

BREEAM



White
Young
Green

Building Research Establishment Environmental Assessment Method
BREEAM for Offices 2008
An environmental assessment method for new and refurbished offices
Project title: Enviroparks Visitor Centre & Gatehouse, Hirwaun
Client: Enviroparks Ltd.
Date: 28th October 2008

Enviroparks Ltd. – Enviroparks Visitor Centre and Gatehouse, Hirwaun

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The project consists of a new Gatehouse building and Visitor Centre at Enviroparks, Hirwaun.

An Initial Guidance Assessment has been prepared by Licensed Assessors - White Young Green to establish the potentially available credits for the Gate house building and Visitor Centre 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 72.21% 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	10.00	100.00%	12.00%
Health & Wellbeing	15.00%	13.00	10.00	76.92%	11.54%
Energy	19.00%	21.00	11.00	52.38%	9.95%
Transport	8.00%	10.00	5.00	50.00%	4.00%
Water	6.00%	6.00	5.00	83.33%	5.00%
Materials	12.50%	13.00	8.00	61.54%	7.69%
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%	12.00	8.00	66.67%	6.67%
Total					71.21%
Exemplary Level credits achieved					1.00%
Approved and/or pre-approved Innovation credits					0.00%
Total Innovation credits achieved					1.00%
Total BREEAM Score					72.21%

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Management			
Man 1 Commissioning	<p>One credit where 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>	2 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>In addition, seasonal commissioning will also be completed at 3, 6 and 9 month intervals after initial occupation, either by measurement or occupant feedback. This will also be confirmed in the M&E Specification, and/or under cover of letter.</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 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	<p>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).</p>	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 ▪ 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 User Guide	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	Where evidence provided demonstrates that an Architectural Liaison Officer (ALO) or Crime Prevention Design Advisor (CPDA) 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 Well Being			
Hea 1 Daylighting	<p>One credit where at least 80% of net lettable office floor area is adequately daylit in accordance with the guidance in the CIBSE Window Design Guide, BS8206 Part 2 and the BRE Site Layout Guide i.e;</p> <p>a. An average daylight factor of at least 2%</p> <p>PLUS either (b) OR (c AND d) below</p> <p>b. A uniformity ratio of at least 0.4; (spaces with glazed roofs, such as atria, must achieve a uniformity ratio of at least 0.7).</p> <p>OR</p> <p>c. A view of sky from desk height (0.7m) is achieved</p> <p>AND</p> <p>d. The room depth criterion $d/w + d/Hw < 2/(1-RB)$ is satisfied. Where: d = room depth w = room width Hw = window head height from floor level RB = average reflectance of surfaces in the rear half of the room.</p>	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 office areas respectively. This will be confirmed on appropriate drawings and in daylighting calculations.
Hea 2 View Out	One credit where evidence provided demonstrates that all desks are within a 7m radius of a window.	1 of 1	The Design Team confirmed that all workstations will be situated within a 7m radius of a window with external view. This will be confirmed upon appropriate notional room layout drawings.

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Hea 3 Glare Control	One credit where evidence provided demonstrates that an occupant controlled glare control system (e.g. internal or external blinds) is fitted.	1 of 1	The Design Team confirmed that all windows in occupied areas will be provided with internal blinds. This will be confirmed upon appropriate drawings and in the NBS (see attached BREEAM clause).
Hea 4 High Frequency Lighting	One credit 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 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) and in room data sheets confirming specific lux levels.
Hea 6 Lighting Zones	One credit where lighting, in all occupied areas, is zoned to allow separate control.	1 of 1	The Design Team confirmed that lighting is zoned to allow separate user-control of the following areas (where applicable): <ul style="list-style-type: none"> ▪ Office and circulation spaces ▪ In office areas, zones of no more than four workplaces ▪ Workstations adjacent to windows/atria and other building areas separately zoned and controlled. This will be confirmed on appropriate lighting schematic drawings and within the M&E Specification (see attached BREEAM clause).
Hea 7 Potential for Natural Ventilation	One credit where evidence provided demonstrates that external façade windows to all occupied areas are openable, and at least on opposite sides for accommodation over 7m deep.	1 of 1	The Design Team confirmed the openable window area in each room/floor plate will be equivalent to 5% of the gross internal floor area of that room/floor plate. This will be confirmed within appropriate drawings and calculations.
Hea 8 Internal Air Quality	One credit may be awarded where evidence provided demonstrates that air intakes serving occupied areas avoid major sources of external pollution and recirculation of exhaust air.	0 of 1	The Design Team confirmed that this credit is unlikely to be achieved, as car parking spaces are located within 10m of openable windows.
Hea 9 Volatile Organic Compounds	Where evidence provided demonstrates that 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.

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Hea 10 Thermal Comfort	Where evidence provided demonstrates that thermal comfort levels in occupied spaces of the building are assessed at the design stage to evaluate appropriate servicing options, ensuring appropriate thermal comfort levels are achieved.	1 of 1	The Design Team confirmed that 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.
Hea 11 Thermal Zoning	Where evidence provided demonstrates that local occupant control is available for temperature adjustment in each occupied space to reflect differing user demands.	1 of 1	The Design Team confirmed that the heating system to the office area will allow independent occupant thermal control, in all separate office areas. This will be confirmed in appropriate mechanical drawings and within the M&E Specification (see attached BREEAM clause).
Hea 12 Microbial Contamination	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 13 Acoustic Performance	Where evidence provided demonstrates that the building achieves appropriate indoor ambient noise levels in offices areas.	0 of 1	The Design Team confirmed that an acoustician will not be employed to confirm via calculation that indoor ambient noise levels in <i>unoccupied</i> staff/office areas comply with the requirements of this credit.

Energy			
Ene 1 Reduction of CO ₂ Emissions	Up to fifteen credits can be awarded where the building demonstrates a percentage improvement above the requirement for CO ₂ emissions as set out in the Building Regulations.	6 of 15	The Design Team confirmed the buildings 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.

<p>Ene 3 Sub-Metering of High Energy Load and Tenancy Areas</p>	<p>One credit may be awarded where evidence provided demonstrates sub-metering of energy use by tenancy/areas is installed within the building.</p>	<p>1 of 1</p>	<p>The Design Team confirmed that separate sub-meters would be provided to cover all major energy use/ tenancy areas within each building. This will be confirmed on appropriate electrical schematic drawings.</p>
<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 at least 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>

Transport			
Tra 1 Provision of Public Transport	<p>Three credits are available.</p> <p>The number of credits awarded is based on the proximity of the development to a public transport node with a good service frequency. This is determined using the BREEAM Offices public transport calculator.</p>	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 Amenities	<p>One credit is awarded where the building is within 500m of the following amenities:</p> <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.
Tra 3 Cyclist Facilities	<p>First credit may be awarded where evidence is provided to demonstrate that there is adequate provision of covered, secure and well lit cycle racks.</p> <p>The second credit may be awarded where, in addition to the above, adequate changing facilities are provided for staff use.</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 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	<p>Where evidence provided demonstrates that the site layout has been designed in accordance with best practice to ensure safe and adequate pedestrian and cycle access.</p>	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 "Guidelines and Practical Details – issue 2", Sustrans and the relevant parts of Appendix VI NCN Design and Construction Checklist.</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 may be 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 development.	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).
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.

Water			
Wat 1 Water Consumption	Up to three credits can be awarded where the specification includes taps, urinals, WCs and showers that consume less water in use than standard specifications for the same type of fittings.	2 of 3	The Design Team confirmed the following sanitary fittings will be provided: <ul style="list-style-type: none"> ▪ 6l/4l dual flush cistern WCs ▪ Spray, Aerated or flow restricted taps (flow rate $\leq 4l/min$). ▪ 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 to be awarded where information 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).

<p>Wat 3 Major Leak Detection</p>	<p>One credit where 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.</p>	<p>1 of 1</p>	<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>
<p>Wat 4 Sanitary Supply Shut Off</p>	<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. 	<p>1 of 1</p>	<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			
<p>Mat 1 Materials Specification – Major Building Elements</p>	<p>Up to four 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.</p>	<p>3 of 4</p>	<p>The Design Team confirmed that external walls, roof, internal walls and upper floors will achieve an A or A+ rating as defined in the green guide to Specification. This will be confirmed in the NBS.</p>
<p>Mat 2 Hard Landscape and Boundary Protection</p>	<p>One credit is available where at least 80% of the combined area of external hard landscaping and boundary protection specifications achieve an A or A+ rating, as defined by the Green Guide to Specification.</p>	<p>1 of 1</p>	<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>
<p>Mat 3 Reuse of Building Façade</p>	<p>One credit where at least 50% of the total façade (by area) is reused and at least 80% of the reused façade (by mass) comprises in-situ reused material.</p>	<p>0 of 1</p>	<p>The Design Team confirmed this development is completely new build, therefore this credit is unavailable.</p>

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Mat 4 Reuse of Building Structure	One credit 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 available where materials used in structural and non-structural elements are responsibly sourced.	1 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. One credit is currently assumed.
Mat 6 Insulation	Up to 2 credits can be awarded; One credit may be awarded where evidence provided demonstrates that thermal insulation products used in the building have a low embodied impact relative to their thermal properties, determined by the Green Guide to Specification ratings. A second credit may be awarded where evidence provided demonstrates that thermal insulation products used in the building have been responsibly sourced.	2 of 2	The Design Team confirmed that 'A' rated insulation materials will be used in the following elements: <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 available where 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 (where appropriate) corner protection, kickplates to doors, robust wall construction, hard wearing floors and external kerbing etc. therefore this credit achievable. This will be confirmed on appropriate drawings.

Waste																		
<p>Wst 1 Construction Site Waste Management</p>	<p>Up to three credits are available where evidence provided demonstrates that the amount of non-hazardous construction waste (m³/100m² or tonnes/100m²) generated on site by the development is the same as or</p> <table border="1" data-bbox="369 526 953 711"> <thead> <tr> <th></th> <th colspan="2">Amount of waste generated per 100m² (gross internal floor area)</th> </tr> <tr> <th>BREEAM Credits</th> <th>m³</th> <th>Tonnes</th> </tr> </thead> <tbody> <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> </tbody> </table> <p>better than good or best practice levels.</p> <p>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.</p>		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	<p>2 of 4</p>	<p>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:</p> <ul style="list-style-type: none"> ▪ 13.0 – 16.6 m³ (6.6-8.5 tonnes) per 100m² (gross internal floor area) <p>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:</p> <ul style="list-style-type: none"> ▪ Reused on site (in-situ or for new applications) ▪ Reused on other sites ▪ Salvaged/reclaimed for reuse ▪ Returned to the supplier via a 'take-back' scheme ▪ Recovered from site by an approved waste management contractor and recycled. <p>The above requirements and benchmarks will also be required to be detailed within the appointed contractors Site Waste Management Plan (see attached BREEAM clause).</p> <p>Two credits have been assumed.</p>
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One	13.0 – 16.6	6.6 – 8.5																
Two	9.2 – 12.9	4.7 – 6.5																
Three	<9.2	<4.7																
<p>Wst 2 Recycled Aggregates</p>	<p>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:</p> <ul style="list-style-type: none"> ▪ Obtained on site OR ▪ 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 ▪ Secondary aggregates obtained from a non-construction post-consumer or post-industrial by-product source. 	<p>1 of 1</p>	<p>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.</p>															
<p>Wst 3 Recyclable Waste Storage</p>	<p>One credit is awarded where a central, dedicated space is provided for the storage of the building's recyclable waste streams.</p>	<p>1 of 1</p>	<p>The Design Team confirmed that adequate space for the storage of recyclable materials would be provided; as part of the process of the development.</p> <p>The provision of the recyclable storage space will be confirmed on appropriate site plan drawings and will allow one credit to be awarded.</p>															

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Wst 6 Floor Finishes	One credit is awarded where carpets and other floor finishes are specified by the future occupant or, in tenanted areas of speculative buildings, where carpets or floor finishes are installed in a limited show area only.	1 of 1	The Design Team confirmed that the future occupier (Enviroparks Ltd.) will specify the floor finishes within both buildings. This will be confirmed under cover of letter from Enviroparks Ltd.
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Land Use & Ecology			
LE 1 Reuse of Land	One credit may be 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.
LE 2 Contaminated Land	One credit may be 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.	1 of 1	The Design Team confirmed that the site is not defined as contaminated, therefore no credit is available.
LE 3 Ecological Value of Land AND Protection of Ecological Values	One credit may be 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.
LE 4 Mitigating Ecological Impacts	<p>The first credit may be awarded 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.</p> <p>The second credit may be 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>

<p>LE 5 Enhancing Site Ecology</p>	<p>One credit may be awarded 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.</p> <p>Up to two additional credits are awarded where, in addition to the above, evidence provided demonstrates a positive increase in the ecological value of the site.</p>	<p>3 of 3</p>	<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 for the landscaping/ ecological planting schedule and plan.</p>
<p>LE 6 Long Term Impact on Biodiversity</p>	<p>One credit is awarded where evidence provided demonstrates that the client has committed to achieving the mandatory requirements and at least two of the additional requirements as listed in the credit Compliance Requirements.</p> <p>An additional credit may be awarded where evidence provided demonstrates that the client has committed to achieving the mandatory requirements and at least four of the additional requirements as listed in the credit Compliance Requirements.</p>	<p>2 of 2</p>	<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>
<p>Pollution</p>			
<p>Pol 1 Refrigerant GWP – Building Services</p>	<p>One credit may be awarded where evidence provided demonstrates the use of refrigerants with a global warming potential (GWP) of less than 5 or where there are no refrigerants specified for use in building services.</p>	<p>1 of 1</p>	<p>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</p>
<p>Pol 2 Preventing Refrigerant Leaks</p>	<p>One credit may be awarded where evidence provided demonstrates that refrigerant leaks can be detected or where there are no refrigerants specified for use in the building or development</p> <p>An additional credit may be awarded where evidence provided demonstrates that 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.</p>	<p>2 of 2</p>	<p>The Design Team confirmed that no refrigerants will be used in the building, and therefore these credits can be awarded by default. This will be confirmed in the M&E Specification and will allow two credits to be awarded</p>

<p>Pol 4 NOx Emissions of heating source</p>	<p>Up to 3 credits are available depending on the maximum dry NOx emissions from delivered space heating energy:</p> <p>One credit may be awarded where dry NOx emissions are ≤ 100 mg/kWh (at 0% excess O₂).</p> <p>Two credits may be awarded where dry NOx emissions are ≤ 70 mg/kWh (at 0% excess O₂).</p> <p>Three credits may be awarded where dry NOx emissions are ≤ 40 mg/kWh (at 0% excess O₂).</p>	<p>0 of 3</p>	<p>The Design Team could not confirm the source of the space heating for each building, although it is likely to be sourced from the waste heat from site processes. It is assumed no credits will be achieved until further confirmation is provided regarding the source of the space heating for each building.</p>
<p>Pol 5 Flood Risk</p>	<p>Up to three credits can be awarded;</p> <p>Two credits may be awarded where evidence provided demonstrates that the assessed development is located in a zone defined as having a low annual probability of flooding.</p> <p>One credit may be awarded where evidence provided demonstrates that the assessed development is located in a zone defined as having a medium or high 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>An additional credit may be awarded where evidence provided demonstrates that surface water run-off attenuation measures are specified to minimise the risk of localised flooding, resulting from a loss of flood storage on site due to development.</p>	<p>3 of 3</p>	<p>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.</p> <p>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.</p> <p>This should be confirmed in the Environment Agency flooding classification maps for the site, and appropriate SUDS drawings and calculations.</p>
<p>Pol 6 Minimising Water Course Pollution</p>	<p>Where evidence provided demonstrates that effective on site treatment such as Sustainable Drainage Systems (SUDs) or oil separators have been specified in areas that are or could be a source of watercourse pollution.</p>	<p>1 of 1</p>	<p>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.</p>
<p>Pol 7 Reduction of Night Time Light Pollution</p>	<p>One credit where evidence provided demonstrates that 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.</p>	<p>1 of 1</p>	<p>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.</p>

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Pol 8 Noise Attenuation	One credit is available 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 and 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.
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