BREEAM Domestic Refurbishment Pre Assessment

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Contents

Introduction to BREEAM Domestic Refurbishment 3

Categories and Issues 3

Minimum Scores 3

Minimum Standards 3

The Certification Process 4

Next Steps 4

Proposed Credits for 21 Broad Street 5

Anticipated Scoring 19

Introduction to BREEAM Domestic Refurbishment

BREEAM (Building Research Establishment Environmental Assessment Method) was created by BRE in 1990 as means of assessing, rating and certifying the sustainability of buildings. The scheme applicable to 21 Broad Street is BREEAM Domestic Refurbishment. This scheme is tailored to self-contained dwellings created through refurbishment, extension or change of use. BREEAM uses the definition given within Part L of the Building Regulations to determine appropriate scheme types.

There are several factors involved in determining a BREEAM rating. These include the project's performance within the BREEAM categories and issues, and the minimum scores and standards required for each BREEAM rating. These are explained in more detail below.

Categories and Issues

To attain the required BREEAM rating, it is necessary to demonstrate performance in seven categories. Each category contains up to ten issues where credits can be awarded to build up a total score. Within each issue, there are several criteria which must adhered to in order to score one or more credits. These criteria often vary depending on the building type or context.

Minimum Scores

The weighted totals of achieved credits are used to create an overall percentage score for the development. Each BREEAM rating requires a minimum total percentage score, ranging from 'Pass' at 30% to 'Outstanding' at 85%. The minimum total scores required to attain each BREEAM rating are shown below. A project which does not achieve a rating of at least 30% is considered unclassified.

BREEAM Rating	Minimum Score
Outstanding	85%
Excellent	70%
Very Good	55%
Good	45%
Pass	30%

Minimum Standards

A BREEAM rating may also have minimum standards for some mandatory criteria. For example, an 'Outstanding' development is required to achieve at least 3.5 credits under *Ene 02: Energy Efficiency Rating Post Development*. This is applicable regardless of the total score.

The Certification Process

It is possible to be awarded BREEAM certification at two stages, known as design stage and post refurbishment (or post construction) stage. A development is not considered to have achieved BREEAM until the post construction certification has been issued.

The design stage assessment provides a rating of the refurbishment as specified, and is sometimes referred to as an 'interim' rating. This assessment should ideally be carried out prior to refurbishment. Is it not necessary to attain design stage certification in order to be certified at the post refurbishment stage, although an interim certificate is sometimes required as a planning condition or similar. The post refurbishment stage assessment is considered to determine the final BREEAM rating for the project.

BREEAM certificates are issued by BRE following the submission of a BREEAM report and compiled evidence by the assessor. A robust evidence policy is operated by BRE when considering projects for certification under BREEAM. Every criteria and requirement must be demonstrated by detailed documentary evidence in order for the credits to be awarded and for the certificate to be released. It is not the role of the assessor to produce evidence, instead evidence of compliance must be provided by the design team and compiled by the assessor for submission.

Next Steps

Please contact Build Energy prior to RIBA Stage 4 or after planning permission is granted for advice on securing BREEAM certification at Design Stage and Post Construction. You can reach Sean at sean@buildenergy.co.uk or on 0330 055 34 05.

Proposed Credits for 21 Broad Street

The requirements outlined below have been drawn from the technical guide published by BRE and sorted into those appropriate for the project type and required scoring at 21 Broad Street. Following consultation with the design team we believe these criteria to be the best possible route for attaining compliance.

Issue	Credits	Requirements	Comments
Management			
Man 01: Home User Guide	3 of 3.	A Home Users Guide must be supplied to all dwellings and as a minimum this must include all of the issues in the 'User Guide Contents List' published by BRE. This must include information on both new and retained existing features. Please refer to page 31 of the BREEAM Domestic Refurbishment Technical Manual 2014 for a detailed contents list. Alternatively, Build Energy can quote to provide a compliant Home User Guide.	
Man 02: Responsible Construction Practices	3 of 3.	The contractor should sign up to the Considerate Constructors Scheme before work begins, and score 40 or more with at least 7 in each section.	
Man 03: Construction Site Impacts	1 of 1.	Two of the following from checklist A4 must be undertaken: • Monitor, report and set targets for CO2 production of energy use arising from site activities • Monitor, report and set targets for water consumption arising from site activities • A main contractor with an environmental materials policy • A main contractor that operates an Environmental Management System • 80% of site timber is reclaimed, re-used or responsibly sourced Please see Checklist A4 for details on the requirements of each of these.	
Man 04: Security	1 of 2.	Retained 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. New external doors must be certified to PAS24:2007 or LPS 1175 Issue 7 Security Rating 1 or equivalent. New external windows must be certified to BS7950:1997 (36) or LPS 1175 Issue 7 Security Rating 1 or equivalent.	

Man 05: Protection and Enhancement of Ecological Features	2 of 2.	A site survey must be carried out by a Suitably Qualified Ecologist (SQE) to determine the presence of ecological features. All features of ecological value on the refurbishment site potentially affected by the works must be maintained and adequately protected. These are defined as: • Trees which have either a trunk with a 100mm trunk diameter or larger, or are over 10 years old, or are otherwise of significant ecological value. • Mature hedgerows over 1m tall and 0.5m wide • Natural areas (e.g. Flower-rich meadow or grassland and heathland which includes habitat or plants that thrive on acidic soils, such as heather and gorse) • Watercourses (rivers, streams and canals) • Wetlands (ponds, lakes, marshland, fenland) • Protected Species. The relevant Statutory Nature Conservation Organisation (SNCO) must be been notified if present. • Local Priority UK BAP species • Either roosting or nesting opportunities, or both, in buildings for bats and birds (refer to RSPB and Bat Conservation Trust guidance). A Suitably Qualified Ecologist must in addition be appointed to recommend appropriate ecological features that will positively enhance the ecology of the site. All general ecological recommendations and 30% of additional recommendations must be adopted.	

Man 06.1: Project Management - Roles and Responsibilities	1 of 1.	Roles and Responsibilities • The project manager assigns individual and shared roles and responsibilities, and these should be assigned across the following key design and refurbishment stages: • Planning and Building control notification. • Design. • Refurbishment. • Commissioning and handover. • Occupation. Design Team Meetings • Key design team meetings should be held, to make key decisions that influence or affect the dwelling(s): • Proposed design(s) • Their refurbishment in accordance with the design • …and therefore the dwelling's sustainability impacts and BREEAM performance. • Team meetings must be related to the building under assessment • These meetings must include representatives from at least three of the parties below: 1. Representatives of the client or developer 2. The main contractor 3. The architect 4. Structural engineers 5. Building services engineers 6. Cost consultants 7. Environmental consultants 8. Project management consultants Individual responsibilities: • Where it is the responsibility of one person (i.e. the project manager) to ensure the production or completion of the outlined tasks: • Produce a time frame for the project. • The time frame should include contingency measures to ensure project flexibility and adaptability. • Compile the scheduled evidence for the BREEAM 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 • To hold an initiation meeting • An individual should be assigned the responsibility of conveying information from team meetings to those appropriate. It would also be this persons responsibility to select the most appropriate method of communication (e.g. in person, phone, email) for the level of detail that needs to be conveyed and time should be allocated for questions that may arise. Shared responsibilities: • Where it is the joint responsibility of the whole project team, to ensure the either the production, completion or both, of the outlined tasks: • End-user requirements and building usage • Design aims, which should be formed following either a discussion, site inspection or both, with reference to a surveyor's report (where available), which highlights any problems with the existing dwelling (e.g. rising damp, excessive condensation, thermal comfort, etc.) • The target BREEAM Domestic Refurbishment rating, outlined within the design aims. • The BREEAM assessment issues that will be targeted, also outlined with the design aims. • Usability and manageability of design solutions for the installer and end-user of the building • Installation or refurbishment instructions are handed onto appropriate on-site trades, contractors or installers i.e. those from product supplier or manufacturer. • Installation equipment is used as advised by the product supplier or	

		manufacturer and appropriately calibrated. • Any consequential risks associated with the installation are identified, with actions identified as part of installation instructions to avoid risks e.g. avoidance of thermal bridging, rain penetration, condensation, fire in accordance with relevant Building Regulations approved documents e.g., Part B, Part L1b, Part F, etc. • The requirement of additional training for installation is identified and implemented. • The refurbishment process is recorded by the contractor including any changes to the specification including installation instructions (any changes should be agreed with the project team and comply with relevant requirements). • Records should be kept to document any issues with product installation and remedial actions taken. • Project team communication methods to ensure each interested party is kept up to date with any changes to the original plan. • Project team communication methods to ensure that all on-site trades are briefed with information required to ensure either appropriate installation and/or protection or both of materials and appliances. • The most suitable way for on-site and offsite teams (where applicable) to contact each other should be agreed on and set up as early as possible. • Supply chains. Supply chain identification is required to ensure that the correct specified products can be sourced within a reasonable distance, time frame and through the most cost-effective procurement routes. The time frame should include contingency measures to ensure project flexibility and adaptability • Producing documents and evidence as required for BREEAM.	

Man 06.2: Project Management - Handover and Aftercare	1 of 1.	Arrange a handover meeting: This should be arranged as soon as possible after occupation. It should introduce the aftercare team and home user guide (if credit chosen); 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. The handover and any subsequent aftercare should also be used to determine project success. 'Project success' is defined below and each should be addressed during the above: • Levels of occupancy. • Occupant thermal comfort. • Adequacy of ventilation and lighting; level of energy consciousness. • Identification of any defects post-refurbishment. • Identification of problems or concerns regarding the effectiveness of the refurbishment and its systems. And where two or more of the following have been committed to to determine project success: • A site inspection within three months of occupation. • Conduct post-occupancy interviews with building occupants or a survey via phone or posted information within three months of occupation. • Longer term after care, e.g. a helpline, nominated individual or other appropriate system to support building users for at least the first 12 months of occupation.	
Man 06.3: Project Management - Early Design Input	0 of 1.	This issue will not be targeted at present.	
Man 06.4: Project Management - Thermographic Surveying and Airtightness Testing	0 of 1.	This issue will not be targeted at present.	
Health and Wellbeing			
Hea 01.1: Daylighting - Impact	0 of 1.	This issue will not be targeted at present.	
Hea 01.2: Daylighting - Standards	0 of 2.	This issue will not be targeted at present.	

Hea 02: Sound Insulation	2 of 4.	Sound testing must be carried out between habitable rooms to meet or exceed Part E of the Building Regulations. The number of credits awarded to a dwelling is determined by the lowest performing separating wall or floor (taken from all specific plots, groups and subgroups combined), which must be clearly identified by the testing. Testing must be carried out by a compliant test body, which is defined as any one of the following: • Organisations having UKAS accreditation to the appropriate scope, or who are accredited by a member of the International Accreditation Forum (IAF—iaf.nu) to the appropriate scope. • Organisations or individuals registered with the Association of Noise Consultants (ANC) Registration Scheme. • Organisations or individuals who can provide evidence that they follow the relevant principles of BS EN ISO 17024 (Conformity assessment—General requirements for bodies operating certification of persons) in relation to BREEAM requirements. A Suitably Qualified Acoustician is an individual who holds a recognised acoustic qualification and membership of an appropriate professional body. The primary professional body for acoustics in the UK is the Institute of Acoustics.	
Hea 03: Volatile Organic Compounds	1 of 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 of 3.	This issue will not be targeted at present.	
Hea 05: Ventilation	2 of 2.	Ventilation is to be provided which meets Section 5 (New Dwellings) of Building Regulations Part F in full.	

Hea 06: Safety	1 of 1.	Fire Detection: The dwelling must be provided with a compliant fire detection and alarm system to the following specification: • To at least a Grade D Category LD3 standard as described in BS 5839–6:2013. LD1 & LD2 Grade C systems are considered to meet and exceed this. Or, if a dwelling has one storey larger than 200m2 and two storeys total excluding basement: • A fire detection system of Grade B Category LD3 as described in BS 5839–6:2013. Or, if a dwelling have one storey larger than 200m2 and three storeys total excluding basement: • A fire detection system of Grade A Category LD2 as described in BS 5839–6:2013. In all cases: • Must be positioned in accordance with building Regulations Part B Fire Safety Volume 1—Dwellinghouses 2006 section 1 Paragraphs 1.11–1.18. Building regulations have separate requirements for the positioning of alarms in refurbishment projects. However, for the purposes BREEAM, all alarms must meet part B Building Regulations as outlined for new build. • Must be positioned in accordance with the recommendations of BS 5839–6:2013 for a category L2 system. Carbon Monoxide: If fossil fuels are not used (e.g. electric heating), it will be assumed that mains gas or any other form of fossil fuel or biomass will not be used within the building and as such carbon monoxide detection is unnecessary. If fossil fuels are used (e.g. gas heating): • Where the dwelling is supplied with mains gas or any other form of fossil fuel or biomass is used within the building, a compliant carbon monoxide detector and alarm system must be provided. • Carbon monoxide detector and alarm system should be in accordance with and positioned in accordance to BS EN 50291–1:2010+A1:2012 and BS EN 50292:2013 • Should carry a British or European approval mark. Note: there is a difference in the standards required for carbon monoxide alarms used as a method of fire detection and those used in the detection of faulty or inadequately ventilated gas appliances. • If combined fire and carbon monoxide systems are chosen these must also meet the LPS 1282 standard. Power Supplies Where there is a full rewire of all electrical circuitry, or a partial rewire taking place in an area that is suitable for the position of a detection system as detailed above: • The fire and carbon monoxide detector and alarm system must be mains powered. • Smoke and heat alarms must conform to BS EN 14604:2005 (which has preceded BS 5446–1: 2000) or BS 5446–2:2003 respectively. • These should have a standby power supply, such as a battery (either rechargeable or non-rechargeable) or capacitor. • Carbon Monoxide alarm power supply should conform to BS EN 50292:2002. The mains supply to the alarm(s) should comprise of a single independent circuit at the dwelling's main distribution board (consumer unit) or a single regularly used local lighting circuit. • There should be a means of isolating power to the smoke alarms without isolating the lighting.	

		Where the project does not involve electrical rewiring: • The power supply for any smoke alarm and carbon monoxide alarm systems must be derived from a battery supply.	
Energy			
Ene 01: Improvement in Energy Efficiency Rating	1.5 of 6.	Credits are awarded for SAP / Part L performance.	
Ene 02: Energy Efficiency Rating Post Refurbishment	2 of 6.		
Ene 03: Primary Energy Demand	5.5 of 7.		
Ene 04: Renewable Technologies	2 of 2.		

Ene 05: Energy Labelled White Goods	2 of 2.	White goods should be provided to the occupants on the following basis: • Fridges and freezers, or fridge freezers, must have an A+ rating or better under the EU energy efficiency labelling scheme. • 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. • 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. If existing appliances are present, these can be considered under some circumstances. Please inform us if this is the case.	
Ene 06: Drying Space	1 of 1.	A space and facilities for drying clothes should be provided on the following basis: • Fixtures in an adequate internal space holding 4m of drying line or more for 1 or 2 bedroom homes, or 6m or more for dwellings with 3 bedrooms or more. • Located in either a heated space with adequate, controlled ventilation, complying with Building Regulations Approved Document F Ventilation 2006 (rooms that commonly meet these requirements are a bathroom or utility room). • The fixture or fitting needs to be a permanent feature of the room. • Internal drying spaces must be in rooms other than: 1. Living rooms 2. Kitchens 3. Dining rooms 4. Main halls 5. Bedrooms	
Ene 07.1: Lighting - External	1 of 1.	External Space Lighting Energy efficient space lighting, including communal areas, should be provided to at least 45 lumens per circuit watt. External Security Lighting Security lighting must be energy efficient or absent as per the below: • Burglar security lights have a maximum wattage of 150W, 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 should be present at all. Statutory safety lighting can be excluded from the above.	
Ene 07.2: Lighting - Internal	1 of 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 of 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 of 2.	Eight bicycles must be accommodated based on current plot and bedroom numbers. Facilities for storing and accessing bikes must be provided as follows: • The space must be covered overhead to protect from the weather. • Cycles must be secured within spaces in rack(s) or fixtures to allow cycles to be freestanding and locked. The use of proprietary (manufactured) cycle storage systems is acceptable where it can be demonstrated that the installation will provide sufficient access to allow cycles to be moved in and out independently. • The covered area and the cycle racks or fixings must be set in or fixed to a permanent structure (building or hardstanding). 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), must allow for access to the cycle storage space, to enable bikes to be easily stored and accessed. If storage is communal: • Communal cycle storage must as a minimum be located within 100m of each dwelling's main entrance, or the main communal entrance in the case of flats. Note: Where due to site constraints, the distance requirements for communal cycle storage or the number of spaces cannot be met, BRE may award these credits where everything possible has been tried, on a case by case basis. Ask us for help if this is the case. If storage is in individual gardens: • Space should include 1m2 space for tools. • If the cycle storage is located at the rear of the property, and there is no right of way to the rear of the property without going through the dwelling: 1. Access through the property to the cycle storage must be gained without going through the lounge, living room, bedrooms (where located on the ground floor) dining room, bathroom or kitchen 2. 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), accounting for furniture and 2.0m bike length for manoeuvring the cycle round corners	

Ene 10: Home Office	1 of 1.	Facilities for a home office provided as follows: • Located in a room other than the kitchen, living room or bathroom. For dwellings with three or more bedrooms, also located in a room other than master bedroom. For studio homes, where the living room, kitchen or both forms part of the same room as the master bedroom, the home office can be in this space. • The room must be large enough to allow the intended use of that room, e.g. if a home office is to be set up in the main bedroom, that room also needs to be able to fit in a double bed and other necessary furnishing. • A minimum size space should be provided (1.8m wall length) to allow a desk, chair and filing cabinet or bookshelf to be installed, with space to move around the front and side of the desk, use the chair appropriately and operate the filing cabinet safely (the 1.8m wall size requirement can, in some circumstances, be altered if drawings can prove that a desk can be fitted in any other type of arrangement, i.e. alcove or similar, fulfilling all the above criteria). The following services must be provided in the suitable room intended as a home office: • Two double power sockets (within the above 1.8m length) • Telephone point (within the above 1.8m length) • Window (either of the width and height are to be no less than 450mm) • Where the room relies on a window for ventilation, the minimum openable casement must be 0.5 m2. Alternatively, where at least one credit has been achieved under issue Hea 05 Ventilation, this is deemed to meet the requirements for adequate ventilation. A room with only an external door does not meet this requirement.	
Water			
Wat 01: Internal Water Use	2.5 of 4.	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 of 1.	In any one of the following cases the credit can be awarded by default and without providing a water collection system: 1. Dwellings with no individual or communal garden space 2. Dwellings only have balconies provided 3. The existing down pipe is not in individual or communal garden space and it is unfeasible to relocate the down pipe 4. There is no down pipe on the dwelling or no access to a down pipe and it is not feasible to relocate the water down pipe	
Wat 03: Water Meter	0 of 1.	This issue will not be targeted at present.	
Materials			
Mat 01: Environmental Impact of Materials	14 of 25.	Please provide full materials spec / complete BE form to allow us to calculate scores. Credits awarded for green accreditation of materials chosen.	
Mat 02.1: Legal Timber	N/A mandatory	All timber used during the refurbishment must come from a 'legal source' and not be on the CITES list or, in the case of Appendix III of the CITES list, not be sourced from the country seeking to protect this species as listed in Appendix III.	
Mat 02.2: Sustainable Procurement Plan	0 of 12.	This issue will not be targeted at present.	
Mat 02.3: Responsible Sourcing of Materials	0 of 3.	This issue will not be targeted at present.	

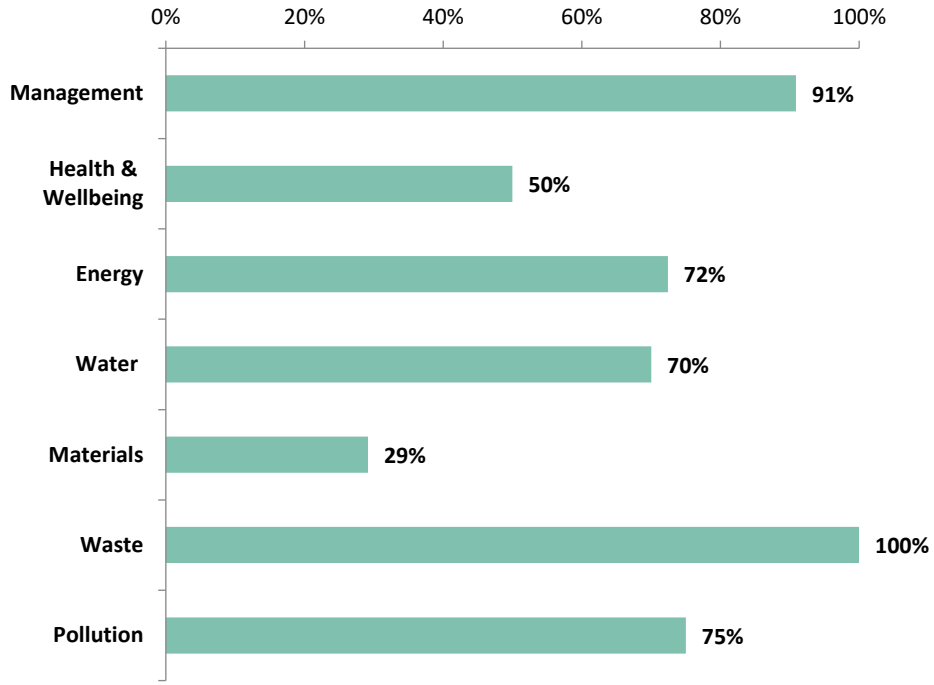
Mat 03.1: Insulation - Embodied Impact	0 of 4.	This issue will not be targeted at present.	
Mat 03.2: Insulation - Responsible Sourcing	0 of 4.	This issue will not be targeted at present.	
Waste			
Was 01.1: Recycling Facilities	1 of 1.	The Local Authority collects three types of recycling, which are sorted by the occupants before collection. The requirements are therefore three internal recycling containers to the following specification: • 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 . • The scheme (provided privately or by the local authority) must have a minimum collection frequency of at least fortnightly, with a minimum of three recyclable materials collected.	
Was 01.2: Composting	1 of 1.	In addition to any other bins, an interior container must be provided for kitchen composting waste as follows: • This container must be at least seven litres. • It must be located in a dedicated position. Where there a food/kitchen waste collection service in place: • A collection service must be provided for food/kitchen waste, by the local authority or by a third party with a management plan. Information Leaflets: • Have a home composting information leaflet that is delivered to each dwelling, or as part of the dwelling's home user guide. Where a composting collection scheme is in operation, the information leaflet provided by the local authority is sufficient to meet the information leaflet criteria. Otherwise, it must include the following: 1. How composting works and why it is important 2. The materials that can be composted (e.g. raw vegetable peelings and fruit, shredded paper, teabags, etc.) 3. Details of the operation and management plan for the communal composting scheme if applicable.	

Was 02: Refurbishment Site Waste Management	3 of 4.	For projects over £300k: First credit – Management plan • Where a compliant level 2 SWMP is in place, including the following: • 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) • 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 three key waste groups as referenced in Table - 32 and recording decisions taken: http://tinyurl.com/mtvn7uy • 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 off site or through a licensed external contractor • Procedures for measuring the amount of construction and demolition waste (if generated) diverted from landfill • 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 Second credit – Good practice waste benchmarks. In addition to the above: • Amount of non-hazardous construction waste generated per £100,000 of project value is no greater than 26.52m3 (actual not bulk)… • …and also no greater than 16.90 tonnes. • The amount of waste generated per £100,000 of project value is recorded in the SWMP. • Where a pre-refurbishment audit of the existing building is completed. The pre-refurbishment/pre-demolition audit must be carried out to determine how to maximise the recovery of material from the refurbishment for subsequent high grade/value applications. • The pre-refurbishment audit should be carried out using an appropriate methodology. The ICE has produced guidance on pre-demolition audits, including 'The Demolition Protocol' and the Waste Resources Action Programme (WRAP) also provides guidance. • The audit must be referenced in the SWMP. • The audit must include identification and amounts of the key refurbishment materials. • The audit must include potential applications and any related issues for the reuse and recycling of the key refurbishment materials. • Where demolition is included as part of the refurbishment programme, then the audit should also cover demolition materials. Third credit – Best practice waste benchmarks. In addition to the above: • Construction waste (non hazardous) meets or exceeds a target of diversion from landfill of 70% by volume (m3)… • …and also 65% by tonne. • Demolition waste (non hazardous) meets or exceeds a target of diversion from landfill of 80% by volume (m3)… …and 90% by tonne. • In all cases diversion from landfill includes only: 1. Reusing the material on-site (in-situ or for new applications) 2. Reusing the material on other sites 3. Salvaging or reclaiming material for reuse 4. Returning material to supplier via a 'take-back' scheme 5. Recovery of material from site by an approved waste management contractor and recycled, composted or sent for energy recovery	
Pollution		
Pol 01: Nitrogen Oxide Emissions	3 of 3.	Dry NOx emissions of space heating and hot water systems must be ≤ 40 mg/kWh (NOx class 4 boiler)	

Pol 02: Surface Water Run-off	1 of 4.	One credit may be awarded by default if the following applies: • Where there is no change in the size of the building footprint or hard standing as a result of the refurbishment • Where any new hard standing areas are permeable, this must include all new pavements, driveways and where applicable public rights of way, car parks and non-adoptable roads (e.g. community scale refurbishment projects). Any calculations necessary to demonstrate that this will be achieved should be carried out by an Appropriately Qualified Professional. • 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 onsite using appropriate Sustainable Drainage Systems (SuDS) such as Soakaways. An Appropriately Qualified Professional is: • A professional with the skills and experience to champion the use of SuDS within the overall design of the development at an early stage • The professional must be capable of understanding the site's particular surface water management needs and opportunities. In addition, they must have knowledge and experience in using SuDS-based solutions to influence the holistic design of a development's drainage system and provide the robust hydraulic design calculations referred to in key guidance documents such as The SuDS manual (CIRIA C697, 2007) and Preliminary rainfall run-off management for developments (EA/DEFRA, 2007) • Suitable professionals may be found in a variety of disciplines, such as engineering, landscape design or hydrology. Geotechnical advisors or specialists may be required for SuDS techniques that allow infiltration.	
Pol 03: Flooding	2 of 2.	Flood risk assessment to confirm that food risk is low.	

Anticipated Scoring

The following scores are achieved within each category if the criteria described above are adhered to and suitably evidenced:



This equates to the following total BREEAM score and rating:

Project Score:	71.08%
Project Rating:	BREEAM Very Good