

BREEAM Pre-Assessment Report

Buildings of Townscape Merit, Barnes Hospital

Prepared for Star Land Realty UK Limited
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envision

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CONTENTS

1	APPROACH TO BREEAM	4
	Assessment Scope	5
	Approach to Pre-Assessment	6
	Predicted Score	6
2	KEY BREEAM DESIGN & CONSTRUCTION MEASURES	8

1 APPROACH TO BREEAM

- 1.1 Condition NS66 states; “Unless otherwise agreed in writing by the LPA, the residential units within converted buildings shall achieve BREEAM Domestic Refurbishment Excellent Standard (or such national measure of sustainability for design that replaces that scheme).” Therefore, this condition applies to the Buildings of Townscape Merit (BTMs).
- 1.2 The BREEAM ‘Excellent’ standard is equal to or greater than a score of 70. The BREEAM scoring bands are shown below.

Table 1.1 – BREEAM Scoring Bands

Target	Score
UNCLASSIFIED	<30
PASS	≥30
GOOD	≥45
V GOOD	≥55
EXCELLENT	≥70
OUTSTANDING	≥85

- 1.3 To maintain a flexible system BREEAM adopts a 'balanced scorecard' approach to the assessment and rating of a building or project. This means that, to achieve a particular level of performance the majority of BREEAM credits can be traded, i.e. not meeting a credit in one area can be offset by achieving a credit in another to achieve the target BREEAM rating.
- 1.4 However, to ensure that performance against fundamental environmental issues is not overlooked in pursuit of a particular rating, BREEAM sets minimum standards of performance in key areas, e.g. energy, water, ventilation, etc.
- 1.5 To achieve ‘Excellent’ against the ‘BREEAM Domestic Refurbishment 2014’ standard, the minimum overall percentage score must be achieved (as detailed in Table 1.1) along with the minimum standards, detailed in the table below:

Table 1.2 – Minimum standard to achieve ‘Excellent’

BREEAM Issue	Standard
Ene 02 Energy efficiency rating post-refurbishment	2.5 Credits
Wat 01 Internal water use	2 Credits
Hea 05 Ventilation	1 Credit
Hea 06 Safety	1 Credit
Pol 03 Flooding	2 Credits
Mat 01 Environmental impact of materials	Criterion 1 Only

Assessment Scope

1.6 BREEAM UK Domestic Refurbishment 2014 (V 2.2) assesses the sustainability performance of a dwelling by giving consideration to a range of environmental issues, divided into the following categories:

- **Management:** including factors such as environmental procedures and security;
- **Health and Wellbeing:** including details regarding noise, daylight and internal air quality;
- **Energy:** including energy efficiency, renewable energy and lighting;
- **Water:** including water efficient appliances and irrigation;
- **Materials:** Including the specification of new materials used and how they were sourced;
- **Transport:** including access to public transport, local amenities and cycle storage;
- **Waste:** including household waste storage, composting facilities and construction waste;
- **Pollution:** including surface water runoff, flood risk and NOx emissions.

1.7 For the purposes of this scheme, 'Domestic Refurbishment' is classified under two categories:

- Category 1: Alterations to existing dwellings and extensions – **applies to BTMs at Barnes Hospital;**
- Category 2: Domestic conversions and change of use projects.

- 1.8 The BREEAM Domestic Refurbishment Assessment recognises the limitations subject to buildings within conservation areas or with a listed status, such as The BTMs at Barnes Hospital. In this case the project team should aim to deliver the minimum standards as far as practically possible. This can be demonstrated with a report confirming that the refurbishment works followed the BREEAM scheme as far as possible within the restrictions of any statutory obligations.
- 1.9 When BREEAM is applied formally (as part of a planning condition) it is most typically applied in two stages. First at the design stage, whereby an initial assessment is undertaken based on design information gathered and a site survey is undertaken.
- 1.10 The second assessment occurs after construction has finished. This validates that the measures have been achieved. This is again based on a site visit of the property.

Approach to Pre-Assessment

- 1.11 A BREEAM predictive assessment has been undertaken for the BTMs at Barnes Hospital to illustrate the performance expected to be achievable. The main outcomes of the assessment are discussed in further detail in the following section, including details of the efforts that will be taken to achieve individual credits. The assessment is based on an evaluation of site constraints, liaison with the design team and on the assumption that various measures and activities can be adopted in detailed design and construction.
- 1.12 It is assumed that the scheme would be classified as a 'large scale' project against the BREEAM definition, as the value of the construction work is expected to be over £100,000. The requirements for larger scale projects are slightly more onerous by comparison to the requirements for smaller scale projects. These requirements have been considered for this predictive assessment.
- 1.13 This assessment is at the predictive stage and therefore illustrative of performance and potential scoring. It is recommended that the BREEAM requirements are reviewed with the Design Team before any construction contracts are awarded to ensure that the requirements of BREEAM can be appropriately integrated. At that stage a more detailed survey of the property should be undertaken, and BREEAM Checklist A1 completed.

Predicted Score

- 1.14 As taken from the pre-assessment provided in Section 2, the Buildings of Townscape Merit at Barnes Hospital are predicted to achieve a score of **76.35%**, equivalent to a rating of 'Excellent' against the '*BREEAM UK Domestic Refurbishment 2014*' assessment criteria.

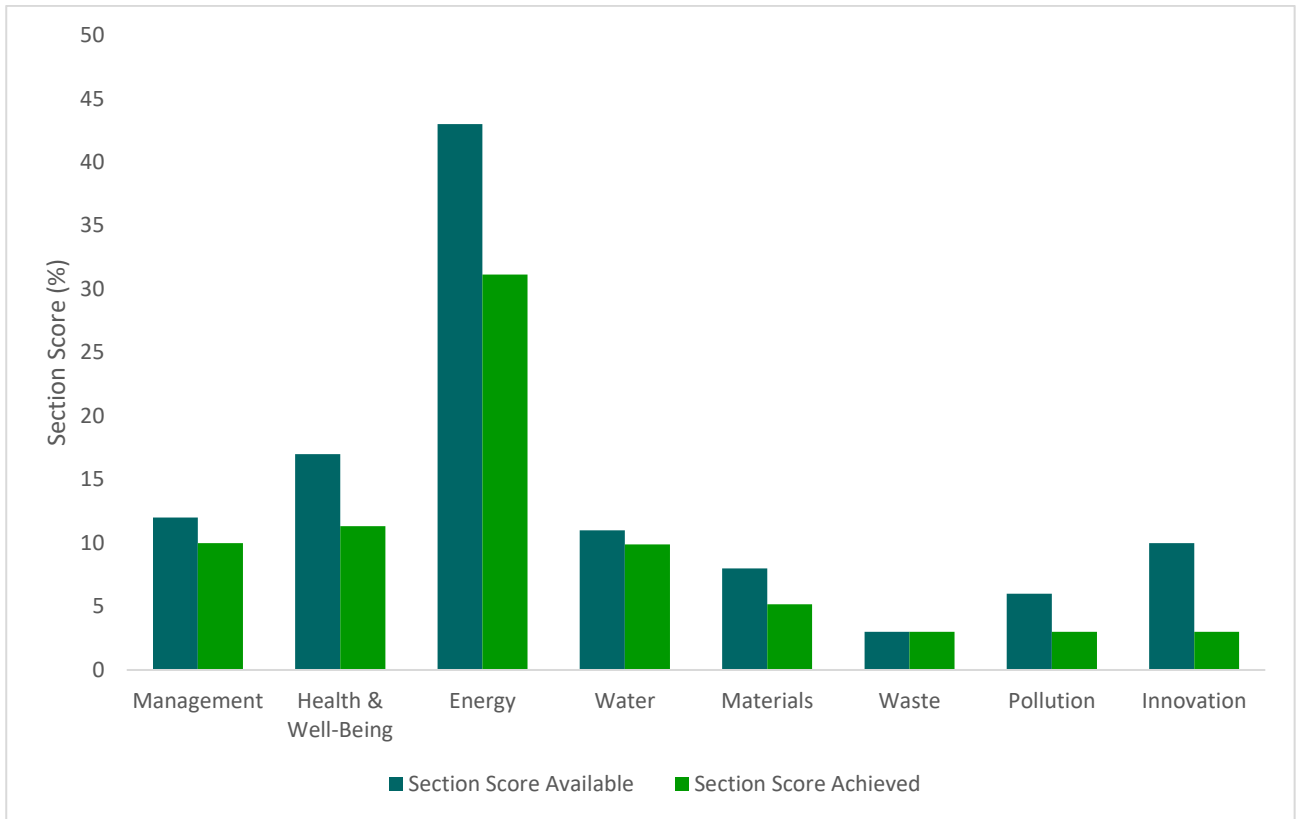


Fig 1.1 – Predicted BREEAM Scores

2 KEY BREEAM DESIGN & CONSTRUCTION MEASURES

2.1 The table below details the key design measures for review by the design team. These are taken from the pre-assessment (in Appendix II) which has identified a route to achieving **76.35%**.

Ref	Issue	Available Credits	Target Credits	Minimum Standard	Proposals for BREEAM	Responsibility	Comment / Additional Responsibility / Action
Management		12	10				
Man01	Home User Guide	3	3	No	Where a home user guide containing the information listed in the 'user guide contents list' has been produced and supplied to all homes.	Principal Contractor - Passed through in ERs	Commitment to produce the Home User Guide required by Stage 4.
Man02	Responsible Construction Practices	2	2	No	Principal contractor will use Considerate Constructors scheme (CCS) . CCS score 25 - 34 (min 5 in each section) = 1 credit CCS score 35 - 39 (min 7 in each section) = 2 credits	Principal Contractor - Passed through in ERs	Credits assumed feasible as part of the wider site effort by the main contractor.
	Exemplary Credit: Responsible Construction Practices	1	1		CCS score 40+ (min 7 in each section) = Exemplary Credit		
Man03	Construction Site Impacts	1	1	No	Ensure the following has been completed: - Timber to be sourced from responsible sources, chain of custody certificates required for all site timber; - Monitor, report and target setting for CO2 emissions arising from site activities; - Monitor, report and target setting for water arising from site activities; - Main contractor to appoint person responsible for monitoring and managing construction site impacts. - Main Contractor to ensure to have up-to-date environmental materials policy. With completion of Checklist A4 .	Principal Contractor - Passed through in ERs	Credit assumed achievable as standard practice for larger main contractors.
Man04	Security: Secure doors and Windows	1	0	No	External doors and accessible windows comply with the minimum-security requirements (i.e. good quality with working locks and keys, double glazing in external doors, accessible windows to have double glazing Newly added external door sets and windows to be appropriately certified.	Scott BrownRigg	Richmond building and townscape merit could affect ability to attain credit if new external door sets and windows are not permitted. Scott BrownRigg to confirm

	Security: Secured by Design	1	0		<p>The principles and guidance of Secured by Design Section 2 - Physical Security are complied with.</p> <p>A suitably qualified security consultant is consulted at Design stage and their recommendations are incorporated into the refurbishment spec.</p>		
Man05	Protection and Enhancement of Ecological Features	1	1	No	<p>Ensure the following have been completed:</p> <ul style="list-style-type: none"> - A site survey is carried out by a suitably qualified ecologist to determine presence of ecological features - If protected species are identified on site the relevant Statutory Nature Conservation Organisation is notified. - All existing features of ecological value on site that could be affected by works are adequately protected during refurbishment works. 	Ecologist/ Principal Contractor - Passed through in ERs	<p>Ecologist report required prior to start of refurbishment.</p> <p>Principal Contractor to confirm protection of existing ecological features.</p> <p>Action: Complete by end of Design Stage</p>
	Exemplary Credit: Protection and Enhancement of Ecological Features	1	1		<p>A suitably qualified ecologist has been appointed to recommend appropriate ecological features that will positively enhance the ecology of the site and where the developer adopts all general ecological recommendations and 30% of additional recommendations.</p>	Ecologist/ Principal Contractor - Passed through in ERs	<p>Ecologist report required prior to start of refurbishment.</p> <p>Credit assumed achievable.</p> <p>Action: Complete by end of Design Stage</p>
Man06	Project Management: Roles and Responsibilities	1	1	No	<p>The Project Manager assigns shared and individual responsibilities across the following design and refurbishment areas:</p> <ul style="list-style-type: none"> - Planning and building control notification. - Design. - Refurbishment. - Commissioning and Handover. - Occupation. 	Beadmans	<p>Credit assumed achievable, the following information required:</p> <p>Written confirmation indicating when the collaboration began and the roles and responsibilities of the project team This could be either:</p> <ol style="list-style-type: none"> Meeting minutes Construction programme Responsibilities schedule Relevant section or clauses of the building specification or contract Project implementation plan <p>Action: RIBA Stage 2</p>

	Project Management: Handover and Aftercare	1	1		Ensure the following is complete: A handover meeting is arranged. Commitment to (at least two) of the following: - Site inspection within 3 months of occupation. - Conduct post occupancy interviews with occupants, or survey, or posted information within 3 months of occupation. - Commit aftercare at least 12 months after occupation including a helpline or nominated individual.	Principal Contractor - Passed through in ERs	Credit assumed achievable, the following information required: Written confirmation of a commitment or contract to provide compliant aftercare support and training or a compliant design stage commitment to provide aftercare. Action: RIBA Stage 2
	Exemplary Credit: Early Design Input	1	1		A BREEAM AP is appointed to oversee key stages within the project at an early stage.	Envision	Envision can provide BREEAM AP services for project. Currently outside of scope Beadmans will need to confirm appointment.
	Exemplary Credit: Thermographic Survey and Air Test	1	0		A thermographic surveying and airtightness testing have been carried out at both pre-refurbishment and post-refurbishment stages, AND an improved air tightness target has been set at design stage and testing demonstrates that this has been achieved post-refurbishment.	Principal Contractor - Passed through in ERs	Potential credit. Currently not assumed achievable as onerous requirements.
Ref	Issue	Available Credits	Target Credits	Minimum Standard	Proposals for BREEAM	Responsibility	Comment / Additional Responsibility / Action
	Health and Wellbeing	12	8				
Hea01	Daylighting: Maintaining Good Daylighting	1	0	No	There is a neutral impact on the dwelling's daylighting levels in the kitchen, living room, dining room and study with "no" answered for all questions in Checklist A-7 (parts 1 and 2) . Average daylight factor using the Hea01 calculator. Position of the no-skyline and percentage of area of the working plane that receives direct light from the sky.	Flatt Consulting	Credit assumed not achievable due to insufficient information. Flatt Consulting to assess list Checklist A-7 to determine feasibility of credit.
	Daylighting: Minimum Daylighting	1	0		The refurbishment achieves minimum daylighting levels in the kitchen, living room, dining room and study. Daylight calculations for any new kitchen, living room, dining room or study completing daylighting calculator.	Flatt Consulting	Credit assumed not achievable due to insufficient information. Flatt Consulting to assess requirements to determine feasibility.

Hea02	Sound Insulation	4	2	No	<p>For historic building - sound testing results demonstrate existing separating walls and floor meet the historic building requirements. The following will be required:</p> <ul style="list-style-type: none"> - Sound testing to be carried out before and after refurbishment by a suitably qualified acoustician to determine the sound insulation values have been met for historic buildings. The sound testing confirms Airborne sound insulation values as 3dB higher than before refurbishment, and Impact sound insulation values 3dB lower than before refurbishment. - Confirmation the at the building is a historic building. 	Beadmans/Scott BrownRigg	<p>2 credits assumed feasible if the following occurs:</p> <ul style="list-style-type: none"> - Sound testing before start of refurbishment. - Sound testing on completion of refurbishment. - Sound insulation installed to improve existing acoustic performance. <p>Building confirmed as historic building.</p>
Hea03	Volatile Organic Compounds: Avoiding the use of VOCs	1	1	No	<p>All decorative paints and varnishes used must be meet Decorative Paint Directive 2004/42/CE and VOC (organic solvent) content (testing req. 6), requirement for Phase 2 Fungal and algal resistant.</p> <p>At least five of the eight remaining product categories (wood panels, timber structures, wood flooring, floor coverings, suspended ceilings, floor adhesives, wall coverings, adhesives for hanging flexible wall coverings) meet the required VOC standards. OR If there are fewer than five product categories all must meet the required VOC standards.</p>	Scott BrownRigg to stipulate standards in Stage 3 specification	Manufacturers literature for relevant products required.
Hea04	Inclusive Design: Minimum Accessibility	1	1	No	An access expert or suitably qualified member of the design team has completed Checklist A8 (Section 1) : ensuring the refurbishment demonstrates reasonable provision to provide accessibility to the dwelling with evidence of measures implemented. This should be based upon a site visit to assess existing access.	Scott BrownRigg	<p>Credit assumed achievable, Scott Brown Rigg to assess checklist 8 sections 1 and 2.</p> <p>Suitably qualified team member is to be either a NRAC access auditor, NRAC consultant OR an inclusive design champion with core competencies and skills listed by the NRAC for access auditors (<u>actual qualification not required</u>)</p>
	Inclusive Design: Advanced Accessibility	1	1		An access expert or suitably qualified member of the design team has completed Checklist A8 (Sections 1 & 2) : ensuring the refurbishment demonstrates reasonable provision to provide accessibility to the dwelling with evidence of measures implemented. This should be based upon a site visit to assess existing access.		
	Exemplary Credit: Inclusive Design	1	0		An access expert or suitably qualified member of the design team has completed Checklist A8 (Sections 1, 2 & 3) : ensuring the refurbishment demonstrates reasonable provision to provide accessibility to the dwelling with evidence of measures implemented. This should be based upon a site visit to assess existing access.		

Hea05	Ventilation: Minimum Ventilation	1	1	Yes	An assessment is carried out to establish the current levels of air tightness and structural moisture before the specification of fabric measures and heating systems. The assessment should establish the appropriate level of ventilation for the building, based upon: The minimum ventilation requirement to meet that set out in Building Regulations Approved Document Part F; - Ventilation rates in all habitable and inhabitable spaces are sufficient to allow structural moisture to be dealt with effectively.	Flatt Consulting	Credit assumed achievable, based on historic status of building. Flatt consulting to confirm: - The refurbishment should be designed to meet the requirements of Building Regulations Part F section 3.11–3.16. Principal Contractor to undertake pressure testing before and after refurbishment.
	Ventilation: Advanced Ventilation	1	1		The first credit is achieved and where the following testing was also carried out in order to develop the ventilation and air tightness strategy for the building: - Pressure testing was carried out before and after refurbishment in accordance with the appropriate standard - Temperature and humidity is monitored before and after refurbishment.	Flatt Consulting/Principal Contractor Passed through ERs	
Hea06	Safety	1	1	Yes	Ensure the following: - Compliant fire detection and alarm system. - Where the project requires re-wiring the power supply for smoke alarms to be derived from the refurbishments main electrical supply. - Where the project does not require re-wiring the power supply for smoke alarms to be battery powered.	Flatt Consulting	Credit assumed achievable, Flatt Consulting to confirm the inclusion of a fire detection and alarm systems should be in accordance with BS 5839–6:2013 and to at least a Grade D Category LD3 standard.
Ref	Issue	Available Credits	Target Credits	Minimum Standard	Proposals for BREEAM	Responsibility	Comment / Additional Responsibility / Action
Energy		29	21				
Ene01	Improvement in Efficiency Rating	6	3	No	The refurbishment results in an improvement to the dwelling's energy efficiency rating, the following will need to be completed: - Determine the dwellings energy efficiency rating before refurbishment. - Determine the buildings energy efficiency rating from full SAP or EPC. - Fill in the BREEAM Domestic Refurbishment Ene01 Calculator. Improvement in EER for 3 credits = >26.	Scott Brown Rigg/Energy Consultant	4 credits assumed. Energy Consultant to confirm feasibility of improvements to EER. For multiple units within the same block an average EER is allowable. To achieve credit there is to be additional high-performance insulation, improved door and windows, as well as efficient lighting installed.

Ene02	Energy Efficiency Rating Post-Refurbishment	4	3	Yes	The result of refurbishment, the dwelling meets a minimum energy efficiency rating: - The minimum refurbishment benchmark for excellent is <70. - The assessment is targeting <75.	Energy Consultant	3 credits assumed. Flatt Consulting to confirm feasibility of completing the following: - A Design Stage energy performance report or SAP 2012 worksheet post refurbishment is required to confirm the building's energy efficiency rating. - And a copy of the BREEAM domestic refurbishment Ene01 calculator.
	Exemplary Credits: EER Post Refurbishment	1	0		Additional credits can be awarded for the following: - 1 additional credit: EER post refurbishment of <90. - 2 additional credits: EER post refurbishment of <100	NA	Credit assumed unachievable.
Ene03	Primary Energy Demand	7	4	No	Primary energy demand targets. As a result of refurbishment, the dwelling meets the primary energy demand target of ≤ 240 kWh/m2/year.	Energy Consultant	4 credits assumed, Energy Consultant to Confirm. This assumes that improvements to the energy efficiency (insulation, windows and lighting) are adequate to reach the energy demand target. SAP required to determine energy demand.
Ene04	Renewable Technologies	2	2	No	At least 20% of the dwellings primary energy demand per annum is supplied by low or zero carbon technologies. AND A reduced energy demand prior to the specification of renewable technologies with a maximum primary energy demand 250 kWh/m2/year.	Flatt Consulting	Credit assumed feasible one the following information: - Communal CHP for units provide over 20% of buildings energy demand. Assuming CHP meets requirements defined in Directive 2009/28/EC, and certified under the microgeneration Certification Scheme, and CHPQA standard. - The reduced target energy demand (<240 kWh/m2/year) exceeds the target for credit.
Ene05	Energy Labelled White Goods: Fridges, Freezers, and Fridge-freezers	1	1	No	All fridges, freezers and fridge-freezers (where specified) to have an A+ rating or better under 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.	Scott BrownRigg	Credit assumed feasible Scott Brown Rigg to confirm specification. Product data sheets for white goods required.
	Energy Labelled White Goods: Washing Machines, Dishwashers, Tumble Dryers and Washer-Dryers	1	1		Washing machines have an A++ rating, dishwashers have an A+ rating, or washer-dryers and tumble dryers have an A 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		Credit assumed feasible Scott Brown Rigg to confirm specification. Product data sheets for white goods required.

Ene06	Drying Space	1	1	No	An adequate, secure internal or external space with posts and footings, or fixings holding with 4m+ of drying line per dwelling.	Scott BrownRigg	Credit assumed achievable, Scott Brown Rigg to confirm garden (if relevant). If no garden space, there will be no credits available.
Ene07	Lighting: External Lighting	1	1	No	Where energy efficient space lighting (including lighting in communal areas) and energy efficient security lighting is provided.	Flatt Consulting	Credit assumed feasible, Flatt Consultants to provide data sheets for all light fittings to be provided, along with information about external lighting controls. LED lighting to be specified for external lighting.
	Lighting: Internal Lighting	1	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.	Flatt Consulting	Assumed feasible Flatt Consulting to provide specification of LED for internal lighting. Lighting plan and luminaire schedule required to calculate watts/m2.
Ene08	Display Energy Devices	2	2	No	Primary heating and current electricity consumption data are displayed to occupants by a compliant energy display device.	Flatt Consulting	Credit assumed achievable with specification and installation of smart meters. Flatt Consulting to confirm.
	Exemplary Credit: Display Energy Devices	1	1		Specified energy display devices is capable of recording consumption data internally for 2 years and be capable of displaying cumulative consumption data in all of the daily, weekly, monthly periods.	Flatt Consulting	Specification of smart meters to include internal data logging. Flatt Consulting to confirm.
Ene09	Cycle Storage	2	2	No	Where individual or communal compliant cycle storage is provided for the following number of cycles: - 1 bed: 1 cycle per 1 dwelling; - 2 bed: 2 cycles per dwelling	Scott BrownRigg	4 cycle storage spaces required for dwelling that must be within 100m of each dwelling. Plans required to show inclusion of complaint cycle storage. Scott BrownRigg to Confirm
Ene10	Home Office	1	0	No	sufficient space and services have been provided which allow the occupants to set up a home office in a suitable room with adequate ventilation.	NA	Credit assumed unachievable due to space constraints.

Ref	Issue	Available Credits	Target Credits	Minimum Standard	Proposals for BREEAM	Responsibility	Comment / Additional Responsibility / Action
Water		5	4.5				
Wat01	Internal Water Use	3	2.5	No	<p>Completion of the BREEAM Domestic Refurbishment Wat01 Calculator to determine the dwellings water consumption. Targeting from 96 to < 107 litres/person/day. The following minimum standards will need to be met:</p> <ul style="list-style-type: none"> - Showers: 6 litres/min - Baths: 140 litre capacity of overflow (or less) - WCs: 3 litre effective flushing volume (or less) - Bathroom/WC taps: 3 litres per min (or less) - Kitchen/Utility Taps: 5 litres per min (or less) - Dishwashers: 12 litres per cycle - Washing machines: 40 litres per cycle 	Scott BrownRigg/Flatt Consulting	<p>Credit assumed feasible. Scott BrownRigg/Flatt Consulting to confirm the following items to ensure the credits:</p> <ul style="list-style-type: none"> - Datasheets for the types of appliances or fittings that use water - Drawings showing fittings and appliances.
	Exemplary Credit: Internal Water Use	1	0		Dwelling achieves a whole house consumption of less than 80 litres per person per day.	NA	Credit assumed unachievable.
Wat02	External Water Use	1	1	No	<p>Where a compliant rainwater collection system for external or internal irrigation use has been provided to dwellings. Or Where dwellings have no individual or communal garden space.</p>	Scott BrownRigg	Credit assumed feasible: if garden area present a compliant rainwater collection system will need to be specified. Scott Brown Rigg to confirm garden area and feasibility of including compliant water butt.
Wat03	Water Meter	1	1	No	An appropriate water meter for measuring usage of mains potable water has been provided to for the dwellings. The meter should be capable of providing a visible display of mains potable water.	Flatt Consulting	Credit assumed feasible. Flatt Consulting to confirm drawings showing location of water meters, data sheet for the water meter to be installed.

Ref	Issue	Available Credits	Target Credits	Minimum Standard	Proposals for BREEAM	Responsibility	Comment / Additional Responsibility / Action
Materials		48	31				
Mat01	Environmental Impact of Materials	25	18	No	<p>Mat01 calculator to be used to determine credits. Credits awarded according to impact of new materials according to their Green Guide Rating and their impact on improving the thermal performance of the dwelling for the following elements:</p> <ul style="list-style-type: none"> - Roof - External Walls - Internal Walls (inc. separating walls) - Upper and ground floors - Windows <p>Retained elements, where no work is carried out on them, are assessed against the Green Guide Calculator. (max 5 credits)</p> <p>Retained elements undergoing refurbishment are assessed against the Green Guide rating. (max 5 credits)</p> <p>New elements (such as windows) are assessed against the Green Guide rating. (max 3 credits)</p> <p>Additional credits are awarded for retained elements undergoing refurbishment as calculated in the Mat01 calculator depending on the thermal improvement made as a result of refurbishment based on the U-value of elements before and after refurbishment.</p>	Scott BrownRigg	<p>18 credits assumed under Excellent scheme.</p> <p>Scott BrownRigg to provide the following:</p> <ul style="list-style-type: none"> - Detailed drawings of refurbished buildings. - Specification of element build ups for roof, external walls, internal walls, upper and ground floors, and windows. - Area (m2) for the following elements: roof, external walls, internal walls, internal walls, upper and ground floors, and windows. - Environmental Performance Declarations for any relevant materials being installed.
Mat02	Responsible Sourcing of Materials	*	*	No	Pre-requisite: All timber and timber-based products used on the project is 'legally harvested and traded timber.	Scott BrownRigg / Principal Contractor - Passed through in ERs	<p>9 credits assumed achievable.</p> <p>The following will be required at design stage from Scott Brown Rigg:</p> <ul style="list-style-type: none"> - Design drawings confirming materials location and materials location. - Details of specified materials. - Volume (m3) or Mass (kg) for specified materials. - Environmental Management certification for each material specified.
		3	3		Where the principal contractor sources materials for the project in accordance with a documented sustainable procurement plan.		
		12	6		Mat02 calculator determine the credits achieved. Targeted 6 credits for >27% of new materials for an element are responsibly sourced. The credits achieved are dependent on % of points achieved based on the tier level of each material.		
	Exemplary Credit: Responsible Sourcing of Materials	1	0		Where at least 70% of RSM points are achieved.		

Mat03	Insulation: Pre-requisite	*	*	No	Pre-requisite: Any new insulation specified for use within the following building elements must be assessed	Scott Brown Rigg / Principal Contractor - Passed through in ERs	6 credits assumed feasible based on insulation achieving required green guide ratings and responsible sourcing certification. All insulation to be assessed, required information: - Drawings showing location and area (m2) or volume (m3). - Manufactures literature for all insulation. - Green Guide ratings for all insulation. - Responsible sourcing certification (BES6001, ISO14001) for all insulation.
	Insulation: Embodied Impact	4	0		Where the insulation index for new insulation used in the buildings is ≥ 2 and is calculated using the BREEAM Domestic Refurbishment Mat 03 calculator; and Green Guide ratings, required by the BREEAM Domestic Refurbishment Mat 03 calculator are determined		
	Insulation: Responsible Sourcing	4	4		Where $\geq 80\%$ of the new thermal insulation used in the building elements is responsibly sourced.		
Ref	Issue	Available Credits	Target Credits	Minimum Standard	Proposals for BREEAM	Responsibility	Comment / Additional Responsibility / Action
Waste		5	5				
Wst01	Household Waste: Recycling Facilities	1	1	No	The dwellings have a compliant collection scheme in place with the following internal recycling storage: - Three internal recycling containers provided where recycling is not sorted post collection. - One internal recycling container provided where recycling is sorted post collection. - Minimum 30 litre total capacity, no single container less than seven litre. - Dedicated position (in kitchen cupboard, close to the waste bin)	Scott Brown Rigg	First credit assumed feasible - Richmond Council offer compliant collection scheme. The following information is required from Scott Brown Rigg: - Drawings showing location, type, and size of bin storage. - Local authority collection information.
	Household Waste: Composting Facilities	1	1		A composting service or facility is provided for kitchen waste is provided, and an interior container is provided for kitchen composting waste of at least 7 litres.		Second credit assumed achievable - Richmond Council offer compliant composting scheme (details required).
Wst02	Refurbishment Site Waste Management: Management Plan	1	1	No	Where a compliant level 2 SWMP is in place in accordance with relevant BREEAM standards.	Principal Contractor - Passed through in ERs	Credit assumed achievable as standard practice for larger main contractors.
	Refurbishment Site Waste Management: Good Practice Waste Benchmarks	1	1		Ensure SWMP is in place and the following is complied with: - Non-hazardous waste generated by the dwellings refurbishment meets or exceeds the resource efficiency benchmark (26.52m3 or 16.90 t). - Amount of waste generated per £100,000 if project value in SWMP. - Pre-refurbishment audit of the existing building is completed. - If demolition is included as part of the refurbishment programme, then the audit should also cover demolition materials.		Credit assumed achievable based on good site waste management. Larger contractor should be capable of targeting benchmarks.

	Refurbishment Site Waste Management: Best Practice Waste Benchmarks	1	1		SWMP is in place, and good practice waste benchmarks are met, and the following is complied with: - non-hazardous demolition waste generated by the dwellings refurbishment meets or exceeds the refurbishment & demolition waste diversion benchmarks in accordance (non-hazardous construction waste 70% (volume) or 65% (tonnes), non-hazardous demolition waste 80% (volume) or 90% (tonnes)).		Credit assumed achievable based on good site waste management. Larger contractor should be capable of targeting benchmarks.
	Exemplary Credit: Refurbishment Site Waste Management	1	0		non-hazardous construction waste generated by the dwelling's refurbishment meets or exceeds the exemplary level resource efficiency benchmark AND Where non-hazardous demolition waste generated by the dwellings refurbishment meets or exceeds the exemplary level diversion benchmarks	NA	Credit assumed unachievable.
Ref	Issue	Available Credits	Target Credits	Minimum Standard	Proposals for BREEAM	Responsibility	Comment / Additional Responsibility / Action
Pollution		8	4				
Pol01	Nitrogen Oxide Emissions	3	0	No	NOx emissions arising from the operation of space heating and hot water systems for each refurbished dwelling are ≤ 40 mg/kWh.	Flatt Consulting	Assumed that BTMs connected to community heating, therefore in accordance with BREEAM guidance 0 credits are achieved. Flatt Consulting to confirm primary heating source.
Pol02	Surface Water Run-Off: Neutral impact on surface water	1	1	No	The following is complied with: - There is no change in the size of the building footprint or hardstanding as a result of the refurbishment. - Any new hardstanding areas are permeable (including all new pavements, driveways and public rights of way, car parks and non-adoptable roads). - Any calculations necessary to demonstrate the above will be achieved should be carried out by an Appropriately Qualified Professional (AQP).	Scott BrownRigg / Civil Engineer	Credit assumed achievable based on information and recommendations given in the FRA submitted at planning. Required: Drainage strategy with calculations along with accompanying drawings showing permeable and impermeable areas. Scott Brown Rigg to
	Surface Water Run-Off: Reducing run-off from site: basic	1	1		The following is complied with: - Run-off from the roof for rainfall depths up to 5mm, have been managed on-site using source control methods. - Where required, an appropriately qualified professional should be used to design an appropriate drainage strategy for the site.	Scott BrownRigg / Civil Engineer	Credit assumed achievable based on information and recommendations given in the FRA submitted at planning. Required: Drainage strategy with calculations along with accompanying drawings showing permeable and impermeable areas.

	Surface Water Run-Off: Reducing run-off from site: advanced	1	0		The following is complied with: - An appropriately qualified professional should be used to design an appropriate drainage strategy for the site. - Run-off as a result of the refurbishment is managed on-site using source control.	NA	Credit assumed unachievable.
	Exemplary Credit: Surface Water Run-Off	1	0		All run-off from the developed site is managed on-site using source control.	NA	Exemplary credit assumed unachievable.
Pol03	Flooding: Low Flood Risk or Flood Mitigation	2	2	Yes	flood risk assessment (FRA) has been carried out and the assessed dwellings are defined as having a low annual probability of flooding.	Achieved	Credits achieved based on information in the FRA submitted at planning.

