



Tilehurst Road

BREEAM Domestic Refurbishment
Pre-Assessment

October 2024

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1 Introduction

NRG Consulting have been appointed to produce a BREEAM Domestic Refurbishment Pre-Assessment in support of a planning application for a proposed development at Belle Vue Hotel, 2 Tilehurst Road, Reading, RG1 7TN.

The application property is a Grade II listed building within the Castle Hill/Russell Street/Oxford Road Conservation Area.

The description of development for the application is:

Change of use and conversion from a hotel (Use Class C1) into 7 x 1-bedroom flats (Use Class C3), together with associated internal works to the listed building and external site works including 3 x car parking spaces, 8 x cycle parking spaces and soft landscaping.

A BREEAM Domestic Refurbishment rating of **“Very Good”** has been targeted and the client is committed to achieving this rating.

This is in-line with **Reading Council** planning policy which states:

Table 3.1: Required level of sustainability standard

	Size of Development	Required Standard
New-build residential	Minor (fewer than 10 dwellings)	19% improvement in the dwelling emission rate over the target emission rate, as defined in the 2013 Building Regulations
	Major (10 dwellings or more)	Zero Carbon (or if unachievable, a minimum 35% improvement in the dwelling emission rate over the target emission rate, as defined in the 2013 Building Regulations and planning contribution to offset remaining carbon emissions to zero)
Creation of new residential units through conversion from other uses and/or major refurbishment	Minor (fewer than 10 dwellings)	BREEAM ‘Very Good’
	Major (10 dwellings or more)	BREEAM ‘Excellent’

The purpose of this strategy is to analyse the potential of achieving a **“Very Good”** rated BREEAM Domestic Refurbishment Assessment (BDR). It will determine which credits will be targeted and any implications of achieving the proposed credits will be highlighted if known at this time.

The report provides conclusions as to the best methods of meeting the requirements of BREEAM Domestic Refurbishment 2014.

The project is being assessed under the BREEAM Domestic Refurbishment Technical Manual 2014 (2.2). Should it be registered under a subsequent version, the pre-assessment will have to be reviewed.

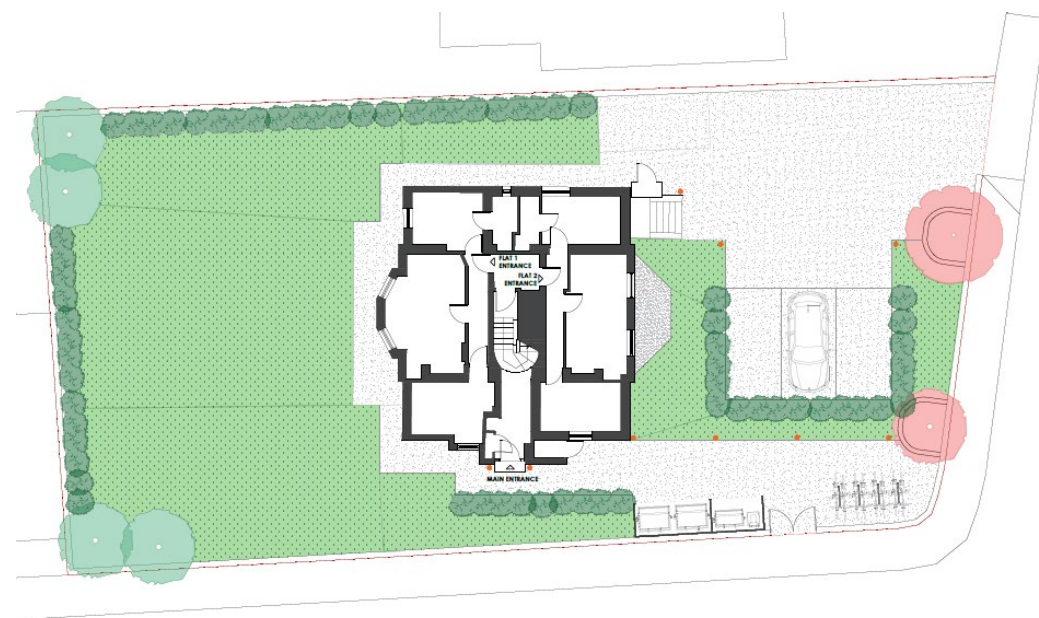


Figure 1: As proposed Site Plan

2 BREEAM Domestic Refurbishment Strategy

BREEAM Domestic Refurbishment is the national environmental standard to be used in the refurbishments, extensions, conversions and changes of use of homes in England. Sustainable design principles cover performance in seven key areas:

BREEAM Domestic Refurbishment - Credit Sections	
Management	Health and Wellbeing
Energy	Materials
Water	Pollution
Waste	

BREEAM Domestic Refurbishment uses a rating system of “Pass”* to “Outstanding”*, “Outstanding”* being the highest level. Dwellings are assessed and rated individually in two stages:

1. A Design Stage Assessment - an interim 'design stage' certificate is issued by the BRE once they have checked the report and evidence submitted and confirmed the design stage information complies with all relevant criteria in the BDR Technical Manual;
2. A Post Construction Stage Assessment - the dwellings are reviewed to ensure that the information provided at design stage has been incorporated. The report and post construction stage evidence must be submitted to the BRE and checked for compliance prior to issue of the final certificate.

Minimum **mandatory standards** must be met for **energy efficiency, internal water use, ventilation, safety, flooding** and **responsible sourcing of materials** before even a Pass can be achieved.

Mandatory Requirements: The following outlines the minimum requirements to meet specific ratings.

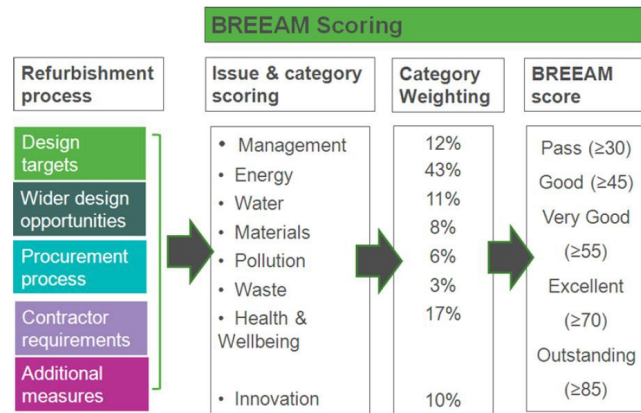
BREEAM Rating / Minimum No. Credits						
BREEAM Issue		Pass	Good	Very Good	Excellent	Outstanding
Ene 02	Energy Efficiency Rating Post Refurbishment	0.5	1	2	2.5	3.5
Wat 01	Internal Water Use	-	-	1	2	3
Hea 05	Ventilation	1	1	1	1	1
Hea 06	Safety	1	1	1	1	1
Pol 03	Flooding	-	-	-	2	2
Mat 02	Responsible sourcing of materials	Criterion 1 only				

In addition to the seven areas within the main part of the assessment, Innovation Credits are available. These are worth 10% (1% each for the 10 credits) and are achieved on top of the 100% of the assessment weighting. These are:

- Ene 2 - Energy Efficiency Rating (2 credits available)
- Ene 8 - Display Energy Devices (1 credit available)
- Wat 1 - Internal Water Use (1 credit available)
- Was 2 - Refurbishment Site Waste Management (1 credit available)
- Pol 2 - Surface Water Run-off (1 credit available)
- Man 2 - Responsible Construction Practices (1 credit available)
- Man 5 - Protection and Enhancement of Ecological Value (1 credit available)
- Man 6 - Project Management (2 credits available)

- Hea 4 - Inclusive Design (1 credit available)

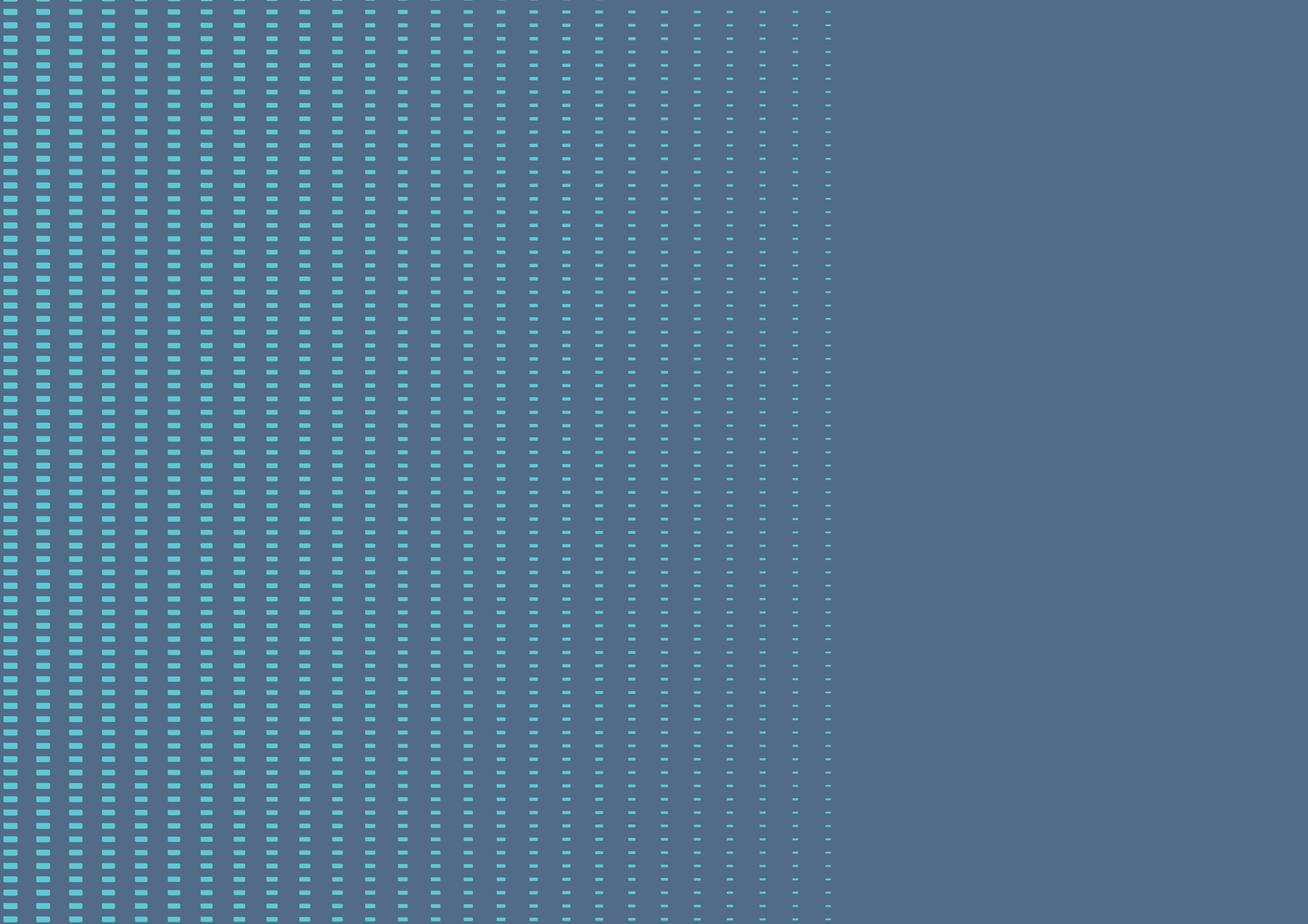
For the normal assessment weighting, each of the seven categories is weighted differently with the main focus on Energy. Full weightings are as follows:



Pre-Assessment Result	
BREEAM Rating Achieved	% Score
Very Good	57.58
As the above, compliance with Local Planning Policy is achieved.	

Once credits in the above sections are achieved, the total rating is then calculated. The BREEAM rating benchmarks for a Domestic Refurbishment Assessment are set out as follows:

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



Appendix 1



Appendix - Summary Score Sheet

BREEAM Domestic Refurbishment Summary Score Sheet

Site: Tilehurst Road

					Score assessment				
					Sub- total	Credits available	% achieved	Weighting factor	Credits Score
Management	Man 1	Home User Guide	3	3	8	11	72.7	0.12	8.73
	Man 2	Responsible Construction Practices	0	2					
	Man 3	Construction Site Impacts	1	1					
	Man 4	Security	1	2					
	Man 5	Protection & Enhancement of Ecological Features	1	1					
	Man 6	Project Management	2	2					
Health & Wellbeing	Hea 1	Daylighting	1	2	6	12	50.0	0.17	8.50
	Hea 2	Sound Insulation	2	4					
	Hea 3	Volatile Organic Compounds	0	1					
	Hea 4	Inclusive Design	0	2					
	Hea 5	Ventilation	2	2					
	Hea 6	Safety	1	1					
Energy	Ene 1	Improvement in Energy Efficiency Rating	1	6	15.5	29	53.4	0.43	22.98
	Ene 2	Energy Efficiency Rating Post Refurbishment	1.5	4					
	Ene 3	Primary Energy Demand	5	7					
	Ene 4	Renewable Technologies	0	2					
	Ene 5	Energy Labelled White Goods	1	2					
	Ene 6	Drying Space	1	1					
	Ene 7	Lighting	2	2					
	Ene 8	Energy Display Device	2	2					
	Ene 9	Cycle Storage	1	2					
	Ene 10	Home Office	1	1					
Water	Wat 1	Internal Water Usage	2.5	3	2.5	5	50.0	0.11	5.50
	Wat 2	External Water Usage	0	1					
	Wat 3	Water Meter	0	1					
Materials	Mat 1	Environmental Impact of Materials	16	25	26	45	57.8	0.08	4.62
	Mat 2	Responsible Sourcing of Materials	6	12					
	Mat 3	Insulation	4	8					
Waste	Was 1	Household Waste	2	2	5	5	100.0	0.03	3.00
	Was 2	Refurbishment Site Waste Management	3	3					
Pollution	Pol 1	Nitrogen Oxide Emissions	0	3	3	8	37.5	0.06	2.25
	Pol 2	Surface Water Run Off	1	3					
	Pol 3	Flooding	2	2					
Innovation	Inn 1	Innovation	2	10	2	10	20.0	0.1	2.00
					Total	125	Score: 57.58		
					Rating: Very Good				

Appendix 2



Tilehurst Road – BREEAM Domestic Refurbishment Pre-Assessment

Section	Credit Name	Credit Score	Out of	Current Assessment Assumptions and Credit Specification
MAN 1	HOME USER GUIDE	3	3	A simple guide that covers information relevant to the 'non-technical' occupant on the operation and environmental performance of the dwelling as well as information on the Surrounding Area will be supplied. Full content requirement of the Home User Guide can be found here.
MAN 2	RESPONSIBLE CONSTRUCTION PRACTICES	0	2	The Considerate Constructors Scheme will not be required here due to the small size of the scheme.
MAN 3	CONSTRUCTION SITE IMPACTS	1	1	The project is a small scale project so 2 items from Checklist A-4 are to be complied with. These will be: • Site Water and CO2 consumption data is to be recorded, including targets for use. • Environmental materials policies (Air & Water) must be provided. In addition, Chain of Custody Certificates for all timber used on site are to be provided.
MAN 4	SECURITY	1	2	The existing doors and windows will be replaced as part of the refurbishment and will either PAS-24 or compliance with Part Q of the Building Regulations. Formal accreditation under the Secure by Design Scheme is impractical on a development of this size therefore the second credit has not been awarded.

MAN 5	PROTECTION OF ECOLOGICAL FEATURES	1	1	All ecological features will be appropriately protected during the works.
MAN 6	PROJECT MANAGEMENT	2	2	The Design team is to ensure that all members of the project team will be involved in project decision making and individual/shared roles and responsibilities will be assigned across the following key design and refurbishment stages: • Planning and Building Control notification; • Design; • Refurbishment; • Commissioning and handover; • Occupation. In addition, the design team is to hold a handover meeting and undertake at least two of the following three items to evaluate project success: • A site inspection within three months of occupancy; • Post-occupancy interviews with building occupants within three months of occupation; • A commitment to providing longer term aftercare, e.g a helpline or other system to support building users for at least the first 12 months of occupation. An Innovation credit has also been awarded for employing a BREEAM Domestic Assessor at an early stage, prior to the production of a refurbishment specification.
HEA 1	DAYLIGHTING	1	2	No Internal Daylight report has been undertaken however some credits should be available in this section. Formal calculations will be required to confirm this at construction stage.
HEA 2	SOUND INSULATION	2	4	Newly constructed Party Floors and Party Walls will meet the requirements of Approved Document Part E.

HEA 3	VOLATILE ORGANIC COMPOUNDS	0	1	Credit not currently sought due to the complicated nature of achieving this credit and the credit can be sought during the construction stage if extra credits become necessary. If the Client wishes to achieve this credit, then the standards contained in Table 16 must be met.
HEA 4	INCLUSIVE DESIGN	0	2	No credits have been assumed at this stage; however 1 credit can be awarded if the development is compliant with section 1 of Checklist A-8. Checklist A-8 can be found here and is to be filled out by the Architect to confirm the credits.
HEA 5	VENTILATION	2	2	For 1 credit, the ventilation must comply with the following standards: • Background – all habitable rooms – Section 7, Building Regulations Approved Document Part F (2010) • Extract – all wet rooms – Section 5, Building Regulations Approved Document Part F (2010) • Purge – all habitable rooms & wet rooms - Section 7, Building Regulations Approved Document Part F (2010) The above credit is a mandatory credit under BREEAM Domestic Refurbishment. The second credit has been awarded also as the new dwellings will be compliant with the requirements of Section 5, Building Regulations Approved Document Part F (2010).
HEA 6	SAFETY	1	1	Written confirmation that a fire detection and alarm systems will be installed be in accordance with BS 5839-6:2004 and to at least a Grade D Category LD3 standard. Furthermore, a Carbon Monoxide detector and alarm system will be installed in accordance with and positioned in accordance to BS EN 50291-1:2001 and BS EN 50292:2002 and should carry a British or European approval mark. The above credit is a mandatory credit under BREEAM Domestic Refurbishment.

ENE 1	IMPROVEMENT IN ENERGY EFFICIENCY RATING	1	6	The refurbishment may not show too high an improvement in the Energy Efficiency Rating based on an EPC rating of the existing and proposed development. This is due to the implementation of electric heating and the current discrepancy between gas & electric fuels between SAP and carbon performance and EPC bandings. Therefore a conservative estimate of 1 credit has been taken here. BREEAM Domestic Refurbishment SAP Calculations will confirm this score at Pre-Construction Stage
ENE 2	ENERGY EFFICIENCY RATING POST-REFURBISHMENT	1.5	4	The Energy Efficiency Rating of the dwelling is to be equal to or higher than 60 post-refurbishment. This meets the minimum standards for an 'Very Good' rating, scoring 1.5 credits. BREEAM Domestic Refurbishment SAP Calculations will confirm this score at Pre-Construction Stage
ENE 3	PRIMARY ENERGY DEMAND	5	7	The primary energy demand post-refurbishment is likely to be under 200 kWh/m²/year across the flats for a score of 7 credits. BREEAM Domestic Refurbishment SAP Calculations will confirm this score at Pre-Construction Stage
ENE 4	RENEWABLE TECHNOLOGIES	0	2	No renewable technologies are being installed on this development therefore no credits can be awarded in this section.
ENE 5	ENERGY LABELLED WHITE GOODS	1	2	An EU Energy Efficiency Labelling Scheme Information Leaflet is provided to the dwelling, achieving one credit. White Goods are currently assumed as not being supplied. If White Goods are to be provided to the dwelling they are required to achieve the following to achieve two credits: • Fridges and freezers or fridges/freezers with a A+ rating or better • Washing machines have an A++ rating or better or Washer-dryers and tumble dryers have an A rating • Dishwashers have an A+ rating or better under

ENE 6	DRYING SPACE	1	1	A Tidy Drier of at least 6m in line length is to be installed in the bathroom of each Flat. A minimum extract high rate of 13l/s must be achieved and be controlled according to the requirements of Approved Document - Part F.
ENE 7	LIGHTING	2	2	Lighting for the scheme is to be specified to meet the following requirements: <u>External Lighting</u> Space Lighting – All to be equipped with fluorescent fittings. Lobby, entrance and steps or pathway lighting to be controlled by a time clock or daylight sensor. Hallway, landing, stairwell, internal corridor and garage lighting to be controlled with push button timers/PIR sensors. Communal room lighting to be controlled by manual switches or occupant sensors. Security Lighting – To have a maximum wattage of 150 W and movement control devices (PIR) and daylight-cut off sensors. Internal Lighting is also to be supplied to a maximum average wattage across the total floor area of 9 watts/m² is to be installed in order to achieve the second credit.
ENE 8	ENERGY DISPLAY DEVICE	2	2	An Energy Display Device is to be installed to achieve 2 credits. The device must be fixed to the mains supply and be capable of displaying the following information for electricity and gas consumption: • Current mains energy consumption (kilowatts and kilowatt hours) • Current emissions (g/kg CO₂) • Current tariff • Current cost (in pounds and pence) • Projected cost (£ per month and £ per year) In addition, an Innovation credit is available if the device is also capable of recording consumption data in addition to all criteria above.

ENE 9	CYCLE STORAGE	1	2	Sufficient cycle storage is to be supplied to the dwelling to achieve 1 credit. This equates to 1 cycle space per dwelling being proposed. Storage is to have a secure lock and a secure fixing and be weatherproof (via a roof). These will be the following: Secure Lock: A permanent mortice deadlock or mortice sash lock that conforms to the BS 3621:2007 can be used where the door is at least 44mm thick and is locked to the doorframe. Secure Fixing: A stand which allows both wheel and frame to be locked and must, as a minimum, be of galvanised steel bar construction (with a minimum thickness of 30mm and have a minimum foundation depth of 300mm with a welded anchor T-bar set in concrete to prevent it being easily removed from the ground.
ENE 10	HOME OFFICE	1	1	A Home Office “space” is to be provided in Living Room of the dwelling. This is to consist of: • Two double power sockets, • A telephone point, • Window of a width and height of at least 450mm. • Adequate ventilation • 1.8m of wall space is to be provided in order to fit in a desk, a chair, and a filing cabinet or bookcase.

WAT 1	INTERNAL WATER USE	2.5	3	Internal Water Usage will be kept to under 107 litres/person/day per dwelling in order to achieve 2.5 credits. This meets the minimum standard for an 'Excellent' Assessment <table><tr><th>Element</th><th>Specification</th><th>Unit of Measurement</th></tr><tr><td colspan="3"></td></tr><tr><td>WC</td><td><i>6/3 dual flush</i></td><td><i>Litres per Flush</i></td></tr><tr><td>Basin Taps</td><td><i>5</i></td><td><i>Litres per Minute</i></td></tr><tr><td>Kitchen Sink Taps</td><td><i>9</i></td><td><i>Litres per Minute</i></td></tr><tr><td>Shower</td><td><i>8</i></td><td><i>Litres per Minute</i></td></tr><tr><td>Bath</td><td><i>155</i></td><td><i>Capacity to Overflow</i></td></tr><tr><td colspan="3"></td></tr><tr><td>Washing Machine</td><td><i>8.17</i></td><td><i>Litres per Kilo (Dry)</i></td></tr><tr><td>Dishwasher</td><td><i>1.25</i></td><td><i>Litres per Place Setting</i></td></tr><tr><td colspan="3"></td></tr><tr><td colspan="2">Total Consumption (Litres / Person / Day)</td><td>104.7</td></tr></table>	Element	Specification	Unit of Measurement				WC	<i>6/3 dual flush</i>	<i>Litres per Flush</i>	Basin Taps	<i>5</i>	<i>Litres per Minute</i>	Kitchen Sink Taps	<i>9</i>	<i>Litres per Minute</i>	Shower	<i>8</i>	<i>Litres per Minute</i>	Bath	<i>155</i>	<i>Capacity to Overflow</i>				Washing Machine	<i>8.17</i>	<i>Litres per Kilo (Dry)</i>	Dishwasher	<i>1.25</i>	<i>Litres per Place Setting</i>				Total Consumption (Litres / Person / Day)		104.7
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WAT 2	EXTERNAL WATER USE	0	1	Impractical to provide a Water Butt to the communal garden space potentially therefore for now this credit has not been sought.																																				
WAT 3	WATER METER	0	1	This credit has currently been excluded due to the lack of compliant dedicated Water Meters available to the domestic market.																																				

MAT 1	ENVIRONMENTAL IMPACT OF MATERIALS	16	25	Based on known details of the existing construction and the amount of retained external elements for the scheme, 16 credits have been preliminarily awarded. This issue covers: • Roof • External Walls • Internal Walls • Upper & Ground Floors • Windows
MAT 2	RESPONSIBLE SOURCING OF MATERIALS	6	15	The following Materials will be responsibly sourced where applicable (i.e. FSC, PEFC, EMS certification) so as to achieve 3 credits: • Brick • Concrete and Concrete blocks • Glass • Metals (Steel, Aluminium etc) • Plasterboard & Plaster • Timber A Sustainable Procurement Plan' will be put in place for materials on this development, therefore the corresponding 3 credits can be awarded.
MAT 3	INSULATION	4	8	4 credits can be awarded where >80% of the insulation in the following areas is responsibly sourced: • External Walls • Ground Floor • Roof • Building Services The second 4 credits can be awarded by, ensuring the Insulation Index for new insulation is >2, where the Green Guide Ratings are determined using the Green Guide tool.

WAS 1	HOUSEHOLD WASTE	2	2	The Local Authority. provides a mixed recycling collection sorting recycling service. Recycling facilities comprising of 1 Bin of at least 30 ltrs total is to be supplied in the Kitchen of the dwelling. In addition, the Local Authority does not currently provide a Food Waste Collection Service for Flats.
WAS 2	REFURBISHMENT SITE WASTE MANAGEMENT	3	3	A full Level 1 Site Waste Management Plan (SWMP) which abides by Compliance Notes 3 will be provided on this development, meeting the following: • Procedures and commitments for minimising non-hazardous construction waste • Procedures for sorting, reusing and recycling construction waste and demolition waste (if generated) into key defined waste groups, according to the waste streams generated by the scope of the works, either onsite or through a licensed external contractor and measuring the amount generated and diverted from landfill. • Licence details for the waste carrier, and permit details for the site the waste is taken to, if waste is removed offsite. • The name or job title of the individual responsible for implementing the above.
POL 1	NO _x EMISSIONS	0	3	Electric Heating is being proposed and despite having zero NO_x implications, the credit methodology here uses outdated figures for the carbon factor with the associated grid electricity as the BREEAM Domestic Refurbishment methodology was last updated in 2014. Therefore, unfortunately, zero credits can be awarded in this section. The Gas Boiler plots will achieve 3 credits here.
POL 2	SURFACE WATER MANAGEMENT	1	3	1 credit can be awarded as there will be no increase in the impermeable area of this development following construction works. Where any new hardstanding areas are permeable, this must include all new pavements and driveways.

POL 3	FLOODING	2	2	A Flood Risk Assessment is required. As per the Government website should confirm the scheme is a Low Flood Risk. 2 credits can be awarded where as a result of the measures to keep water away from the dwelling is defined as achieving avoidance from flooding by Checklist A-11.
INN	INNOVATION	2	10	Innovation credits have been achieved in the following sections: • MAN 06 – Project Management • ENE 08 – Energy Display Device

Document Control Sheet			
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