BREAAM Domestic Refurbishment Pre-Assessment Report

Proposed Development of 85 Connaught Road, Teddington, London TW11 0QQ

01/08/2021

Contents

1. Executive Summary

This BREAAM Pre-Assessment has been produced on behalf of the applicant to determine what BREAAM Rating the proposed refurbishment element (4 x one beds flats and 2 x two bed flats) of the proposed development at 85 Connaught Road, Teddington, London TW11 0QQ can achieve.

As the project is a domestic refurbishment development that includes internal alterations to the existing ground, first and second floor flats, the 2012 – Domestic Refurbishment version of the BREEAM scheme will be used to assess the development.

Following an initial review of credits to identify the viability of achieving a reasonable BREEAM performance in a pragmatic way. Based on the initial review of credits below, the proposed scheme scores as follows:

- Targeted Credits 68% Very Good.

2. Background

This Pre-Assessment report defines the BREEAM strategy for the development and uses the BREEAM process as a framework for driving the wider agenda of sustainability on the project.

3. Location and Description of Proposed Development

The proposed development is located in Teddington in the London Borough of Richmond-upon-Thames ("LBRT"). The proposals involve the conversion of an existing two and three bed flat into 4 x one bed flats and 2 x two bed flats. A new full floor and a mansard roof extension which will accommodate a new 1 x 2 bed flat and a new 1 x one bed flat, this element does not form part of this pre-assessment, instead it will be assessed under Building Regulations Part L (2013) baseline in order to achieve a 35% reduction in CO2 emissions.

4. About BREEAM

BREEAM is a voluntary scheme that aims to quantify and reduce the environmental burdens of buildings by rewarding those designs that take positive steps to minimise their environmental impacts. It aims to:

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

5. About BREAAM Domestic Refurbishment

BREEAM Domestic Refurbishment is a performance based assessment method and certification scheme for domestic buildings undergoing refurbishment. The primary aim of BREEAM Domestic Refurbishment is to improve the environmental performance of existing dwellings in a robust and cost effective manner. This is achieved through integration and use of the scheme by clients and their project teams at key stages in the refurbishment process. This enables the client, through personnel qualified and licensed under the BREEAM Domestic Refurbishment Scheme and the BRE Global certification process, to measure, evaluate and reflect the performance of their refurbishment project against best practice in an independent and robust manner.

This performance is quantified by a number of individual measures and associated criteria stretching across a range of environmental issues as described below:

- Management
- Health and Wellbeing
- Energy
- Water
- Materials
- Waste
- Pollution
- Innovation

In addition to the overarching principles of BREEAM, the BREEAM Domestic Refurbishment scheme has been developed in accordance with the following set of principles:

- Promote low cost, sustainable refurbishment
- Recognise the limitations of existing buildings including their inherent built form and location
- Drive market transformation by promoting best practice and innovation in the refurbishment of existing buildings
- Provide a holistic environmental assessment that works effectively across different building and project types
- Recognise the different starting points of our existing building stock

The assessment process results in a report covering the issues assessed together with a formal certification giving a rating on a scale of PASS, GOOD, VERY GOOD, EXCELLENT and OUTSTANDING.

6. BREAAM Scoring System

Within each of the BREEAM categories outlined above, there are a number of credit requirements that reflect the options available to designers and managers of buildings.

An environmental weighting is applied to the scores achieved under each category, as shown below, in order to calculate the final BREEAM score. The weighting factors have been derived from consensus based research with various groups such as government, material suppliers and

lobbyists. This research was carried out by BRE to establish the relative importance of each environmental issue. The environmental weightings are as follows:

Issue Category	Issue Weighting
Management	12%
Health and Wellbeing	17%
Energy	43%
Water	11%
Materials	8%
Waste	3%
Pollution	6%
Innovation (additional)	10%

The BREEAM rating bands are as follows:

Rating	Score
PASS	30%
GOOD	45%
VERY GOOD	55%
EXCELLENT	70%
OUTSTANDING	85%

7. Anticipated Score

Following a review of the project with the design team, an anticipated score of the refurbishment elements BREAAM rating has been made. This prediction and the assumptions underpinning it will be reviewed throughout the project's development. When the project is formally assessed, a formal assessment report will be compiled to allow the interim design stage and full as built assessments to be certified by the BRE. At this stage "targeted credits", which as the title indicates, are credits considered achievable and additional credits are items which will require further investigation. Currently, the predictions are as follows:

Targeted Credits 68% Very Good

An initial review of credits has been undertaken to identify the viability of achieving a reasonable BREEAM performance in a pragmatic way.

8. BREAAM Scores

Title	Credits	Requirements
Management		
Man 01: Home User Guide	3	The Home User Guide produced to BRE's requirements must be provided to all dwellings.
Man 02: Responsible Construction Practices	0	n/a
Man 03: Construction Site Impacts	0	n/a
Man 04: Security	2	External doors and accessible external windows must be of good quality with working key locks and a strong frame. All glazing including in doors should be a minimum of double glazing. Putty or beading to glazed areas should be on the unexposed side of the door or window, in good condition, with no sign of degradation. In all cases there can be no sign of warping, splitting or rot. In addition, the site must meet the standards required in 'Section 2 – Physical Security' from 'Secured by Design – New Homes'. The build must incorporate any advice given by a security consultant. Your security consultant must be suitably qualified to gain these credits. Common examples are Police Architectural Liaison Officers (ALO) or a Crime Prevention Design Advisor (CPDA) from the police.
Man 05: Protection and Enhancement of Ecological Features	0	n/a
Man 06.1: Project Management - Roles and Responsibilities	0	n/a
Man 06.2: Project Management - Handover and Aftercare	0	n/a
Man 06.3: Project Management - Early Design Input	0	n/a
Man 06.4: Project Management - Thermographic Surveying and Airtightness Testing	0	n/a

Health and Wellbeing		
Hea 01.1: Daylighting - Impact	1	The refurbishment results in a neutral impact on the dwellings daylighting levels in the kitchen, living room, dining room and study. (Checked with "no" answered for all questions in Checklist A-7: Daylight Factor).
Hea 01.2: Daylighting - Standards	0	n/a
Hea 02: Sound Insulation	3	Airborne results to be 5dB higher, and impact 5dB lower, than before refurbishment. OR airborne results to exceed Building Regulations for new builds. Airborne 3dB higher than regs, impact 3dB lower (these regs are Part E for England & Wales, Section 5 for Scotland or Part G for N.I.).
Hea 03: Volatile Organic Compounds	1	Where at all decorative paints and varnishes meet the requirements in table 16 AND where at least five of the other remaining product categories listed in table 16 meet testing requirements and emissions levels specified. If there are less than five of these in the build, then all must pass.
Hea 04: Inclusive Design	0	n/a
Hea 05: Ventilation	2	The refurbishment should be designed to meet the requirements of Building Regulations Part F section 3.11–3.16. Assessments should be carried out to establish the current levels of air tightness and structural moisture prior to works. Temperature and humidity should also be monitored before and after the works. From this, the ventilation levels for the dwellings can be decided based upon: • The minimum ventilation requirements set out in Building Regulations Approved Document Part F • Ventilation rates needed to allow structural moisture to be dealt with effectively. This may be required by Building Regulations Approved Document Part F where the structure or fixtures needs higher levels of ventilation in order to deal with moisture levels.
Hea 06: Safety	1	Where a compliant fire detection and fire alarm system is provided. This should be mains supplied, comply to BS 5839-6:2004 (40) and to at least Grade D Category LD3 standard. In order to gain this credits the positioning of system must be in accordance with the more robust building regulations for new builds as opposed to refurbishments. Regulations Part B Fire Safety Volume 1–Dwellinghouses 2006. Section 1 Paragraphs 1.11–1.18 and in accordance with the recommendations of BS 5839–6:2004 for a category L2 system. Carbon Monoxide detector installed if dwelling is supplied with mains gas or other fossil fuel. Carbon Monoxide alarm power supply should conform to BS EN 50292:2002.
Energy		
Ene 01: Improvement in Energy Efficiency Rating	4	Credits awarded for SAP / Part L performance.
Ene 02: Energy Efficiency Rating post refurbishment	3	Credits awarded for SAP / Part L performance.
Ene 03: Primary Energy Demand	7	Credits awarded for SAP / Part L performance.

Ene 04: Renewable Technologies	0	n/a
Ene 05: Energy Labelled White Goods	2	White goods provided on the following basis: Fridges and freezers or fridges/freezers have an A+ rating or better under the EU Energy Efficiency Labelling Scheme OR Where no white goods are provided to the dwelling(s) but the EU Energy Efficiency Labelling Scheme Information Leaflet is provided to each dwelling. Washing machines have an A++ rating or better under the EU Energy Efficiency Labelling Scheme AND Dishwashers have an A+ rating or better under the EU Energy Efficiency Labelling Scheme AND EITHER Washer-dryers and tumble dryers have an A rating under the EU Energy Efficiency Labelling Scheme (where a washer dryer is provided, it is not necessary to also provide a washing machine) OR Where a washer dryer or tumble dryer is not provided, the EU Energy Efficiency Labelling Scheme Information Leaflet is provided to each dwelling.
Ene 06: Drying Space	1	An adequate, secure internal or external space with posts and footings, or fixings holding: 1.a 1–2 bedrooms: 4m+ of drying line. 1.b 3+ bedrooms: 6m+ of drying line.
Ene 07.1: Lighting - External	1	Energy efficient space lighting, including communal areas, to be at least 45 lumens per circuit watt. Energy efficient security lighting is defined as:• Burglar security lights have a maximum wattage of 150 W, movement detection control devices (PIR) and daylight cut-off sensors.• Other security lighting which has energy efficient fittings and is fitted with daylight cut-off sensors or timers.• Lighting design for the affected areas should follow the requirements of the standard(s) applicable or CIBSE LG9, and should not compromise the safety of any persons using the building.• Or alternatively NO security lighting present at all. Statutory safety lighting can be excluded from the above.
Ene 07.2: Lighting - Internal	1	Energy required for internal lighting is minimised through the provision of a maximum average wattage across the total floor area of the dwelling of 9 watts/m2.
Ene 08: Energy Display Devices	3	The Energy Display Device (EDD) must display current electricity AND primary heating fuel consumption data to the occupants. BRE define an EDD as a system comprising a self-charging sensor(s) fixed to the incoming mains supply or supplies, to measure and transmit energy consumption data to a visual display unit. As a minimum the visual display unit must be capable of displaying the following information: • Local time • Current (real time) energy consumption (kilowatts and kilowatt hours) • Current (real time) estimated emissions (g/kg CO2) • Current (real time) tariff • Current (real time) cost (per hour) • Visual presentation of data (i.e. non-numeric) to allow consumers to easily identify high and low level of usage • Recording of Consumption Data - Historical consumption data so that consumers can compare their current and previous usage in a meaningful way. This should include cumulative consumption data in all of the daily, weekly, monthly or other billing periods. The data must be stored internally for a minimum of two years or be connected to a separate device with automatic upload from the energy display device.

Ene 09: Cycle Storage	2	2 bicycles must be accommodated based on current plot and bedroom numbers. Where cycle storage is to be located within the dwelling(s) (please advise if different):• Storage must be on the ground floor of the dwelling and in a dedicated space e.g. within dedicate part of a hallway.• Not located in a lounge, living room, bedroom, bathroom, dining room or kitchen, • Not accessed through these rooms or through ground floor bedrooms.• Have adequate fixtures and be large enough to allow the cycles to be freestanding.• Accessible to allow the cycle to be moved in and out of the dwelling, taking account of the minimum width needed for a person pushing a bicycle (1.10m width), and 2.0m bike length for manoeuvring the cycle round corners. The storage space should not impede the intended use of that room.
Ene 10: Home Office	1	Home office must meet the following: Location:• For dwellings with three or more bedrooms, located in a room other than the kitchen, living room, master bedroom or bathroom.• For dwellings with one or two bedrooms or studio homes, located in a room other than the kitchen, living room or bathroom, however may be within the master bedroom.• In all cases, the room must be large enough to allow the original intended use of that room as well. Features:• Two double power sockets & telephone point set within 1.8m of wall space.• Window (either width or height > 450mm). Where the room relies on a window for ventilation, the minimum openable casement must be 0.5 m2.
Water		
Wat 01: Internal Water Use	3	Water consumption must fall between 96 and 107 litres per person per day as demonstrated by a water calculation.
Wat 02: External Water Use	1	The rainwater collection system (e.g. rainwater butts) volume requirements are:• Terraces and patios without planting – minimum of 50 litres
Wat 03: Water Meter	0	n/a
Materials		
Mat 01: Environmental Impact of Materials	20	All timber used during the refurbishment will/has come from a ‘legal source’ and is not on the CITES list OR in the case of Appendix III of the CITES list, it has not been sourced from the country seeking to protect this species as listed in Appendix III.
Mat 02.1: Legal Timber	Mandatory	All timber used during the refurbishment will/has come from a ‘legal source’ and is not on the CITES list OR in the case of Appendix III of the CITES list, it has not been sourced from the country seeking to protect this species as listed in Appendix III.
Mat 02.2: Sustainable Procurement Plan	0	n/a
at 02.3: Responsible Sourcing of Materials	0	n/a
Mat 03.1: Insulation - Embodied Impact	4	Credits awarded for green accreditation of materials chosen.

Mat 03.2: Insulation - Responsible Sourcing	0	Credits awarded for green accreditation of materials chosen.
Waste		
Was 01.1: Recycling Facilities	1	The Local Authority collects three types of recycling, one of which (plastics) is sorted and separated by the occupants before collection. The rest is sorted after collection. • Two internal recycling containers:• Minimum 30 litre total capacity, no single container less than seven litre capacity• In a dedicated, unobtrusive position located in a cupboard in the kitchen, close to the non-recyclable waste bin, or located adjacent (within 10m) to the kitchen in a utility room, storage room or connected garage• The storage containers for recycling are provided in addition to non-recyclable waste storage• The storage containers are a fixture of the dwelling
Was 01.2: Composting	1	An interior container is provided for kitchen composting waste of at least 7l, in addition to any recycling or general waste bins.
Was 02: Refurbishment Site Waste Management	0	n/a
Pollution		
Pol 01: Nitrogen Oxide Emissions	0	Credits awarded for heating systems with low NOx levels. <70 targeted.
Pol 02: Surface Water Run-off	0	n/a
Pol 03: Flooding	0	Credits are awarded for undertaking a Flood Risk Assessment which shows a low risk of flooding.

Total Score **68**