

BREEAM 



Building Research Establishment Environmental Assessment Method
BREEAM Industrial 2008
An environmental assessment method for new industrial units with offices
Project Title: Enviroparks Biomax Unit, Hirwaun
Client: Enviroparks Ltd.
Date: 28 th October 2008

Enviroparks Ltd. – Enviroparks Biomax Unit, Hirwaun

BREEAM Industrial 2008



The project consists of the construction of a new Enviroparks Biomax Unit with office area at Hirwaun.

An Initial Guidance Assessment has been prepared by Licensed Assessors - White Young Green to establish the potentially available credits for the Enviroparks Biomax unit at Hirwaun based on the provisional design. This Initial Guidance Assessment can be used to progress the scheme prior to the preparation of the Formal Assessment.

The Assessor has worked with the Design Team to establish which credits could be achieved on the current building design, the results of which are detailed below. The purpose of the assessment is to ensure that flexible, energy efficient, easily maintainable and environmentally friendly buildings are provided. As detailed in Table 1 below, the existing design of the building would provisionally achieve an **'Excellent'** rating of 75.73% based on the current proposed design.

Rating breakdown: $\geq 25\%$ = Pass, $\geq 40\%$ = Good, $\geq 55\%$ Very Good, $\geq 70\%$ = Excellent, $\geq 80\%$ = Outstanding.

Table 1: Provisional Rating

Minimum BREEAM Standards					
Rating Level	Pass	Good	Very Good	Excellent	Outstanding
Minimum Standards Achieved	YES	YES	YES	YES	NO

Building Performance by Section					
	Environmental weighting	Credits available	Credits achieved	% Achieved	Weighted Score
Management	12.00%	10.00	9.00	90.00%	10.80%
Health & Wellbeing	15.00%	7.00	5.00	71.43%	10.71%
Energy	19.00%	25.00	15.00	60.00%	11.40%
Transport	8.00%	11.00	6.00	54.55%	4.36%
Water	6.00%	6.00	5.00	83.33%	5.00%
Materials	12.50%	11.00	8.00	72.73%	9.09%
Waste	7.50%	7.00	5.00	71.43%	5.36%
Land Use & Ecology	10.00%	10.00	9.00	90.00%	9.00%
Pollution	10.00%	10.00	8.00	80.00%	8.00%
Total					73.73%
Exemplary Level credits achieved					2.00%
Approved Innovation credits					0.00%
Total Innovation credits achieved					2.00%
Total BREEAM Score					75.73%

Management			
Man 1 Commissioning	<p>Two credits are available. 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.</p> <p>The second credit is awarded where seasonal commissioning will be carried out during the first year of occupation, post construction, including (for naturally ventilated buildings) a review of thermal comfort, ventilation, and lighting, at 3, 6 and 9 month intervals after initial occupation, either by measurement or occupant feedback.</p>	1 of 2	<p>The Design Team confirmed that commissioning will be carried out in accordance with Building Regulations and Best Practice Guidelines (BSRIA/CIBSE). An appropriate person will be appointed to monitor commissioning, and this will be confirmed in the M&E Specification. (see attached BREEAM clause).</p> <p>Seasonal commissioning is not currently specified; however this may be re-addressed at a later stage if additional credits are required.</p>
Man 2 Considerate Constructors	<p>To recognise and encourage construction sites which are managed in an environmentally and socially considerate and accountable manner, two credits may be awarded:</p> <p>First credit: Where evidence provided demonstrates that there is a commitment to comply with best practice site management principles.</p> <p>Second credit: Where evidence provided demonstrates that there is a commitment to go significantly beyond best practice site management principles.</p>	2 of 2	<p>The Design Team confirmed the appointed Contractor will be required to register the site under the Considerate Constructors Scheme and achieve a minimum CCS score of 36, with at least three points being awarded in each category. This will be confirmed in the Prelims documents. (see attached BREEAM clause).</p> <p>The achievement of a CCS score of 36 or more will also allow one innovation credits to be achieved for exceeding the Best Practice requirements of this credit.</p>

Man 3 Construction Site Impacts	Up to four credits are awarded where evidence provided demonstrates that established good practice is adopted on site in line with the BREEAM Construction Site Impacts Checklist A3 (attached).	4 of 4	<p>The Design Team confirmed that the following practices will be completed during the construction phase:</p> <ul style="list-style-type: none"> Monitor, report and set targets for CO₂ or energy arising from site activities Monitor, report and set targets for water consumption arising from site activities Implement best practice policies in respect of air (dust) pollution arising from the site Implement best practice policies in respect of water (ground and surface) pollution occurring on the site Main contractor will have an environmental materials policy, used for sourcing of construction materials to be utilised on site Main Contractor has an EMS. At least 80% of site timber will be responsibly sourced and 100% is legally sourced. <p>The implementation and completion of the above practices would allow four credits to be awarded, and requirement to undertake these practices will be included in the Prelims (see attached BREEAM clause).</p>
Man 4 Building Users Guide	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.	1 of 1	The Design Team confirmed that a building user guide will be completed in accordance with the BREEAM guidance, and will form a separate section within the O&M manuals, or a stand-alone document, (see attached BREEAM clause).
Man 8 Security	One credit is awarded Where evidence provided demonstrates that an <i>Architectural Liaison Officer (ALO)</i> or <i>Crime Prevention Design Advisor (CPDA)</i> from the local police force has been consulted at the design stage and their recommendations incorporated into the design of the building and its parking facilities (if relevant).	1 of 1	The Design Team confirmed that an ALO will be consulted during the design of the project, and their recommendations relating to building and parking safety will also be implemented. This will be confirmed in appropriate letters of correspondence and drawings.

Health and Wellbeing

Hea 1 Daylighting	One credit is awarded where evidence provided demonstrates that at least 80% of office and operational floor area is adequately daylight.	1 of 1	The Design Team confirmed that a daylight factor of at least 2%, and a uniformity ratio of at least 0.4 will be achieved for at least 80% of the operational and office areas respectively. This will be confirmed on appropriate drawings and in daylighting calculations.
Hea 4 High Frequency Lighting	One credit is awarded where evidence provided demonstrates that high frequency ballasts are installed on all fluorescent and compact fluorescent lamps.	1 of 1	The Design Team confirmed all fluorescent and compact fluorescent lamps will be specified with high frequency control gear. This will be included in the M&E Specification and upon appropriate drawings (see attached BREEAM clause).

Hea 5 Internal and External Lighting Levels	One credit is awarded where evidence provided demonstrates that all internal and external lighting, where relevant, is specified in accordance with the appropriate maintained illuminance levels (in lux) recommended by CIBSE.	1 of 1	The Design Team confirmed that the appropriate lighting levels for internal and external lighting in line with credit requirements and CIBSE guidelines will be achieved. For internal areas, lighting will be designed in accordance with CIBSE Lighting Guide 3, and for areas where computers are used, CIBSE Lighting Guide 7. External areas will be designed in accordance with CIBSE Lighting Guide 6. This will be confirmed in the M&E Specification (see attached BREEAM clause).
Hea 9 Volatile Organic Compounds	One credit is awarded where the emissions of VOCs and other substances from key internal finishes and fittings comply with best practice levels.	0 of 1	The Design Team confirmed that further investigation into achieving this credit is required. The Architect needs to refer to the VOC list (attached) and confirm if the proposed finishes and fittings will comply. This credit is assumed not to be available, however it may be re-considered at a later stage upon feedback from the Architect.
Hea 12 Microbial Contamination	One credit is awarded where evidence provided demonstrates that the risk of waterborne and airborne legionella contamination has been minimised.	1 of 1	The Design Team confirmed that all heating and ventilation systems will be designed to meet the requirements of HSE Approved Code of Practice (ACoP) and Guidance, L8, "Legionnaires disease; The Control of Legionella Bacteria in Water Systems", 2000. This will be confirmed in the M&E Specification (see attached BREEAM clause).
Hea 14 Office Space	<p>Up to two credits are available. One credit is awarded where three of the following measures are achieved for at least 80% of the development's office space.</p> <p>The second credit is awarded where six of the following measures are achieved for at least 80% of the development's office space:</p> <ul style="list-style-type: none"> ▪ View Out ▪ Potential for Natural Ventilation ▪ Thermal Zoning ▪ Lighting Zones ▪ Daylight Glare Control ▪ Acoustic Performance ▪ Internal Air Pollution ▪ Thermal Comfort 	1 of 2	<p>The Design Team confirmed that the following measures will be achieved for at least 80% of the office space of the building:</p> <p>View Out – Not all workstations will be situated within a 7m radius of a window with external view out, however this may be re-addressed at a later date.</p> <p>Glare Control – All office windows will be provided with occupant controlled blinds. This will be confirmed on appropriate drawings.</p> <p>Lighting Zones – All lighting in office areas will be switched to control no more than four workstations, and separate switching will be provided to lighting adjacent to windows.</p> <p>Thermal Zoning – The heating system to the office area will allow independent occupant thermal control, in all separate office areas.</p> <p>Thermal Comfort – Internal temperatures will be in line with the recommended comfort criteria in section 1.3 of CIBSE Guide A. This will be confirmed in appropriate calculations/ thermal model to be provided by the M&E Engineer.</p> <p>Potential for Natural Ventilation – Openable windows will be provided at rate of 5% of the gross floor area of each office. This will be confirmed upon appropriate drawings and calculations.</p> <p>Acoustic Performance – An acoustician will not be employed to confirm compliance with this measure, however this may be re-addressed at a later date.</p>

Energy			
Ene 1 Reduction of CO ₂ Emissions	Up to fifteen credits are available where evidence provided demonstrates an improvement in the energy efficiency of the building's fabric and services and therefore achieves lower building operational related CO ₂ emissions.	6 of 15	The Design Team confirmed the building will achieve a CO ₂ index rating of 40, which will achieve six credits and comply with the mandatory requirements of achieving an Excellent rating. This will be confirmed in a copy of the appropriate EPC calculations for the building. The EPC rating may increase once the calculation has been completed. The Design Team should inform the assessor once preliminary EPC calculations have been completed.
Ene 2 Sub-metering of Substantial Energy Uses.	One credit is awarded where separate <i>accessible energy sub-meters</i> , labelled with the end energy consuming use, are provided for the following systems (where present): <ul style="list-style-type: none"> ▪ Space Heating ▪ Domestic Hot Water ▪ Humidification ▪ Cooling ▪ Fans (major) ▪ Lighting ▪ Small Power (lighting and small power can be on the same sub-meter where supplies are taken at each floor/department). 	1 of 1	The Design Team confirmed that separate direct sub-metering will be provided for all energy uses, (where appropriate) throughout the building. This will be confirmed on appropriate electrical schematic drawings.
Ene 3 Sub-metering of Areas/ Tenancy	One credit is awarded where <i>accessible</i> sub-meters covering the <i>energy supply</i> to all tenanted, or in the case of single occupancy buildings, <i>relevant function areas or departments</i> within the building/unit.	1 of 1	The Design Team confirmed that separate sub-meters could be provided to cover all major energy use areas within the building. This will be confirmed on appropriate electrical schematic drawings.

<p>Ene 4 External Lighting</p>	<p>One credit is awarded where energy efficient external luminaires are specified and all light fittings controlled for the presence of daylight in accordance with the following:</p> <ul style="list-style-type: none"> ▪ All external light fittings for the building, access ways and pathways have a luminous 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. ▪ All external light fittings to car parking areas, associated roads and floodlighting has a luminous 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. ▪ All external light fittings for signs and uplighting have a luminous 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>0 of 1</p>	<p>The Design Team could not confirm if the current lighting design will comply with the credit requirements. Further investigation will be undertaken by the M&E Engineer to determine if this credit can be achieved.</p> <p>At this stage it is assumed that this credit will not be awarded, until further confirmation is received from the M&E Engineer.</p>
<p>Ene 5 Low or Zero Carbon Technologies</p>	<p>One credit where evidence provided demonstrates that a feasibility study considering local (<i>on-site</i> and/or <i>near site</i>) low or zero carbon (LZC) technologies has been carried out and the results implemented.</p> <p>Two credits where evidence provided demonstrates that the first credit has been achieved and there is a 10% reduction in the building's CO2 emissions as a result of the installation of a feasible local LZC technology.</p> <p>Three credits where evidence provided demonstrates that the first credit has been achieved and there is a 15% reduction in the building's CO2 emissions as a result of the installation of a feasible local LZC technology.</p>	<p>3 of 3</p>	<p>The Design Team confirmed that a feasibility study considering the use of renewable or low emission energy systems will be carried out; and as a result of the nature and process of the development 20% of the energy demand for the building will be provided from a renewable or low emission energy source.</p> <p>Furthermore, as more than 20% of the total energy demand for the building will be provided by a renewable/ low carbon technology, one innovation credit can be achieved.</p>

Ene 6 Building Fabric Performance and Avoidance of Air Infiltration	One credit is awarded where evidence provided demonstrates that the building has been designed and detailed to ensure optimum building fabric performance and to minimise unnecessary air infiltration.	1 of 1	The Design Team confirmed that goods doors will not face prevailing winds, and a full thermographic survey will be carried out including any remediation measures where necessary. In addition, goods doors will not face prevailing winds.
Ene 7 Cold Storage Equipment	<p>Up to three credits are achievable:</p> <p>First Credit: Where the cold storage refrigeration plant components are on the ECA Energy Technology Product List.</p> <p>Second Credit: Where the cold storage plant is designed to minimise energy consumption in operation.</p> <p>Third Credit: Where opportunities for heat recovery, free cooling or thermal storage are identified and taken advantage of.</p>	3 of 3	<p>The Design Team confirmed the following will be undertaken:</p> <p>The following components, where specified as part of the cold storage refrigeration plant/ strategy, will be on the ECA Energy Technology Product List or an equivalent list:</p> <ul style="list-style-type: none"> ▪ Air cooled condensing units ▪ Automatic air purgers ▪ Cellar cooling equipment ▪ Commercial service cabinets (cold food storage) ▪ Curtains, Blinds, Sliding Doors and Covers for Refrigerated Display Cabinets ▪ Evaporative condensers ▪ Forced air pre-coolers ▪ Liquid pressure amplification ▪ Refrigerated display cabinets ▪ Refrigeration compressors ▪ Refrigeration system controls <p>The cold storage refrigeration plant will also comply with the following minimum requirements:</p> <ul style="list-style-type: none"> ▪ Variable speed drives are fitted to the compressors, pumps and fans ▪ Strip curtains are installed on the cold storage opening(s) ▪ Low powered/heat lighting is fitted e.g. fibre optics, LEDs ▪ <i>Defrost on demand</i> controls for evaporators are installed ▪ The installed refrigeration plant, controls and monitoring system has been specified in accordance with the guidance outlined in the Food & Drink Industry Refrigeration Efficiency Initiative Guide 2 <i>Purchase of Efficient Refrigeration Plant</i> ▪ The plant has been commissioned in compliance with the requirements for cold food storage commissioning outlined in BREEAM credit Man 1 Commissioning (this does not necessarily require BREEAM credit M1 to have been awarded). <p>The plant will be capable of EITHER of the following free cooling/heating strategies:</p> <ul style="list-style-type: none"> ▪ Thermal storage during periods of low load to provide additional cooling during periods of peak cooling load OR ▪ Heat recovery of the waste heat to meet in part or full space heating and/or hot water requirements for the assessed building or other local demand e.g. air curtain above the cold storage enclosure entrance.

Transport			
Tra 1 Provision of Public Transport	Up to three credits are available where evidence provided demonstrates the proximity of the development to a public transport node with a goods service frequency. The number of credits is determined using the BREEAM Industrial Public Transport Calculator.	1 of 3	The Design Team confirmed that a bus stop is likely to be located around 650m of the site; however the service frequency could not be confirmed. It was agreed that one credit is achievable, and this will be confirmed in a site plan demonstrating the location and distance of the bus stops from the site, (via safe pedestrian walking route) along with the appropriate bus timetables.
Tra 2 Proximity to Key Amenities	One credit is awarded where the building is within 500m of the following amenities: <ul style="list-style-type: none"> Grocery shop and/or food outlet Post box Cash machine 	0 of 1	The Design Team confirmed that the required amenities are not located within 500m of the site; therefore this credit is not achievable.
T5 Cyclist Facilities	<p>First credit: One credit is awarded where evidence is provided to demonstrate that there is adequate provision of covered, secure and well lit cycle racks.</p> <p>Second credit: One credit is awarded where the first credit is achieved and where evidence provided demonstrates adequate provision of changing facilities and lockers for clothes or a dedicated drying space for wet clothes.</p>	2 of 2	<p>The Design Team confirmed that cycle facilities will be provided for 10% of the predicted building occupants. The cycle racks will also be covered overhead and protected from rain, secure and lit to BS5489-Part 1.</p> <p>In addition, showers will also be provided for at least 10% of all cycle racks provided, and lockers will be provided at a rate equivalent to each cycle rack. Lockers will also be least 900mm x 300mm x 450mm, and for each shower, a minimum of 1m² of changing space adjacent to the shower(s) with hooks for hanging clothes will also be provided.</p>
Tra 4 Pedestrian and Cyclist Safety	One credit is awarded where the site layout has been designed in accordance with best practice to ensure safe and adequate pedestrian and cycle access.	1 of 1	<p>The Design Team confirmed that cycle lanes have been designed and constructed in accordance with the guidance in the National Cycle Network “<i>Guidelines and Practical Details – issue 2</i>”, Sustrans and the relevant parts of Appendix VI <i>NCN Design and Construction Checklist</i>.</p> <p>The cycle lanes and pedestrian paths meet the following minimum width dimensions:</p> <ul style="list-style-type: none"> Where pedestrian and cycle routes are shared the minimum total width of the combined path is 3.0m Where the cycle lane is segregated from both the pedestrian route and carriageway the minimum width of the cycle path is 2.0m and the minimum width of the pedestrian path is 1.5m Where the cycle route forms a part of the carriageway, the minimum width of the lane is 1.5m <p>Cycle lanes will provide direct access to any cycle storage facilities provided on the site, and footpaths will connect to public footpaths off site. In addition, where dedicated pedestrian crossing of a vehicle access route is provided, the road will be raised to the pavement level (i.e. the pavement is not lowered to road level).</p>

Tra 5 Travel Plan	One credit is awarded where a travel plan, in accordance with BREEAM Criteria (attached) has been provided for the site.	1 of 1	The Design Team confirmed that a Travel Plan will be completed for the site, in accordance with and will cover all BREEAM requirements (see attached guidance).
Tra 6 Maximum Car Parking Capacity	Up to two credits are awarded in accordance with the following: <ul style="list-style-type: none"> ▪ One credit No more than one parking space is provided for every three <i>building users</i>. ▪ Two credits No more than one parking space is provided for every four <i>building users</i>. 	0 of 2	The Design Team confirmed that due to the amount of car parking spaces provided, these credits cannot be achieved, however this may be re-addressed if additional credits are required.
Tra 8 Deliveries and Manoeuvring	One credit is awarded where evidence provided demonstrates that vehicle access areas have been designed to ensure adequate space for manoeuvring delivery vehicles and provide space for storage of refuse skips and pallets.	1 of 1	The Design Team confirmed that appropriate turning circles, lorry waiting areas and a skip / pallet storage area will be included within the external design. This will be confirmed in appropriate site drawings and will allow one credit to be awarded.

Water

Wat 1 Water Consumption	Up to three credits can be awarded on the basis of the predicted potable water consumption for sanitary use within the building.	2 of 3	<p>The Design Team confirmed the following sanitary fittings will be provided:</p> <ul style="list-style-type: none"> ▪ 6l/4l dual flush cistern WCs ▪ Spray, Aerated or flow restricted taps (flow rate $\leq 4\text{l/min}$). ▪ Showers with a flow rate of less than 6litres/min. ▪ PIR control to urinals. <p>The provision of the above fittings to all toilet areas will allow two credits to be achieved. This will be confirmed in the M&E and NBS Specifications.</p>
Wat 2 Water Meter	One credit is awarded where evidence provided demonstrates that a water meter with a pulsed output will be installed on the mains supply to each building.	1 of 1	The Design Team confirmed that a pulsed water meter will be provided to the mains water supply of each unit. This will be confirmed in the M&E Specification and on appropriate drawings (see attached BREEAM clause).

Wat 3 Major Leak detection	One credit is awarded where evidence provided demonstrates that a leak detection system is specified or installed and is capable of identifying major leaks both within the building and between the building and the site boundary, and should cover all mains water supplies to the building.	1 of 1	<p>The Design Team confirmed that a leak detection system will be specified for each unit. The system will be capable of detecting major leaks on the water supply and will cover all mains water supply between and within the building and the site boundary. It will also be:</p> <ul style="list-style-type: none"> ▪ Audible when activated ▪ 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 ▪ Able to identify different flow and therefore leakage rates, e.g. continuous, high and/or low level, over set time periods. ▪ Programmable to suit the owner/occupiers' water consumption requirements ▪ Where applicable, designed to avoid false alarms caused by normal operation of large water-consuming plant such as chillers. <p>This will be confirmed in the M&E Specification and on appropriate mechanical schematic drawings (see attached BREEAM clause).</p>
Wat 4 Sanitary Supply Shut Off	<p>One credit is awarded where 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> <ul style="list-style-type: none"> ▪ Infra-red movement detectors within each toilet facility OR ▪ Sensors or switches placed at or on entry doors to each facility. 	1 of 1	<p>The Design Team confirmed that sanitary supply shut off will be specified for each unit, in accordance with BREEAM requirements. This will be confirmed in the M&E Specification and on appropriate mechanical schematic drawings (see attached BREEAM clause).</p>

Materials

Mat 1 Materials Specification – Major Building Elements	Up to two credits are available where evidence provided demonstrates that the major building elements specified have an 'A' rating, as defined in the Green Guide to Specification.	2 of 2	<p>The Design Team confirmed the roof and external walls will comprise of composite cladding system, both of which achieve an 'A' rating in the Green Guide to Specification.</p> <p>The provision of these materials will be confirmed within the Building Specification and within construction detail drawings, which will allow two credits to be awarded.</p>
Mat 2 Hard Landscaping and Boundary Protection	One credit is awarded where at least 80% of the combined area of external hard landscaping and boundary protection specifications achieve an 'A' rating, as defined by the Green Guide to Specification.	1 of 1	<p>The Design Team confirmed the external hard landscaping will predominantly consist of concrete pavers to footpaths and parking areas, and boundary protection will be predominantly timber post and rail fence; therefore this credit is achievable. This will be confirmed in the NBS and on appropriate drawings.</p>

Mat 3 Re-use of Building Façade	One credit is awarded where evidence provided demonstrates that at least 50% of the total final façade (by area) is reused in situ and at least 80% of the reused façade (by mass) comprises in-situ reused material.	0 of 1	The Design Team confirmed this development is completely new build, therefore this credit is unavailable.
Mat 4 Re-Use of Building Structure	One credit is awarded where evidence provided demonstrates that a design reuses at least 80% of an existing primary structure and for part refurbishment and part new build, the volume of the reused structure comprises at least 50% of the final structure's volume.	0 of 1	The Design Team confirmed this development is completely new build, therefore this credit is unavailable.
Mat 5 Responsible Sourcing of Materials	Up to three credits are awarded where materials used in structural and non-structural elements are responsibly sourced.	2 of 3	The Design Team confirmed that every effort will be made to responsibly source all appropriate materials, in accordance with BREEAM criteria, (see attached guidance notes). The Design Team needs to complete the MW8 checklist (attached), and provide ISO14001, EMAS or FSC/ PEFC certificate for each individual material, making up each building element, as detailed upon the checklist. Two credits are currently assumed.
Mat 6 Insulation	Up to two credits can be awarded where thermal insulation products used in the building have a low embodied impact relative to their thermal properties, determined by the <i>Green Guide to Specification</i> ratings. And where thermal insulation products used in the building have been responsibly sourced	2 of 2	<p>The Design Team confirmed that 'A' rated insulation materials will be used in the following elements:</p> <ul style="list-style-type: none"> ▪ External walls ▪ Ground floor ▪ Roof ▪ Building services <p>Guide ratings for thermal insulation can be found at: www.thegreenguide.org.uk</p> <p>In addition, at least 80% of the thermal insulation used in the building elements will be sourced from suppliers with ISO14001 or EMAS certification.</p>
Mat 7 Designing for Robustness	One credit is awarded where evidence provided demonstrates that protection is given to vulnerable parts of the building such as areas exposed to high pedestrian traffic, vehicular and trolley movements.	1 of 1	The Design Team confirmed that appropriate protection would be given to vulnerable parts of the building, including bollards to goods doors, corner protection, kickplates to doors etc. therefore this credit achievable. This will be confirmed on appropriate drawings.

Waste																			
Wst 1 Construction Site Waste Management	Up to three credits are available where evidence provided demonstrates that the amount of non-hazardous construction waste (m ³ /100m ² or tonnes/100m ²) generated on site by the development is the same as or better than good or best practice levels.	2 of 4	The Design Team confirmed the appointed Contractor will be required to undertake the following: Ensure non-hazardous construction waste generated by the building's construction phase (excluding demolition and excavation waste) meets or exceeds the following resource efficiency benchmarks:																
	<table><tr><td></td><td colspan="2">Amount of waste generated per 100m² (gross internal floor area)</td></tr><tr><td>BREEAM Credits</td><td>m³</td><td>Tonnes</td></tr><tr><td>One</td><td>13.0 – 16.6</td><td>6.6 – 8.5</td></tr><tr><td>Two</td><td>9.2 – 12.9</td><td>4.7 – 6.5</td></tr><tr><td>Three</td><td><9.2</td><td><4.7</td></tr></table>			Amount of waste generated per 100m ² (gross internal floor area)		BREEAM Credits	m ³	Tonnes	One	13.0 – 16.6	6.6 – 8.5	Two	9.2 – 12.9	4.7 – 6.5	Three	<9.2	<4.7	<ul style="list-style-type: none">13.0 – 16.6 m3 (6.6-8.5 tonnes) per 100m² (gross internal floor area)	
			Amount of waste generated per 100m ² (gross internal floor area)																
	BREEAM Credits		m ³	Tonnes															
	One		13.0 – 16.6	6.6 – 8.5															
Two	9.2 – 12.9	4.7 – 6.5																	
Three	<9.2	<4.7																	
An additional credit can be awarded a significant majority of non-hazardous construction waste generated by the development will be diverted from landfill and reused or recycled.		The Design Team also confirmed at least 75% by weight or 65% by volume of non-hazardous construction waste generated by the project will be diverted from landfill and either: <ul style="list-style-type: none">Reused on site (in-situ or for new applications)Reused on other sitesSalvaged/reclaimed for reuseReturned to the supplier via a 'take-back' schemeRecovered from site by an approved waste management contractor and recycled.																	
		The above requirements and benchmarks will also be required to be detailed within the appointed contractors Site Waste Management Plan (see attached BREEAM clause).																	
		Two credits have been assumed.																	
Wst 2 Recycled Aggregate	One credit can be awarded where the amount of recycled and secondary aggregate specified is over 25% (by weight or volume) of the total <i>high-grade</i> aggregate uses. Such aggregates can be EITHER : <ul style="list-style-type: none">Obtained on site ORObtained 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 ORSecondary aggregates obtained from a non-construction post-consumer or post-industrial by-product source (see compliance notes).	1 of 1	The Design Team confirmed that at least 25% by weight or volume of the total high grade aggregate used will be sourced from a nearby post-industrial by-product source, such as PFA. This will allow one credit to be achieved.																

Wst 3 Recyclable Waste Storage	One credit is awarded where a central, dedicated storage space is provided for materials that can be recycled. This can be either within the building itself, or on site using skips, (provided there is good access for collections and it is within easy reach of the building).	1 of 1	The Design Team confirmed that adequate space for the storage of recyclable materials would be provided; as part of the process of the unit. The provision of the recyclable storage space will be confirmed on appropriate site plan drawings and will allow one credit to be awarded.
Wst 4 Compactor/ Baler	Where evidence provided demonstrates that either a compactor or baler is provided for compacting/baling waste generated on site.	1 of 1	The Design Team confirmed that a compactor/baler plant would not be provided as part of the process of the unit. This will be confirmed on appropriate drawings.

Land Use and Ecology

LE1 Re-Use of Land	One credit is awarded where evidence is provided to demonstrate that the footprint of the proposed development largely falls within the boundary of land previously developed.	1 of 1	The Design Team confirmed that the site was previously used within the last 50 years, therefore this credit is achievable. This should be confirmed in appropriate current and historical plans/ drawings.
LE2 Contaminated Land	One credit is awarded where evidence is provided to demonstrate that the land used for the new development has, prior to development, been defined as contaminated, and where adequate remedial steps have been taken to decontaminate the site prior to construction.	0 of 1	The Design Team confirmed that the site is not defined as contaminated, therefore no credit is available.
LE3 Ecological Value of Site 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 of 1	The Design Team confirmed the land is of a low ecological value, and the BREEAM 'Land of Low Ecological Value Checklist' will be completed to confirm this. This will allow one credit to be awarded. An ecological report will also be prepared which will indicate the site to be of low ecological value.

LE4 Mitigating Ecological Impact	<p>First Credit: One credit is awarded where evidence is provided to demonstrate the change in ecological value of the site, as a result of development, is less than zero and equal to, or greater than, minus nine species, i.e. a small negative change.</p> <p>Second Credit: One credit is awarded 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.</p>	2 of 2	<p>The Design Team confirmed that due to the Low Ecological Value of the site, it is likely that no negative impact will occur. This will be confirmed in a completed copy of the LE4 Checklist 'Change in Ecological Value', and will allow two credits to be awarded.</p> <p>A suitably qualified Ecological Consultant will also be employed to provide advice on landscaping to improve the number of species.</p> <p>This will be confirmed in a completed copy of the Ecological report.</p>
LE5 Enhancing Site Ecology	<p>First Credit: One credit is awarded where evidence provided demonstrates that the design team (or Design Team) 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.</p> <p>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.</p>	3 of 3	<p>The Design Team confirmed a suitably qualified Ecological Consultant will be employed to provide advice on the general enhancement and protection of site ecology and these recommendations will be implemented.</p> <p>As a result, there will also be a positive increase in the ecological value of the site of six species or greater.</p> <p>This will be confirmed in a completed copy of the Ecological report, along with a copy of the landscaping/ecological planting schedule and plan.</p>
LE6 Long Term Impact of Biodiversity	<p>First Credit: One credit is awarded where evidence provided demonstrates that the Design Team has committed to achieving the mandatory requirements and at least two of the additional requirements as listed in the credit Compliance Requirements.</p> <p>Second Credit: One credit is awarded where evidence provided demonstrates that the Design Team has committed to achieving the mandatory requirements and at least four of the additional requirements as listed in the credit Compliance Requirements.</p>	2 of 2	<p>The Design Team confirmed that a suitable qualified Ecologist will be appointed to confirm the mandatory requirements and at least four of the additional requirements of this credit are achieved.</p> <p>The achievement of the additional requirements will be the responsibility of the appointed Contractor. This will be confirmed in the Prelims documentation (see attached BREEAM clauses).</p>

Pollution			
Pol 1 Refrigerant GWP – Building Services	One credit is awarded where refrigerants have a global warming potential (GWP) of less than 5 or where there are no refrigerants specified for use in building services.	1 of 1	The Design Team confirmed that no refrigerants will be used in the building, and therefore this credit can be awarded by default. This will be confirmed in the M&E Specification and will allow one credit to be awarded.
Pol 2 Preventing Refrigerant Leaks	One credit is awarded where refrigerant leaks can be detected AND the provision of automatic refrigerant pump down is made to a heat exchanger (or dedicated storage tanks) with isolation valves or where there are no refrigerants specified for the development.	1 of 1	The Design Team confirmed that no refrigerants will be used in the building, and therefore this credit can be awarded by default. This will be confirmed in the M&E Specification and will allow one credit to be awarded.
Pol 3 GWP Refrigerant – Cold Storage	Where evidence provided demonstrates the use of refrigerants within cold storage systems with a global warming potential (GWP) of less than 5.	0 of 1	The Design Team confirmed that this credit would not be achieved.
Pol 4 NO _x Emissions	One credit can be awarded where evidence provided demonstrates that the maximum dry NO _x emissions from delivered space heating energy in the Office Area are ≤70 mg/kWh delivered heating energy or less (at 0% excess O ₂).	1 of 1	The Design Team confirmed that the heating system will benefit from the energy generated on site, and therefore have zero NO _x emissions.
Pol 5 Flood Risk	Two credits can be awarded where evidence provided demonstrates that the assessed development is located in a zone defined as having a low annual probability of flooding. OR One credit can be awarded 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. One additional credit can be awarded where evidence provided demonstrates that Sustainable Urban Drainage techniques are specified.	3 of 3	The Design Team confirmed the site is designated as an area of low probability of flood risk, which would allow two of the three credits to be awarded. Further confirmation was given that a Sustainable Urban Drainage System is currently specified to attenuate at least 50% of run off from hard surfaces, therefore an additional credit be achieved. This should be confirmed in the Environment Agency flooding classification maps for the site, and appropriate SUDS drawings and calculations.

Pol 6 Minimising Watercourse Pollution	One credit is awarded where evidence provided demonstrates that on site treatment such as oil separators/interceptors or filtration have been specified for areas at risk from pollution, i.e. vehicle manoeuvring areas, car parks, waste disposal facilities, delivery facilities or plant areas.	1 of 1	The Design Team confirmed that an oil/petrol interceptor will be installed on the site. This will be confirmed within appropriate civil and structural drawings and will allow one credit to be awarded.
Pol 7 Reduction in Night Time Light Pollution	One credit is awarded where the external lighting design is in compliance with the guidance in the Institution of Lighting Engineers (ILE) Guidance notes for the reduction of obtrusive light, 2005.	1 of 1	The Design Team confirmed that the external lighting design will be in accordance with the Institution of Lighting Engineers (ILE) Guidance notes for the reduction of obtrusive light, 2005. This will be confirmed in appropriate electrical drawings and in the M&E specification.
Pol 8 Noise Attenuation	One credit is awarded where evidence provided demonstrates that sources of noise from the development do not give rise to the likelihood of complaints from existing noise sensitive premises, amenity or wildlife areas that are within the locality of the site.	0 of 1	The Design Team have confirmed that noise sensitive areas are located within 800m radius of the site, and an acoustician will not be appointed to undertake a noise survey in accordance with BS4142.