BREEAM Pre-Assessment Report

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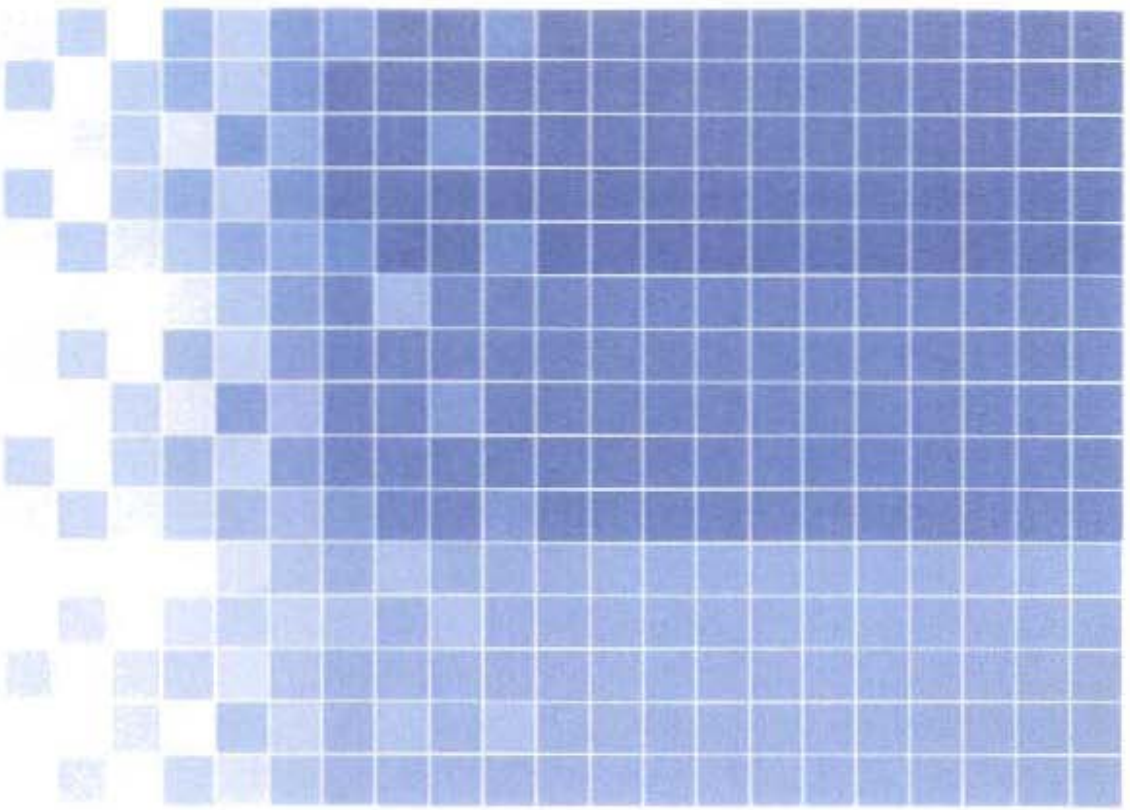


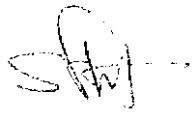
BREEAM Offices 2006 Pre-Assessment
Port Street, Manchester

GP Investments
4 February 2008

BREEAM OFFICES 2006 PRE-ASSESSMENT

Port Street, Manchester.

Prepared by :-



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1.0 ASSESSMENT SUMMARY

A pre-assessment has been undertaken on the proposed development at Port Street, Manchester using the Building Research Establishment Environmental Assessment Methodology (BREEAM).

BREEAM is a tool for assessing and reducing the environmental impact of new buildings at the design stage by examining issues related to management, health and wellbeing, energy, transport, water, materials, land use, ecology and pollution, and awarding credits for compliance with best practice. A single summary BREEAM rating is produced of Pass, Good, Very Good or Excellent.

The pre-assessment was undertaken using the 2006 Design and Procurement Methodology for Offices.

The pre-assessment demonstrates that based upon the current design proposals and the credits which are considered to be feasible the development will achieve a score of **59.0%** and a BREEAM rating of **Very Good**.

The credit criteria are described within the action list in Section 4.0.

For all of the credits suitable documentary evidence will need to be provided to the BREEAM assessor to allow the credits to be awarded in the final assessment.

2.0 CREDIT SUMMARY

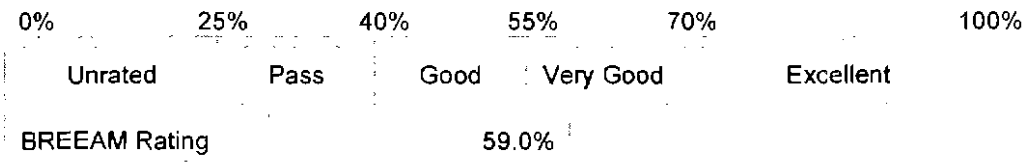
Credit Summary BREEAM 2006 Offices		Credit Reference	Credits Available	Credits Required
Management	Commissioning	M1	2	2
	Considerate Constructors	M4	2	2
	Construction Site Impacts	M5	4	4
	Building User Guide	M12	1	1
Health & Wellbeing	Daylighting	HW1	1	0
	View Out	HW2	1	1
	Glare Control	HW3	1	1
	High Frequency Lighting	HW4	1	1
	Internal and External Lighting Levels	HW5	1	0
	Lighting Zones	HW6	1	1
	Potential for Natural Ventilation	HW8	1	1
	Internal Air Pollution	HW9	1	0
	Ventilation Rates	HW11	1	1
	Thermal Comfort	HW14	1	0
	Thermal Zoning	HW15	1	1
	Microbial Contamination	HW16	1	1
	Acoustic Performance	HW17	1	0
Energy & Transport	Reduction of CO_2 emissions	E1	15	0
	Sub-metering substantial users	E2	1	0
	Sub-metering of areas/tenancy	E3	1	1
	External Lighting	E4	1	1
	Provision of public transport	T1	2	2
	Transport CO_2	T2	10	10
	Cyclist facilities	T5	2	0
	Travel Plan	T8	1	0
Water	Water Consumption	W1	3	2
	Water meter	W2	1	1
	Major Leak Detection	W3	1	0
	Sanitary Supply Shut off	W4	1	0
Materials	Materials Specification - Major Building Elements	MW1	4	3
	Floor Finishes	MW3	1	1
	Reuse of Building Façade	MW5	1	0
	Reuse of Building Structure	MW6	1	0
	Recycled Aggregates	MW7	1	0
	Responsible Sourcing of Materials	MW8	3	0
	Storage of Recyclable Waste	MW12	1	1
Land use & Ecology	Reuse of Land	LE1	1	1
	Contaminated Land	LE2	1	0
	Ecological Value of Land and Protection of Ecological Features	LE3	1	1
	Mitigating Ecological Impacts	LE4	2	2
	Enhancing Site Ecology	LE5	3	2
	Long Term Impact on Biodiversity	LE6	2	1
Pollution	Refrigerant GWP - Building Services	P1	1	1
	Preventing Refrigerant Leaks	P2	2	2
	Insulant GWP	P4	1	1
	NO_x Emissions of Heating Source	P6	3	0
	Flood Risk / Water Run-off	P7	3	2
	Minimising Water Course Pollution	P8	1	0
	Renewable & Low Emission Energy	P11	3	0
	Reduction of night time light pollution	P12	1	1
			TOTAL	59.0%

3.0 BREEAM RATING

The BREEAM rating is calculated from the percentage score from each of the weighted sections of the assessment as shown in the table below.

	Credits Available	Credits Required	% of Available Credits Required	Weighting Factor	Section Score
Management	9	9	100.0%	15.0%	15.0%
Health & Wellbeing	13	8	61.5%	15.0%	9.2%
Energy	18	2	42.4%	25.0%	10.6%
Transport	15	12			
Water	6	3	50.0%	5.0%	2.5%
Materials	12	5	41.7%	10.0%	4.2%
Land Use & Ecology	10	7	70.0%	15.0%	10.5%
Pollution	15	7	46.7%	15.0%	7.0%
			TOTAL		**59.0%**

The pre-assessment demonstrates that based upon the current design proposals and the credits which are considered to be feasible the development will achieve a score of **59.0%** and a BREEAM rating of **Very Good**.



4.0 CREDIT CRITERIA

The below provides an overview of the BREEAM Office 2006 criteria and identifies the credits which have been targeted for this scheme.

CREDIT CRITERIA	Credits Required
M1 Commissioning	
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. Confirm that a specialist commissioning agent will be utilised for all complex systems (mechanical ventilation, air conditioning, BMS).	1
A second credit is available where the specification (or commissioning duties) show that seasonal commissioning will be undertaken during the first 12 months of occupancy/post completion: • The performance of systems is to be tested under high and low load and, where relevant at high and low occupancy levels by the specialist commissioning agent. • Occupant feedback should be sought and re-commissioning of complex systems shall be undertaken where found to be necessary. Changes shall be incorporated into the O&M manuals.	1
M4 Considerate Constructors	
One credit is awarded where it can be demonstrated that the contractor has committed to register the site with the Considerate Constructors Scheme (CCS) and achieve formal certification under the scheme, with a CCS score of at least 24 points. A second credit can be awarded, where the contractor has committed to the above and a CCS score of at least 32 points (with a minimum of 4 in each section of the scheme).	2
M5 Construction Site Impacts	
Up to three credits are awarded based upon the implementation of measures to minimise the impact of the construction process. To achieve the credits six of the following seven measures must be adopted: • Monitor, report and set targets for CO_2 or energy arising from site activities; • Monitor, report and set targets for CO_2 or energy arising from transport to and from site; • Monitor, report and set targets for water consumption arising from site activities; • Monitor construction waste on site; • Sort and recycle construction waste; • Adopt best practice policies in respect of air (dust) pollution arising from the site; • Adopt best practice policies in respect of water (ground and surface) pollution occurring on the site.	4
A further credit is awarded where it can be shown that all temporary timber (e.g. hoardings, formwork and scaffolding) used during construction has been responsibility sourced with an appropriate chain of custody (e.g. FSC or PEFC). Re-used timber is acceptable as long as its source can be identified.	

CREDIT CRITERIA	Credits Required
M12 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. The flowing contents must be covered for both the general user and non technical facilities staff: Building Services Information, Emergency Information, Energy and Environmental Strategy, Water Use, Transport Facilities, Materials and Waste Policy, Refit / Re-arrangement Considerations, Reporting Provision, Training, Links and References	1
HW1 Daylighting	
Credit is awarded where it can be demonstrated that 80% of the NLA is adequately daylit. To be considered adequately daylit there must be an average daylight factor of 2%, and either: • Achieve a uniformity ratio of 0.4; or • View of sky from desk height (0.7m) and satisfy the room depth criteria $d/w+d/H_w<2/(1-R_B)$. Where: d = room depth w = room width H_w = window head height from floor level R_B = average reflectance of surfaces in the rear half of the room.	0
HW2 View Out	
Where it can be demonstrated that all workstations have a view out of the building within 7m.	1
HW3 Glare Control	
Where evidence provided demonstrates that an occupant controlled glare control system (e.g. internal or external blinds) is fitted. For speculative buildings a commitment by the developer to provide an occupant controlled system of glare control, as part of their fit out works, will be acceptable. Where the tenant is unknown, this credit can only be achieved where the developer confirms that the provision of glare control/blinds will form part of the fit out agreement.	1
HW4 High Frequency Lighting	
Where evidence provided demonstrates that high frequency ballasts are installed on all fluorescent and compact fluorescent lamps.	1
HW5 Internal and External Lighting Levels	
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. For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 7, 'Lighting for offices'. External Lighting - Lux levels must be specified in accordance with CIBSE Lighting Guide 6, '*The outdoor environment*'.	0

CREDIT CRITERIA	Credits Required
HW6 Lighting Zones	
Where evidence provided demonstrates that lighting, in all occupied areas, is zoned to allow separate control. For offices separate zones should be provided for (as a minimum): office and circulation spaces; no more than four workplaces in office areas (40m^2) workstations adjacent to windows/atria and other areas. In the case of speculative office buildings, the control system has the capacity to be zoned, as detailed as above, once the final tenant is known and occupancy patterns/layout is agreed, but need not be set up for this in order for the credit to be awarded.	1
HW8 Potential for Natural Ventilation	
Where evidence provided demonstrates that external façade windows to all occupied areas are openable. The openable window area in each room/floor plate should be equivalent to 5% of the gross internal floor area of that room/floor plate, and for accommodation over 7m deep openable windows are on opposite sides.	1
HW9 Internal Air Pollution	
Where air intakes serving occupied areas avoid major sources of external pollution and recirculation of exhaust air. Where location of air intakes/outlets are over 10m apart to minimise recirculation AND intakes are over 20m from sources of external pollution.	0
HW11 Ventilation Rates	
Where evidence provided demonstrates that each space within the development achieves recommended minimum fresh air rates. For naturally ventilated buildings the openable window area in each room/floor plate should be equivalent to 5% of the gross internal floor area of that room/floor plate, and for accommodation over 7m deep openable windows are on opposite sides.	1
HW14 Thermal Comfort	
Thermal modelling must have been carried out using software that is compliant with CIBSE AM11. The software used to carry out the simulation at the detailed design stage must provide full dynamic thermal analysis. The studies/modelling are used to guide design decisions including: • Basic building form and orientation, • Internal layout, • Exploiting the effect of trees and building overshading on solar heat gain, balancing the maximisation of daylight for reduced lighting energy use against increased cooling loads and thermal comfort levels. • Checking for overheating risk. The design team should confirm that the air-conditioning system has been sized to maintain thermal comfort conditions (in accordance with CIBSE Guide A) and that the recommended comfort criteria in section 1.3 will be met.	0

CREDIT CRITERIA	Credits Required
HW15 Thermal Zoning	
Where evidence provided demonstrates that local occupant control is available for temperature adjustment in each area to reflect differing load requirements:- • The heating/cooling system is designed to allow independent occupant thermal control, in all separate rooms/areas (including floors) within the building. • Zoning allows separate occupant control to be made of each perimeter area (i.e. within 7m of each external wall) and the central zone (i.e. over 7m from the external walls).	1
HW16 Microbial Contamination	
Where evidence provided demonstrates that the risk of waterborne and airborne legionella contamination has been minimised. All water and HVAC (heating ventilation and air-conditioning) systems are 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. Where no humidification is present, or only steam humidification is provided.	1
HW17 Acoustic Performance	
Where evidence demonstrates that the building design can be shown to achieve ambient noise levels in unoccupied offices within the range of 45-50dB $L_{Aeq\,T}$ (Large open plan offices). Where T is taken as the normal working day (typically 8 hours between 09.00 and 17.00). Noise from both internal sources (e.g. mechanical ventilation systems, plant noise) and external sources (e.g. traffic noise transmitted via the building façade) should be included, and, where windows are openable as part of the ventilation strategy, these should be assumed to be open for the purposes of the calculation.	0
E1 Reduction of CO_2 Emissions	
Where the building demonstrates a percentage improvement above the requirement for CO_2 emissions as set out in the Building Regulations. Credits: 1 — Percentage over L2A(2006): 1% Credits: 2 — Percentage over L2A(2006): 2% Credits: 3 — Percentage over L2A(2006): 4% Credits: 4 — Percentage over L2A(2006): 6% Credits: 5 — Percentage over L2A(2006): 8% The number of credits achieved is based on the percentage improvement in the assessed designs' predicted Building CO_2 Emission Rate (BER) over the Target CO_2 Emission Rate (TER), as defined in the Building Regulations.	0

CREDIT CRITERIA	Credits Required
E2 Sub-metering of substantial energy uses	
Where evidence is provided to demonstrate the provision of direct sub-metering of substantive energy uses within the building. Separate energy sub-meters are provided for the following systems (where present) • Space Heating • Humidification Plant • Cooling Plant • Fans (major) • Lighting • Small power (lighting and small power can be on the same sub-meter where supplies are taken at each floor/department). • Other major energy consuming items where appropriate e.g. servers, kitchens	0
E3 Sub-metering of areas/tenancy	
Where evidence provided demonstrates sub-metering of energy use by tenancy/areas is installed within the building on a floor by floor basis. For speculative buildings a commitment is required to install meters to separate tenancy areas.	1
E4 External Lighting	
Credit is awarded where the following criteria are met:- • Efficacy of all external lighting for the building, access ways and pathways is at least 50 lamp lumens/circuit watt; • Lighting to car parking areas and associated roads, flood lighting and sign lighting where provided, has an efficacy of at least 70 lamp lumens/circuit watt • External lighting is provided with lux controls or a timer.	1
T1 Provision of Public Transport	
Credits are awarded where the site is within 500m of a transport node and there is a regular service (average of 15 minutes) to a local urban centre at peak times.	1
A second credit is awarded where there is a transport node with 500m which has a regular service (average of 30 minutes) to a major transport node during peak times. Transport nodes must be within 500m via a safe pedestrian route from the entrance to the development.	1
T2 Transport CO_2	
Ten credits will be achieved using the BREEAM Offices Calculation Tool as no car parking spaces are provided.	10

CREDIT CRITERIA	Credits Required
T5 Cyclist Facilities	
Where evidence is provided to demonstrate that there is adequate provision of covered, secure and well lit cycle racks and showers for building occupants. Where both credits within T1 Provision of Public Transport are achieved cycle facilities for 5% of the occupant (based upon 1 person per $10m^2$ of net floor area) must be provided. Where both credits within T1 are not achieved, facilities for 10% of the occupants should be provided. One shower is also required for every 10 cycle racks.	0
An additional credit is achieved where it can be demonstrated that there is adequate provision of changing facilities ($1m^2$ per cycle rack) and lockers for clothes, or a dedicated drying space for wet clothes (ventilated and heated space no minimum size requirement).	0
T8 Travel Plan	
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. The plan should demonstrate how and what measures have been, or will be taken to minimise the impact of traffic, as a result of the new development. It must also be demonstrated that measures have been included in the design to assist to meet the travel plan objectives (e.g. cycle bays, provision of safe pedestrian access).	0
W1 Water Consumption	
Credits are awarded based upon the calculated water usage per person using the BREEAM Offices Calculation Tool. The following specification would achieve two credits: • 6/4 litre dual flush WC • Urinals with PIR flush controls • Taps – aerating, flow regulated or auto shut off • Shower with a maximum flow rate of 9 litres/minute.	2
W2 Water Meter	
Where a water meter with a pulsed output will be installed on the mains supply to the building.	1
W3 Major Leak Detection	
Where evidence provided demonstrates that a leak detection system is specified capable of identifying major leaks both within the building and between the building and the site boundary, covering all mains water supplies to the building.	0
W4 Sanitary Supply Shut Off	
Where evidence provided demonstrates that proximity detection shut off is provided to the water supply to all urinals and WC's using solenoid valves and PIR or door sensors.	0

CREDIT CRITERIA	Credits Required
MW1 Materials Specification – Major Building Elements	
Where evidence provided demonstrates that the major building elements specified have an 'A rating', as defined in the *Green Guide to Specification*. The following elements are considered: external walls, windows, roof, upper floor slabs. Credits are awarded for the major building elements based on the target ratio derived by the BREEAM Ecopoints calculator. Provide an outline specification for the listed elements to the assessor.	3
MW3 Floor Finishes	
Where carpets and other floor finishes are specified by the future occupant or, in tenant areas of speculative buildings, where carpets or floor finishes are installed in a limited show area only (up to 25% of the net lettable area maximum).	1
MW5 Reuse of Building Façade	
This credit cannot be achieved for a new build development.	0
MW6 Reuse of Building Structure	
This credit cannot be achieved for a new build development.	0
MW7 Recycled aggregates	
Credit is awarded where the amount of recycled aggregate specified is over 25% (by weight) of the total '*high grade*' aggregate uses (see definition below). Recycled aggregates can be obtained on site, obtained from sites within a 30km radius, or obtained from a recycled, non construction post-consumer/post-industrial by product source, such as crushed/blown glass pellets, PFAs, blast furnace slag, etc. *High grade'* aggregate uses are considered to be: structural frame, floor slabs including ground floor slabs, asphalt based or similar road surfaces, gravel landscaping, site-derived masonry as hardcore under ground floor slabs, site roads and car parking areas.	0
MW8 Responsible sourcing of materials	
The majority of materials in the following elements within the building must be responsibly sourced: roof, frame, walls (external), floors (ground, upper), foundations/substructure, doors, and windows. A calculation is undertaken by the assessor which takes into account the rigor of the certification scheme or Environmental Management Scheme used during manufacture or procurement. Timber elements such as doors should be specified from FSC sources, non timber elements must be from suppliers with an Environmental Management System certified to either ISO14001 or EMAS standard.	0
MW12 Storage of recyclable waste	
Where a central, dedicated storage space is provided for materials that can be recycled. The storage space must measure $2m^2$ per $1,000m^2$ of net floor area and be : • Clearly labelled for recycling. • Placed within easy reach of all building areas (e.g. less than 20m from the base of a stairwell serving all floors). • In a location with good vehicular access to facilitate collections.	1

CREDIT CRITERIA	Credits Required
LE1 Reuse of Land	
Credit is awarded where is can be shown that at least 75% of the proposed development's footprint was previously developed or used for industrial purposes in the last 50 years.	1
LE2 Contaminated Land	
The land used for development was not significantly contaminated prior to development and did not require remediation. Credit cannot be achieved.	0
LE3 Ecological value of land and protection of ecological features	
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
LE4 Mitigating ecological impact	
Where evidence is provided to demonstrate the change in ecological value of the site, as a result of development, is between minus nine and zero species per hectare, as quantified by a suitably trained ecologist or using the BREEAM LE4 Calculation Tool.	2
LE5 Enhancing site ecology	
Where evidence is provided to demonstrate that the design team (or client) has appointed a professional to advise and report on enhancing and protecting the ecological value of the site; and have implemented the professional's recommendations for general enhancement and protection for site ecology to achieve a slight positive change in the ecological value of the site.	2

CREDIT CRITERIA	Credits Required
LE6 Long Term Impact on Biodiversity	
Once credit is awarded for implementing 'mandatory measures', where a suitably qualified ecologist is appointed prior to commencement of activities on site to: • Confirm that all relevant UK and EU legislation relating to protection and enhancement of ecology has been, or will be, complied with during the design and construction process. • Develop an appropriate management plan is produced covering at least the first 5 years after project completion to be handed over to the building occupants. **AND** Where two of the 'additional requirements' have been implemented:- • The contractor nominates a 'Biodiversity Champion' with the authority to influence site activities. • The contractor is required to train all relevant site work-force on how to protect site ecology during the project. • The contractor is required to record actions taken to protect biodiversity and monitor their effectiveness through key stages of construction. • An ecologically valuable habitat appropriate to the local area is created. • Site works are programmed to avoid disturbance to wildlife. • The client requires actions be taken to protect/enhance biodiversity taking full account of the UK biodiversity action plan. Two credits are awarded where the 'mandatory requirements' and a total of four of the 'additional requirements' have been implemented.	1
P1 Refrigerant GWP – building services 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.	1
P2 Preventing refrigerant leaks Two credits are available where evidence provided demonstrates: - • Refrigerant leaks can be detected or where there are no refrigerants specified for use in the building or development. • 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. The credits can be awarded by default where the total refrigerant charge in a system or systems is shown to be less than 5kg.	2
P4 Insulant GWP Where evidence provided demonstrates that the specification of insulating materials avoids the use of substances with a global warming potential (GWP) of 5 or more in either manufacture or composition. The selected insulation materials must also have zero Ozone Depleting Potential (ODP). All insulation in fabric and services must be shown to comply.	1

CREDIT CRITERIA	Credits Required
P6 NOx emissions of heating source	
Where evidence provided demonstrates that the maximum dry NO_x emissions from delivered space heating energy are: • ≤100 mg/kWh (at 0% excess O_2) – 1 credit • ≤70 mg/kWh (at 0% excess O_2) – 2 credits • ≤40 mg/kWh (at 0% excess O_2) – 3 credits	0
P7 Minimising flood risk	
The site has an annual probability of flooding of 1 in 1,000 (<0.1%) and two credits are achieved.	2
An additional credit can be achieve were it can be demonstrated that Sustainable Urban Drainage (SUDS) techniques are specified to attenuate 50% of the peak flow rate of water run off, from hard surfaces to natural watercourses or municipal drainage systems, during a design storm event where the risk of flooding is low (<0.1%). To ensure effective operation of the water run-off attenuation measures, the facilities must discharge half their volume within 24-48 hours (unless advised otherwise by a statutory body) of the storm event in readiness for any subsequent storm inflow. Hard surfaces include; roofs, car parks, access roads, pavements, delivery/service yards and external hard landscaping. Footpaths less than 1.5m wide which have free drainage to soft landscaped areas on both sides may be excluded. For the purposes of calculating the peak flow rate volume, a 60 min duration of the design storm event should be used (unless a different duration is required by a statutory body).	0
P8 Minimising watercourse pollution	
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.	0
P11 Renewable & low emission energy	
One credit is awarded where a feasibility study is undertaken for low and zero carbon energy sources and the results implemented.	
A second credit is awarded where low or zero carbon energy sources are provided to meet 10% of the total heat or power.	0
A third credit is awarded where low or zero carbon energy sources are provided to meet 15% of the total heat or power.	
P12 Reduction of Night Time Light Pollution	
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.	1