BREEAM®

BREEAM DOMESTIC REFURBISHMENT - 2014

THE ENVIRONMENTAL RATING FOR REFURBISHED HOMES

PRELIMINARY ASSESSMENT

INCLUDING ASSUMPTIONS AND BASIS FOR DATA

27 Montague St, WC1B 5BH

FOR **The Bedford Estates**

Issue Date:	**22/02/2017**
Version:	**First Issue, for Planning**
BREEAM Registration:	**ongoing**

LICENSED ASSESSOR COMPANY
greenbooklive.com

ABBA ENERGY
UNIT A7 ATLAS BUSINESS CENTRE, OXGATE LANE, LONDON NW2 7HJ

INTRODUCTION

This document was commissioned by Marlene Martins of FT Architects, on behalf of The Bedford Estates and written by Julian Williams of Abba Energy Ltd. There are three units being assessed on this site.

This report reviews the current standing of this scheme, employing verbal and available design information. Sufficient evidence is not yet available to enable an Interim Stage assessment to be undertaken.

Following this report (and where issued by Abba Energy), it will be the project team's responsibility to ensure that the drawings and specifications follow and clearly state the requirements for the relevant BREEAM Domestic Refurbishment Issues. Information should then be submitted to the Assessor for the Final report to be made. Please note that without the evidence the assessor cannot award the credits. Reference should be made to the BREEAM Domestic Refurbishment Technical Guide.

Project name	27 Montague St, WC1B 5BH	**BREEAM BDR Version**	2014
Client	The Bedford Estates	**Target Rating**	Excellent
Assessment Type	Preliminary	**Preliminary Rating Achieved**	Excellent

PRELIMINARY ASSESSMENT

The report table on the following pages includes the basis of data input, sources and assumptions. Each issue is 'weighted' differently, to reflect considered importance, according to the following equivalent percentage scores per credit point: Management – (Man) 1.09%; Health & Wellbeing (Hea) – 1.42%; Energy (Ene) – 1.48%; Water (Wat) – 2.75%; Materials (Mat) – 0.18%; Waste (Was) – 0.60%; Pollution (Pol) – 0.75%; Innovation (Ino) – 1.00%. Where credits have been awarded, it is assumed that the criteria (detailed within the relevant version of the BREEAM Domestic Refurbishment Technical Guide) will be met.

Please note – Architect = FT Architects [FT], Client = The Bedford Estates [BE], BREEAM Consultant = Abba Energy [AE].

References to 'dwelling' mean a unit of accommodation, house or flat.

CATEGORY TARGETS FOR PLANNING

Energy - 60%	57%	**TOTAL BDR TARGET PERCENTAGE REQUIRED**	70.00%
Water - 60%	100%	**INDICATIVE BDR PERCENTAGE SCORE**	72.44%
Materials - 40%	65%	**ESTIMATED BDR RATING**	Excellent

BREEAM UK Domestic Refurbishment 2014 Pre-Assessment Estimator v0.1

BREEAM UK

This assessment and indicative BREEAM rating is not a formal certified BREEAM assessment or rating and must not be communicated as such. The score presented is indicative of a dwelling's potential performance and is based on a simplified pre-formal BREEAM assessment and unverified commitments given at an early stage in the design process.

Building name	27 Montague St (3no flats)
Indicative building score (%)	72.44%
Indicative BREEAM rating	BREEAM Excellent

Management | Health & Wellbeing | Energy | Water | Materials | Waste | Pollution

	Minimum Standards				
	Pass	Good	Very Good	Excellent	Outstanding
Ene 02	✓	✓	✓	✓	✗
Wat 01	✓	✓	✓	✓	✓
Hea 05	✓	✓	✓	✓	✓
Hea 06	✓	✓	✓	✓	✓
Pol 03	✓	✓	✓	✓	✓
Mat 02	✓	✓	✓	✓	✓

INNOVATION — Section Weighting: 10% — Indicative Section Score: 3.00%

Comments

MANAGEMENT — Section Weighting: 12% — Indicative Section Score: 12.00%

Man 01 Home Users Guide

No. of BREEAM credits available	3	Available contribution to overall score	3.27%
No. of BREEAM innovation credits	0	Minimum Standards applicable:	No

Assessment Criteria

Where a Home Users Guide be provided to all dwellings, covering all issues set out in the 'Users Guide Contents list', three credits may be awarded ⇨

Indicative Credits
3

Comments

This Issue will be complied with

Man 02 Responsible Construction Practices

No. of BREEAM credits available	2	Available contribution to overall score:	2.18%
No. of BREEAM innovation credits	1	Minimum Standards	No

Assessment Criteria

Where a compliant considerate construction scheme will be used, credits are awarded depending the score achieved as outlined below: ⇨

Indicative Credits
2

Large Scale - project with more than 5 units

	One Credit	Two Credits
Considerate Constructors Scheme	Score of 25-34 with a score of 5 in each section	Score of 35-39 with a score of 7 in each section
Alternative Compliant Scheme	Compliance	Beyond Compliance

Small Scale - project with 5 units or fewer

	One Credit	Two Credits
Considerate Constructors Scheme	Score of 25-34 with a score of 5 in each section	Score of 35-39 with a score of 7 in each section
Alternative Compliant Scheme	Compliance	Beyond Compliance
Checklist A-3	50% of the optional items	80% of the optional items

Exemplary Credit

Considerate Constructors Scheme	Score of 40 or more with a score of 7 in each section
Alternative Compliant Scheme	Exemplary Level Compliance
Checklist A-3*	All Items (Optional & Mandatory)

* Small Scale Project Only

⇨

Indicative Innovation Credits Achieved
0

Comments

This Issue will be partially complied with

Man 03 Construction Site Impacts

No. of BREEAM credits available	1	Available contribution to overall score	1.09%
No. of BREEAM innovation credits	0	Minimum Standards applicable	No

Assessment Criteria

Where evidence demonstrate that site impacts will be monitored, as detailed below: ⇨

Indicative Credits
1

	One Credit
Large Scale	Where there is evidence to demonstrate that **2 or more** of the sections in **Checklist A-4** are completed
Small Scale	Where there is evidence to demonstrate that **2 or more** of the sections in **Checklist A-5** are completed

Sections of Checklist	
Large Scale - Checklist A-4	Small Scale - Checklist A-5
Monitor, report and set targets for CO_2 production of energy use arising from site activities	Set objectives for reducing CO_2 production from energy use arising from site activities
Monitor, report and set targets for water consumption arising from site activities	Set objectives for reducing water use arising from site activities
A main contractor with an environmental materials policy	Main contractor environmental materials statement
A main contractor that operates an Environmental Management System	80% of site timber is reclaimed, re-used or responsibly sourced
80% of site timber is reclaimed, re-used or responsibly sourced	

Same definition of small and large scale as in Man 02

Comments

This Issue will be complied with

Man 04 Security

No. of BREEAM credits available	**2**	**Available contribution to overall score:**	**2.18%**
No. of BREEAM innovation credits	**0**	**Minimum Standards applicable:**	**No**

Assessment Criteria
Where the following requirements will be met:

Indicative Credits
2

One Credit Secure windows and doors	External doors and accessible windows meet minimum standards and appropriately certified
Two Credits Secured by design	Principles and guidance of Secured by Design Section 2 are complied with
	A suitably qualified security consultant is consulted at the design stage and their recommendations are incorporated into the refurbishment

Comments

This Issue will be followed during Detail Design, using liaison with relevant security experts including the Police

Man 05 Protection and Enhancement of Ecological Features

No. of BREEAM credits available	**1**	**Available contribution to overall score:**	**1.09%**
No. of BREEAM innovation credits	**1**	**Minimum Standards applicable:**	**No**

Assessment Criteria
Where the following requirements will be met:

Indicative Credits
1

One Credit Protecting Ecological Features	Site survey carried out to determine presence of ecological features
	Statutory Nature Conservation Organisation notified of protected species
	Features of ecological value protected during refurbishment works
Exemplary Credit **Ecological enhancement**	A suitably qualified ecologist recommends features to enhance ecology of the site
	adopts all general ecological recommendations
	adopts 30% of additional recommendations

Indicative Innovation Credits Achieved
1

Comments

There are no existing significant ecological features and this Issue will be complied with through liaison with a specialist consultant

Man 06 Project Management

No. of BREEAM credits available	**2**	**Available contribution to overall score**	**2.18%**
No. of BREEAM innovation credits	**2**	**Minimum Standards applicable**	**No**

Assessment Criteria
Where the following requirements will be met:

Indicative Credits
2

One Credit Project Roles and Responsibilities	Where all of the project team are involved in the project decision making
	Small Scale - the project manager assigns individual and shared responsibilities amongst the project team including all trades on site
	Large Scale - the project manager assigns individual and shared responsibilities across the following key design and refurbishment stages: i. Planning and Building control notification ii. Design iii. Refurbishment iv. Commissioning and handover v. Occupation

Small Scale projects: five units or fewer and less than £100k

Large Scale projects: more than five units and more than £100k

One Credit Handover and Aftercare	Handover meeting arranged
	2 or more of the following committed to: - A site inspection within 3 months of occupation - Conduct post occupancy interviews with building occupants or a survey via phone or posted information within 3 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

Indicative Innovation Credits Achieved
0

Exemplary Credits

One Exemplary Credit Early Design Input	Where A BREEAM Accredited Professional has been appointed to oversee key stages within the project. OR Where a BREEAM Domestic Refurbishment Assessor has been appointed at an early stage of the project, prior to the production of a refurbishment specification
One Exemplary Credit Thermographic Surveying and Airtightness Testing	Where Thermographic surveying and Airtightness testing have been carried out at both pre and post refurbishment stages Where an improved air tightness target has been set at design stage and testing demonstrates that this has been achieved post refurbishment

Comments

This Issue will be partially complied with

HEALTH & WELLBEING	Section Weighting: 17%	Indicative Section Score 9.92%

Hea 01 Daylighting

No. of BREEAM credits available	2	Available contribution to overall score	2.83%
No. of BREEAM innovation credits	0	Minimum Standards applicable	No

Assessment Criteria

Where the refurbishment results in a neutral impact on daylighting or where minimum daylighting standards are met, up to two credits may be awarded as follows:

Indicative Credits
1

For Existing Dwellings and Change of Use Projects

First Credit Maintaining Good Daylighting	The refurbishment results in a neutral impact on the dwellings daylighting levels in the kitchen, living room, dining room and study

Where the property is being extended

First Credit Maintaining Good Daylighting	New spaces achieve minimum daylighting levels
	The extension does not significantly reduce daylighting levels in the kitchen, living room, dining room or study of neighbouring properties

For All Properties

Second Credit Minimum Daylighting	The dwelling achieves minimum daylighting levels in the kitchen, living room, dining room and study

Comments

This Issue will partially be complied with. A higher score may be gained during Detail Design

Hea 02 Sound Insulation

No. of BREEAM credits available	4	Available contribution to overall score	5.67%
No. of BREEAM innovation credits	0	Minimum Standards applicable	No

Assessment Criteria

To ensure the provision of acceptable sound insulation standards and so minimise the likelihood of noise complaints.

Indicative Credits
1

Properties where sound testing has been carried out:

Up to Four Credits	Four credits awarded according to the improvement over building regulations. See table in additional information in Technical Manual

Properties where sound testing is not feasible and not required by the appointed Building Control body

Two Credits	Where existing separating walls and floors are designed to meet the requirements of Building Regulations with compliant construction details
Up to Four Credits	Where a Suitably Qualified Acoustician (SQA) provides recommendations for the specification of all existing separating walls and floors
	SQA confirms in their professional opinion that they have the potential to meet or exceed the sound insulation credit requirements
	Where these recommendations are implemented
	See table in additional information in Technical Manual

Historic Buildings

Up to Four Credits	Where the dwelling is a Historic Building and sound testing results demonstrate existing separating walls and floor meet the Historic Building credit requirements
	See table in additional information in Technical Manual
	Where sound testing is not feasible and not required by the appointed Building Control body meeting criteria 2 and 3 using Table 12
	Properties where sound testing has been carried out, credits awarded according to the improvement over building regulations. See table in additional information in Technical Manual
	Where the dwelling is a detached property
	Where the dwelling is a propertywith separating walls or floors only between non habitable rooms OR Testing not required by building control body

Detached Properties

Four Credits	By Default

Properties with separating walls or floors only between non habitable rooms OR Testing not required by building control body

Four Credits	By Default

Comments

As a Historic Building, the properties will be tested before work starts and after completion, to prove that the standards have not been reduced

Hea 03 Volatile Organic Compounds

No. of BREEAM credits available	1	Available contribution to overall score	1.42%
No. of BREEAM innovation credits	0	Minimum Standards applicable	No

Assessment Criteria

Where the refurbishment avoids the use of VOCs with new products meeting the following requirements:

Indicative Credits
1

One Credit Avoiding the use of VOCs	Where all decorative paints and varnishes used in the refurbishment have met the requirement listed in table 5.4 in the Technical Manual
	Where at least five of the eight remaining product categories listed in table 5.4 have met the testing requirements and emission levels for Volatile Organic Compound (VOC) emissions against the relevant standards identified within table 5.4 in the Technical Manual
	Where five or less products are specified within the refurbishment, all must meet the requirements in order to achieve this credit.

Comments

This Issue will be complied with, by specifying Contractor's relevant materials, paints and adhesives

Hea 04 Inclusive Design

No. of BREEAM credits available	2	Available contribution to overall score	2.83%
No. of BREEAM innovation credits	1	Minimum Standards applicable	No

Assessment Criteria

Where an access statement has been carried out using Checklist A-8 of the Technical Manual to optimise the accessibility of the home as follows:

Indicative Credits: 2

	Checklist A-8 of the Technical Manual	
	Section 1	Section 2
One Credit Minimum Accessibility	Completed with Evidence	
Two Credits Advanced Accessibility	Completed with Evidence	Completed with Evidence

Exemplary Performance

One Credit	Where an access expert suitably qualified member of the design team has completed sections 1, 2 and 3 of Checklist A-8, access statement template with evidence provided of the measures implemented in the refurbishment

Indicative Innovation Credits Achieved: 0

Comments

This Issue will be complied with

Hea 05 Ventilation

No. of BREEAM credits available	2	Available contribution to overall score	2.83%
No. of BREEAM innovation credits	0	Minimum Standards applicable	Yes

Assessment Criteria

Where the dwelling meets the following ventilation requirements:

Indicative Credits: 1

One Credit Minimum Ventilation Requirements	A minimum level of background ventilation is provided (with trickle ventilators or other means of ventilation) for all habitable rooms, kitchens, utility rooms and bathrooms compliant with section 7, Building Regulations Approved Document Part F, 2010
	A minimum level of extract ventilation is provided in all wet rooms (e.g. kitchen, utility and bath-rooms), compliant with section 5, Building Regulations Approved Document Part F 2010.
	A minimum level of purge ventilation is provided in all habitable rooms and wet rooms, compliant with section 7, Building Regulations Approved Document Part F, 2010.
	It is an historic building and meets historic building requirements in CN4 of the technical manual
Two Credits Advanced Requirements	Ventilation is provided for the dwelling that meets the requirements of Section 5 of Building Regulations Part F in full
	Where the building is a historic building and meets the requirements for Historic Buildings in compliance note 4 of the technical manual

Comments

This Issue will be partially complied with, using the BREEAM specifications for a Historic Building

Hea 06 Safety

No. of BREEAM credits available	1	Available contribution to overall score	1.42%
No. of BREEAM innovation credits	0	Minimum Standards applicable	Yes

Assessment Criteria

Where a fire and carbon monoxide (CO) detection and alarm system is specified as follows:

Indicative Credits: 1

One Credit Fire and Carbon Monoxide (CO) Detection and Alarm Systems	Where a compliant fire detection and fire alarm system is provided
	Carbon Monoxide detector installed if dwelling is supplied with mains gas or other fossil fuel
	Mains supplied fire detection and alarm system if project involves re-wiring*
	Battery operated fire detection and alarm system if no re-wiring* is to take place

*** see CN9 in Hea 06 for the definition of re-wiring**

Comments

This Issue will be complied with

ENERGY — **Section Weighting: 43%** — **Indicative Section Score 24.47%**

Ene 01 Improvement in Energy Efficiency Rating

No. of BREEAM credits available	6	Available contribution to overall score	8.90%
No. of BREEAM innovation credits	0	Minimum Standards applicable	No

Assessment Criteria

Where the following targets are met for the improvement in Energy Efficiency Rating achieved as a result of refurbishment:

Indicative Credits: 1

Improvement in EER	Credits
≥ 5	0.5
≥ 9	1
≥ 13	1.5
≥ 17	2
≥ 21	2.5
≥ 26	3
≥ 31	3.5
≥ 36	4
≥ 42	4.5
≥ 48	5
≥ 54	5.5
≥ 60	6

Comments

From calculated SAP Results 22-02-2017.

Ene 02 Energy Efficiency Rating Post Refurbishment

No. of BREEAM credits available	4	Available contribution to overall score	5.93%
No. of BREEAM innovation credits	2	Minimum Standards applicable	Yes

Assessment Criteria

Where the following Energy Efficiency Rating benchmarks will be met as a result of refurbishment:

Indicative Credits
3

EER post refurbishment	Credits	Minimum requirements
≥50	0.5	'Pass' level EER of 50
≥55	1	'Good' level EER of 58
≥60	1.5	
≥65	2	'Very Good level' EER of 65
≥70	2.5	'Excellent' level EER of 70
≥75	3	
≥80	3.5	'Outstanding' level EER of 81
≥85	4	

Exemplary	Credits
≥90	1
≥100	2

Indicative Innovation Credits Achieved
0

Comments

From calculated SAP Results 22-02-2017.

Ene 03 Primary energy demand

No. of BREEAM credits available	7	Available contribution to overall score	10.38%
No. of BREEAM innovation credits	0	Minimum Standards applicable	No

Assessment Criteria

Where the following Primary Energy Demand benchmarks will be met as a result of refurbishment:

Indicative Credits
5.5

Primary Energy Demand Post Refurbishment	Credits
≤ 400	0.5
≤ 370	1
≤ 340	1.5
≤ 320	2
≤ 300	2.5
≤ 280	3
≤ 260	3.5
≤ 240	4
≤ 220	4.5
≤ 200	5
≤ 180	5.5
≤ 160	6
≤ 140	6.5
≤ 120	7

Comments

From calculated SAP Results 22-02-2017.

Ene 04 Renewable Technologies

No. of BREEAM credits available	2	Available contribution to overall score	2.97%
No. of BREEAM innovation credits	0	Minimum Standards applicable	No

Assessment Criteria

Where the dwelling will meet the following % contribution from renewables and primary energy demand targets as a result of refurbishment

Indicative Credits
0

Dwelling Type	Primary Energy Demand	Percentage from Renewables	
		1 Credit	2 Credits
Detached	≤ 250 kWh/m^2/year	≥10%	≥20%
Semi-Detached		≥10%	≥20%
Bungalow		≥10%	≥20%
End of Terrace		≥10%	≥20%
Mid Terrace	≤ 220 kWh/m^2/year	≥10%	≥20%
Low Rise Flat		≥10%	≥20%
Mid Rise Flat		≥10%	≥15%
High Rise Flat		≥10%	≥15%

Comments

Potential for compliance with this Issue has been explored and the single viable option is PV (photovoltaic panels), which have been excluded for Conservation reasons

Ene 05 Energy Labelled White Goods

No. of BREEAM credits available	2	Available contribution to overall score	2.97%
No. of BREEAM innovation credits	0	Minimum Standards applicable	No

Assessment Criteria

Where Energy Efficiency White goods are to be provided as follows:

Indicative Credits
2

First Credit

Appliance	Appliance provided	Appliance not to be provided
Fridges, Freezers and Fridge-Freezers	A+ Rating under EU Energy Efficiency Labelling Scheme	EU Energy Efficiency Labelling Scheme Information Leaflet provided to all dwellings

Second Credit

Appliance	Appliance provided	Appliance not to be provided
Washing Machines and Dishwashers	Washing Machine A++ under EU Energy Efficiency Labelling Scheme AND Dishwasher A+ uner EU Energy Efficiency Labelling Scheme	Second credit not achieved
Washer-Dryers and Tumble Dryers	Appliances specified with A Rating under EU Energy Efficiency Labelling Scheme	EU Energy Efficiency Labelling Scheme Information Leaflet provided to all dwellings

Comments

This Issue will be complied with

Ene 06 Drying Space

No. of BREEAM credits available	1	Available contribution to overall score	1.48%
No. of BREEAM innovation credits	0	Minimum Standards applicable	No

Assessment Criteria

Where adequate, secure internal or external space with posts and footings or fixings is provided with the following:

Indicative Credits
1

1 Credit

Number of bedrooms	Drying line required
1-2	4m+
3+	6m+

Comments

This Issue will be complied with

Ene 07 Lighting

No. of BREEAM credits available	2	Available contribution to overall score	2.97%
No. of BREEAM innovation credits	0	Minimum Standards applicable	No

Assessment Criteria

Where energy efficient internal and external lighting is provided as follows:

Indicative Credits
2

External Lighting - 1

Energy Efficient Space Lighting of more than 45 lumens per circuit watt and Energy Efficient Security Lighting OR

Where Energy Efficient Space Lighting is provided ONLY

Internal Lighting - 1

Maximum average wattage across the total floor area of the dwelling of 9 watts/m2

Comments

This Issue will be complied with

Ene 08 Display Energy Devices

No. of BREEAM credits available	2	Available contribution to overall score	2.97%
No. of BREEAM innovation credits	1	Minimum Standards applicable	No

Assessment Criteria

Where consumption data is displayed to occupants by a compliant energy display device

Indicative Credits
2

Electricity usage data displayed	Primary Heating Fuel	
	Electricity	Other
Electricity usage data displayed	2 credits awarded	1 credit awarded
Primary Heating Fuel usage data displayed	N/A	1 credit awarded
Electricity & Primary Heating Fuel usage displayed	N/A	2 credits awarded

Exemplary Credits

One credit Recording consumption data	Where the first two credits are achieved	Indicative Innovation Credits Achieved
	Where any compliant Energy Display Device is capable of recording consumption data	1

Comments

This Issue will be fully complied with

Ene 09 Cycle Storage

No. of BREEAM credits available	2	Available contribution to overall score	2.97%
No. of BREEAM innovation credits	0	Minimum Standards applicable	No

Assessment Criteria

Where individual or communal compliant cycle storage is provided as follows:

Indicative Credits
0

Dwelling Size	One Credit	Two Credits
Studios/ 1 bedroom	1 per two dwellings	1 per dwelling
2-3 bedrooms	1 per dwelling	2 per dwelling
4 bedrooms	2 per dwelling	4 per dwelling

Comments

Credits not applied for at this time due to restrictions of space and compliant access

Ene 10 Home Office

No. of BREEAM credits available	1	Available contribution to overall score	1.48%
No. of BREEAM innovation credits	0	Minimum Standards applicable	No

Assessment Criteria

Where sufficient space and services will be provided to allow occupants to set up a home office in a suitable room with adequate ventilation

Indicative Credits
0

Comments

There is insufficient space to comply with this Issue

WATER	Section Weighting: 11%	Indicative Section Score 11.00%

Wat 01 Internal Water Use

No. of BREEAM credits available	**3**	**Available contribution to overall score**	**6.60%**
No. of BREEAM innovation credits	**1**	**Minimum Standards applicable**	**Yes**

Assessment Criteria

Where the dwellings water consumption meets the following consumption benchmarks, or where terminal fittings meet the following water consumption standards:

Indicative Credits
3

Calculated Water Consumption (litres/person/day)	Equivalent terminal fitting standards	Minimum Standard	Credits
>150	Typical baseline performance	N/A	0
from 140 to ≤ 150	All showers specified to 'Good' **OR** All taps and WC's to 'Good' **OR** Kitchen fittings specified to 'Excellent'	N/A	0.5
from 129 to < 140	All showers specified to 'Excellent' **OR** All showers and bathroom taps to 'Good'	BREEAM Very Good	1
from 118 to < 129	All bathroom and WC room fittings specified to 'Good' **OR** All bathroom fittings specified to 'Excellent'	N/A	1.5
from 107 to < 118	All Bathroom and WC room fittings specified to 'Excellent' **OR** All Bathroom fittings Specified to 'Excellent' and WC room fitting specified to 'Good' **OR** All Bathroom fittings, kitchen and utility sittings specified to 'Good'	BREEAM Excellent	2
from 96 to < 107	All kitchen, bathroom, utility room and WC room fittings specified to 'Good' **OR** All bathrooms, kitchens and utility rooms specified to 'Excellent'	N/A	2.5
< 96	All bathroom fittings specified to 'Excellent' and WC room, kitchen and utility room fittings specified to 'Good'	BREEAM Outstanding	3

NOTE: 'Good' fittings are equivalent to good practice fittings with "Excellent" fittings equivalent to best practice fittings (see the technical manual for full details.

Exemplary Credit	If the water consumption is less than 80l/person/day

Indicative Innovation Credits Achieved
0

Comments

This Issue will be complied with

Wat 02 External Water Use

No. of BREEAM credits available	**1**	**Available contribution to overall score**	**2.20%**
No. of BREEAM innovation credits	**0**	**Minimum Standards applicable**	**No**

Assessment Criteria

Where the following requirements will be met:

Indicative Credits
1

Requirements:

One Credit	Where a compliant rainwater collection system for external/internal irrigation use has been provided to dwellings. **OR** Where dwellings have no individual or communal garden space.

Comments

This Issue will be complied with by Flat 1, using external collection and re-use, whilst Flats 2 and 3 will comply by default since they have no external space

Wat 03 Water Meter

No. of BREEAM credits available	**1**	**Available contribution to overall score**	**2.20%**
No. of BREEAM innovation credits	**0**	**Minimum Standards applicable**	**No**

Assessment Criteria

Where an appropriate water meter for measuring usage of mains potable water meter has been provided to dwelling(s), one credit may be awarded

Indicative Credits
1

Comments

This Issue will be complied with by all units

MATERIALS	Section Weighting: 8%	Indicative Section Score 5.17%

Mat 01 Environmental Impact of Materials

No. of BREEAM credits available	25	Available contribution to overall score	4.16%
No. of BREEAM innovation credits	0	Minimum Standards applicable	No

Assessment Criteria

Indicative Credits
12

Up to 25 credits can be awarded, with credits calculated using the Mat 01 calculator tool. The table below shows the maximum number of credits available for each element:

Elements	Green Guide Rating credits available	Thermal performance credits available*
Roof	5	3
External walls	5	3.8
Internal walls (including separating walls)	5	-
Upper and Ground Floor	5	1.2
Windows	5	2

The full 25 credits represents all of the elements containing refurbished or existing materials that meet the Green Guide Rating of A+(6)

GG Rating	Points for existing / refurbished elements	Points for new elements
A+ (6)	5	
A+ (5)	4.6	
A+ (4)	4.2	
A+ (3)	3.8	
A+ (2)	3.4	
A+	3	3
A	2	2
B	1	1
C	0.5	0.5
D	0.25	0.25
E	0	0

Where the full 25 credits cannot be achieved the score can be 'topped up' with thermal performance credits. The full number of thermal performance credits for each element can be achieved when achieving the minimum U-values shown below.

Elements	Minimum U-Value
Roof	0.11
External walls	0.15
Internal walls (including separating walls)	-
Upper and Ground Floor	0.15
Windows	1.4

Comments

Credits have been estimated at this stage - to be confirmed during detailed design

Mat 02 Responsible Sourcing of Materials

No. of BREEAM credits available	15	Available contribution to overall score	2.50%
No. of BREEAM innovation credits	0	Minimum Standards applicable	Yes

Assessment Criteria

Indicative Credits
15

Where new materials are responsibly sourced, up to 12 credits may be awarded where 80% of new materials for an element are responsibly sourced. The credits achieved are dependent on % of point achieved which is based upon the responsible sourcing tier level of each material sourced as detailed below:

Sustainable Procument Plan (3 BREEAM credits)
The principal contractor sources materials for the project in accordance with a documented sustainable procurement plan
OR Where the principal contractor is a Small Company (up to 3 BREEAM credits)
Checklist A-9 is filled in with supporting evidence

Will all new timber used in the project be sourced in accordance with the UK Government's Timber Procurement
Yes

Table 1

BREEAM credits	% of available points achieved
12	≥54%
10	≥45%
8	≥36%
6	≥ 27%
4	≥ 18%
2	≥ 9%

Comments

Credits have been estimated at this stage - to be confirmed during detailed design

Mat 03 Insulation

No. of BREEAM credits available	8	Available contribution to overall score	1.33%
No. of BREEAM innovation credits	0	Minimum Standards applicable	No

Assessment Criteria

Indicative Credits
4

Where any new insulation specified for use within external walls, ground floor, roof and buildings services meet the following requirements:

Requirements	
4 Credits	Where the Insulation Index for new insulation used in the buildings is ≥2
	Where Green Guide ratings are determined using the Green Guide to specification tool

Requirements	
4 Credits	Where ≥ 80% of the new thermal insulation used in the building elements is responsibly sourced.

Comments

This Issue will be partially complied with

WASTE	Section Weighting: 3%	Indicative Section Score 2.40%

Was 01 Household Waste

No. of BREEAM credits available	**2**	**Available contribution to overall score**	**1.20%**
No. of BREEAM innovation credits	**0**	**Minimum Standards applicable**	**No**

Assessment Criteria

Where compliant recycling and composting facilities are provided, up to two credits may be awarded as follows

Indicative Credits
1

First Credit - Recycling Facilities

Scenario	Internal recycling storage requirements
Compliant collection scheme in place	3 internal recycling containers provided where recycling is not sorted post collection
	1 internal recycling container provided where recycling is sorted post collection
	Minimum 30 litre total capacity, no single container less than 7 litre capacity
	Dedicated position in accordance with compliance note 1
No compliant collection scheme in place No adequate external storage	3 internal recycling containers provided
	Minimum 60 litre total capacity
	Dedicated position in accordance with compliance note 1
No compliant collection scheme in place Adequate external storage provided	3 internal recycling containers provided
	Minimum 30 litre total capacity, no single container smaller than 7 litre
	Dedicated position in accordance with compliance note 1

Second credit - Composting facilities

With external space	Without external space
Where a composting service or facility is provided for green/garden waste	Where a composting service or facility is provided for kitchen waste
Where a composting service or facility is provided for kitchen waste	Where an interior container is provided for kitchen composting waste of at least 7 litres
Where an interior container is provided for kitchen composting waste of at least 7 litres	

Comments

This Issue will partially be complied with. At detail design stage it may be possible to provide garden composting for Flat 1

Was 02 Refurbishment Site Waste Management

No. of BREEAM credits available	**3**	**Available contribution to overall score**	**1.80%**
No. of BREEAM innovation credits	**1**	**Minimum Standards applicable**	**No**

Assessment Criteria

Up to three credits are available depending on the site waste management plan to be implemented as follows

Indicative Credits
3

Projects up to £100k

Three Credits	Where waste generated through the refurbishment process is managed in accordance with Checklist A-9
Exemplary Credit	Where a compliant Level 1; Site Waste Management Plan (SWMP) is in place

Indicative Innovation Credits Achieved
1

Projects up to £300k

Three Credits	Where a compliant Level 1; Site Waste Management Plan (SWMP) is in place
Exemplary Credit	Where a compliant Level 2; Site Waste Management Plan (SWMP) is in place
	Non-hazardous construction waste generated by the dwellings refurbishment meets or exceeds the resource efficiency benchmark
	The percentage of non-hazardous construction waste and demolition waste generated by the project has been diverted from landfill and meets or exceeds the refurbishment & demolition waste diversion benchmarks

Projects over £300k

First Credit Management Plan	Where a compliant Level 2; Site Waste Management Plan (SWMP) is in place
Second Credit Good Practice Waste Benchmarks	First credit achieved
	Non-hazardous construction waste generated by the dwellings refurbishment meets or exceeds the resource efficiency benchmark
	Amount of waste generated against £100,000 of project value is recorded in the 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
Third Credit Best Practice Waste Benchmarks	Where the first two credits have been achieved achieved
	Where Non-hazardous demolition waste generated by the dwellings refurbishment meets or exceeds the refurbishment & demolition waste diversion benchmarks
Exemplary Credit	Where non-hazardous construction waste generated by the dwellings refurbishment meets or exceeds the *exemplary level resource efficiency benchmark*
	Where Non-hazardous demolition waste generated by the dwellings refurbishment meets or exceeds the exemplary level diversion benchmarks

Comments

This Issue will be complied with by ensuring clear liaison between Contractor and Site Waste Sub-Contractor

POLLUTION	Section Weighting: 6%	Indicative Section Score 4.50%

Pol 01 NOx Emissions

No. of BREEAM credits available	3	Available contribution to overall score	2.25%
No. of BREEAM innovation credits	0	Minimum Standards applicable	No

Assessment Criteria

Credits are awarded on the basis of NOx emissions arising from the operation of space heating and hot water systems for each refurbished dwelling as follows:

Indicative Credits
3

	Dry NOx Emissions
One Credit	≤100 mg/kWh (NOx class 4 boiler)
Two Credits	≤70 mg/kWh (NOx class 5 boiler)
Three Credits	≤40 mg/kWh

Comments

This Issue will be complied with by specifying a cleaner-burning boiler

Pol 02 Surface Water Runoff

No. of BREEAM credits available	3	Available contribution to overall score	2.25%
No. of BREEAM innovation credits	1	Minimum Standards applicable	No

Assessment Criteria

Where impacts of the refurbishment on surface water runoff are neutralised or where runoff is reduced as a result of refurbishment, up to three credits can be awarded as follows:

Indicative Credits
1

Requirements

One Credit Neutral Impact on Surface Water	New hard standing areas must be permeable
	If building on to previously permeable area additional run-off must be managed on site
	Calculations should be carried out by an appropriately qualified professional

Requirements

OR Second Credits Reducing Run-Off From Site: Basic	Where the criteria needed for One Credit has been achieved
	Where all run-off from the roof for rainfall depths up to 5 mm, have been managed on site using source control methods
	Include runoff from all existing and new parts of the roof.
	An appropriately qualified professional should be used to design an appropriate drainage strategy for the site

Requirements

OR Three Credits Reducing Run-Off From Site: Advanced	Where run-off as a result of the refurbishment is managed on site using source control
	An appropriately qualified professional should be used to design an appropriate drainage strategy for the site.
	The peak rate of run-off as a result of the refurbishment for the 1 in 100 year event has been reduced by 75% from the existing site.
	The total volume of run-off discharged into the watercourses and sewers as a result of the refurbishment, for a 1 in 100 year event of 6 hour duration has been reduced by 75%.
	An allowance for climate change must be included for all of the above calculations, in accordance with current best practice (PPS25, 2010).

Requirements

Exemplary Credit	Where all run-off from the developed site is managed on site using source control
	The peak rate of run-off as a result of the refurbishment for the 1 in 1 year event is reduced to zero.
	The peak rate of run-off as a result of the refurbishment for the 1 in 100 year event is reduced to zero.
	There is no volume of run-off discharged into the watercourses and sewers as a result of the refurbishment, for a 1 in 100 year event of 6 hour duration.
	An allowance for climate change must be included for all of the above calculations, in accordance with current best practice (PPS25, 2010).

Indicative Innovation Credits Achieved
0

Comments

This Issue will partially be complied with; a higher score may be achieved during detail design

Pol 03 Flooding

No. of BREEAM credits available	2	Available contribution to overall score	1.50%
No. of BREEAM innovation credits	0	Minimum Standards applicable	Yes

Assessment Criteria

Where the dwelling is located in a low flood risk zone, or where in a medium to high flood risk zone and a flood resilience/resistance strategy has been implemented, up to two credits can be awarded as follows:

Indicative Credits
2

Minimum Standards	A minimum of two credits must be achieved for this issue at the Excellent and Outstanding levels

Option 1 - Low Flood Risk

Two Credits	Where a Flood Risk Assessment (FRA) has been carried out and the assessed dwellings are defined as having a low annual probability of flooding.

Option 2 - Medium / High Flood Risk

Two Credits	Where a Flood Risk Assessment (FRA) has been carried out and the assessed dwellings are defined as having a medium or high annual probability of flooding.
	Two credits are awarded where as a result of the dwellings floor level or measures to keep water away the dwelling is defined as achieving avoidance from flooding by following Checklist A-10; Decision Strategy Flow Chart.
	Where avoidance is not possible, two credits are achieved where a full flood resilience/resistance strategy is implemented for the dwellings in accordance with recommendations made by a Suitably Qualified Building Professional

Comments

The site is understood to be in a Low Flood Risk Zone, but this will be confirmed in accordance with NPPF Guidelines during detail design, by carrying out a full FRA

BREEAM UK Domestic Refurbishment 2014 Pre-Assessment Estimator v0.1: Results Summary

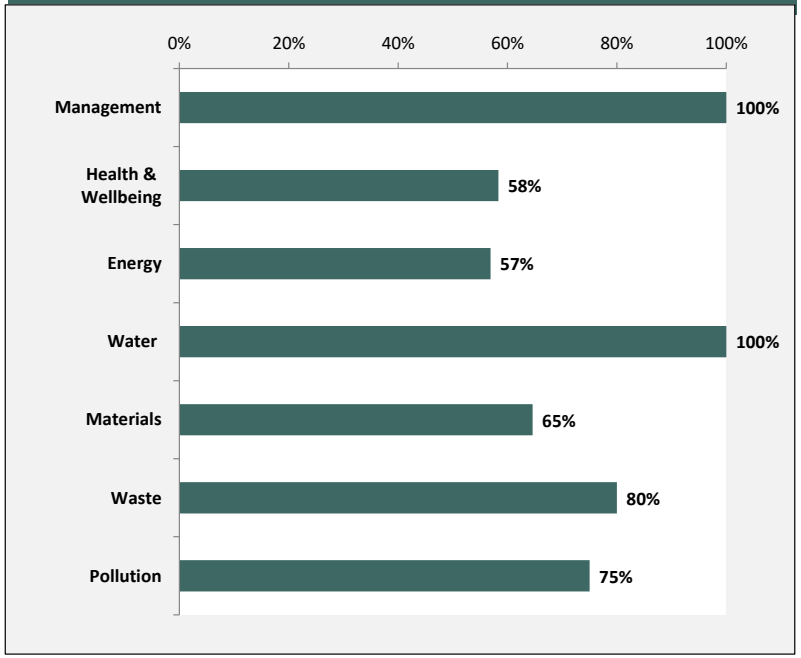
Building name	27 Montague St (3no flats)
Indicative Building Score	72.44%
Indicative Building Rating	BREEAM Excellent

This assessment and indicative BREEAM rating is not a formal certified BREEAM assessment or rating and must not be communicated as such. The score presented is indicative of a dwelling's potential performance and is based on a simplified pre-formal BREEAM assessment and unverified commitments given at an early stage in the design process.

	Issue	Credits Available	Indicative Credits Achieved	Weighting	Section Score
Management	Man 01	3	3	12%	12.00%
	Man 02	2	2		
	Man 03	1	1		
	Man 04	2	2		
	Man 05	1	1		
	Man 06	2	2		
Health and Wellbeing	Hea 01	2	1	17%	9.92%
	Hea 02	4	1		
	Hea 03	1	1		
	Hea 04	2	2		
	Hea 05	2	1		
	Hea 06	1	1		
Energy	Ene 01	6	1	43%	24.47%
	Ene 02	4	3		
	Ene 03	7	5.5		
	Ene 04	2	0		
	Ene 05	2	2		
	Ene 06	1	1		
	Ene 07	2	2		
	Ene 08	2	2		
	Ene 09	2	0		
	Ene 10	1	0		
Water	Wat 01	3	3	11%	11.00%
	Wat 02	1	1		
	Wat 03	1	1		
Materials	Mat 01	25	12	8%	5.17%
	Mat 02	15	15		
	Mat 03	8	4		
Waste	Was 01	2	1	3%	2.40%
	Was 02	3	3		
Pollution	Pol 01	3	3	6%	4.50%
	Pol 02	3	1		
	Pol 02	2	2		
Innovation		10	3	N/A	3.00%

	Minimum Standards				
	Pass	Good	Very Good	Excellent	Outstanding
Ene 02	✓	✓	✓	✓	✗
Wat 01	✓	✓	✓	✓	✓
Hea 05	✓	✓	✓	✓	✓
Hea 06	✓	✓	✓	✓	✓
Pol 03	✓	✓	✓	✓	✓
Mat 02	✓	✓	✓	✓	✓

Percentage of Category Score Attained



CONCLUSION

BREEAM Domestic Refurbishment (BDR) assesses the environmental quality of a development by considering the broad concerns of climate change, use of resources, pollution, and impacts on bio-diversity. These concerns are balanced against their need for a high quality internal environment. The BREEAM Rating benchmarks used for Certification are <30% (Unclassified), >/=30% (Pass), >/=45% (Good), >/=55% (Very Good), >/=70% (Excellent) and >/=85% (Outstanding). However, these can only be applied after all categories have been sub-totalled into their overall 'Issue' categories. At such time scores are 'weighted' and the final marks then calculated.

The Preliminary rating for this scheme is estimated as achieving the Target Rating if the issues awarded with credits are implemented in full.

To allow for a margin of safety, it is recommended that a score that is at least 5.0% in excess of the required target percentage is specified. This is because failure on any major issue may force unexpected or unwanted alternative strategies to achieve the desired rating and potentially additional expense.

The Project Team should check and confirm the data and assumptions contained within this report at the earliest opportunity. This will aid the timely and accurate submission of data for the Interim Code Assessment.

The project team should ensure that the drawings and specifications follow AND clearly state ALL the relevant Code issues for each of the applicable credits. Please note that for the Interim Stage Assessment, without the evidence, the assessor cannot award the credits for such certificated assessment. Once the relevant Code issues are integrated with the design, ALL compliant data (auditable proof, as described in the Code Technical Guide) should then be submitted to the Assessor for the Interim Stage report to be written. Once this report is finished it can be submitted to the BRE for QA and Interim Certification, as necessary. This is then followed by the Post Construction Stage report, which is compiled following site visit(s), receipt of "as built" evidence and ultimately, Post Construction Certification.

REFERENCES

This report was based on the following drawings along with written, verbal and web-based evidence:

REF	Status/Revision	Dated
Site Location by FT Architects 319-00-00	P1	20/12/2016
Existing Plans by FT Architects 319-00-01 to 04 and 10	P1	20/12/2016
Proposed Plans by FT Architects 319-01-01 to 04	P1	20/12/2016

<end>