

Energy from Waste Facility
Battlefield Enterprise Park, Shrewsbury

SUPPORTING STATEMENT



APPENDIX C: BREEAM ASSESSMENT



Client: Veolia ES Shropshire Ltd.

**Battlefield Energy from Waste Facility,
Vanguard Way, Battlefield Enterprise
Park, Shrewsbury**

BREEAM Bespoke 2008 Pre Assessment
Report



Date: 17th December 2008

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Assessor: Aparna Maladkar

Quality Assurance

This report has been checked in accordance with Scott Wilson's internal Quality Assurance procedures.

Issue	Rev	Prepared by	Checked by	Description	Issued
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1	1	Aparna Maladkar	Ronald Chan	For issue	17/12/2008

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1.0 EXECUTIVE SUMMARY

The Sustainable Construction Team (SCT) was commissioned by Miles Nichol of Veolia ES Shropshire Ltd. to provide BREEAM advice for the new Battlefield Energy from Waste Facility in Shropshire.

At this stage, it is unclear whether the project will be assessed under the standard Industrial version of BREEAM or a bespoke methodology. This BREEAM Pre-assessment has been undertaken based on a set of bespoke BREEAM 2008 criteria compiled by Scott Wilson based on their experience of recent similar projects. As such, when BRE confirm the required methodology, there could be a small variation in the current scoring.

It is understood that the proposed Battlefield EWF development will be designed to achieve a BREEAM 'GOOD' rating (45.0% - 54.0%). The design team has undertaken this assessment to review the development's current BREEAM performance in support of the planning application.

Appendix 2 provides a summary of the BREEAM process.

Figure 1 shows that a BREEAM score of **45.7%** is achieved under the current proposals. This result is subject to the provision of evidence to the assessor in due course (rated 'B' in Fig 1 and Appendix 1: Table 2).

All mandatory credits for a Good rating are achieved. These include 1 credit each for Man 1, Hea 4, Hea 12, Wat 1 & Wat 2.

Note 1: The Project Team aim to achieve additional credits from the following group of credits Ene 1, Ene 5, Mat 1, Mat 5, Pol 4, Exemplary 1 (Man 2), Exemplary 1 (Ene 5); and specifically aim to improve the score by an approximate 2 credits.

The exact credits being achieved will be determined by the Contractor's site management mechanisms, and design teams' optimum design development strategies. The final design will dictate the BREEAM score to secure the 'Good' rating. It will also determine the extent of 'Good' rating the development will achieve, i.e. exact score between 45.0% - 54.0%.

2.0 INTRODUCTION

The Sustainable Construction Team (SCT) was commissioned by Miles Nichol of Veolia Environmental Services to provide BREEAM advice for the new Battlefield Energy from Waste Facility in Shropshire. The advice given at this stage is based on the BRE's BREEAM Bespoke 2008 criteria compiled by Scott Wilson based on their experience of similar projects.

It is understood that the proposed Battlefield EWF development will be designed to achieve a BREEAM 'GOOD' rating (45.0% - 54.0%). The design team has undertaken this assessment to review the development's current BREEAM performance in support of the planning application.

3.0 PROJECT DESCRIPTION

The proposed Battlefield Energy from Waste Facility is located 4km north of Shrewsbury town centre on an industrial and retail development situated at Vanguard Way on a greenfield site. The existing site already accommodates an Integrated Waste Management Facility (IWMF), which has been in use since February 2005.

It is understood that the proposed development will accommodate an energy from waste facility with an administration building, offices and weighbridge; extend the existing HRC and improve the facilities of the existing HRC offices to allow use as a visitor centre. Associated car parking, access roads and landscaping will be incorporated within the proposals.

This assessment covers the new builds only, which include the office and mess facility along with the proposed EWF. However the assessment itself does not include the process areas, which are not included in the BREEAM scope.

4.0 **BREEAM ASSESSMENT METHODOLOGY**

Appendix 2 to this report provides a summary of the BREEAM methodology.

4.1 **BREEAM PRE ASSESSMENT MEETING**

BREEAM Pre Assessment Workshops have been held with the Project Team with Aparna Maladkar of Scott Wilson as the BREEAM Assessor.

At this stage, it is unclear whether the project will be assessed under the standard Industrial version of BREEAM or a bespoke methodology. This BREEAM Pre-assessment has been undertaken based on a set of bespoke BREEAM 2008 criteria compiled by Scott Wilson based on their experience of recent similar projects. As such, when BRE confirm the required methodology, there could be a small variation in the current scoring.

The development has to meet the following mandatory credits to achieve a ‘**GOOD**’ rating.

2008 MANDATORY LEVELS		
REF	CREDIT	GOOD
Man 1	Commissioning	1
Hea 4	High frequency lighting	1
Hea 12	Microbial contamination	1
Wat 1	Water consumption	1
Wat 2	Water meter	1

Table 1 – MANDATORY CREDITS FOR A ‘GOOD’ RATING

For the purpose of this report all credits are classified using a simple A, B, C, D and E system developed by Scott Wilson. Under this system, credits are assessed in terms of the relative ease with which they could be achieved by the developments and are categorised as follows:

- A. Credits that are achieved (not used at this Pre Assessment stage);
- B. Credits that will be achieved subject to provision of suitable evidence;
- C. Credits that are not achieved but could be achieved with relative low cost and/or effort;
- D. Credits that are not achieved but could be achieved with relative high cost or are uncertain; and
- E. Credits that are not achievable.

The above system provides an easy method for design teams to assess the most cost-effective options for achieving the required BREEAM rating. BREEAM threshold rating scores are shown below.

Pass = 30%
Good = 45%
Very Good = 55%
Excellent = 70%
Outstanding = 85%

Table 2 details the assessment status of the development with details of compliance with BREEAM compliance criteria.

5.0 RESULTS AND CONCLUSIONS

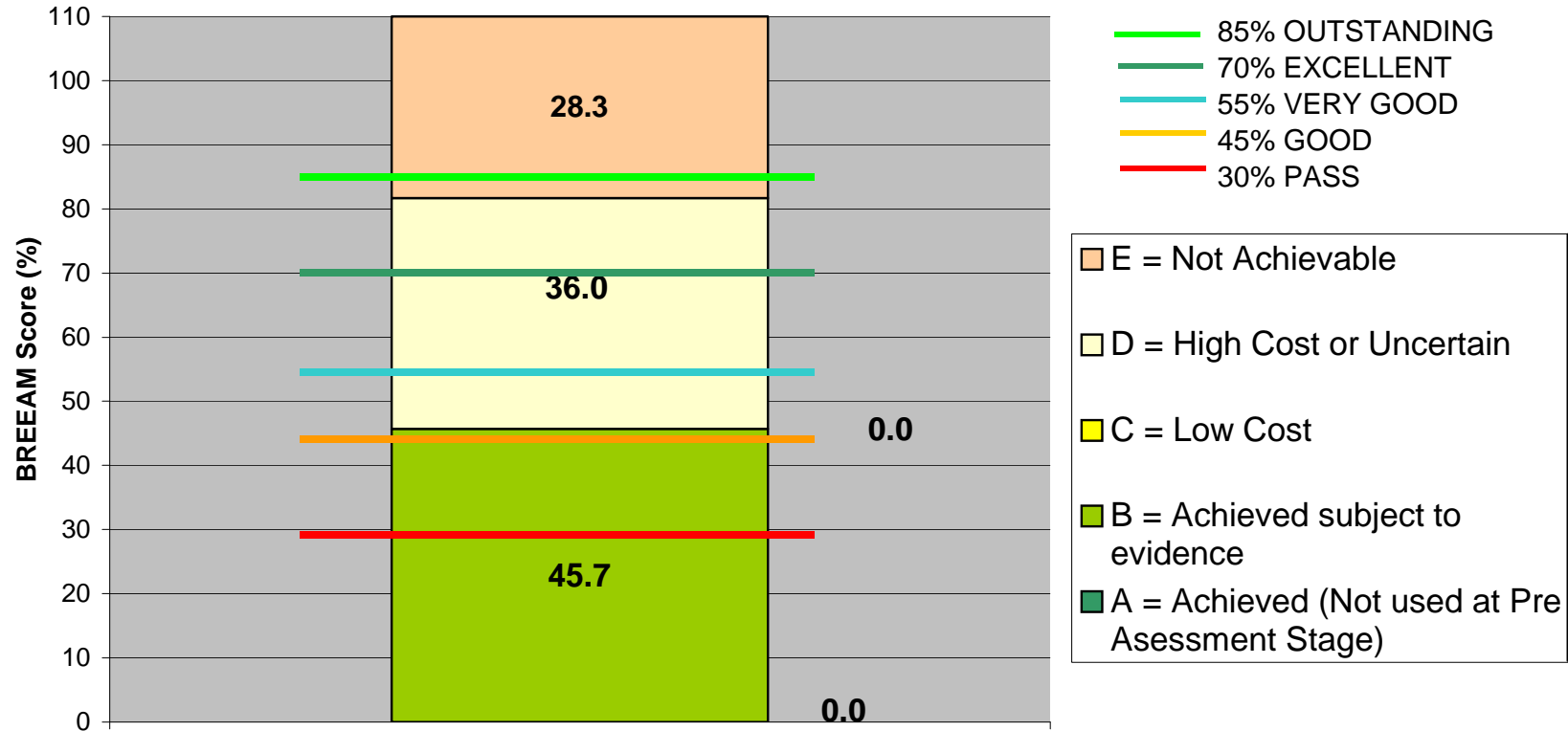
Figure 1 shows that a BREEAM score of **45.7%** and a rating of '**GOOD**' is achieved under the current proposals. This result is subject to the provision of evidence to the assessor in due course (rated 'B' in Fig 1 and Appendix 1: Table 2).

All mandatory credits for a Good rating are achieved. These include 1 credit each for Man 1, Hea 4, Hea 12, Wat 1 & Wat 2.

Note 1: The Project Team aim to achieve additional credits from the following group of credits Ene 1, Ene 5, Mat 1, Mat 5, Pol 4, Exemplary 1 (Man 2), Exemplary 1 (Ene 5); and specifically aim to improve the score by an approximate 2 credits.

The exact credits being achieved will be determined by the Contractor's site management mechanisms, and design teams' optimum design development strategies. The final design will dictate the BREEAM score to secure the 'Good' rating. It will also determine the extent of 'Good' rating the development will achieve.

6.0 FIGURE 1: GAP ANALYSIS RESULTS – BATTLEFIELD ENERGY FROM WASTE FACILITY, SHROPSHIRE



APPENDIX 1 - Table 2: BREEAM Pre-assessment Credits

Credit Ref	Credit Title	Credit Criteria	Credits Available	Energy from Waste Facility (EWF)	Commentary
Management					
Man 1	Commissioning	<p>MANDATORY FOR ALL: 1 CREDIT FOR OUTSTANDING: 2 CREDITS</p> <p>First credit: One credit is awarded where evidence provided demonstrates that an appropriate project team member has been appointed to monitor commissioning on behalf of the client to ensure commissioning will be carried out in line with current Building Regulations and (where applicable), best practice. 2008 The specialist commissioning manager must have been appointed during the design stage and the scope of their responsibility Where BMS specified, the commissioning procedures</p>	1	B	<p>Project Team confirmed that commissioning will be carried out in line with BREEAM requirements.</p> <p>Seasonal commissioning of the office building services will be undertaken by Project Team and the Operator.</p> <p>2 credits achieved subject to evidence.</p>
		<p>Second Credit: A further credit is awarded where evidence provided demonstrates that seasonal commissioning will be carried out during the first year of occupation, post construction (or post fit out).</p>	1	B	
Man 2	Considerate Constructors	<p>MANDATORY FOR EXCELLENT: 1 CREDIT FOR OUTSTANDING: 2 CREDITS</p> <p>First credit: One credit is awarded where evidence provided demonstrates that there is a commitment to comply with best practice site management principles. CCS Code of Considerate Practice score between 24 and 31.5.</p>	1	B	<p>Project Team commit to achieve a CCS score of 32.</p> <p>2 credits achieved subject to evidence.</p>
		<p>Second credit: A further credit is awarded where evidence provided demonstrates that there is a commitment to go significantly beyond best practice site management principles. CCS Code of Considerate Practice score between 32 and 35.5.</p> <p>Innovation credits: CCS Code of Considerate Practice with a score of at least 36.</p>	1	B	

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Credit Ref	Credit Title	Credit Criteria	Credits Available	Energy from Waste Facility (EWF)	Commentary
Man 3	Construction Site Impacts	<p>3 credits:</p> <p>a. Monitor, report and set targets for CO2 or energy arising from site activities</p> <p>b. Monitor, report and set targets for CO2 or energy arising from transport to and from site</p> <p>c. Monitor, report and set targets for water consumption arising from site activities</p> <p>d. Implement best practice policies in respect of air (dust) pollution arising from the site</p> <p>e. Implement best practice policies in respect of water (ground and surface) pollution occurring on the site</p> <p>f. Main contractor has an environmental materials policy, used for sourcing of construction materials to be utilised on site</p> <p>g. Main contractor operates an Environmental Management System.</p> <p>1 credit:</p> <p>at least 80% of site timber is responsibly sourced and 100% is legally sourced.</p>	1	B	<p>Project Team commit to achieve a minimum of 6 items listed for the first 3 credits in line with BREEAM requirements.</p> <p>Project Team commit to 80% of responsibly sourced timber for temporary site works.</p> <p>4 credits achieved subject to evidence.</p>
			1	B	
			1	B	
			1	B	
Man 4	Building Users Guide	<p>MANDATORY FOR EXCELLENT & ABOVE: 1 CREDIT</p> <p>One credit is awarded where evidence provided demonstrates the provision of a simple guide that covers information relevant to the tenant/occupants and non-technical building manager on the operation and environmental performance of the building.</p>	1	B	<p>Project Team confirmed that there will be a commitment to create a 'non-technical' Building User Guide in line with BREEAM requirements.</p> <p>1 credit achieved subject to evidence.</p>

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Credit Ref	Credit Title	Credit Criteria	Credits Available	Energy from Waste Facility (EWF)	Commentary
Man 6	Consultation	<p>First credit</p> <p>1. During the preparation of the brief (equivalent to RIBA stage B) the following was undertaken:</p> <p>a. Members of the local community and appropriate stakeholders identified with whom the design team consulted</p> <p>b. Knowledge and experience collated from the existing buildings of the same type (if relevant) to identify existing partnerships and networks.</p> <p>c. A consultation plan was prepared and included a timescale and methods of consultation, clearly identifying at which points consultees can usefully contribute and how they will be kept informed about progress on the project.</p> <p>2. The consultation included:</p> <p>a. Functionality, building quality and local impact (including aesthetics), b. Building user satisfaction/productivity, c. Management and operational implications, d. Maintenance resources/burdens, e. Good and bad examples of buildings of the same type., f. Local traffic/transport impact., g. Opportunities for shared use of facilities and infrastructure with the community, h. Consultation with the relevant bodies to confirm whether the building (or site) has any archaeological importance</p> <p>3. Feedback has been given to the consultation group.</p>	1	B	<p>Veolia confirmed that monthly Community Liaison Group meetings have been arranged since April 2008 and confirmed that 3 public exhibitions have been taken place. These consultations have included various issues relating to the proposed building.</p> <p>It also confirmed that the design team could demonstrate design changes following consultation process. Feedback is being provided through the exhibitions, CLG, the planning consultation process and through web sites.</p> <p>2 credits achieved subject to evidence.</p>
		<p>Second Credit</p> <p>1. The first credit has been achieved.</p> <p>2. The project team demonstrate the following:</p> <p>a. How the results of the consultation process have influenced, or resulted in modifications to, the proposed design and building operation/use</p> <p>b. The measures taken, as agreed with the relevant bodies, to protect any areas or features of historic/heritage value.</p>	1	B	
Man 8	Security	<p>1. The design team has consulted with and sought the advice of the local police Architectural Liaison Officer (ALO) or Crime Prevention Design Advisor (CPDA) on designing out the opportunity for crime, in accordance with the principles and guidance of Secured by Design.</p> <p>2. Consultation with the ALO/CPDA occurred during or prior to the Outline Proposals stage (RIBA stage C) or equivalent.</p> <p>3. The final design embodies the recommendations of the ALO/CPDA and is built to conform to the principles and guidance of Secured by Design.</p>	1	E	<p>The credit is not sought.</p> <p>1 credit will not be achieved.</p>
Subtotals			12		

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APPENDIX 1 - Table 2: BREEAM Pre-assessment Credits

Credit Ref	Credit Title	Credit Criteria	Credits Available	Energy from Waste Facility (EWF)	Commentary
Health and Wellbeing					
Hea 1	Daylighting	<p>1. At least 80% of net lettable office floor area avg DF 2% or more. PLUS either (b) OR (c AND d) b. A uniformity ratio of at least 0.4 or a minimum point DF 0.8% OR A view of sky. AND room depth criterion</p> <p>2. In accordance with CIBSE Lighting Guide 10, BS8206 Part 2 and BRE Site Layout Guide.</p> <p>3. At least 80% of floor area in the operational area(s) and all other occupied spaces is adequately daylight as follows: a. Average daylight factor of 2% or more. b. PLUS either (b) OR (d) above.</p> <p>Innovation section: 80% of floor area: avg DF of 3% in multi-storey buildings & 4% in single-storey buildings.</p>	1	D	<p>Project Team confirmed that additional study/modelling studies would have to be undertaken to establish daylighting compliance.</p> <p>1 credit is uncertain.</p>
Hea 2	View Out	<p>For office space <500m2 refer to compliance notes for guidance</p> <p>The relevant areas are within 7m of a wall with a window or permanent opening providing an adequate view out, where the window/opening is ≥20% of the total inside wall area</p>	1	B	<p>Project Team confirmed that office areas will be within 7m distance of an external window. Crane driver and workshop is excluded from this requirement.</p> <p>1 credit achieved subject to evidence.</p>
Hea 3	Glare Control	<p>An occupant-controlled shading system on all windows, glazed doors and rooflights in all relevant building areas, where there are, or will be, workstations/benches, desks and/or close work will be undertaken or visual aids used.</p>	1	B	<p>Project Team confirmed that all occupied areas and areas with desks will have occupant controlled blinds.</p> <p>1 credit achieved subject to evidence.</p>
Hea 4	High Frequency Lighting	<p>MANDATORY FOR ALL: 1 CREDIT</p> <p>One credit is awarded where evidence provided demonstrates that high frequency ballasts are installed on all fluorescent and compact fluorescent lamps.</p>	1	B	<p>Project Team confirmed that there will be a commitment to specify high frequency ballasts on all fluorescent and compact fluorescent lamps.</p> <p>1 credit achieved subject to evidence.</p>

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APPENDIX 1 - Table 2: BREEAM Pre-assessment Credits

Credit Ref	Credit Title	Credit Criteria	Credits Available	Energy from Waste Facility (EWF)	Commentary
Hea 5	Internal and external lighting levels	<p>Illuminance (lux) levels Internal areas: Part 2 CIBSE Code for Lighting 2002 & 2004 Addendum.</p> <p>Areas with Computer screens: CIBSE Lighting Guide 7 [2] sections 3.3, 4.6, 4.7, 4.8 and 4.9. a. Limits to the luminance of the luminaires, to avoid screen reflections. (Manufacturers' data for the luminaires is required). b. For up-lighting, the recommendations refer to the luminance of the lit ceiling rather than the luminaire; a design calculation is required. c. Recommendations for direct lighting, ceiling illuminance, and average wall illuminance.</p> <p>External areas within the construction zone: CIBSE Lighting Guide 6</p>	1	B	<p>Project Team confirmed that there will be a commitment to meet internal and external lighting in accordance to relevant guidances, including LG7 for offices.</p> <p>1 credit achieved subject to evidence.</p>
Hea 6	Lighting Zones	<p>1. Lighting is zoned to allow separate user-control a. Office and circulation spaces b. In office areas, zones of no more than four workplaces c. Workstations adjacent to windows/atria and other building areas separately zoned and controlled. d. Seminar and lecture rooms: zoned for presentation and audience areas e. Library spaces: separate zoning of stacks, reading and counter areas.</p>	1	B	<p>Project Team confirmed that all offices will be adequately zoned to meet BREEAM requirements.</p> <p>1 credit achieved subject to evidence.</p>
Hea 7	Potential for Natural Ventilation	<p>Occupied spaces: Openable window area is 5% of the gross internal floor area. If rooms 7-15m deep, the openable window on opposite sides & evenly distributed. OR Calculations for ventilation design tool types recommended by CIBSE AM10 [2]) that the natural ventilation strategy provides adequate cross flow</p> <p>For a strategy not relying on openable windows, or plan depth greater than 15m, calculations to show the ventilation strategy can provide adequate cross flow</p> <p>Strategy is capable of providing at least two levels of user-control on the supply of fresh air.</p>	1	E	<p>This credit is not sought.</p> <p>1 credit will not be achieved.</p>
Hea 8	Indoor Air Quality	<p>Air-conditioned and mixed-mode buildings: air intakes and exhausts are over 10m apart AND intakes are over 20m from sources of external pollution. Naturally-ventilated buildings: openable windows/ventilators are over 10m from sources of external pollution.</p> <p>Fresh air rates to dilute pollutants: General office: 12 litres per second per person.</p>	1	B	<p>Project Team confirmed that external windows will be more than 10m from external pollution sources and intake and outlets will be more than 10m apart from each other. Fresh air rates will be as per BREEAM requirements.</p> <p>1 credit achieved subject to evidence.</p>

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Hea 9	Volatile Organic Compounds	The emissions of VOCs and other substances from key internal finishes and fittings have been tested against and meet the relevant standards outlined in table 1.0 for Volatile Organic Compound (VOC) emissions:	1	D	Project Team consider that further review of products with low VOCs is required. 1 credit is uncertain.
Hea 10	Thermal Comfort	Thermal modelling in accordance with CIBSE AM11 'Building Energy and Environmental Modelling' Building design and services deliver thermal comfort levels in occupied spaces in accordance with CIBSE Guide A 'Environmental Design' (particularly internal winter & summer temps in line with the comfort criteria in table 1.5) The software must provide full dynamic thermal analysis. For smaller and more basic buildings CIBSE AM11 may apply	1	E	This credit is not sought. 1 credit will not be achieved.
Hea 11	Thermal Zoning	Office space <500m2 refer to compliance notes for guidance The heating/cooling system allows occupant control of zoned areas Zoning allows separate occupant control (within the occupied space) of each perimeter area (i.e. within 7m of each external wall) and the central zone (i.e. over 7m from the external walls). Where long-lag systems are specified, the requirements are to service the base load only and a responsive secondary heating system and controls are provided, zoned in compliance with the above	1	B	Project Team confirmed that occupied spaces will be zoned appropriately with local control as per BREEAM requirements. 1 credit achieved subject to evidence.
Hea 12	Microbial Contamination	MANDATORY FOR ALL: 1 CREDIT 1. All water systems in the building are designed in compliance with the measures outlined in the Health and Safety Executive's "Legionnaires' disease - The control of legionella bacteria in water systems". Approved Code of Practice and guidance, 2000. 2. Where no humidification is specified or only steam humidification is provided.	1	B	Project Team confirmed that all water systems in the building are designed in compliance with BREEAM requirements. 1 credit achieved subject to evidence.
Hea 13	Acoustic Performance	1. Indoor ambient noise levels in unoccupied staff/office areas comply with the following: a. ≤ 40dB LAeq,T in single occupancy offices b. 40-50dB LAeq,T in multiple occupancy offices c. ≤ 40 dB LAeq,T general spaces (staffrooms, restrooms) e. ≤ 50 dB LAeq,T in informal café/canteen areas g. ≤55 dB LAeq,T in manual workshops	1	E	This credit is not sought. 1 credit will not be achieved.
Subtotals			13		

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Credit Ref	Credit Title	Credit Criteria	Credits Available	Energy from Waste Facility (EWF)	Commentary																																																
Energy																																																					
Ene 1	Reduction of CO ₂ emissions	<p>MANDATORY FOR EXCELLENT: 6 CREDITS FOR OUTSTANDING: 10 CREDITS</p> <p>Up to 15 credits are available: The number of credits achieved is determined by comparing the building's CO₂ index (EPC Rating), taken from the Energy Performance Certificate (EPC), with the table of benchmarks in BREEAM</p> <p style="text-align: center;">CO₂ Index (EPC Rating)</p> <table border="1"> <thead> <tr> <th>Credits</th> <th>New Build</th> <th>Refurbishment</th> </tr> </thead> <tbody> <tr><td>1</td><td>63</td><td>100</td></tr> <tr><td>2</td><td>53</td><td>87</td></tr> <tr><td>3</td><td>47</td><td>74</td></tr> <tr><td>4</td><td>45</td><td>61</td></tr> <tr><td>5</td><td>43</td><td>50</td></tr> <tr><td>6</td><td>40</td><td>47</td></tr> <tr><td>7</td><td>37</td><td>44</td></tr> <tr><td>8</td><td>31</td><td>41</td></tr> <tr><td>9</td><td>28</td><td>36</td></tr> <tr><td>10</td><td>25</td><td>31</td></tr> <tr><td>11</td><td>23</td><td>28</td></tr> <tr><td>12</td><td>20</td><td>25</td></tr> <tr><td>13</td><td>18</td><td>22</td></tr> <tr><td>14</td><td>10</td><td>18</td></tr> <tr><td>15</td><td>0</td><td>15</td></tr> </tbody> </table> <p>Innovation Credits: Credit 1 <0 ≤0 Credit 2 True zero carbon building</p>	Credits	New Build	Refurbishment	1	63	100	2	53	87	3	47	74	4	45	61	5	43	50	6	40	47	7	37	44	8	31	41	9	28	36	10	25	31	11	23	28	12	20	25	13	18	22	14	10	18	15	0	15	1	B	<p>Project Team confirmed that 1 credit aimed to achieve as per Note 1 in Section 5.</p> <p>1 credit achieved subject to evidence 7 credits are uncertain 7 credits are not sought.</p>
		Credits	New Build	Refurbishment																																																	
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Ene 2	Sub-metering of Substantial Energy Uses	<p>MANDATORY FOR VERY GOOD & ABOVE: 1 CREDIT</p> <p>Separate energy sub-meters, labelled with the end energy consuming use</p> <p>a. Space Heating b. Domestic Hot Water c. Humidification d. Cooling e. Fans (major) f. Lighting g. Small Power (lighting and small power can be on the same sub-meter where supplies are taken at each floor/department). h. Other major energy-consuming items</p>	1	E	<p>Credit not sought.</p> <p>1 credit will not be achieved.</p>																																																
Ene 3	Sub-metering of Areas/Tenancy	<p>Provision of accessible sub-meters covering the energy supply to all tenanted, or in the case of single occupancy buildings, relevant function areas or departments within the building/unit.</p> <p>Relevant Areas: Office areas (Metering by floor plate), Catering, Operational area</p>	1	E	<p>Credit not sought.</p> <p>1 credit will not be achieved.</p>																																																

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APPENDIX 1 - Table 2: BREEAM Pre-assessment Credits

Credit Ref	Credit Title	Credit Criteria	Credits Available	Energy from Waste Facility (EWF)	Commentary
Ene 4	External Lighting	<p>External light building, access ways and pathways: efficacy of at least 50 lamp lumens/circuit Watt when the lamp has a colour rendering index (Ra) greater than or equal to 60. OR 60 lamp Lumens / circuit Watt when the lamp has a colour rendering index (Ra) less than 60.</p> <p>Car parking areas, associated roads and floodlighting: efficacy of at least 70 lamp lumens/circuit Watt when the lamp has a colour rendering index (Ra) greater than or equal to 60. OR 80 lamp Lumens / circuit Watts when the lamp has a colour rendering index (Ra) less than 60.</p> <p>Signs and uplighting: efficacy of at least 60 lamp lumens/circuit Watt when the lamp wattage is greater than or equal to 25W. OR 50 lamp lumens/circuit Watt when the lamp wattage is less than 25W.</p> <p>All external light fittings controlled through a time switch, or daylight sensor.</p>	1	D	<p>Project Team confirmed that it is uncertain at this stage if external lighting can be specified in line with BREEAM requirements.</p> <p>1 credit is uncertain.</p>
Ene 5	Low or Zero Carbon Technologies	<p>MANDATORY FOR EXCELLENT & ABOVE: 1 CREDIT</p> <p>1 credit: A feasibility study carried out and the results implemented.</p> <p>2 credits: First credit PLUS 10% reduction in the building's CO₂ emissions</p> <p>3 credits: First credit PLUS 15% reduction in the building's CO₂ emissions</p> <p>OR</p> <p>1 credit: A contract with an energy supplier is in place to provide sufficient electricity used within the development to meet the above criteria from a 100% renewable energy source. (Note: a standard Green Tariff will not comply)</p> <p>Innovation Credits: 20% reduction in the building's CO₂ emissions.</p>	1	D	<p>Project Team confirmed that the energy generated from waste will be used for the building. BRE has confirmed that this energy can be defined as 'Waste Incineration' Low Carbon Technologies. However, to achieve these credits it is essential to comply with the feasibility study and local authority's waste management requirements.</p> <p>These credits are uncertain subject to Note 1 in Section 5.</p> <p>3 credits are uncertain.</p>
			1	D	
			1	D	

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APPENDIX 1 - Table 2: BREEAM Pre-assessment Credits

Credit Ref	Credit Title	Credit Criteria	Credits Available	Energy from Waste Facility (EWF)	Commentary
Ene 6	Building fabric performance & avoidance of air infiltration	<ol style="list-style-type: none"> 1. Installation of personnel door(s) between internal and external areas within proximity of any adjacent openings for goods delivery access; AND a draught lobby between office areas (where present) and the external building access. 2. Delivery loading/unloading areas and operational and/or storage areas are partitioned. 3. Where present all goods/personnel access, vents in the roof and backdraught dampers on extract fans are draught sealed. 4. Loading/unloading bay doors insulated to 0.6 W/m²K. 5. Plastic strip curtains are specified between internal delivery areas and other internal warehouse storage or operational areas (where there is no other draught sealing or doors). The strip curtains should have a partial overlap. 6. Either of the following are specified on the external goods doors/vehicle delivery bays: a. Plastic strip curtains (with a partial overlap), b. Air curtains (not door heaters) covering the entire width of the opening, c. Pneumatic dock seals mounted on all vehicle delivery bays., 7. Rapid rise loading/unloading bay doors with at least 1.0 m/sec closing speed or less than 5 secs closing time between fully opened and fully closed are specified/installed. 	1	E	<p>Credit not sought.</p> <p>1 credit will not be achieved.</p>
Ene 8	Lifts	<p>1 credit: Analysis of transport demand & patterns - optimum number & size of lifts etc Energy consumption for at least 2 types of lift or lift strategy 'fit for purpose' has been estimated and the system with the lowest energy consumption specified.</p> <p>2 credits First credit is achieved. 3 out 4 energy-efficient features are specified: Lifts operate in a stand-by mode during off-peak and idle periods. Lift motors use a drive controller capable of variable-speed, variable-voltage, variable-frequency control of the drive motor. Lift has a regenerative unit so that energy generated by the lift (due to running up empty and down full) is returned back to the grid or used elsewhere on site. Lift car uses energy-efficient lighting and display lighting (>60 Lumens/watt or fittings that consume less than 5W e.g. LEDS).</p>	2	B	<p>Project Team confirmed that there is only one lift in the building and it is uncertain at this stage whether an energy efficient lift will be specified.</p> <p>1 credit is uncertain.</p>
Subtotals			24		

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APPENDIX 1 - Table 2: BREEAM Pre-assessment Credits

Credit Ref	Credit Title	Credit Criteria	Credits Available	Energy from Waste Facility (EWF)	Commentary
Transport					
Tra 1	Provision of Public Transport	3 credits based on the Accessibility Index in Tra 1 Provision of Public Transport calculator:	1	B	Transport Assessment confirms that the site is located within close vicinity to several existing bus stops. The nearest is located on Knights Way; within 400m walking distance from the site. Bus services operating Monday to Saturday connect the site to central Shrewsbury. Bus route 6 has an hourly frequency, while bus route 25 has 15 min frequency at peak times. This information was added to BRE's Tra 1 calculator which generated 2.47 Accessibility Index (1 credit).
		a. The distance (m) from the main building entrance to each compliant public transport node	1	D	
		b. The public transport type serving the compliant node e.g. bus or rail c. The average number of services stopping per hour at each compliant node during the standard operating hours of the building for a typical day	1	D	
					1 credit achieved subject to evidence 2 credits are uncertain
Tra 2	Proximity to Amenities	1. Where the building is within 500m of the following amenities: a. Grocery shop and/or food outlet b. Post box c. Cash machine	1	B	Project Team confirmed that there is a Tesco supermarket within 500m to the site, which would have all the required facilities. 1 credit achieved subject to evidence.
Tra 3	Cyclist Facilities	First credit 1. The number of compliant cycle storage spaces provided is as follows: a. 10% of building users up to 500 PLUS b. 7% for building users in the range of 501 – 1000 PLUS c. 5% for building users over 1000	1	B	Project Team confirmed that required cycle spaces and compliant facilities will be provided on site. 2 credits achieved subject to evidence.
		Second credit for ALL: First credit AND two of the following: a. Compliant showers b. Compliant changing facilities and lockers for clothes c. Compliant drying space for wet clothes	1	B	

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APPENDIX 1 - Table 2: BREEAM Pre-assessment Credits

Credit Ref	Credit Title	Credit Criteria	Credits Available	Energy from Waste Facility (EWF)	Commentary
Tra 4	Pedestrian & Cyclist Safety	<p>First credit - cycle access requirements: cycle lanes guidance National Cycle Network "Guidelines and Practical Details – issue 2", Sustrans[1] and relevant parts of Appendix VI NCN Design and Construction Checklist Cycle lanes & pedestrian paths meet minimum width dimensions and best practice as detailed in the Sustrans[1] and DfT[2] guidance.</p> <p>Second credit - pedestrian access requirements: Onsite footpaths connect to public footpaths off site, Drop-off areas are designed off the access road and provide direct access to pedestrian pathways/areas, Dedicated pedestrian crossing is raised to the pavement level (i.e. the pavement is not lowered to road level). Larger developments to have signposts.</p> <p>Combined cyclists and pedestrian: Delivery areas are not accessed through parking areas and do not cross or share pedestrian and cyclist routes and other outside amenity areas Lighting design CIBSE Lighting Guide 6, 1992 (LG6)[6] and BS5489 Part 1[5].</p>	1	B	<p>Project Team confirmed that there will be a commitment to meet all the requirement for this credit.</p> <p>2 credits achieved subject to evidence.</p>
		1	B		
Tra 5	Travel Plan	One credit is awarded where evidence is provided to demonstrate that a travel plan has been developed and tailored to the specific needs of the users of the assessed development.	1	B	<p>Project Team confirmed that a BREEAM compliant travel plan will be produced.</p> <p>1 credit achieved subject to evidence.</p>
Tra 8	Deliveries and manoeuvring	<p>1. Parking and turning areas are designed for simple manoeuvring according to the type of delivery vehicle likely to access the site, thus avoiding the need for repeated shunting.</p> <p>2. There is a separate parking area for waiting goods vehicles, away from the manoeuvring area and staff/visitor car parking.</p> <p>3. Delivery areas are not accessed through parking areas and do not cross or share pedestrian and cyclist routes and other outside amenity areas accessible to building users and general public.</p> <p>4. There is a dedicated space for the storage of refuse skips and pallets away from the delivery vehicle manoeuvring area and staff/visitor car parking.</p>	1	B	<p>It was confirmed that parking and turning areas will be designed as per BREEAM requirements.</p> <p>1 credit achieved subject to evidence.</p>
Tra 9	Maximum Car Parking Capacity	<p>Office only</p> <p>First credit 1. No more than one parking space is provided for every three building users.</p>	1	E	<p>Project Team confirmed that since this is an industrial area, provisions for parking spaces is more than BREEAM requirements.</p> <p>2 credits will not be achieved.</p>
		<p>Second credit 1. No more than one parking space is provided for every four building users.</p>	1	E	
Subtotals			12		

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APPENDIX 1 - Table 2: BREEAM Pre-assessment Credits

Credit Ref	Credit Title	Credit Criteria	Credits Available	Energy from Waste Facility (EFW)	Commentary
Water					
Wat 1	Water Consumption	<p>MANDATORY FOR GOOD & ABOVE: 1 CREDIT FOR OUTSTANDING: 2 CREDITS</p> <p>First credit All WCs have an effective flush volume of 4.5 litres or less AND have guidance or symbols instructing the user on the appropriate operation of the flushing device.</p> <p>Second credit EITHER of the following: a. All WCs have an effective flush volume of 3 litres or less OR b. All WCs are compliant with the requirements for the first credit and fitted with a delayed action inlet valve.</p> <p>Third credit two of the following, a. All taps except kitchen taps, cleaners' sinks and external taps have a maximum flow rate less than 6 litres/min for a water pressure of 0.3MPa and are one of, or a combination of, the following types: · Timed automatic shut-off taps e.g. push taps, · Electronic sensor tap, Low flow screw-down/lever taps, · Spray taps b. All showers, have a measured flow rate that does not exceed 9 litres per minute for a water pressure of 0.3MPa, assuming a delivered water temperature of 37°C. c. All urinals are either: · Fitted with individual presence detectors that operate the flushing control after each use. OR · Ultra low flush or waterless urinals. d. All baths have a capacity of 100 litres to the overflow and each bath is fitted with a device that automatically stops the flow from the taps when the bath's maximum capacity is reached.</p>	1	B	<p>Project Team confirmed that they will aim to achieve at least 2 credits under this section.</p> <p>2 credits are achieved subject to evidence. 1 credit is uncertain.</p>
			1	B	
			1	D	
Wat 2	Water Meter	<p>MANDATORY FOR GOOD & ABOVE: 1 CREDIT</p> <p>1. The specification of a water meter on the mains water supply to each building 2. The water meter has a pulsed output</p> <p>Innovation Credits: Sub meters for individual water-consuming plant or building areas as appropriate</p>	1	B	<p>Project Team confirmed that separate water meters will be provided for all mains supply and that these will have a pulsed output.</p> <p>1 credit achieved subject to evidence.</p>
Wat 3	Major Leak Detection	<p>Leak detection system on all mains water supply between and within the building and the site boundary. System is:</p> <p>a. Audible when activated b. Activated when the flow of water passes through the water meter/data logger at a flow rate above a pre-set minimum for a pre-set period of time c. Able to identify different flow and therefore leakage rates, e.g. continuous, high and/or low level, over set time periods d. Programmable to suit the owner/occupiers' water consumption requirements e. Where applicable, designed to avoid false alarms caused by normal operation of large water-consuming plant such as chillers.</p>	1	E	<p>This credit is not sought.</p> <p>1 credit will not be achieved.</p>
Wat 4	Sanitary Supply Shut-off	<p>Solenoid valves are installed on the water supply to each toilet area in the building and the flow of water through that supply is controlled by a link to either:</p> <p>· Infra-red movement detectors within each toilet facility OR · Sensors or switches placed at or on entry doors to each facility.</p>	1	B	<p>Project Team confirmed that there will be a commitment to meet all the requirement for this credit.</p> <p>1 credit achieved subject to evidence.</p>
Subtotals			6		

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APPENDIX 1 - Table 2: BREEAM Pre-assessment Credits

Credit Ref	Credit Title	Credit Criteria	Credits Available	Energy from Waste Facility (EWF)	Commentary
Materials					
Mat 1	Materials Specification - Major Building Elements	<p>Up to four credits are available, determined by the Green Guide to Specification ratings for the major building elements.</p> <p>Innovation credits: If 4 or more building elements, the building achieves at least 2 points additional to the total points required to achieve maximum credits under the standard BREEAM requirements.</p> <p>If fewer than 4 applicable building elements, the building achieves at least one point additional to the total points required to achieve maximum credits under the standard BREEAM requirements.</p>	1	B	<p>Project Team confirmed that they will aim to achieve at least 1 credit as per Note 1 in Section 5.</p> <p>1 credit achieved subject to evidence 3 credits are uncertain.</p>
			1	D	
			1	D	
			1	D	
Mat 2	Hard Landscaping & Boundary Protection	80% of all external hard landscaping and boundary protection (by area) achieves an A or A+ rating, as defined in the Green Guide to Specification.	1	D	<p>Project Team confirmed that tarmac & concrete would be specified. However, there could be an opportunity to specify a material with an improved rating under Green Guide 2008.</p> <p>1 credit is uncertain.</p>
Mat 3	Re-use of Building Façade	<p>1. At least 50% of the total final building façade (by area) is reused.</p> <p>2. At least 80% of the reused façade (by mass) comprises in-situ reused material.</p>	1	E	<p>This is a new build project and therefore does not provide any scope for reuse of façade.</p> <p>1 credit will not to be sought.</p>
Mat 4	Reuse of Building Structure	<p>1. Where at least 80% by volume of an existing primary structure is reused without significant strengthening or alteration works.</p> <p>2. Where a project is part refurbishment and part new build, the reused structure comprises at least 50% by volume of the final building, i.e. any new-build extension to a building being refurbished should not be larger than the original building to qualify for this credit.</p>	1	E	<p>This is a new build project and therefore does not provide any scope for reuse of structure.</p> <p>1 credit will not to be sought.</p>
Mat 5	Responsible Sourcing of Materials	<p>Up to three credits are awarded where materials used in key building elements are responsibly sourced.</p> <p>Innovation credits: 95% of the applicable materials are responsibly sourced.</p>	1	B	<p>Project Team confirmed that they will aim to achieve at least 1 credit under this section as per Note 1 in Section 5.</p> <p>1 credit achieved subject to evidence 2 credits are uncertain.</p>
			1	D	
			1	D	

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APPENDIX 1 - Table 2: BREEAM Pre-assessment Credits

Credit Ref	Credit Title	Credit Criteria	Credits Available	Energy from Waste Facility (EWF)	Commentary
Mat 6	Insulation	<p>External walls, Ground floor, Roof, Building services</p> <p>First credit: Embodied Energy The Green Guide rating for the thermal insulation materials must be determined. Where the Insulation Index for the building insulation is the same as or greater than 2. The Insulation Index is calculated using the Mat 6 Insulation Index Calculator Tool: a. $(\text{Area of insulation (m}^2) \times \text{thickness(m)}) / \text{Thermal Conductivity (W/ m.K)}$ OR b. Total volume of insulation used (m^3) / Thermal conductivity (W/m.K)</p> <p>Second credit - Responsible Sourcing 80% of the thermal insulation must be responsibly sourced, i.e. certified in accordance with Levels 1, 2 or 3 described in Table 1: Tier levels As per Table 3 - Key Processes and Supply Chain processes required for common insulation products.</p>	1	D	<p>Project Team confirmed that specification of insulation is uncertain at this stage. Once relevant information is made available in due course, it may provide an opportunity to improve the current score.</p> <p>2 credits are uncertain.</p>
		1	D		
Mat 7	Designing for Robustness	<p>1. Internal and external areas of the building where vehicular, trolley and pedestrian movement occur have been identified.</p> <p>2. Suitable durability and protection measures: a. Protection from the effects of high pedestrian traffic in main entrances, public areas and thoroughfares (corridors, lifts, stairs, doors etc). b. Protection against any internal vehicular/trolley movement within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas. c. Protection against, or prevention from, any potential vehicular collision where vehicular parking and manoeuvring occurs within 1m of the external building façade for all car parking areas and within 2m for all delivery areas.</p>	1	B	<p>Project Team confirmed that this credit will be achieved.</p> <p>1 credit achieved subject to evidence.</p>
Subtotals			13		

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APPENDIX 1 - Table 2: BREEAM Pre-assessment Credits

Credit Ref	Credit Title	Credit Criteria	Credits Available	Energy from Waste Facility (EWF)	Commentary
Waste					
Wst 1	Construction Site & Waste Management	<p>Up to three credits: Amount of non-hazardous construction waste (m3/100m2 or tonnes/100m2) generated on site by the development is the same as or better than good or best practice levels. Site Waste Management Plan (SWMP)</p> <p>1 credit: 75% by weight or 65% by volume of non-hazardous construction waste diverted from landfill and either: a. Reused on site (in-situ or for new applications) b. Reused on other sites c. Salvaged/reclaimed for reuse d. Returned to the supplier via a 'take-back' scheme e. Recovered from site by an approved waste management contractor and recycled.</p> <p>Innovation credits: 90% by weight (80% by volume) of non-hazardous construction waste and 95% of demolition waste by weight (85% by volume) is diverted from landfill All key waste groups are identified for diversion from landfill at pre-construction stage SWMP.</p>	1	B	<p>Project Team confirmed that they will aim to achieve 1 credit under this section.</p> <p>1 credit achieved subject to evidence 3 credits are uncertain.</p>
			1	D	
			1	D	
			1	D	
Wst 2	Recycled Aggregates	<p>1. Where the amount of recycled and secondary aggregate specified is over 25% (by weight or volume) of the total high-grade aggregate uses for the building. Such aggregates can be EITHER: a. Obtained on site OR b. Obtained from waste processing site(s) within a 30km radius of the site; the source will be principally from construction, demolition and excavation waste (CD&E) – this includes road planings OR c. Secondary aggregates obtained from a non-construction post-consumer or postindustrial by-product source (see compliance notes).</p> <p>High Grade uses: Bound: · Structural frame; · Floor slabs including ground floor slabs; · Bitumen or hydraulically bound base, binder, and surface courses for paved areas and roads. Unbound: · Asphalt-based or similar road surfaces, · Granular fill and capping, · Pipe bedding, · Sub bases/building foundations, · Gravel landscaping.</p>	1	B	<p>Project Team confirmed that there will be a commitment to meet all the requirement for this credit.</p> <p>1 credit achieved subject to evidence.</p>

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Credit Ref	Credit Title	Credit Criteria	Credits Available	Energy from Waste Facility (EWF)	Commentary
Wst 3	Recyclable Storage Waste	<p>MANDATORY FOR EXCELLENT & ABOVE: 1 CREDIT</p> <p>A dedicated storage space, Clearly labelled for recycling, Placed within accessible reach, In a location with good vehicular access to facilitate collections.</p> <p>2. The size of the space as a minimum:</p> <p>a. At least 2m² per 1000m² of net floor area for buildings <5000m²</p> <p>b. A minimum of 10m² for buildings ≥5000 m²</p> <p>c. An additional 2m² per 1000m² of net floor area where catering is provided (up to an additional minimum of 10m² ≥5000m²).</p>	1	B	<p>Project Team confirmed that there will be a commitment to meet all the requirement for this credit.</p> <p>1 credit achieved subject to evidence.</p>
Wst 6	Floor Finishes	<p>1. For tenanted areas (where the future occupant is not known), prior to full fit-out works, carpets and other floor finishes have been installed in a show area only.</p> <p>2. In a building developed for a specific occupant, that occupant has selected (or agreed to the specified floor finishes.</p>	1	B	<p>Project Team confirmed that there will be a commitment to meet all the requirement for this credit.</p> <p>1 credit achieved subject to evidence.</p>
Subtotals			7		

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APPENDIX 1 - Table 2: BREEAM Pre-assessment Credits

Credit Ref	Credit Title	Credit Criteria	Credits Available	Energy from Waste Facility (EWF)	Commentary
Pollution					
Pol 1	Refrigerant GWP - Building Services	1. The building has no refrigerants OR 2. The refrigerants used within the building services have a GWP less than 5.	1	B	Project Team confirmed that refrigerants with less than 5 GWP will be specified for office areas. 1 credit achieved subject to evidence.
Pol 2	Preventing Refrigerant Leaks	<p>First credit: Refrigerant leak detection 2. Systems contained in a moderately air tight enclosure (or a mechanically ventilated plant room), and a refrigerant leak detection system is installed covering high-risk parts of the plant. OR 3. An automatic permanent refrigerant leak detection system is specified, which is NOT based on the principle of detecting or measuring the concentration of refrigerant in air.</p> <p>Second credit: First credit PLUS Refrigerant recovery system 4. The automatic shutdown and pump down of refrigerant occurs on the detection of high concentrations of refrigerant in the plant room/enclosure. For the majority of cases only systems in mechanically ventilated/moderately air tight plant rooms (or enclosures) comply. 5. Automatic pump-down to either a separate storage tank or into the heat exchanger is acceptable but only where automatic isolation valves are fitted to contain the refrigerant once fully pumped down. 6. The alarm threshold that triggers automatic pump down is set to a maximum of 2000ppm (0.2%), but lower levels can be set. The credit cannot be awarded for manual systems.</p>	1	D	Project Team confirmed that it is uncertain whether BREEAM compliant leak detection system can be specified. 2 credits are uncertain.
			1	D	

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Credit Ref	Credit Title	Credit Criteria	Credits Available	Energy from Waste Facility (EWF)	Commentary
Pol 4	NOx Emissions of Heating Source	1 credit dry NOx emissions from delivered space heating energy are ≤100 mg/kWh (at 0% excess O ₂). 2 credits dry NOx emissions from delivered space heating energy are ≤70 mg/kWh (at 0% excess O ₂). 3 credits dry NOx emissions from delivered space heating energy are ≤40 mg/kWh (at 0% excess O ₂).	1	E	Project Team confirmed that the energy generated from waste will be used for the building. To generate this energy, electricity will be used. 3 credits will not to be achieved.
			1	E	
			1	E	
Pol 5	Minimising Flood Risk	<p>Two credits are awarded where evidence provided demonstrates that the assessed development is located in a zone defined as having a low annual probability of flooding OR</p> <p>One credit Where evidence provided demonstrates that the assessed development is located in a zone defined as having a medium annual probability of flooding and the ground level of the building, car parking and access is above the design flood level for the site's location.</p> <p>One further credit: attenuation measures specified to ensure that the peak rate of run-off from the site to the watercourses (natural or municipal) is no greater for the developed site than it was for the pre-development site. This should comply with the Interim Code of Practice for Sustainable Drainage systems (SUDS) (CIRIA, 2004), or for at least a 1 year and 100 year return period event with a 6 hour duration.</p> <p>2. The capacity of the attenuation measures must include an allowance for climate change; this should be made in accordance with current best practice</p>	1	B	<p>Flood Risk Assessment confirms that Battlefield Brook has been modelled to confirm the 1 in 100 year flood level including a 20% increase for climate change (medium Zone).</p> <p>Project Team confirmed that SUDs will be specified in line with BREEAM requirements.</p> <p>2 credit achieved subject to evidence. 1 credit will not to be achieved.</p>
			1	E	
			1	B	

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APPENDIX 1 - Table 2: BREEAM Pre-assessment Credits

Credit Ref	Credit Title	Credit Criteria	Credits Available	Energy from Waste Facility (EWF)	Commentary
Pol 6	Minimising Water Course Pollution	<ol style="list-style-type: none"> 1. Specification of Sustainable Drainage Systems (SUDs) or source control systems such as permeable surfaces or infiltration trenches where run-off drains are in areas with a relatively low risk source of watercourse pollution. 2. Specification of oil/petrol separators (or equivalent system) in surface water drainage systems, where there is a high risk of contamination or spillage of substances such as petrol and oil 3. All water pollution prevention systems have been designed and detailed in accordance with the recommendations of Pollution Prevention Guideline 3 and where applicable the SUDS manual. 4. A comprehensive and up-to-date drainage plan of the site will be made available for the building/site occupiers. 	1	B	<p>Project Team confirmed that there is a commitment to meet all the requirement for this credit.</p> <p>1 credit achieved subject to evidence.</p>
Pol 7	Reduction of Night Time Light Pollution	<ol style="list-style-type: none"> 1. The external lighting strategy complies with Table 1 (and its accompanying notes) of the ILE Guidance notes for the reduction of obtrusive light, 2005, 2. All external lighting (except for safety and security lighting) can be automatically switched off between 2300hrs and 0700hrs. This can be achieved by providing a timer for all external lighting set to the appropriate hours. 3. If safety or security lighting is provided and will be used between 2300hrs and 0700hrs, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 1 of the ILE's Guidance notes 4. Illuminated advertisements, where specified, must be designed in compliance with ILE Technical Report 5 – The Brightness of Illuminated Advertisements. 	1	D	<p>Project Team consider that further study is required to confirm compliance.</p> <p>1 credit is uncertain.</p>
Pol 8	Noise Attenuation	<p>A noise impact assessment in compliance with BS 4142:1997</p> <ol style="list-style-type: none"> a. Existing background noise levels at the nearest or most exposed noise-sensitive areas b. The rating noise level resulting from the proposed noise-source. This can be based upon reference to similar installations or sites, or determined by calculation. <p>The noise impact assessment must be carried out by a suitably qualified acoustic consultant holding a recognised acoustic qualification and membership of an appropriate professional body. The primary professional body for acoustics in the UK is the Institute of Acoustics.</p> <ol style="list-style-type: none"> 3. Where the rating level of the noise source(s) from the site/building is equivalent to or less than the background noise level, the credit can be awarded. 4. Where the rating level of the noise source(s) from the site/building is greater than the background noise level, measures have been installed to attenuate the noise at its source 	1	D	<p>A noise assessment has been undertaken as part of the Environmental Statement of the planning application.</p> <p>1 credit is uncertain.</p>
Subtotals			12		

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Credit Ref	Credit Title	Credit Criteria	Credits Available	Energy from Waste Facility (EWF)	Commentary
Landuse and Ecology					
LE 1	Reuse of Land	At least 75% of the proposed development's footprint is on an area of land which has previously been developed for use by industrial, commercial or domestic purposes in the last 50 years.	1	E	Project Team confirmed that the site is on a greenfield. 1 credit will not to be sought.
LE 2	Contaminated Land	1. The site is deemed to be significantly contaminated as confirmed by a contaminated land specialist's site investigation, risk assessment and appraisal identifying: a. the degree of contamination b. the contaminant sources/types c. the options for remediating sources of pollution which present an unacceptable risk to the site. 2. The client or contractor confirms that remediation of the site will be carried out in accordance with the remediation strategy and its implementation plan.	1	E	Project Team confirmed that the site was not contaminated. 1 credit will not to be sought.
LE 3	Ecological Value of Land and Protection of Ecological Features	One credit is awarded where evidence is provided to demonstrate that the construction zone is defined as land of low ecological value and all existing features of ecological value will be fully protected from damage during site preparation and construction works.	1	B	Project Team confirmed that ecology survey has been undertaken and the site could be defined as of low ecological value. 1 credit achieved subject to evidence.
LE 4	Mitigating Ecological Impacts	First Credit: Where evidence is provided to demonstrate the change in ecological value of the site, as a result of development, is between less than zero and equal to, or less than, minus nine species, i.e. a small negative change.	1	B	Environmental Statement details a small negative change on the proposed site. 1 credit achieved subject to evidence 1 credit is uncertain.
		Second Credit: Where evidence is provided to demonstrate there is no negative change in the ecological value of the site as a result of development, i.e. equal to, or greater than, zero species.	1	D	
LE 5	Enhancing Site Ecology	First Credit: Where evidence is provided to demonstrate that the design team (or client) has i) appointed a professional to advise and report on enhancing and protecting the ecological value of the site; and ii) implemented the professional's recommendations for general enhancement and protection for site ecology.	1	B	Environmental Statement details ecological recommendations. 1 credit achieved subject to evidence 2 credits are uncertain.
		Additional credits: Up to two credits are awarded where in addition to the above, evidence provided demonstrates a positive increase in the ecological value of the site.	1	D	
			1	D	

A = Achieved
B = Achieved subject to evidence
C = Low Cost
D = High Cost or Uncertain
E = Not Achievable

APPENDIX 1 - Table 2: BREEAM Pre-assessment Credits

Credit Ref	Credit Title	Credit Criteria	Credits Available	Energy from Waste Facility (EWF)	Commentary
LE 6	Long Term Impact on Biodiversity	First Credit: Where evidence is provided to demonstrate that the client has committed to achieving the mandatory requirements listed below and at least two of the additional requirements.	1	B	Project Team confirmed that 1 credit can be achieved under this section. 1 credit achieved subject to evidence 1 credit is uncertain.
		Second Credit: Where evidence is provided to demonstrate that the client has committed to achieving the mandatory requirements listed below and at least four of the additional requirements.	1	D	
Subtotals			10		

A = Achieved
 B = Achieved subject to evidence
 C = Low Cost
 D = High Cost or Uncertain
 E = Not Achievable

APPENDIX 1 - Table 2: BREEAM Pre-assessment Credits

Credit Ref	Credit Title	Credit Criteria	Credits Available	Energy from Waste Facility (EWF)	Commentary
Innovation					
Exemplary - Man 2	Considerate Constructors Scheme (Exemplary)	CCS score: 36 or above	1	D	Project Team aspires to achieve a CCS score of 36 and above as per Note 1 in Section 5. 1 credit is uncertain.
Exemplary - Hea 1	Daylighting (Exemplary)	80% floor area: DF 3% multi storey DF 4% single storey	1	E	This credit is not sought. 1 credit cannot be achieved.
Exemplary - Hea 14	Office Space (Retail & Industrial only)	All the measures detailed within the credit are achieved for at least 80% of the development's office space floor area.	1	E	This credit is not sought. 1 credit cannot be achieved.
Exemplary - Ene 1 (Pt 1)	Reduction in CO2 Emissions (Exemplary)	1 credit: Carbon neutral building as defined by the NCM (i.e. in terms of building services energy demand), as follows: a. A new building achieves a CO ₂ index less than 0 on the benchmark scale. b. A refurbished building achieves a CO ₂ index equal to or less than 0 on the benchmark scale.	1	E	1 credit will not to be sought.
Exemplary - Ene 1 (Pt 2)		2 credits: True zero carbon building (in terms of building services and operational energy demand).	1	E	1 credit will not to be sought.
Exemplary - Ene 5	Low or Zero Carbon Technologies (Exemplary)	20% reduction in the building's CO ₂ emissions.	1	D	Further study required to confirm CO ₂ index. 1 credit is uncertain.

A = Achieved
B = Achieved subject to evidence
C = Low Cost
D = High Cost or Uncertain
E = Not Achievable

APPENDIX 1 - Table 2: BREEAM Pre-assessment Credits

Credit Ref	Credit Title	Credit Criteria	Credits Available	Energy from Waste Facility (EWF)	Commentary
Exemplary - Wat 2	Water Meter (Exemplary)	Sub meters allow individual water-consuming plant or building areas (such as cooling towers, car washes, catering areas, staff & public areas, labs, laundry, kitchen, tenant areas etc). If the building does not have any major water consuming plant this exemplar credit is not available. Sub meter has a pulsed output	1	D	Further study required. 1 credit is uncertain.
Exemplary - Mat 1	Materials Specification (Exemplary)	If 4 or more building elements, the building achieves at least 2 points additional to the total points required to achieve maximum credits under the standard BREEAM requirements. If fewer than 4 applicable building elements, the building achieves at least one point additional to the total points required to achieve maximum credits under the standard BREEAM requirements.	1	D	Further study required. 1 credit is uncertain.
Exemplary - Mat 5	Responsible Sourcing of Materials (Exemplary)	95% of the applicable materials are responsibly sourced.	1	E	1 credit will not to be sought.
Exemplary - Wst 1	Construction Site Waste Management (Exemplary)	Non-hazardous construction waste meets or exceeds the resource efficiency benchmark required to achieve three credits 90% by weight (80% by volume) of non-hazardous construction waste and 95% of demolition waste by weight (85% by volume) is diverted from landfill and either: a. Reused on site (in-situ or for new applications) b. Reused on other sites c. Salvaged/reclaimed for reuse d. Returned to the supplier via a 'take-back' scheme e. Recovered from site by an approved waste management contractor and recycled. All key waste groups are identified for diversion from landfill at pre-construction stage SWMP.	1	E	1 credit will not to be sought.
Subtotals			10		

A = Achieved
B = Achieved subject to evidence
C = Low Cost
D = High Cost or Uncertain
E = Not Achievable

APPENDIX 2 - DETAILS OF THE BREEAM METHODOLOGY

BREEAM (Building Research Establishment’s Environmental Assessment Method) is the world’s leading and most widely used environmental assessment method for buildings, with over 115,000 buildings certified and nearly 700,000 registered. It sets the standard for best practice in sustainable design and has become the de facto measure used to describe a building’s environmental performance. Credits are awarded in nine categories according to performance. These credits are then added together to produce a single overall score on a scale of Pass, Good, Very Good, Excellent and Outstanding. The operation of BREEAM is overseen by an independent Sustainability Board, representing a wide cross-section of construction industry stakeholders.

AIMS OF BREEAM:

- To mitigate the impacts of buildings on the environment
- To enable buildings to be recognised according to their environmental benefits
- To provide a credible, environmental label for buildings
- To stimulate demand for sustainable buildings

OBJECTIVES OF BREEAM:

- To provide market recognition to low environmental impact buildings
- To ensure best environmental practice is incorporated in buildings
- To set criteria and standards surpassing those required by regulations and challenge the market to provide innovative solutions that minimise the environmental impact of buildings
- To raise the awareness of owners, occupants, designers and operators of the benefits of buildings with a reduced impact on the environment
- To allow organisations to demonstrate progress towards corporate environmental objectives

BREEAM scheme can be used to assess the environmental impacts arising as a result of an individual building development (including external site areas) at the following stages:

1. Design Stage (DS) - leading to an **Interim BREEAM Certificate**
2. Post-Construction Stage (PCS) – leading to a **Final BREEAM Certificate**

BREEAM RATING & SCORE: The rating benchmarks for the 2008 version of BREEAM are outlined below:

BREEAM Rating	% score
UNCLASSIFIED	<30
PASS	≥30
GOOD	≥45
V GOOD	≥55
EXCELLENT	≥70
OUTSTANDING*	≥85

WEIGHTINGS: The environmental weightings for the nine BREEAM sections:

BREEAM Section	Weighting (%)	
	New builds, extensions & major refurbishments	Building fit-out only (where applicable to scheme)
Management	12	13
Health & Wellbeing	15	17
Energy	19	21
Transport	8	9
Water	6	7
Materials	12.5	14
Waste	7.5	8
Land Use & Ecology	10	N/A
Pollution	10	11

MANDATORY CREDITS: To achieve a BREEAM 2008 rating, the minimum percentage score must be achieved and the minimum standards (i.e. number of credits achieved) applicable to that rating level complied with.

INNOVATION CREDITS: These provide additional recognition for a building that innovates in the field of sustainable performance, above and beyond the level that is currently recognised and rewarded within standard BREEAM issues. The maximum number of Innovation credits that can be awarded for any one building assessed is 10.