| | | | | |
|---|---|---|---|---|
| **Hea 3**<br><br>Private Space | 1 credit is awarded where outdoor space (private or semi-private) has been provided that is:<br>• Of at least a minimum size that allows all occupants to sit outside:<br>  ○ Private space requirement is at least 1,5 $m^2$ per bedroom.<br>  ○ Shared space requirement is at least 1.0 $m^2$ per bedroom.<br>• Allows easy access by all occupants, including wheelchair users<br>• Access for wheelchair users should conform to "BS8300 Design of buildings and their approaches to meet the needs of disabled people – Code of practice".<br>• Accessible only to occupants of designated dwellings<br><br>The space must be designed in a way that makes it clear that the space is only to be used by occupants of designated dwelling(s). This could be achieved by using the buildings themselves, fencing, planting or other barrier to seal off the space. | 1 | 1 | MAA |
| **Hea 4**<br><br>Lifetime Homes | For a Level 6 assessment achievement of the Lifetimes Homes criteria is a mandatory requirement.<br><br>4 credits are awarded where all the principles of Lifetime Homes, applicable to the dwelling being assessed, have been complied with. | 4 | 4 | MAA |
| **Man 1**<br><br>Home User Guide | 2 credits are awarded for the provision, in each home, of a simple guide that covers information relevant to the non-technical tenant/owner on the operation and environmental performance of their home, compiled using Checklist Man 1 Part 1 together with information that the guide is available in alternative accessible formats. | 2 | 2 | Contractor (BH to include in prelims) |
| | 1 further credit is awarded where the guide also covers information relating to the site and its surroundings, compiled using Checklist Man 1 Part 2. | 1 | 1 | Contractor (BH to include in prelims) |
| **Man 2**<br><br>Considerate Constructors Scheme | 1 credit is awarded where there is a commitment to meet Best Practice under a nationally or locally recognised certification scheme such as the Considerate Constructors Scheme. In the Considerate Constructors Scheme this equates to a score of at least 5 in every section and an overall score of between 25 and 34.<br><br>2 credits are awarded where there is a commitment to go significantly beyond Best Practice under a nationally or locally recognised certification scheme such as the Considerate Constructors Scheme. In the Considerate Constructors Scheme this equates to an overall score of at least 35, with a minimum score of 7 in each section. | 2 | 2 | Contractor (BH to include in prelims) |



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| | | | | |
|---|---|---|---|---|
| **Man 3**<br><br>Construction Site Impacts | 1 credit is awarded where procedures that cover 2 or more of the following items are set up in line with the requirements of the technical guide of the Code for Sustainable Homes:<br>• Monitor, report and set targets for $CO_2$ production or energy use arising from site activities.<br>• Monitor and report $CO_2$ or energy use arising from commercial transport to and from site.<br>• Monitor, report and set targets for water consumption from site activities.<br>• Adopt best practice policies in respect of air (dust) pollution arising from site activities.<br>• Adopt best practice policies in respect of water (ground and surface) pollution occurring on the site.<br>• 80% of site timber is reclaimed, reused or responsibly sourced.<br><br>2 credits are awarded where procedures that covers 4 or more of the items listed above are set up in line with the requirements of the technical guide of the Code for Sustainable Homes. | 2 | 2 | Contractor (BH to include in prelims) |
| **Man 4**<br><br>Security | 2 credits are achieved by complying with "Section 2 – Physical Security" from 'Secured by Design New Homes'<br><br>*AND*<br><br>Where an Architectural Liaison Officer (ALO) or Crime Prevention Design Advisor (CPDA) from the local police force is consulted at the design stage and their recommendations are incorporated into the design of the dwelling (an actual *Secured by Design* Certificate is not required). | 2 | 2 | MAA |
| **Eco 1**<br><br>Ecological Value of Site | 1 credit is awarded where the *development site* is confirmed as land of inherently *low ecological value*.<br><br>*EITHER*<br>• By meeting the criteria for *low ecological value* (using *Checklist Eco 1 – Land of Low Ecological Value* under *Checklists and Tables* below)<br>*OR*<br>• By being confirmed by a *Suitably Qualified Ecologist*.<br>*OR*<br>• Where an independent ecological report of the site, prepared by a *Suitably Qualified Ecologist*, states that the *construction zone* is of low or insignificant ecological value<br>*AND*<br>• Any land of ecological value outside the *construction zone* but within the *development site* will remain undisturbed by the construction works. | 1 | 0 | Ecologist (BH to appoint) |
| **Eco 2**<br><br>Ecological Enhancement | 1 credit is awarded where a Suitably Qualified Ecologist has been appointed to recommend appropriate ecological features that will positively enhance the ecology of the site.<br><br>*AND*<br><br>Where the developer adopts all key recommendations and 30% of additional recommendations. | 1 | 1 | Ecologist (BH to appoint) |

| | | | | |
|---|---|---|---|---|
| **Eco 3**<br><br>Protection of Ecological Features. | 1 credit is awarded where all existing features of ecological value on the development site potentially affected by the works, are maintained and adequately protected during site clearance, preparation and construction works.<br><br>The credit can be awarded by default where the site has been classified as having *low ecological value* in accordance with *Section 1 of Checklist Eco 1, Ecological features of the site* and no features of ecological value have been identified. Additionally if a *Suitably Qualified Ecologist* has confirmed a feature can be removed due to insignificant ecological value or poor health/condition (e.g. diseased trees which require felling, either for health and safety and/or conservation reasons), the credit can be achieved provided all other features are adequately protected in accordance with the ecologist's recommendations. | 1 | 1 | Ecologist (BH to appoint and included in Prelims) |
| **Eco 4**<br><br>Change of Ecological Value of Site | Credits are awarded where the resulting change in ecological value is as follows:<br><br>**Credits** / **Requirement**<br>1 – For a change of ecological value of between –9 and –3 natural species<br>2 – For a change of ecological value of between -3 and 3 natural species<br>3 – For a change of ecological value of between +3 and +9 natural species<br>4 – For a change of ecological value of greater than +9 natural species | 4 | 2 | Ecologist (BH to appoint) |
| **Eco 5**<br><br>Building Footprint | • For houses: 1 credit is awarded where the Net Internal Floor Area: Net Internal Ground Floor Area ratio is greater than 2.5:1<br>*OR*<br>• For blocks of flats: Where the Net Internal Floor Area: Net Internal Ground Floor Area is greater than 3:1<br>*OR*<br>• For a combination of houses and flats, a ratio of total net Internal Floor area : total ground floor area greater than the area weighted average of the two ratios above<br>• For houses: 2 credits are awarded where the Net Internal Floor Area: Net Internal Ground Floor Area ratio is greater than 3:1<br>*OR*<br>• For block of flats: Where the Net Internal Floor Area: Net Internal Ground Floor Area is greater than 4:1<br>*OR*<br>• For a combination of houses and flats, a ratio of total Net Internal Floor Area : Total Ground Floor Area greater than the area weighted average of the two ratios above | 2 | 1 (houses)<br>2 (apartments) | MAA |





# 6.0 Appendix B: Supporting Information

This appendix is provided as supporting information.

## 6.1 How the Score is Calculated

Each category is subject to a weighting factor to reflect their relative importance. The credits with the highest weighted value are in the Water, Ecology and Energy categories. The credits with the lowest weighted value are in the Materials category. Table 6.1 identifies the value of the credits in each category.

The weighted final points score determines the CfSH level achieved, provided all relevant mandatory criteria are met.

Under the CfSH each individual dwelling requires its own assessment and rating. A single rating cannot be awarded across a complete residential development where differences in the specification of individual dwellings exist.

## 6.2 Mandatory Requirements

Table 6.2 identifies the mandatory requirements pertinent to each CfSH rating level.

In addition to those items identified in the table, for all levels developments must achieve minimum requirements in:

- Mat 1: Environmental Impact of Materials;
- Sur 1: Management of Surface Water Run-off; and
- Was 1: Storage of Waste

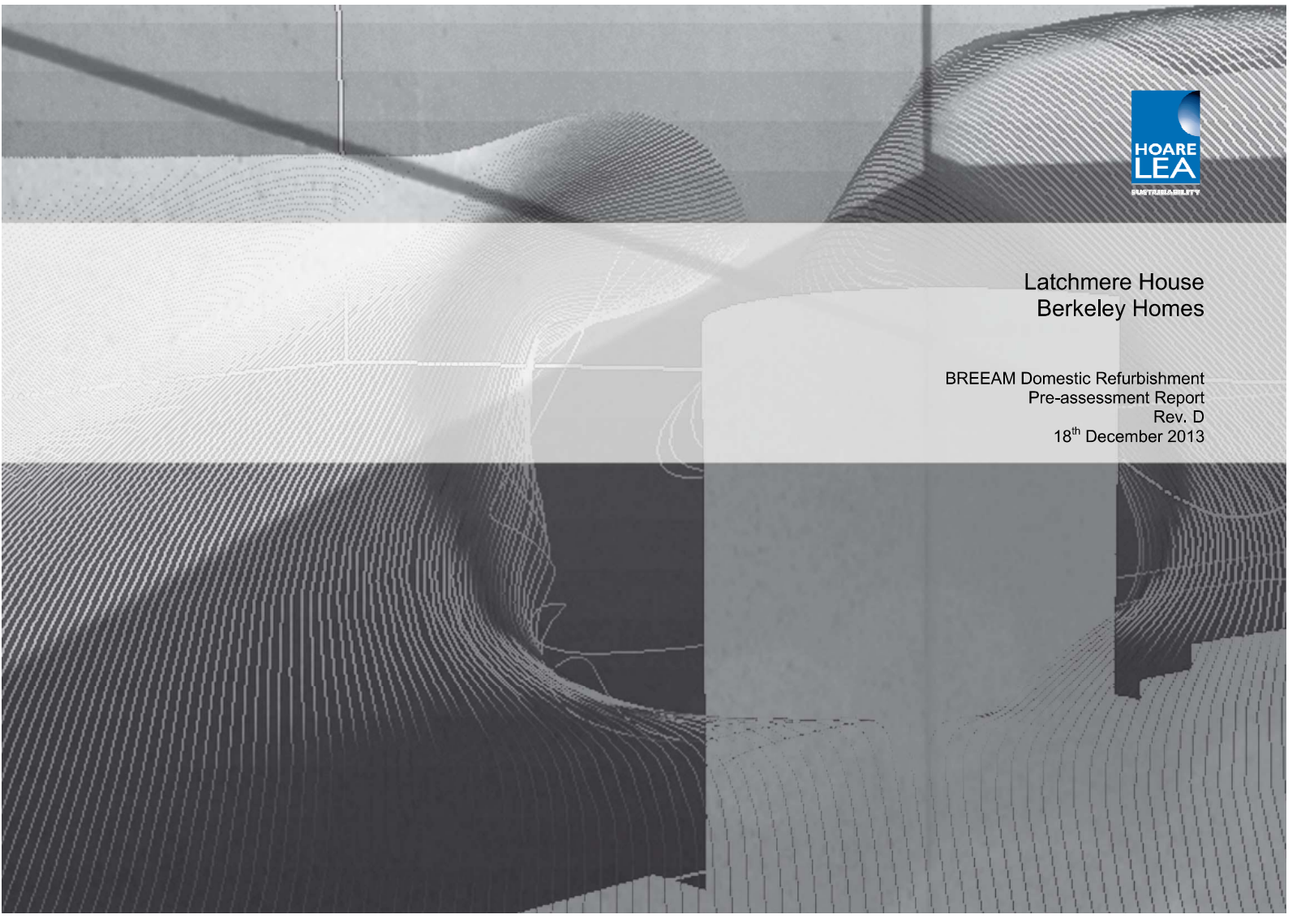
| Category | Value of Each Credit |
|---|---|
| Energy and $CO_2$ Emissions | 1.17 |
| Water | 1.50 |
| Materials | 0.30 |
| Surface Water Run-off | 0.55 |
| Waste | 0.80 |
| Pollution | 0.70 |
| Health & Wellbeing | 1.17 |
| Management | 1.11 |
| Ecology | 1.33 |

*Table 6.1: Approximate Value of Each Credit.*

| Level | Ene 1: $CO_2$ | Ene 2: FEE | Wat 1: Water | Hea 4: Lifetime Homes | Total Points |
|---|---|---|---|---|---|
| 1 | - | - | < 120l/p/d | - | 36 |
| 2 | - | - | < 120l/p/d | - | 48 |
| 3 | - | - | < 105l/p/d | - | 57 |
| 4 | - 25% | - | < 105l/p/d | - | 68 |
| 5 | - 100% (regulated) | <39 / <46 | < 80l/p/d | - | 84 |
| 6 | - 100% (all) | <39 / <46 | < 80l/p/d | Y | 90 |

*Table 6.2: Summary of Mandatory Requirements.*

# 9.0 Appendix C: BREEAM Domestic Refurbishment Pre-assessment



# Latchmere House
# Berkeley Homes

BREEAM Domestic Refurbishment
Pre-assessment Report
Rev. D
18th December 2013



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## Audit Sheet

| Rev. | Description | Prepared and checked by | Reviewed by | Date |
|---|---|---|---|---|
| A | First issue for discussion at workshop 15.08.2013 | L. Wille | - | 15.08.2013 |
| B | Incorporation of comments from Workshop | A. Punter | L. Wille | 16.08.2013 |
| C | Draft planning issue – very minor changes | L. Wille | - | 13.09.2013 |
| D | Planning issue - very minor changes | L. Wille | - | 18.12.2013 |
| | | | | |
| | | | | |
| | | | | |

# Contents







# 1.0 Executive Summary

BREEAM Domestic Refurbishment (BREEAM DR) is an Environmental Assessment Methodology managed by the Building Research Establishment (BRE).

This report contains a BREEAM DR pre-assessment for the refurbished (i.e. not entirely new-build) residential units at Latchmere House based on the July 2012 technical guidance. This assessment sets out a potential route to achieving an 'Excellent' rating based on Hoare Lea's current understanding of the scheme.

The current estimated design stage score for this pre-assessment is **70.28%**, which equates to an 'Excellent' rating provided all the relevant mandatory requirements are carried out.

This includes a **safety margin of approximately 0.28%**, as the score required for a BREEAM 'Excellent' rating is 70%. The margin is included as there is always a potential to lose some credits through scheme design, construction and post-construction stages.

| Description | Score | Rating |
|---|---|---|
| Min. Score Required for 'Excellent' Rating | 70% | Excellent |
| Current Pre-Assessment Score | 70.28% | Excellent |

**This should be reviewed by the team and updated regularly throughout the design process.**

## Items to Note

The following items contained within the pre-assessment are of particular note, and will be carefully considered by the design team as the design progresses:

- Substantial improvement in the dwelling Energy Efficiency Ratings.
- Water consumption in apartments reduced using high efficiency water systems.
- Environmental assessment conducted into the materials that make up the main building elements.
- A dedicated area for waste recycling in each apartment and for communal waste collection for all apartments including food waste (this is in addition to space set aside for general waste storage).
- A commitment to go beyond best practice site management techniques, including a strategic review of how to reduce waste arising from the construction process, and the monitoring of construction site impacts throughout the construction process.

## 2.0 Background to the BREEAM Domestic Refurbishment

BREEAM Domestic Refurbishment (BREEAM-DR) is being used as a benchmarking tool in the design of refurbished dwellings or dwellings being developed from previously non-residential properties (i.e. change of use).

The aim of BREEAM-DR is to review and score the sustainability of buildings and to promote a programme of design improvement. BREEAM-DR is published by the BRE and further information is available at the following web address:

http://www.breeam.org/page.jsp?id=228

Mandatory standards apply to:

- Energy Efficiency Rating Post Refurbishment
- Internal Water Use
- Ventilation
- Safety
- Flooding, and
- Responsible Sourcing of Materials

Failure to meet the mandatory criteria may restrict a development to **fail to achieve any BREEAM rating**, regardless of the overall number of credits achieved.

| Category | Description |
|---|---|
| Management | Homes Users Guide, Responsible Construction Practices, Construction Site Impacts, Security, Protection and Enhancement of Ecological Features, Project Management |
| Health and Wellbeing | Daylighting, Sound Insulation, Volatile Organic Compounds, Inclusive Design, Ventilation, Safety |
| Energy | Improvement in Energy Efficiency Rating, Energy Efficiency Rating Post Refurbishment, Primary Energy Demand, Renewable Technologies, Energy Labelled White Goods, Drying Space, Lighting, Energy Display Devices, Cycle Storage, Home Office |
| Water | Internal water use, External water use. |
| Materials | Environmental Impact of Materials, Responsible Sourcing of Materials, Insulation |
| Pollution | Nitrogen Oxide Emissions, Surface Water Run Off, Insulation |
| Waste | Household Waste, Refurbishment Site Waste Management |

*Table 2.1: BREEAM-DR Criteria Summary*





Credits obtained are subject to a weighting factor to reflect the relative importance of each category. The credits with the highest weighted value are in the Energy and Health and Wellbeing categories.

The credits with the lowest weighted value are in the Materials category.

The weighted final points score determines the BREEAM rating achieved, provided all relevant mandatory criteria are met.

Under BREEAM DR each individual dwelling requires its own assessment and rating. **A single rating cannot be awarded across a complete residential development where differences in the specification of individual dwellings exist.**

For example, if one apartment achieves the daylight criteria stated in HEA 1, but an identical apartment on a different floor does not then this difference in performance will be reflected in SEPARATE RATINGS awarded to the two apartment types. In this case the apartment achieving the criteria would be awarded a higher credit score. It is therefore assumed that all dwellings in the development will comply with the minimum criteria laid out in this report, as a worst-case scenario, thus safeguarding the desired rating for even the lowest-scoring apartments.

Table 2.2 below summarises the mandatory requirements to meet the various BREEAM DR rating levels.

The Latchmere House refurbished apartments are targeting a score of BREEAM Excellent, subject to heritage constraints.

| BREEAM-DR Rating | Minimum Improvement in Energy Efficiency Rating Post Refurbishment | Maximum water consumption (litres per person per day) | Minimum Ventilation Standards Achieved? | Fire and carbon monoxide detectors? | Responsibly Sourced Timber? | Flood risk level | Total points score (greater than or equal to) |
|---|---|---|---|---|---|---|---|
| Pass | >30 | - | Yes | Yes | Yes | - | 30 |
| Good | >45 | - | Yes | Yes | Yes | - | 45 |
| Very Good | >55 | 129-139 | Yes | Yes | Yes | - | 55 |
| **Excellent** | **>70** | **107-117** | **Yes** | **Yes** | **Yes** | **Low** | **70** |
| Outstanding | >85 | <95 | Yes | Yes | Yes | Low | 85 |

*Table 2.2: Minimum Requirements to meet the BREEAM DR Ratings*

## 3.0 Scope of this Pre-Assessment

Hoare Lea Sustainability, who are licenced BREEAM Domestic Refurbishment assessors, have undertaken a pre-assessment. The results of this assessment is summarised in this report.

The rating obtained in this pre-assessment is for guidance only. It is an initial estimation of the score that would result should all the assumptions stated in this document be implemented in line with the requirements set out in the full BREEAM DR technical guidance.

The BREEAM-DR process is as follows:

*Step 1* is this 'Pre-Assessment'

*Step 2* is a site inspection to assess the developments current performance (where relevant)

*Step 3* is the Design Stage (DS) assessment

*Step 4* is the Post Construction Stage (PCS) assessment

The final BREEAM-DR Rating will be awarded after the completion of the Post Construction Stage assessment.

## 4.0 Documentation

Please note that for any subsequent full BREEAM-DR Design Stage Assessment, documented evidence will be required to demonstrate that the measures stated in this document have been implemented.

For some credits it may be difficult or impossible to provide the level of proof required retrospectively, therefore the BREEAM-DR Technical Guidance must be referred to at all design stages.

As the design of the scheme is an on-going process, the residences may vary in layout and orientation, or change for technical or commercial reasons. As a result, the predicted rating may differ from those obtained during the Pre-Assessment.

It is recommended that the BREEAM-DR Score is reviewed prior to any drawings or specifications becoming fixed or issued for tender.

A formal BREEAM-DR assessment will be carried out in accordance with the BREEAM-DR criteria during the design process, as defined in the BREEAM-DR technical guidance.

Target ratings have been calculated for the development using the BREEAM-DR pre-assessment estimator v.0.6, and the Technical Guidance v1.0.2 as published in July 2012.



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## 5.0 Estimated Rating Breakdown

The estimated credits assumed in the score and associated weightings are shown in table 5.1 below:

| Section | Mandatory Elements | Weighting Factor | No. Credits Available | No. Credits Targeted | Percentage Credits Achieved | Weighted Points Score |
|---|---|---|---|---|---|---|
| **Management** | n/a | 12% | 11 | 11 | 100.00% | 12.00% |
| **Health and Wellbeing** | ✔ | 17% | 12 | 6 | 50.00% | 8.50% |
| **Energy** | ✔ | 43% | 29 | 19 | 65.52% | 28.17% |
| **Water** | ✔ | 11% | 5 | 4 | 80.00% | 8.80% |
| **Materials** | ✔ | 8% | 45 | 22 | 48.89% | 3.91% |
| **Waste** | n/a | 3% | 5 | 4 | 80.00% | 2.40% |
| **Pollution** | ✔ | 6% | 8 | 5 | 62.50% | 4.50% |
| **Innovation** | n/a | 10% | 10 | 2 | 20.00% | 2.00% |
| | | | | | **Total:** | **70.28%** |

*Table 5.1: Summary of Pre-Assessment Score*

## 6.0 Detailed Credit Assessment

The design team members as identified in table 6.1 are either solely or jointly responsible for each of the credits as detailed in the following series of tables for each BREEAM category.

At this stage the credits which each team member is responsible for should be reviewed to ensure that the targeted credits can be achieved.

At the design stage and post construction review it will be necessary for the design team members to provide the required evidence that the targeted credits will and have been achieved respectively.

The number of innovation credits available are shown within the credits available column as '+1' or '+2'.

| Role | Design Team Member |
|---|---|
| Client | Berkeley Homes (BH) |
| Architects | MAA |
| M&E Engineer | Hoare Lea (HL) |
| Acoustic Consultant | TBC |
| Sustainability Consultant | Hoare Lea (HL) |
| Structural & Civil Engineer | RSK Land & Development Engineering (RSK) |
| Daylight Consultant | TBC |
| Ecologist | TBC |

*Table 6.1: Responsible Design Team Members*





### 6.1 Management

| Issue ID | Description | Compliance Status | Credits Available | Assessed Score | |
|---|---|---|---|---|---|
| **Man 01** | Home Users Guide | 3 credits are awarded based upon the provision of a home user guide to each dwelling. This user guide must contain the following information:<br>- Information about BREEAM Refurbishment.<br>- A recommendations report.<br>- Energy Efficiency.<br>- Water Use.<br>- Transport facilities.<br>- Materials and Waste.<br>- Emergency Information.<br>- Local Amenities.<br>This home user guide must be available in alterative formats and contain links and references to other information, publications and websites which will encourage and assist in reducing the environmental impact of dwellings. | 3 | **3** | |
| | Responsible team member: **BH** (to include in contractor prelims) | | | | |
| **Man 02** | Responsible Construction Practices | 1 credit is awarded where there is a commitment to **meet Best Practice** under a nationally or locally recognised certification scheme such as the **Considerate Constructors Scheme.**<br>In the Considerate Constructors Scheme this equates to a score of at least 5 in every section and an overall score of between 25 and 34.<br>2 credits are awarded where there is a commitment to **go significantly beyond Best Practice** under a nationally or locally recognised certification scheme such as the **Considerate Constructors Scheme.** In the Considerate Constructors Scheme this equates to an overall score of between 35 and 39, with at least seven points in each section.<br>1 Innovation credit is available where there is a commitment to achieve a CCS score of at least 40 points, with at least seven points in each section. | 2+1 | **2** | |
| | Responsible team member: **BH** (to include in contractor prelims) | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **Man 03** | Construction Site Impacts | 1 credit is awarded where two or more of the following actions are carried out on site during the site works:<br>- Monitor report and set targets for $CO_2$ production from energy use arising from site activities.<br>- Monitor report and set targets for water consumption arising from site activities.<br>- A main contractor with environmental materials policy.<br>- A main contractor that operates an Environmental Management System.<br>- 80% of site timber is reclaimed, reused or responsibly sourced. | 1 | **1** | |
| | Responsible team member: **BH** (to include in contractor prelims) | | | | |
| **Man 04** | Security | 1 credit is awarded where all external doors and accessible windows are specified to the following security standards:<br>- External doors - PAS24:2007 or LPS1175 Issue 7 Security rating 1.<br>- Accessible windows - BS7950:1997 or LPS1175 Issue 7 Security rating 1.<br><br>1 credit is awarded where the dwellings are designed in accordance with the principles and guidance of Secured by Design Section 2- *Physical Security* and a suitably qualified security consultant is consulted with at the design stage and their recommendations are incorporated into the refurbishment specification. | 2 | **2** | |
| | Responsible team member: **MAA** | | | | |
| **Man 05** | Protection and Enhancement of Ecological Features | 1 credit is awarded where a site survey is carried out by a member of the design team and to determine the presence of ecological features.<br><br>Where protected species are identified, the relevant Statutory Nature Conservation Organisation has been notified and the feature adequately protected.<br><br>Where there are existing features on site of ecological value, they are maintained and protected during the refurbishment works. | 1 | **1** | |
| | Responsible team member: **MAA + Ecologist + BH** (to include in contractor prelims) | | | | |





| | | | | | |
|---|---|---|---|---|---|
| **Man 06** | Project Management | 1 credit is available where the project manager assigns individual and shared responsibilities across the following design and refurbishment stages:<br>- Planning and Building Control notification.<br>- Design.<br>- Refurbishment.<br>- Commissioning and handover.<br>- Occupation.<br><br>1 credit is awarded where a handover meeting is arranged and two or more of the following items are committed to:<br>- A site inspection within 3 months of occupation.<br>- Conduct post occupancy interviews with building occupants or a survey via phone or posted information within 3 months of occupation.<br>- 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.<br><br>**Up to 2 innovation credits are available:**<br>1 innovation credit is awarded where a BREEAM Accredited Professional (AP) has been appointed to oversee key stages within the project at an early stage, prior to the production of the refurbishment specification.<br><br>1 innovation credit is awarded where thermographic surveys and airtightness testing have been carried out at both the pre and post refurbishment stages and where an improved air tightness target has been set at design stage and testing demonstrates that this has been achieved post refurbishment. | 2+2 | **2** | |
| | Responsible team member: **BH** | | | | |