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BREEAM®

67a-68a Barnes High Street

BREEAM Domestic Refurbishment 2014 Pre-Assessment Report

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Executive Summary

Price & Myers has been commissioned to carry out a BREEAM Domestic Refurbishment Pre-Assessment for the 67a-68a Barnes High Street residential development. The project involves the major refurbishment and extension of existing terraced mixed use building in the London Borough of Richmond.

This report demonstrates that the proposed dwelling has the potential to achieve a score of 61.70%, which equates to a Very Good BREEAM rating.

This score provides a buffer over the target score of 55% (the threshold for a Very Good rating) should credits be lost through design or cost constraints as the project progresses.

It is key for the design team to remain in contact with the assessor throughout the process and to check that all specifications are in line with the pre-assessment to ensure the required level is achieved upon construction. In order to sign off the planning condition, a Design Stage and Post Construction Stage assessment will be required and the reports submitted to the BRE for certification.

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1. Introduction

Price & Myers has been commissioned to carry out a Preliminary BREEAM (BRE Environmental Assessment Method) Domestic Refurbishment assessment for the proposed development of 67a-68a Barnes High Street.

The development involves the major refurbishment and extension of 67-69 Barnes High Street in the London Borough of Richmond. The development will involve the refurbishment of the existing building and construction of a rear extension to create a total of 90m2 of A2 commercial space and 6 C3 residential units.

There is a planning target to achieve a BREEAM Very Good rating.

This report comprises a pre-assessment of the development against the BREEAM Domestic Refurbishment scheme in support of the planning application. It concludes the BREEAM score and rating that the development can achieve based on the individual credits targeted by the design team.

The results presented are indicative only of the potential performance achievable for the assessed building. The results do not represent a formal certified BREEAM assessment or rating and must not be communicated as such.

2. BREEAM Domestic Refurbishment

BREEAM Domestic Refurbishment is a performance based assessment method and certification scheme for domestic buildings undergoing refurbishment and/or subterranean extensions.

The primary aim of the scheme is to improve the environmental performance of existing dwellings in a robust and cost effective manner. The performance of the dwelling on the scheme is quantified by a number of individual measures and associate criteria encompassing a range of environmental issues, categorised into the following sections:

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

BREEAM Scoring

Within each of the eight 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, illustrated in Section 3, 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 current rating benchmarks for this BREEAM scheme are detailed in the table below:

BREEAM Rating	% Score
Outstanding	≥ 85
Excellent	≥ 70
Very Good	≥ 55
Good	≥ 45
Pass	≥ 30
Unclassified	< 30

Table 2.1 - BREEAM rating benchmarks

Minimum Standards

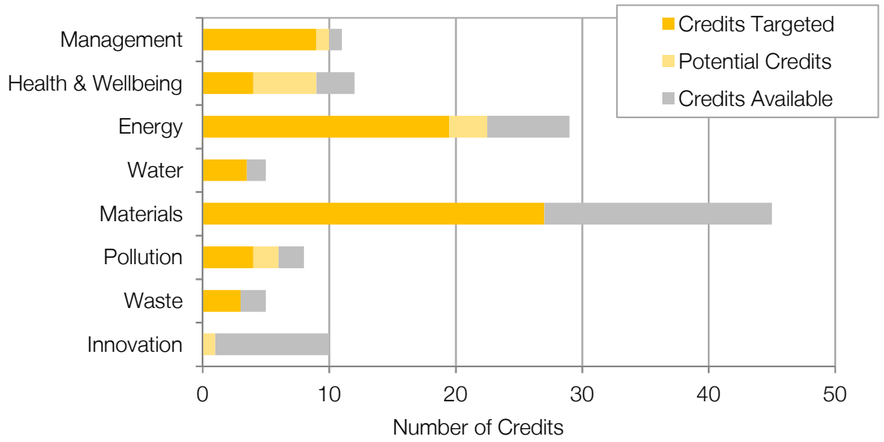
In order to achieve particular benchmark ratings there is a minimum performance requirement within the BREEAM schemes. The minimum performance requirements are detailed in the table below and a project cannot achieve a particular rating unless the minimum requirements have been met, irrespective of the overall percentage score.

BREEAM Credit	Minimum Standards by Rating Level				
	Pass	Good	Very Good	Excellent	Outstanding
Ene 02: Energy Efficiency Rating Post Refurbishment	EER ≥ 50	EER ≥ 58	EER ≥ 65	EER ≥ 70	EER ≥ 81
Wat 01: Internal Water Use	-	-	1 Credit	2 Credits	3 Credits
Hea 05: Ventilation	1 Credit	1 Credit	1 Credit	1 Credit	1 Credit
Hea 06: Safety	1 Credit	1 Credit	1 Credit	1 Credit	1 Credit
Pol 03: Flooding	-	-	-	2 Credits	2 Credits
Mat 02: Responsible Sourcing of Materials	Criterion 3 only	Criterion 3 only	Criterion 3 only	Criterion 3 only	Criterion 3 only

Table 2.2 - Minimum BREEAM standards

3. Score Summary

The potential BREEAM score of the development has been determined based on discussions with the design team and is currently expected to achieve the following:



BREEAM Section	Credits Available	Credits Targeted	% of Credits Achieved	Section Weighting	Section Score
Management	11	9	81.8%	12%	9.82
Health & Wellbeing	12	4	33.3%	17%	5.67
Energy	29	19.5	67.2%	43%	28.91
Water	5	3.5	70.0%	11%	7.70
Materials	45	27	60.0%	8%	4.80
Pollution	8	4	50.0%	6%	3.00
Waste	5	3	60.0%	3%	1.80
Innovation	10	0	0.0%	10%	0.00
Target BREEAM Score			61.70		
Target BREEAM Rating			Very Good		
Potential BREEAM Score			76.82		
Potential BREEAM Rating			Excellent		

Minimum BREEAM Standards					
Rating Level	Pass	Good	Very Good	Excellent	Outstanding
Minimum Standards Achieved	Yes	Yes	Yes	No	No

This report demonstrates that the development has met all of the minimum standards and can achieve a Very Good rating on the BREEAM Domestic Refurbishments scheme.

BREEAM Project Scorecard

Credit	Credits Targeted	Potential Credits	Responsibility
Management			
Man 01 Home User Guide	3	0	Architect / Contractor
Man 02 Responsible Construction Practices	2	0	Contractor
Man 03 Construction Site Impacts	1	0	Contractor
Man 04 Security	1	1	Architect
Man 05 Protection and Enhancement of Ecological Features	1	0	Architect / Contractor
Man 06 Project Management	1	0	Contractor
Health and Wellbeing			
Hea 01 Daylighting	1	0	Architect
Hea 02 Sound Insulation	0	2	Acoustician
Hea 03 Volatile Organic Compounds	1	0	Architect
Hea 04 Inclusive Design	0	2	Architect
Hea 05 Ventilation	1	1	Architect
Hea 06 Safety	1	0	Architect / M&E
Energy			
Ene 01 Improvement in Energy Efficiency Rating	1.5	0	P&M
Ene 02 Energy Efficiency Rating Post-Refurbishment	4	0	P&M
Ene 03 Primary Energy Demand	7	0	P&M
Ene 04 Renewable Technologies	2	0	P&M
Ene 05 Energy Labelled White Goods	2	0	Architect
Ene 06 Drying Space	0	0	Architect
Ene 07 Lighting	1	1	M&E
Ene 08 Energy Display Devices	0	2	Architect / M&E
Ene 09 Cycle Storage	1	0	Architect
Ene 10 Home Office	1	0	Architect / M&E
Water			
Wat 01 Internal Water Use	2.5	0	Architect / M&E
Wat 02 External Water Use	0	0	Architect
Wat 03 Water Meter	1	0	Architect / M&E
Materials			
Mat 01 Environmental Impact of Materials	10	0	Architect
Mat 02 Responsible Sourcing of Materials	11	0	Architect / Contractor
Mat 03 Insulation	6	0	Architect / Contractor
Waste			
Was 01 Household Waste	2	0	Architect
Was 02 Refurbishment Site Waste Management	1	0	Contractor
Pollution			
Pol 01 Nitrogen Oxide Emissions	3	0	M&E
Pol 02 Surface Water Run-Off	1	0	Infrastructure
Pol 03 Flooding	0	2	Infrastructure
Innovation			
Innovation	0	1	Various

4. Pre-assessment Credit Summary

The following section details the BREEAM credits assessed under the scheme and whether they will be targeted for the development.

Management						
Criteria	**Mandatory Credit Requirements**	**Credit Value**	**Status**	**Target Score**	**Pre-Assessment Stage Assumptions**	**Responsibility**
Man 01 Home User Guide						
Where a Home User Guide containing the information listed in the 'User Guide Contents List' has been produced and supplied to all homes		3.27	Targeted	3.27	A Home User Guide will be produced containing the information listed in the User Guide Content List (Detailed in Appendix A1).	Architect / Contractor
Man 02 Responsible Construction Practices						
CCS Score 25 - 34 (score of 5 in each section)		1.09	Targeted	1.09	The contractor will be expected to achieve a score of at least 35 points on the new CCS scheme (with a score of at least 7 in each of the 5 sections).	Contractor
CCS Score 35 - 39 (score of 7 in each section)		1.09	Targeted	1.09		
Man 03 Construction Site Impacts						
Achieve 2 or more of the following construction site impacts: a. Monitor, report and set targets for CO2 production of energy use arising from site activities		1.09	Targeted	1.09	The contractor will be expected to achieve at least 2 of the construction site impact actions. Further details of the requirements are listed in Appendix A2.	Contractor
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						
e. 80% of site timber is reclaimed, re-used or responsibly sourced and 100% is legally sourced						
Man 04 Security						
Existing doors and windows meet minimum security requirement. New doors and windows are appropriately certified.		1.09	Targeted	1.09	All new doors and windows will meet the required PAS or LPS standards and any retained doors/windows will be of good quality, have working key locks, sturdy frames and double glazing where glazing is included (Further details in Appendix A3).	Architect
Comply with Secure by Design Section 2 and implement the recommendations having consulted with an ALO or CPDA		1.09	Potential	0.00	It is not currently assumed that the design team will work with a CPDA or achieve the Secure by Design award.	Architect
Man 05 Protection and Enhancement of Ecological Features						
Site survey carried out and any ecological aspects protected during site works (and no ecological features are removed)		1.09	Targeted	1.09	Where a site survey is carried out by a member of the project team or a Suitably Qualified Ecologist (SQE) to determine the presence of ecological features. All existing features of ecological value on the refurbishment site potentially affected by the works, will be maintained and adequately protected during refurbishment works.	Architect / Contractor
Man 06 Project Management						
Assign project roles and responsibilities See Appendix A4 for full details		1.09	Not Achievable	0.00	This credit will not be targeted as the criteria is considered to be too onerous and time consuming for a project of this size.	Contractor
A handover meeting is arranged AND Two or more of the following are committed to:		1.09	Targeted	1.09	The architect will carry out a site inspection within 3 months of occupation and provide aftercare support to the client for the first 12 months of occupation.	Contractor
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 help line, nominated individual or other appropriate system to support building users for at least the first 12 months of occupation						

Health & Wellbeing						
Criteria	**Mandatory Credit Requirements**	**Credit Value**	**Status**	**Target Score**	**Pre-Assessment Stage Assumptions**	**Responsibility**
Hea 01 Daylighting						
The refurbishment results in a neutral impact on the dwellings daylighting levels in the kitchen, living room, dining room and study		1.42	Targeted	1.42	It is assumed that at least a neutral impact of the daylighting levels within existing rooms will be made. All newly created rooms will achieve the daylighting standards.	Architect
Where the property is being extended the new spaces achieve minimum daylighting levels and the extension does not reduce daylighting levels in the kitchen, living room, dining room or study of neighbouring properties						
Dwelling achieves minimum daylighting levels in the kitchen (2%), living room, dining room and study (1.5%) + 80% of working plane receives direct sunlight		1.42	Not Achievable	0.00		
Hea 02 Sound Insulation						
Party walls and floors are compliant with Part E		2.83	Potential	0.00	Existing party walls are solid brick walls which may meet the Part E requirements however pre-completion acoustic testing will need to be carried out to confirm.	Acoustician
3dB improvement over Part E		1.42	Not Achievable	0.00		
5dB improvement over Part E		1.42	Not Achievable	0.00		
Hea 03 Volatile Organic Compounds (VOCs)						
Products will be specified avoiding the use of VOCs in compliance with the BREEAM table		1.42	Targeted	1.42	All applicable internal finishes and fittings will be specified to avoid the use of volatile organic compounds (VOCs). The relevant standards and VOC levels are detailed in Appedix B1.	Architect
Hea 04 Inclusive Design						
An access expert or suitably qualified member of the design team has completed section 1 of Checklist A8; Access Statement Template (An architect is expected to satisfy the requirements)		1.42	Potential	0.00	Currently not targeted but if so, a suitably qualified member of the design team would complete the access statement to demonstrate reasonable provision to provide accessibility to the dwelling, covering sections 1 and 2 of Checklist A-8. Refer to Appendix B2 for full details of Checklist A-8.	Architect
An access expert or suitably qualified member of the design team has completed sections 1 and 2 of Checklist A8; Access Statement Template (An architect is expected to satisfy the requirements)		1.42	Potential	0.00		
Hea 05 Ventilation						
Minimum background ventilation in the form of trickle ventilation (or an equivalent means of ventilation) should be provided as follows: • Habitable rooms: 5000mm^2 equivalent area; • Kitchens, utility rooms and bathrooms: 2500mm^2 equivalent area; • New rooms (in the case of an extension): 8000mm^2 equivalent area; And a minimum level of extract ventilation is provided in all wet rooms (e.g. kitchen, utility and bathrooms), compliant with section 5 of AD Part F 2010; And a minimum level of purge ventilation is provided in all habitable rooms and wet rooms, compliant with section 7 of AD Part F 2010	**Pass / Good / Very Good / Excellent / Outstanding - 1 credit**	1.42	Targeted	1.42	It is mandatory for one credit to be achieved in order to achieve a Very Good rating. Ventilation will be provided to the property in compliance with the minimum levels detailed in Sections 5 and 7 in AD Part F 2010.	M&E
Ventilation is provided for the dwelling that meets the requirements of Section 5 of Building Regulations Part F in full		1.42	Potential	0.00		
Hea 06 Safety						
Where the dwelling is supplied with mains gas or where any other form of fossil fuel is used within the building (e.g. coal), a compliant fire and carbon monoxide detector and alarm system is provided Where the project involves electrical re-wiring the power supply for the smoke alarm and compliant carbon monoxide alarm systems are derived from the dwellings main electricity supply (else from a battery supply)	**Pass / Good / Very Good / Excellent / Outstanding - 1 credit**	1.42	Targeted	1.42	It is mandatory to achieve one credit for a Very Good rating. As the dwelling is supplied with mains gas a compliant fire and carbon monoxide detector and alarm system will be provided. The power supply for the smoke alarm and carbon monoxide alarm systems must be derived from the dwelling's main electricity supply (and not battery operated).	Architect / M&E

Energy						
Criteria	Mandatory Credit Requirements	Credit Value	Status	Target Score	Pre-Assessment Stage Assumptions	Responsibility
Ene 01 Improvement in Energy Efficiency Rating						
Calculated from SAP 2012 ≥ 5 Improvement in EER		0.74	Targeted	0.74	SAP worksheets confirm that when averaged the improvement in EER is 14, as such 1.5 credits can be awarded. See SAP worksheet section 11a (box 258).	M&E
> 9 Improvement in EER		0.74	Targeted	0.74		
> 13 Improvement in EER		0.74	Targeted	0.74		
> 17 Improvement in EER		0.74	Not	0.00		
> 21 Improvement in EER		0.74	Not	0.00		
> 26 Improvement in EER		0.74	Not	0.00		
> 31 Improvement in EER		0.74	Not	0.00		
> 36 Improvement in EER		0.74	Not	0.00		
> 42 Improvement in EER		0.74	Not	0.00		
> 48 Improvement in EER		0.74	Not	0.00		
> 54 Improvement in EER		0.74	Not	0.00		
> 60 Improvement in EER		0.74	Not	0.00		
Ene 02 Energy Efficiency Rating Post Refurbishment						
Calculated from SAP 2012 ≥ 50 EER rating	Pass - 0.5 credits Good - 1 credit Very Good - 2 credits Excellent - 2.5 credits Outstanding - 3.5 credits	0.74	Targeted	0.74	SAP worksheets confirm that when averaged the EER post refurbishment is ≥ 85, as such 4 credits can be awarded. See SAP worksheet section 11a (box 258).	M&E
> 55 EER rating		0.74	Targeted	0.74		
> 60 EER rating		0.74	Targeted	0.74		
> 65 EER rating		0.74	Targeted	0.74		
> 70 EER rating		0.74	Targeted	0.74		
> 75 EER rating		0.74	Targeted	0.74		
> 80 EER rating		0.74	Targeted	0.74		
> 85 EER rating		0.74	Targeted	0.74		
Ene 03 Primary Energy Demand						
Calculated from SAP 2012 ≤ 400 kWh/m2/yr		0.74	Targeted	0.74	SAP worksheets confirm that when averaged, the average primary energy demand for the units is 66.34 kWh/m2/yr, as such 7 credits can be awarded. See SAP worksheet section 13a (box 273).	M&E
< 370 kWh/m2/yr		0.74	Targeted	0.74		
< 340 kWh/m2/yr		0.74	Targeted	0.74		
< 320 kWh/m2/yr		0.74	Targeted	0.74		
< 300 kWh/m2/yr		0.74	Targeted	0.74		
< 280 kWh/m2/yr		0.74	Targeted	0.74		
< 260 kWh/m2/yr		0.74	Targeted	0.74		
< 240 kWh/m2/yr		0.74	Targeted	0.74		
< 220 kWh/m2/yr		0.74	Targeted	0.74		
< 200 kWh/m2/yr		0.74	Targeted	0.74		
< 180 kWh/m2/yr		0.74	Targeted	0.74		
< 160 kWh/m2/yr		0.74	Targeted	0.74		
< 140 kWh/m2/yr		0.74	Targeted	0.74		
< 120 kWh/m2/yr		0.74	Targeted	0.74		
Ene 04 Renewable Technologies						
≥10% of Primary Energy Demand per annum is by LZC technologies AND The dwelling has reduced energy demand prior to the specification of renewable technologies (Must use MCS certified products and installers)		1.48	Targeted	1.48	BREEAM compliant renewable technologies are planned for this development. Flat 1, 2, 6 and 7 all achieve two credits. Flats 3 and 4 achieve one credit and Flat 5 achieves zero credits.	M&E
≥15% (mid to high rise flats) or 20% (all others) of Primary Energy Demand per annum is by LZC technologies AND The dwelling has reduced energy demand prior to the specification of renewable technologies (Must use MCS certified products and installers)		1.48	Targeted	1.48		

Ene 05 Energy Labelled White Goods						
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		1.48	Targeted	1.48	The specified fridge-freezers will be recognised by the Energy Saving Trust Recommended labelling scheme and carry the Energy Saving Trust Recommended Label.	Architect / M&E
Washing machines have an A++ rating or better under the EU Energy Efficiency Labelling Scheme Dishwashers have an A+ rating or better under the EU Energy Efficiency Labelling Scheme AND EITHER Washer-dryers and tumble dryers have a 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		1.48	Targeted	1.48	The specified washing machines and dishwashers will be recognised by the Energy Saving Trust Recommended labelling scheme and carry the Energy Saving Trust Recommended Label. Washer dryers and tumble dryers will have a B rating under the EU Energy Efficiency Labelling Scheme or if not specified, EU Energy Efficiency Labelling Scheme Information Leaflet is provided to each dwelling.	Architect / M&E
Ene 06 Drying Space						
Adequate (permanent) internal or external drying line of 4m+ (1-2 bed) or 6m+ (3+ bed) This is either; a heated space with adequate, controlled ventilation, complying with AD Part F 2006, or an unheated outbuilding		1.48	Not Achievable	0.00	This credit is not being targeted.	Architect
Ene 07 Lighting						
External Lighting - Energy efficient space lighting and security lighting (if present) is provided AND Appropriate control systems i.e. Passive Infra Red (PIR), 'Dusk to Dawn' daylight sensors or time switches		1.48	Targeted	1.48	Energy Efficient Space lighting (including lighting in communal areas) and Energy Efficient Security lighting (where applicable) will be provided to external areas, along with appropriate controls. Further details of the lighting requirements are in Appendix C1.	M&E
Internal Lighting - Maximum average wattage across the total floor area of the dwelling of 9 W/m^2		1.48	Potential	0.00	It is not expected that this credit will be achieved. However it will be reviewed at the detailed design stage.	
Ene 08 Energy Display Devices						
Current electricity consumption OR Current primary heating fuel consumption data is displayed to occupants		1.48	Not Applicable	0.00	The Design team shall investigate the cost implications of EDDs. To achieve the credits current electricity and primary heating fuel consumption data will be displayed to occupants by a compliant Energy Display Device (or Visual Display Unit). Details of a compliant device are in Appendix C2. An additional exemplary credit is available where the EDD has the capability to record and store energy consumption data, however this is not currently targeted.	Architect / M&E
Current electricity AND primary heating fuel consumption data are displayed to occupants OR Where electricity is the primary heating fuel and current electricity consumption data are displayed to occupants		2.97	Potential	0.00		
Ene 09 Cycle Storage						
Studios or 1 bed – 1 cycle for every 2 dwellings 2/3 bed – 1 cycle per dwelling 4+ bed – 2 cycles per dwelling		1.48	Targeted	1.48	Two cycle spaces will be provided in the Lower Ground plant room or entrance corridor. Full requirements for compliant storage are detailed in Appendix C3.	Architect
Studios or 1 bed – 1 cycle per dwelling 2/3 bed – 2 cycle per dwelling 4+ bed – 4 cycles per dwelling		1.48	Not Achievable	0.00		
Ene 10 Home Office						
Sufficient space and services for a home office: • 1.8m wall length space • Two double power sockets • Telephone point • Window (either the width and height are to be >450mm) • Adequate ventilation (0.5m^2 openable area or meet Hea 05)		1.48	Targeted	1.48	A space and facilities for a home office will be provided in the Lower Ground dining room.	Architect / M&E

Water						
Criteria	Mandatory Credit Requirements	Credit Value	Status	Target Score	Pre-Assessment Stage Assumptions	Responsibility
Wat 01 Water Consumption						
140 - 150 litres / person / day	Very Good - 1 credit Excellent - 2 credits Outstanding - 3 credits	1.10	Targeted	1.10	As a mandatory standard, water fittings will be specified such that the Total Water Consumption per dwelling is less than 105 litres/person/day. The following flow rates will be used as guidance: Bathroom taps - 5 l/min Baths - 140 l (overflow) Showers - 8 l/min Dishwasher - 13 l/cycle Washing machine - 60 l/load WC - 4 l effective flushing volume Kitchen sink taps - 5 l/min	Architect / M&E
129 - 139 litres / person / day		1.10	Targeted	1.10		
118 - 128 litres / person / day		1.10	Targeted	1.10		
107 - 117 litres / person / day		1.10	Targeted	1.10		
96 - 107 litres / person / day		1.10	Targeted	1.10		
< 95 litres / person / day		1.10	Not Achievable	0.00		
Wat 02 External Water Use						
A rainwater collection system for external/internal irrigation use has been provided OR No external space provided		2.20	Not Achievable	0.00	It is assumed that a water butt will not be installed	Architect
Wat 03 Water Meter						
An appropriate water meter for measuring and storing usage data of mains potable water has been provided		2.20	Targeted	2.20	A compliant water meter (that provides a visible display of mains potable water consumption to occupants and stores the data) will be provided.	Architect / M&E

Materials						
Criteria	Mandatory Credit Requirements	Credit Value	Status	Target Score	Pre-Assessment Stage Assumptions	Responsibility
Mat 01 Environmental Impact of Materials						
Assessment of the following building elements based on their Green Guide to Specification rating and Thermal Performance:				1.80	The following materials have been proposed: • Roof • External Walls • Internal Walls (Including separating walls) • Upper and Ground Floor • Windows Using the Mat 01 calculator tool, the indicated credits expected are: 10	Architect
• Roof		0.89	Targeted			
• External Walls		0.89	Targeted			
• Internal Walls (Including separating walls)		0.89	Targeted			
• Upper and Ground Floor		0.89	Targeted			
• Windows		0.89	Targeted			

Mat 02 Responsible Sourcing of Materials						
Where the Principle Contractor sources materials for the project in accordance with a document Sustainable Procurement Plan OR Where the Principle Contractor (when a Mirco-enterprise) addresses Part 1 OR Part 2 of Checklist A-9; Sustainable Procurement Statement		0.18	Targeted	0.18	A sustainable Procurement plan will be produced. Further details are in Appendix D1.	Architect / Contractor
Where the Principle Contractor sources materials for the project in accordance with a document Sustainable Procurement Plan OR Where the Principle Contractor (when a Mirco-enterprise) addresses Part 1 AND Part 2 of Checklist A-9; Sustainable Procurement Statement		0.18	Targeted	0.18		
Where the Principle Contractor sources materials for the project in accordance with a document Sustainable Procurement Plan OR Where the Principle Contractor (when a Mirco-enterprise) addresses Part 1, 2 AND 3 of Checklist A-9; Sustainable Procurement Statement		0.18	Targeted	0.18		
≥9% Achieved in BREEAM Calculator Tool		0.36	Targeted	0.36	Materials will be responsibly sourced (i.e. FSC, PEFC, EMS) as to achieve at least 36% of credits within the BREEAM Mat 02 calculator. All new timber and wood-derived products will be sourced from only independently verifiable legal and sustainable sources or FLEGT (forest law enforcement, governance and trade) licensed timber or equivalent timber. Further details are in Appendix D1.	
≥18% Achieved in BREEAM Calculator Tool		0.36	Targeted	0.36		
≥27% Achieved in BREEAM Calculator Tool		0.36	Targeted	0.36		
≥36% Achieved in BREEAM Calculator Tool		0.36	Targeted	0.36		
≥45% Achieved in BREEAM Calculator Tool		0.36	Not Achievable	0.00		
≥54% Achieved in BREEAM Calculator Tool		0.36	Not Achievable	0.00		
All new timber is sourced in line with the UK Gov's Timber Procurement Policy	**Mandatory Credit**		Targeted			
Mat 03 Insulation						
Where the (BREEAM) Insulation Index for new insulation is ≥2 based on the Green Guide rating and thermal performance for insulation within the: • External walls • Ground floor • Roof • Building services		0.18	Targeted	0.18	All new insulation for external walls, ground floor, roof and building services will be specified with a Green Guide rating of A or A+ (where possible) to achieve at least 2 credits.	Architect / Contractor
		0.18	Targeted	0.18		
		0.18	Not Achievable	0.00		
		0.18	Not Achievable	0.00		
Where ≥ 80% of the new thermal insulation used in the building elements is responsibly sourced (for key processes and supply chain)		0.18	Targeted	0.18	At least 80% of the new thermal insulation will be responsibly sourced (i.e. with EMS certification). Further details are in Appendix D2.	
		0.18	Targeted	0.18		
		0.18	Targeted	0.18		
		0.18	Targeted	0.18		

Pollution						
Criteria	**Mandatory Credit Requirements**	**Credit Value**	**Status**	**Target Score**	**Pre-Assessment Stage Assumptions**	**Responsibility**
Pol 01 Nitrogen Oxide Emissions (NOx)						
Dry NOx emissions of space heating and hot water systems are <100 mg/kWh		0.75	Targeted	0.75	The current M&E strategy is to use gas fired boilers and so it is expected that the dry NOx emissions will be less than 40 mg/kWh.	M&E
Dry NOx emissions of space heating and hot water systems are <70 mg/kWh		0.75	Targeted	0.75		
Dry NOx emissions of space heating and hot water systems are <40 mg/kWh		0.75	Targeted	0.75		
Pol 02 Surface Water Runoff						
Neutral impact on surface water		0.75	Targeted	0.75	The existing site is hard landscaping and the proposed site will not add any further hard landscaping (some additional garden/planting may be carried out). Therefore a neutral impact on surface water run-off is expected. The additional credits are not expected to be achieved as compliant SUDS (infiltration) will not be provided for this development. Further details are in Appendix E1.	Infrastructure
Reducing run-off from site: Basic		0.75	Not Achievable	0.00		
Reducing run-off from site: Advanced		0.75	Not Achievable	0.00		

Pol 03 Flooding						
Flood Risk Assessment (FRA) carried out and a Low Flood Risk If Medium/High Flood risk then protective measures to be taken	**Excellent - 2 credits** **Outstanding - 2 credits**	1.50	Potential	0.00	A FRA has confirmed the site is located in Flood Zones 2/3. For credits to be achieved measures should be taken to prevent or protect against potential flooding.	Infrastructure

Waste						
Criteria	**Mandatory Credit Requirements**	**Credit Value**	**Status**	**Target Score**	**Pre-Assessment Stage Assumptions**	**Responsibility**
Was 01 Household Waste						
If a LA or private 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 30l total capacity, no single container less than 7l • Dedicated location		0.60	Targeted	0.60	The Local Authority operate a roadside collection scheme for mixed recycling and so a 30 litre recycling bin (in addition to a container for non-recyclable/general waste) will be provided within a kitchen cupboard.	Architect
If no compliant collection scheme in place and no adequate external storage: • 3 internal recycling containers provided • Minimum 60l total capacity • Dedicated location						
If no compliant collection scheme in place but adequate external storage provided: • 3 internal recycling containers • Minimum 30l total capacity, no single container smaller than 7l • Dedicated location						
Where a composting service or facility is provided for green/garden waste, kitchen waste and an interior container is provided for kitchen composting waste of at least 7l Where the private external space ≥ 4.5m2 (Houses) or ≥ 1m2 per bedroom (Flats) then green/garden waste must also be composted		0.60	Targeted	0.60	The Local Authority provide a garden waste collection service, but not for composting. A facility will be provided in the garden for green/garden waste, kitchen waste and a 7l compost bin provided in the kitchen.	Architect
Was 02 Refurbishment Site Waste						
A compliant SWMP is in place		0.60	Targeted	0.60	A Site Waste Management Plan will be put into place for this development. Appendix F1 details what a compliant SWMP must include.	Contractor
First credit achieved AND Where Non-hazardous construction waste generated by the dwellings refurbishment is ≤26.52m3 or 16.9 Tonnes (per £110k project value)		0.60	Not Achievable	0.00	This credit is not being targeted as the waste generated cannot be accurately predicted at this stage. The credits may still be achievable if waste levels are recorded.	Contractor
Where the amount of waste generated against £100k of project value is recorded in the SWMP						
Where a pre-refurbishment audit of the existing building is completed						
Where the demolition is included as part of the refurbishment programme, then the audit should also cover demolition materials						
First 2 credits achieved AND ≤ 70% (by volume) or 60% (by Tonnes) of non-hazardous construction waste is diverted from landfill		0.60	Not Achievable	0.00		
AND ≤ 80% (by volume) or 90% (by Tonnes) of non-hazardous demolition waste is diverted from landfill						

Innovation						
Criteria	Mandatory Credit Requirements	Credit Value	Status	Target Score	Pre-Assessment Stage Assumptions	Responsibility
Man 02 Responsible Construction Practices						
CCS Score 40+ (a score of 7 in each of the 5 sections must be achieved)		1.00	Potential	0.00	The contractor will be expected to confirm if this credit can be achieved.	Contractor
Man 05 Protection and Enhancement of Ecological Features						
SQE appointed and adopt all general ecological recommendations and 30% of additional recommendations		1.00	Not Achievable	0.00	This credit is not being targeted.	Contractor
Man 06 Project Management						
BREEAM Accredited Professional (AP) has been appointed		1.00	Not Achievable	0.00	This credit is not being targeted.	
Thermographic Surveying and Airtightness Testing carried out		1.00	Not Achievable	0.00	This credit is not being targeted.	Contractor
Hea 04 Inclusive Design						
Lifetime Homes and Part M compliance		1.00	Not Achievable	0.00	This credit is not being targeted.	Architect
Ene 02 Energy Efficiency Rating Post Refurbishment						
≥ 90 EER rating post refurbishment		1.00	Not Achievable	0.00	This credit is not being targeted.	M&E
≥ 100 EER rating post refurbishment		1.00	Not Achievable	0.00		
Ene 08 Energy Display Devices						
Where any specified Energy Display Devices is capable of recording consumption data		1.00	Not Achievable	0.00	This credit is not being targeted.	M&E
Wat 01 Water Consumption						
< 80 litres / person / day		1.00	Not Achievable	0.00	This credit is not being targeted.	Architect / M&E
Pol 02 Surface Water Runoff						
Where all run-off from the developed site is managed on site using source control		1.00	Not Achievable	0.00	This credit is not being targeted.	Infrastructure
Was 02 Refurbishment Site Waste						
SWMP implemented and achieving higher waste reduction targets		1.00	Not Achievable	0.00	This credit is not being targeted.	Contractor

5. Conclusion

This Pre-Assessment report demonstrates that a Very Good rating can be achieved, with a score of 61.70%, based on the credits targeted by the design team.

Additional credits have been highlighted as potential credits, such as:
- Man 02 Responsible Construction Practices
- Man 04 Security
- Hea 02 Sound Insulation
- Hea 04 Inclusive Design
- Ene 07 Lighting
- Ene 08 Energy Display Devices
- Pol 03 Flooding

The score provides a comfortable buffer above the 55% threshold for a Very Good rating.

Achieving the targeted BREEAM credits through the design and post construction stages will require rigorous adherence to the credit criteria, which are very prescriptive. As some details for full compliance may not be included in this summary report, it is essential for the design team to remain in contact with the assessor as the project develops to confirm that all specifications are in line with the pre-assessment.

Design Stage and Post Construction Stage assessments will be required and the reports and compliant evidence submitted to the BRE for certification.

Appendices

Appendix A - Management
- A1: Man 01 - Home Users Guide
- A2: Man 03 - Construction Site Impacts
- A3: Man 04 - Security
- A4: Man 06 - Project Management

Appendix B - Health & Wellbeing
- B1: Hea 03 - VOCs
- B2: Hea 04 - Inclusive Design

Appendix C - Energy
- C1: Ene 07 - Lighting
- C2: Ene 08 - Energy Display Devices
- C3: Ene 09 - Cycle Storage

Appendix D - Materials
- D1: Mat 02 - Responsible Sourcing of Materials
- D2: Mat 03 - Insulation

Appendix E - Pollution
- E1: Pol 02 - Surface Water Run-off

Appendix F - Waste
- F1: Was 02 - SWMP

Appendix A - Management

A1: MAN 01 – Home Users Guide

The list below indicates the type of information that should be included in the Home Users Guide and provided to occupants at handover. Where such features are not relevant to the dwelling (e.g. there are no renewables) or this is an occupied home and residents are already familiar with surrounding area (e.g. location of local amenities), information can be excluded from the Home Users Guide.

About BREEAM Domestic Refurbishment

Background about the scheme, category areas, scoring system (all of this information can be found at the front of the manual).

A copy or photocopy of the BREEAM Domestic Refurbishment certificate should also be provided with a summary of the environmental features that have been designed into the dwelling to help achieve the rating.

Recommendations report

A recommendations report for how the homes could be improved in the future including:

- How to improve the home to the next BREEAM Domestic Refurbishment rating band covering each category
- Use of sustainable material including low VOC materials, responsible sourcing and the Green Guide
- Use of contractors with good green credentials including site waste management, use of considerate constructors scheme or similar and awareness of environmental impacts
- Sources of further guidance on how to improve the home e.g. EST, Green Deal Advisors
- Information on potential funding mechanisms e.g. the Green Deal, Feed in Tariffs etc.
- How to obtain an assessment for future refurbishment work

Energy Efficiency

Information on energy-efficient features and strategies relating to the home, and also provide an overview of the reasons for their use, e.g. economic and environmental savings. Information could include:

- Information on the effective operation and reason for the use (e.g. environmental economic savings) of environmental features/design strategies such as passive solar design, super insulation, energy efficient timber windows, heat recovery systems, solar hot water systems, photovoltaics, passive vents or the use of certified timber or SUDS within the boundary of individual properties.
- Tips on other energy saving measures such as not leaving electrical appliances on standby etc and the cost/environmental savings they can give.
- Information as described in the Building Regulations ADL1b (requirement note L1c) (1) i.e. Sufficient information about the building and its building services and their maintenance requirements so that the building can be operated in such a manner as to use no more fuel and power than is reasonable in the circumstances. A way of complying would be to provide suitable set of operating and maintenance instructions aimed at achieving economy in the use of fuel and power in a way that the home owner / tenant can understand. The instructions should be directly related to the particular system/s installed in the dwelling.

The instructions should explain to the occupier how to operate the system(s) efficiently. These should include: the making of seasonal adjustments to control settings and what routine maintenance is needed to enable operating efficiency to be maintained at a reasonable level through the service live/s of the system/s.

Details of any renewable system/s and how it/they operate/s.

Details of low-energy light fittings (e.g. CFL, LED etc.), their use, their benefits and the benefits of purchasing high efficacy lamps, e.g. how much energy they save compared to traditional light fit-tings and what this can mean in terms of reduced energy bills and payback.

Details of the EU labelling scheme for white goods.

Include information on smoke detector/s. User guide in Plain English on the following technologies where included with basic user instructions labelled on equipment or controls where appropriate:

- Boiler
- Air Source Heat Pump
- Ground Source Heat Pump
- Mechanical Ventilation with Heat Recovery (MVHR)
- Solar hot water
- PV
- CHP
- Smart meter / display energy device
- Water meter

Water Use

Details of water saving features and their use and benefits, e.g. low/dual flush toilets, low water use showers, low water use white goods (washing machines, dishwashers etc), and tips as well as details of external water use and efficiency, e.g. the use of water butts or other type of rainwater recycling systems.

Transport Facilities

Include details of resident car-parking and cycle storage provision, cycle paths in the area including if available cycle path network maps for the whole town/local area plus local public transport information, maps and timetables where relevant (i.e. this may not be relevant to existing occupied homes).

Information on alternative methods of transport such as park and ride, car sharing schemes and/or car pools/car hire in the area and local ‘green’ transport initiatives should be included. Information on the location of amenities and places of interest/cultural value, areas of outstanding natural beauty (AONB’s), nature reserves, allotments etc. Also details on how to get to local amenities in the area, using public transport or cycling as relevant.

Materials & Waste

Information on the use & benefits of:

- Low energy/low water white goods
- Electrical equipment, including light fittings and bulbs
- Timber products from sustainable sources

Information on the location of recyclable materials storage areas (especially within flats) and how to use them appropriately.

Information on responsible purchasing of:

- Low energy/low water white goods
- Electrical equipment, including light fittings and bulbs
- Timber products from sustainable sources
- Organic food procurement/food growing/local produce/local food provision, e.g. farmers markets, organic box schemes, etc

Recycling information as follows:

- Information about the Local Authority collection scheme (if applicable).
- If the home is not covered by a Local Authority collection scheme, details and location of communal recycling bins/skips/facilities.
- Information on the location and use of any recycling and compost bins.
- Information on Waste and Resource Action Plan (WRAP) (4), which can offer guidance on recycling and sustainable waste disposal.
- Information on what to do with waste not covered by the standard weekly Local Authority collection scheme for example fridges/freezers, computer equipment, batteries and other potentially hazardous equipment. In some areas the local authority will collect these items. If this is the case, details and information on such a collection scheme should be provided.
- Information and location detailing local recycling facilities and waste tips.

Environmental recommendations for consideration in any home improvement works, such as the use of low VOC products or the purchase of certified timber

Emergency Information

Information on smoke detector/s and carbon monoxide detectors
Contact details for emergency services including the location of local minor injuries clinics, A&E departments and the nearest police/fire station

Local Amenities

The location of food shops, post boxes, postal facilities, bank/cash points, pharmacies, schools, medical centres, leisure centres, community centres, places of worship, public houses, children's play areas, outdoor open access public areas as deemed relevant occupiers.

Other local amenities such as places of interest/cultural value, areas of beauty / wildlife / conservation / allotments etc.

Provision of Information in Alternative Formats

Include details of the procedure for obtaining a copy of the guide in alternative formats, including foreign languages, Braille, large print or audio cassette / CD. It should include the contact details of the person/organisation responsible for producing the guide

SuperHomes network

SuperHomes is a network of over 100 energy aware households. The homeowners have refurbished their old homes to the highest standards of energy efficiency and have achieved at least 60% reduction on fossil fuel use. The homes are examples which are open for visits to aid other refurbishment projects. For more information about the SuperHomes network and the projects visit www.superhomes.org.uk

Links & References

This should include links to other information including websites, publications and organisations providing information on how to reduce the environmental impact in terms of transport, the use

of local amenities, responsible purchasing etc. As a minimum, this should include links and address/telephone contact numbers to:

- The Energy Saving Trust good practice guidance
- The Local Authority
- The company responsible for the refurbishment of the property
- The company responsible for the management of the home (where applicable)
- Act on CO2

A2: Man 03 – Construction Site Impacts

Site monitoring

Requirements for monitoring reporting and target setting (for requirements a. energy monitoring and b. water monitoring):

- Monthly measurements of energy use will be/has been recorded and displayed on site.
- Appropriate target levels of energy/water consumption will be/were set and displayed (targets could be annual, monthly, or project targets).
- As a minimum, monitoring will/did include checking the meters and displaying some form of graphical analysis in the site office to show consumption over the project duration and how actual consumption compares to the targets set.
- The design/site management team will/did nominate an individual who will be responsible for the monitoring and collection of data.

Notes:
Targets for energy consumption during the refurbishment process should be set using DTI's Environmental KPI benchmarks. These documents do not specify targets but facilitate projects in setting appropriate targets (see references section of main credit for further details).

BREEAM does not require targets to be met but is encouraging the process of setting, monitoring and reporting against targets.

Environmental materials policy

The main contractor operates an environmental materials policy, used for sourcing of construction materials to be utilised on site. The policy should cover/promote the following:

- Use of local materials (where possible)
- Use of responsibly sourced materials
- Re use of materials
- Use of materials with a high recycled content
- Waste minimisation and recycling
- Use of non-toxic materials & refrigerants with a high global warming potential
- Use of materials with a low embodied impact
- Use of durable materials

EMS

Third party certified, to ISO14001/EMAS or equivalent standard. OR

The structure of the EMS is in compliance with British Standard 8555 2003 and has reached phase four of the implementation stage, 'implementation and operation of the environmental management system', and completed phase audits one to four, as defined in BS8555.
80% of timber used during construction, including formwork, site hoardings and other temporary site timber used for the purpose of facilitating construction, will be/was procured

from sustainably managed sources, independently certified by one of the top two levels as set out in the Responsible Sourcing of Materials Issues (BREEAM credit Mat 2). Re-used timber from off site can be counted as equivalent. Additionally 100% of all site timber will be/was legally sourced.

A3: Man 04 – Security

Requirements for new doors & windows:

External Door sets:
PAS 24:2007 or
LPS 1175 Issue 7 Security Rating 1 1 or equivalent

Windows are certified to:
BS 7950:1997 (36)
LPS 1175 Issue 7 Security Rating 1 or equivalent

Requirements for existing windows & doors:

External doors are of good quality with working key locks and a strong frame, where there is no sign of warping, splitting or rotting to the door or its frame. Where the door contains glazing this should be a minimum of double glazing. Putty or beading to glazed areas should be on the unexposed side of the door, in good condition, with no sign of degradation.

Accessible Windows should have a minimum of double glazing with working key locks. Putty or beading to glazed areas should be on the unexposed side of the window, in good condition, with no sign of degradation. The window frame should be strong with no sign of warping, splitting or rot.

A4: Man 06 – Project Management

Project Roles and Responsibilities

For large scale projects, the project manager assigns individual and shared responsibilities across the following key design and refurbishment stages:

- Planning and Building control notification
- Design
- Refurbishment
- Commissioning and handover
- Occupation

Key design team meetings should be held to define and make key decisions that influence/affect the dwelling's proposed designs, and their refurbishment in accordance with the design (and therefore the dwelling's sustainability impacts and BREEAM performance). These meetings may be site or office based and would typically include representatives from at least three of the parties (below).

- Representatives of the Client / Developer
- The Main Contractor
- The Architect
- Structural Engineers
- Building Services Engineers
- Cost Consultants

- Environmental Consultants
- Project Management Consultants

Individual responsibilities:

Where it is the responsibility of one person (i.e. the project manager) to ensure the production and/or completion of the outlined tasks:

- Produce a timeframe for the project
- Compile the scheduled evidence for the assessment
- Determine Building Status i.e. Listed buildings and buildings in conservation areas
- Occupier's budget and technical expertise in maintaining any proposed systems
- Building control notification
- Ensure the shared responsibilities are assigned and managed
- To write project implementation plan and hold an initiation meeting

Shared responsibilities:

Where it is the joint responsibility of the whole project team, to ensure the production and/or completion of the outlined tasks:

- End user requirements and building usage
- Design aims.
- Particular installation and construction requirements.
- Usability and manageability of design solutions for the installer and end user of
- the building
- Project team communication methods.
- Supply chains.
- Documents as required in schedule of evidence sections

Handover and Aftercare

'Handover Meeting'
This should be arranged as soon as possible after occupation. It should introduce the aftercare team and Home User Guide (where appropriate); present key information about how the building operates; and answer questions. Where appropriate it should also include demonstrations of newly installed equipment and an insight into their advantages. Information should be presented in a clear manner and with an appropriate level of technical terminology.

Appendix B - Health & Wellbeing

B1: Hea 03 – VOCs

Product	European Standard	Emission level required
Decorative paints and varnishes	BS EN 13300:2001 (24) referred to the requirements of Decorative Paint Directive 2004/42/CE	VOC (organic solvent) content (testing req. 6), requirement for Phase 2. Fungal and algal resistant.
Wood Panels Particleboard, Fibreboard including MDF, OSB, Cement-bonded particleboard	EN 13986:2004 (13)	Formaldehyde E1 in accordance with EN 3986:2004 Annex B (see also compliance notes) Verify that regulated wood preservatives are absent as defined by the standard.

Plywood Solid wood panel and acoustic board		
Timber Structures Glued laminated timber	EN 14080:2005 (14)	Formaldehyde E1 (Testing req 1)
Wood flooring parquet flooring	EN 14342:2005 (15)	Formaldehyde E1 (Testing req. 1) Verify that regulated wood preservatives are absent as defined by the standard.
Resilient, textile and laminated Floor coverings Vinyl/linoleum Cork and rubber Carpet Laminated wood flooring	EN 14041:2004 (16)	Formaldehyde E1 (Testing req. 1) Verify that regulated preservatives are absent as defined by the standard.
Suspended ceiling tiles	EN 13964:2004 (17)	Formaldehyde E1 (Testing req 1). No asbestos.
Flooring adhesives (and if relevant adhesives for rigid wall coverings)	EN 13999–1:2007 (18)	Verify that carcinogenic or sensitising volatile substances are absent.(Testing req. 2–4)
Wall-coverings Finished wall-papers Wall vinyls and plastic wall-coverings Wallpapers for subsequent decoration. Heavy duty wall-coverings Textile wall-coverings	EN 233:1999 (19) EN 234:1997 (20) EN 259:2001 (21) EN 266:1992 (22)	Formaldehyde (Testing req. 5) and Vinyl chloride monomer (VCM) (Testing req. 5) release should be low and within the BS EN standard for the material. Verify that the migration of heavy metals and other toxic substances are within the EN standard for the material.
Adhesive for hanging flexible wall-coverings (for rigid wall coverings use flooring adhesives criteria)	BS 3046:1981 (23)	No harmful substances and preservatives used should be of minimum toxicity.

Table B1-1

Testing requirements:

1. EN 717–1:2004 (25)
2. EN 13999–2:2007—Volatile Organic Compounds (VOCs) (18)

3. EN 13999–3:2007—Volatile aldehydes (18)
4. EN 13999–4:2007—Volatile diisocyanates (18)
5. EN 12149:1998 (26)
6. BS EN ISO 11890–2:2006 (27)

B2: Hea 04 - Inclusive Design

Suitably qualified design team member
A suitably qualified member of the design team would need to poses the minimum competences and skills requirements listed by the National Register of Access Consultants (NRAC) for Access Auditors (actual qualification is not required).

Please refer to the following website for these competencies:

http://www.nrac.org.uk/Information_pack.html#Anchor-44591

Access Statement
The requirements of the access statement template are detailed below.

Section 1

Means of access into the dwelling - An accessible threshold is provided into the entrance.
Note: The design of an accessible threshold should also satisfy the requirements of Building regulations Part C.

Accessible switches and socket outlets in the dwelling(s) - switches and socket outlets for lighting and other equipment in habitable rooms at appropriate heights between 450mm and 1200mm from finished floor level

1. WC provision in the entrance storey of the building, as follows:
    a. WC is provided in the entrance storey of a dwelling which contains a habitable room; or where the dwelling is such that there are no habitable rooms in the entrance storey, if a WC is provided in either the entrance storey or the principal storey.
    b. The door to the WC compartment opens outwards, and is positioned to enable wheelchair users to access the WC and has a clear opening width in accordance with table Table B2-1.
    c. The WC compartment provides a clear space for wheelchair users to access the WC (see diagrams 31 and 32 within Approved Document M) and washbasin is positioned so that it does not impeded access.

2. Requirements for entrances should be adhered to as follows:
    a. All entrances to dwellings/communal entrances to blocks of dwellings should be illuminated.
    b. All entrances to dwellings, all communal entrances to blocks of dwellings and all associated communal doors should have level access over the threshold (threshold upstand should not exceed 15mm).
    c. Main entrances to dwellings and main entrances to blocks of dwellings should be covered.

3. Walls in bathrooms and toilets should be capable of taking adaptations such as handrails (wall reinforcements should be located between 300 and 1500mm from the floor).

4. The bathroom should be designed to incorporate ease of access to the bath, WC and wash basin (Although there is not a requirement for a turning circle in bathrooms, sufficient space should be provided so that a wheelchair user can use the bathroom).

5. Switches, sockets, ventilation and service controls should be at a height usable by all (i.e. between 450 and 1200mm from the floor).

Minimum Widths of Corridors and Passageways for a Range of Doorway widths	
Doorway Clear Opening Width (mm)	Corridor/Passageway width (mm)
750 or narrower	900 (when approached head-on)
750	1200 (when approached not head-on)
775	1050 (when approached not head-on)
800	900 (when approached not head- on)

Table B2-1

Section 2

1. Means of access
    a. Approach to the dwelling - within the plot of the dwelling, a suitable approach is provided from the point of access to the entrance. The point of access should be reasonably level and the approach should not have crossfalls greater than 1 in 40. The whole, or part, of the approach may be a driveway. Improvements made to meet Part M requirement as far as practical.
    b. Access Doors - An external door providing access for disabled people has a minimum clear opening width of 775mm.

2. Circulation within the entrance storey of the dwelling(s):
    a. A corridor or other access route in the entrance storey or habitable room containing a WC (which may be a bathroom) on that level, has an unobstructed width in accordance with table x above.
    b. Vertical circulation - In exceptional circumstances, where severely sloping plots are involved, a stepped change of level within the entrance storey may be unavoidable. In those instances, the aim should be to provide a stair of reasonable width for ambulant disabled people to negotiate the steps with assistance and for handrails on both sides. Approved Document K of the Building Regulations contains guidance on the design of private stairs in dwellings. A stair providing vertical circulation within the entrance storey of the dwelling will satisfy requirement M1 if:
        - it has flights whose clear widths are at least 900mm;
        - there is a suitable continuous handrail on each side of the flight and any intermediate landings where the rise of the flight comprises three or more rises: and
        - the rise and going are in accordance with the guidance in the Approved Document for part K for private stairs

3. Passenger Lifts & Common Stairs in Blocks of flats

a. A building containing flats, in which a passenger lift is not be installed, is provided with a suitable stair, with:
   - all step nosings distinguishable through contrasting brightness;
   - top and bottom landings whose lengths are in accordance with Part K1;
   - steps with suitable tread nosing profiles and uniform rise of each step, which is not more than 170mm;
   - uniform going of each step, which is not less than 250mm, which for tapered treads, should be measured at a point 270mm form the inside of the tread;

b. In a building, or part of a building which contains flats above the entrance storey, any lift access with a minimum load capacity of 400kg must:
   - have a clear landing at least 1500mm wide and at least 1500mm long in front of its entrance;
   - has a door or doors which provide a clear opening width of at least 800mm;
   - have car whose width is at least 900mm and whose length is at least 1250mm (other dimensions may satisfy Requirement M1 where shown by test evidence or experience in use, or otherwise, to be suitable for an unaccompanied wheelchair user);
   - have landing and car controls which are not less than 900mm and not more than 1200mm above the landing and the car floor, at a distance of at least 400mm from the front wall;
   - is accompanied by suitable tactile indication on the landing and adjacent to the lift call button to identify the storey in question;
   - have suitable tactile indication on or adjacent lift within the car to confirm the floor selected;
   - incorporate a signalling system which gives visual notification that the lift is answering a landing call and a 'dwell time' of five seconds before its doors beginning to close after they are fully open; the system may be overridden by a door re-activating device which relies on appropriate electronic methods, but not a door edge pressure system, provided that the minimum time for a lift door to remain fully open is 3 seconds;
   - incorporates visual and audible indication of the floor reached (when the lift serves more than three storeys).

4. WC Provision in the entrance story
   a. WC is provided in the entrance storey of a dwelling which contains a habitable room; or where the dwelling is such that there are no habitable rooms in the entrance storey, if a WC is provided in either the entrance storey or the principal storey
   b. the door to the WC compartment opens outwards, and is positioned to
   c. enable wheelchair users to access the WC and has a clear opening width in accordance with (door openings wider than the minimum in accordance with the table allow easier manoeuvring and access to the WC by wheel- chair users); and
   d. the WC compartment provides a clear space for wheelchair users to
   e. access the WC (see diagrams 31 and 32 within Approved Document) and washbasin is positioned so that it does not impeded access

Section 3

Where there is car parking adjacent to the home, it should be capable of enlargement to attain 3300mm width - The general provision for a car parking space is 2400mm width. If an additional 900mm width is not provided at the outset, there must be provision (e.g. a grass verge) for enlarging the overall width to 3300mm at a later date. The distance from the car parking space to the home should be kept to a minimum and should be level or gently sloping (where topography prevents a level approach, refer to table B2-2 for maximum gradients).

Distance	Gradient
<5m	1:12
5-10m	1:15
>10m	1:20

Table B2-2

1. The approach to all entrances should be level or gently sloping (where topography prevents a level approach, refer to table x for maximum gradients).

2. Communal stairs & lifts
   a. Minimum dimensions for communal stairs are as follows:
      - Uniform rise not more than 170mm;
      - Uniform going not less than 250mm;
      - Handrails extend 300mm beyond top and bottom step;
      - Handrail height 900mm from each nosing.

   b. Minimum dimensions for lifts are as follows:
      - Clear landing entrances 1500mm x 1500mm;
      - Minimum internal dimensions 1100mm x 1400mm;
      - Lift controls between 900 and 1200mm from the floor and 400mm from the lift's internal front wall.

3. Doorways & Hallways
   Doorway & hallways should comply with the requirements of table B2-3

Doorway Clear Opening Width (mm)	Corridor/Passageway width (mm)
750 or wider	900 (when approached head-on)
750 or wider	1200 (when approached not head-on)
750 or wider	1050 (when approached not head-on)
900	900 (when approached not head- on)

Table B2-3

   a. All front doors to dwellings and communal entrance doors should have a 800mm opening width and a 300mm leading edge

4. A turning circle of 1500mm diameter or a 1700mm x 1400mm in dining areas and living rooms and adequate circulation space for wheelchairs elsewhere.

5. The living room should be at entrance level.

6. In houses of two or more storeys, there should be space on the entrance level that could be used as a convenient bed-space.

7. There should be a wheelchair accessible entrance level WC, with drainage provision enabling a shower to be fitted in the future. For the fully accessible WC a wheelchair user should be able to close the door from within the closet and achieve side transfer from a wheelchair to at least one side of the WC. There must be at least 1100mm clear space from the front of the WC bowl. The shower provision must be within the closet or adjacent to the closet. In small two-bedroom dwellings (not including those on only one level) where the design has failed to achieve the above fully accessible standard WC, the Part M standard WC will meet this requirement.

8. The design should incorporate provision of a stair lift and a suitably identified space for a through-the-floor lift from the ground to the first floor, for example to a bedroom next to a bathroom There must be a minimum of 900mm clear distance between the stair wall (on which the lift would normally be located) and the edge of the opposite handrail/balustrade. Unobstructed ‘landings’ are needed at the top and bottom of the stairs.

9. The design should provide a reasonable route for a potential hoist from a main bedroom to the bathroom - Most timber trusses today are capable of taking a hoist and tracking. Technological advances in hoist design mean that a straight run is no longer a requirement.

10. Living room window glazing should begin at 800mm or lower and windows should be easy to open/operate - People should be able to see out of the window whilst seated. Wheelchair users should be able to operate at least one window in each room.

Appendix C – Energy

C1: Ene 07 – Lighting

Energy Efficient Space Lighting

General space lighting:

- Lighting for external doors, porch, steps/pathways, patio, garage, garden, carports and any other outbuildings provided by dedicated energy efficient fittings, controlled by manual switching.

Space lighting in communal areas:

- Lighting in lobbies, main external entrances, internal entrance porches, external steps and pathways equipped with dedicated fluorescent fittings (or other efficient luminaires like SON or metal halide) and controlled by a time clock or day-light sensor.
- Lighting in Hallways, landings, stairwells, internal corridors and garages equipped with dedicated fluorescent fittings that are controlled by push button time switches/PIR sensors or equivalent.
- Lighting in communal rooms (laundries, cycle and other storage spaces etc) equipped with dedicated fluorescent fittings and manual switching or occupant sensors.

Energy Efficient Security Lighting:

- Security lighting, which are fittings designated for energy efficiency and are adequately controlled such that:
- 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 dedicated 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.

C2: Ene 08 – Energy Display Devices

Compliant energy display device

A system comprising a self-charging sensor(s) fixed to the incoming mains supply/supplies, to measure and transmit energy consumption data to a visual display unit. The visual display unit must be capable of displaying energy consumption data.

To obtain the exemplary credit, any energy display device installed in the dwelling must be capable of recording and storing energy consumption data. The consumption data that the device should be capable of displaying in order to achieve any credits is as follows:

- Current energy consumption (Watts)
- Current emissions (kg CO2)
- Current cost (£ per hour)
- Projected cost (£ per month and £ per year).

C3: Ene 09 – Cycle Storage

Compliant cycle storage

- The space is covered overhead to protect from the weather
- Where cycle storage space is to be located externally, cycles can be secured within spaces in rack(s) or fixtures to allow cycles to be free-standing and locked. The rack(s) consists of fixings for one or more spaces.
- The covered area and the cycle racks or fixings are set in or fixed to a permanent structure (building or hard-standing). Alternatively the cycle storage may be located in a locked structure fixed to or part of a permanent structure.
- The distance between each cycle rack, and cycle racks and other obstructions (e.g. a wall), allows for appropriate access to the cycle storage space, to enable bikes to be easily stored and accessed including 1m2 space for tools, where cycles are to be stored in a shed.
- Communal cycle storage is located within 100m of each dwellings main entrance (ideally within 50m), or within 100m of the main communal entrance in the case of flats

Cycle storage can be provided within the dwelling, provided the space is:

- of adequate size within a dedicated storage space such as. a dedicated space within a hallway, adequately sized cupboard or other suitable space with adequate fixtures allowing the cycles to be freestanding
- on the ground floor of the dwelling
- not in a lounge/living room, bedroom, bathroom, dining room or kitchen
- accessed without going through the lounge/living room, bed-rooms (where located on the ground floor), dining room, bathroom or kitchen
- there is adequate access 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.

Appendix D – Materials

D1: Mat 02 - Responsible Sourcing of Materials

Sustainable Procurement Plan

A plan that sets out a clear framework for the responsible sourcing of materials to guide procurement throughout a project and by all involved in the specification and procurement of construction materials. The plan may be prepared and adopted at an organisational level or be site/project specific and for the purposes of BREEAM compliance, will cover the following as a minimum:

- Risks and opportunities are identified against a broad range of social, environmental and economic issues. BS 8902:2009 Responsible sourcing sector certification schemes for construction products- Specification can be used as a guide to identify these issues.
- Aims, objectives and targets to guide sustainable procurement activities.
- The strategic assessment of sustainably sourced materials available locally and nationally. There should be a policy to procure materials locally where possible.
- Procedures are in place to check and verify that the sustainable procurement plan is being implemented/adhered to on individual projects. These could include setting out measurement criteria, methodology and performance indicators to assess progress and demonstrate success.

Building elements to be included in assessment:

- Structural Frame
- Ground floor
- Upper floors (including separating floors)
- Roof
- External walls
- Internal walls (including separating walls)
- Foundation/substructure (excluding sub-base materials)
- Staircase
- Windows, External and internal doors
- Secondary fixes including skirting, panelling, fascias and balustrades
- Fixed furniture
- Any other significant use

Applicable materials within above elements:

- Brick (including clay tiles and other ceramics)
- Resin-based composite materials, including GRP and polymeric render
- Concrete (including in-situ and pre-cast concrete, blocks, tiles, mortars, cementitious renders etc.)
- Glass
- Plastics and rubbers (including EPDM, TPO, PVC and VET roofing membranes including polymeric renders)
- Metals (steel, aluminium etc.)
- Dressed or building stone including slate
- Timber, timber composite and wood panels (including structural laminated timber components, plywood, OSB, MDF, chip-board and cement bonded particleboard)
- Plasterboard and plaster
- Bituminous materials, such as roofing membranes and asphalt

- Other mineral-based materials, including fibre cement and calcium silicate
- Products with recycled content

All other materials should be ignored when providing information

Responsible Sourcing & Tiers		
Scheme	Certification level/scope	Tier level
BRE Global, BES6001 Product /Standard certification	Excellent	2
	Very Good	3
	Good	4
	Pass	5
Canadian Standards Association's (CSA) Chain of Custody Scheme	Chain of custody certification	3
Environmental Management System (EMS) (certified)	Key process and supply chain extraction process4	6
Environmental Management System (EMS) (certified)	Key process	7
Forest Stewardship Council (FSC)	Chain of custody certification	3
Green Dragon Environmental Standard	Level 4 and above	7
Recycled materials	Certified EMS for key process	6
Re-used materials	-	3
Malaysian Timber Certification Council (MTCC)	Chain of custody certification	6
Programme for the Endorsement of Forest Certification (PEFC)	Chain of custody certification	3
Sustainable Forestry Initiative (SFI)	Chain of custody certification	3
Société Générale de Surveillance's (SGS) 'Timber Legality and Traceability' scheme	Timber Legality & Traceability Verification (TLTV)	6
Rainforest Alliance's 'Verification of Legal Origin and Compliance' scheme (supersedes SmartWood Verified)	Verification of Legal Origin and Compliance (VLO/VLC)	6

Table D1-1

Key process and supply chain (extraction) processes by material type		
Material	Key Process	Supply Chain Processes
Brick (including clay tiles and other ceramics)	Product Manufacture	Clay Extraction

Resin-based composites and materials (including GRP and polymeric render but excluding timber based composites)	Composite product manufacture	Glass fibre production (or other principle matrix material) Polymer production
In situ Concrete (including ready mix and cemetitious mortars and renders)	Ready mixed concrete plant	Cement production Aggregate extraction and production
Precast concrete and other concrete products (including blocks, cladding, precast flooring, concrete or cementitious roof tiles)	Concrete product manufacture	Cement production Aggregate extraction and production
Glass	Glass production	Sand extraction Soda Ash production or extraction
Plastics and rubbers (including polymeric renders, EPDM, TPO, PVC and VET roofing membranes)	Plastic/rubber product manufacture	Main polymer production
Metals (steel, aluminium etc)	Metal Product manufacture - e.g. cladding production, steel	Metal production: Steel: Electric arc furnace or Basic oxygen furnace process

Table D1-2

D2: Mat 03 - Insulation

Key process and supply chain (extraction) processes for insulation		
Material	Key Process	Supply chain processes
Foam Insulation	Insulation manufacture	Principal Polymer production, e.g. Polystyrene, MDI , Phenolic resin or equivalent
Stone wool, glass & cellular glass made using < 50% recycled input	Product manufacture	Any quarried or mined mineral over 20% of input
Wool	Product manufacture	Wool Scouring
Products using > 50% recycled content except those using timber	Product manufacture	Recycled content by default
Timber-based insulation materials including those using recycled timber	Product manufacture	Recycled timber by default, all other timber from one of the recognised timber certification schemes in Mat 02 Responsible Sourcing of Materials
Other renewable-based insulation materials using agricultural by-products (e.g. straw)	Product manufacture	By-product manufacture by default
Any other product	Product manufacture	1 or 2 main inputs with significant

		production or extraction impacts should be identified

Appendix E - Pollution

E1: Pol 02 – Surface Water Run-off

First credit – neutral impact on surface water

1. Where any new hard standing areas are permeable, this must include all new pavements, drive-ways and where applicable public rights of way, car parks and non-adoptable roads (e.g. com-munity scale refurbishment projects).
2. Where the building is being extended onto any previously permeable surfaces, or an impermeable surface that drains onto a permeable surface (e.g. paving slabs set on concrete that drained onto soft landscaped areas) the additional run-off for rainfall depths up to 5 mm caused by the area of the extension must be managed on site using appropriate Sustainable Drainage Systems (SuDS) such as Soakaways.
3. Any calculations necessary to demonstrate that criterion 2 will be achieved should be carried out by an Appropriately Qualified Professional (AQP) seeCN6.

Second credit – reducing run-off from site: basic

4. Where all run-off from the roof for rainfall depths up to 5 mm, have been managed on site using source control methods (e.g. through infiltration, soakaways etc.). This should include runoff from all existing and new parts of the roof.
5. Where required, an appropriately qualified professional should be used to design an appropriate drainage strategy for the site, ensuring criterion 1 is achieved

Third Credit – reducing run-off from site: advanced

6. An appropriately qualified professional should be used to design an appropriate drainage strategy for the site.
7. Where run-off as a result of the refurbishment is managed on site using source control achieving the following requirements:
    a. 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.
    b. 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%.
    c. An allowance for climate change must be included for all of the above calculations, in accordance with the current best practice (PPS25, 2010)

Exemplary level requirements

8. The following outlines the exemplary level requirements to achieve an innovation credit for this BREEAM issue.
    a. Where all run-off from the developed site is managed on site using source control. The following must be achieved to confirm compliance:
    b. The peak rate of run-off as a result of the refurbishment for the 1 in 1 year event is reduced to zero.
    c. The peak rate of run-off as a result of the refurbishment for the 1 in 100 year event is reduced to zero.
    d. 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.
    e. An allowance for climate change must be included for all of the above calculations, in accordance with current best practice (PPS25, 2010).

9. Where an appropriately qualified professional has been employed to provide the above calculations and design an appropriate drainage strategy for the site, ensuring all above criteria are achieved.

Control source:

The control of run-off at or very near to its source. Source control measures acceptable as defined in the SuDS manual include:

- Permeable pavements
- Filter drains
- Filter Strips
- Swales
- Soakaways
- Infiltration trench
- Green Roofs
- Bioretention areas
- Rainwater Harvesting systems

Appendix F - Waste

F1: Was 02 - SWMP

To demonstrate a compliant SWMP for refurbishments between £100,000 - £300,000 the following must be met:

- 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 and recording decisions taken
- Procedures for minimising hazardous waste
- Procedures for sorting, reusing and recycling construction and demolition waste (if generated) (according to the waste streams generated by the scope of the works) either on site or through a licensed external con-tractor
- 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.

To demonstrate a compliant SWMP for refurbishments over £300,000 the following must be met:

- A target benchmark for resource efficiency i.e. m3 of waste per £100,000 of project value or tonnes of waste per £100,000 of project value (in line with the credit available).
- Where the target for Non-hazardous construction waste generated by the dwellings refurbishment is ≤26.52m3 or 16.9 Tonnes (per £110k 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 and recording decisions taken
- Procedures for minimising hazardous waste
- Procedures for sorting, reusing and recycling construction and demolition waste (if generated) (according to the waste streams generated by the scope of the works) either on site or through a licensed external con-tractor
- 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.