BREEAM Office 2006

Design Advice Report

Holbrook House

Henderson Central London Office Fund

5th May 2006

WSP

QM

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Executive Summary

WSP ENVIRONMENTAL HAS BEEN APPOINTED AS THE INDEPENDENT BREEAM ASSESSOR FOR HOLBROOK HOUSE OFFICE REFURBISHMENT. THIS REPORT OUTLINES THE LIKELY ENVIRONMENTAL PERFORMANCE UNDER THE BREEAM FOR OFFICE 2006 ASSESSMENT. AT THIS EARLY STAGE IN THE DESIGN A SCORE OF 50.37% IS LIKELY TO BE ACHIEVED, WHICH EQUATES TO A RATING OF 'GOOD'.

IN ADDITION, WSPE AND THE DESIGN TEAM HAVE IDENTIFIED CREDITS TO INCREASE THE TARGET RATING TO A 'VERY GOOD', WITH THE POTENTIAL OF ACHIEVING A SCORE OF 61.04%.

1 Development

Holbrook House Office Development.

2 Design Team

Client/ Developer:	Henderson Central London Office Fund
Architects:	John Robertson and Architects
M&E Engineer:	WSP Buildings
Quantity Surveyor	Rider Hunt

3 Introduction

This report has been prepared for Henderson Central London Office Fund by WSP Environmental Ltd. who is a licensed organisation under the Building Research Establishments (BRE) Office scheme.

This report provides the outcome of the BREEAM Offices 2006 design advice assessment, carried out during the meeting on 20th April 2006 and details the design measures confirmed by the design team that secured a 'GOOD' rating.

4 Background

BREEAM is a market-focused tool aimed at encouraging significant improvements in the performance of buildings through the recognition and demonstration of improvements made to those buildings.

The BREEAM score provides a means of measuring the environmental impact of a building throughout its life and so benchmarking this against other buildings. There are a number of key uses for the methodology, which provide the following benefits:

- Maximising opportunities of the building's performance during the design phase of both new build and refurbishment schemes.
- Specifying environmental requirements in the procurement and management of office accommodation of any age or type.
- Providing an independently verifiable measurement tool for use within Environmental Management Systems.
- Providing an independently verifiable environmental label for marketing and promotional purposes.

The BREEAM rating is divided into four levels, with 'PASS', 'GOOD', 'VERY GOOD', and 'EXCELLENT' being the achievable ratings. The percentage score achieved within the assessment is categorised accordingly, based on calculations in the BREEAM software:

Minimum score required for Design and Procurement Assessment:

PASS	25%,
GOOD	40%,
VERY GOOD	55%,
EXCELLENT	70%,

5 Category Weightings & Credit Percentages

The BREEAM Office 2006 categories are weighted according to importance by the BRE, see table below. Within each category there are a different number of credits, therefore, individual credits carry specific percentage weightings, as a percentage of the overall total:

Category	Category Weighting %	Weighting Per Credit %
Management	15	1.67
Health and Wellbeing	15	1.15
Energy	25	0.76
Transport		
Water	5	0.83
Materials	10	0.83
Land Use	15	1.5
Ecology		
Pollution	15	1.0

6 Report Format

We have provided a Credit Summary Table (Table 1) that the design team can use as a quick reference to benchmark their progress towards securing credits above 55% for a 'VERY GOOD' and for a potential score of 50.37% to optimise the present 'GOOD' rating based on the credits identified in the design advice meeting on 20th April 2006.

We have also provided a Table of Requirements (Table 2) that details the information necessary to secure the sought after credits that achieve a 'GOOD' rating and identified additional credits aimed at increasing this rating to a score above 55% and a 'VERY GOOD' rating.

In addition, the percentage value of each credit is shown so the design team have the flexibility to select alternative credits as appropriate to gain the required percentage score.

7 Disclaimer

WSP Environmental has undertaken the following assessment of Holbrook house with the assistance of the design team. All information provided has been accepted in good faith as being accurate and representative of the proposed scheme at the time of review.

The assessor shall not be liable whether in Contract or in Tort or otherwise for any loss or damage sustained as a result of using or relying on the information contained in this report or the final certificate from the BRE that it is based on.

8 Copyright Statement

9 Credit Summary Table (Table 1)

The table below is a summary of all the BREEAM Office credits against which Holbrook House is likely to be assessed. The table details the maximum credits available under BREEAM, and the credits achieved to secure a GOOD rating confirmed during the BREEAM design advice meeting.

- **Credits Likely to be achieved – 'GOOD':** The credits detailed under this heading currently achieve a score of 50.37% and a rating of 'GOOD' as confirmed and agreed as suitable by the design team at this early stage in the design.

It should be understood that a minimum score of 55% is required to secure a rating of 'VERY GOOD'. We advise that a score above 55% is secured so that, in the rare event that any credits are not awarded during the BRE QA process, the percentage is still sufficient to ensure the target rating is awarded.

- **Additional credits – VERY GOOD:** WSPE and the design team has identified additional credits to increase the score to 61.04% and achieve a 'VERY GOOD' rating.
- **Value**: we have provided the percentage value of each credit so that the design team can add up the percentage score to benchmark their progress in reaching a 'VERY GOOD' rating, a score **above** 55% is the target.

Credit Ref.	Credit Heading	Max Available	Credits likely to be Achieved - GOOD	Additional Credits – VERY GOOD	Value %
	Management				
M1	Commissioning	2	1	1	1.67 each
M4	Considerate Constructors	2	2	-	1.67 each
M5	Construction Site Impacts	4	3	-	1.67 each
M12	Building User's Guide	1	1	-	1.67
	Health & Wellbeing				
HW1	Daylighting	1	0	-	1.15
HW2	View out	1	0	-	1.15
HW3	Glare Control	1	1	-	1.15

Credit Ref.	Credit Heading	Max Available	Credits likely to be Achieved - GOOD	Additional Credits – VERY GOOD	Value %
HW4	High Frequency Lighting	1	1	-	1.15
HW5	Internal and External Lighting Levels	1	1	-	1.15
HW6	Lighting Zones	1	1	-	1.15
HW8	Potential for Natural Ventilation	1	0	-	1.15
HW9	Internal Air Pollution	1	0	-	1.15
HW11	Ventilation Rates	1	1	-	1.15
HW14	Thermal Comfort	1	1	-	1.15
HW15	Thermal Zoning	1	1	-	1.15
HW16	Microbial Contamination	1	1	-	1.15
HW17	Acoustic Performance	1	0	1	1.15
	Energy				
E1	Reduction of CO_2 Emissions	15	0	2	0.76 each
E2	Sub-Metering of Substantial Energy Uses	1	1	-	0.76
E3	Sub-Metering of Areas / Tenancy	1	1	-	0.76
E4	External Lighting	1	1	-	0.76
	Transport				
T1	Provision of Public Transport	2	2	-	0.76 each
T2	Transport CO_2	10	10	-	0.76 each
T5	Cyclist Facilities	2	2	-	0.76

Credit Ref.	Credit Heading	Max Available	Credits likely to be Achieved - GOOD	Additional Credits – VERY GOOD	Value %
T8	Travel Plan	1	1	-	0.76
	Water				
W1	Water Consumption	3	2	-	0.83 each
W2	Water Meter	1	1	-	0.83
W3	Major Leak Detection	1	0	1	0.83
W4	Sanitary Supply Shut Off	1	0	1	0.83
	Materials				
MW1	Materials Specification – Major Building Elements	4	0	1	0.83 each
MW3	Floor Finishes	1	1	-	0.83
MW5	Reuse of Building Façade	1	1	-	0.83
MW6	Reuse of Building Structure	1	1	-	0.83
MW7	Recycled Aggregates	1	0	-	0.83
MW8	Responsible Sourcing of Materials	3	0	1	0.83 each
MW12	Storage of Recyclable Waste	1	1	-	0.83
	Land Use & Ecology				
LE1	Reuse of Land	1	1	-	1.5
LE2	Contaminated Land	1	0	-	1.5
LE3	Ecological Value of Land and Protection of Ecological Features	1	1	-	1.5
LE4	Mitigating Ecological Impacts	2	2	-	1.5 each

Credit Ref.	Credit Heading	Max Available	Credits likely to be Achieved - GOOD	Additional Credits – VERY GOOD	Value %
LE5	Ecological Site Ecology	3	0	-	1.5 each
LE6	Long Term Impact on Biodiversity	2	0	-	1.5 each
	Pollution				
P1	Refrigerant GWP – Building Services	1	0	-	1
P2	Preventing Refrigerant Leaks	2	0	-	1 each
P4	Insulant GWP	1	1	-	1
P6	NO_X Emissions of Heating Source	3	2	-	1 each
P7	Flood Risk / Water Run Off	3	0	2	1 each
P8	Minimising Watercourse Pollution	1	0	1	1
P11	Renewable & Low Emission Energy	3	1	-	1 each
P12	Reduction of Night Time Light Pollution	1	0	-	1
		TOTAL	**50.37%**	**61.04%**	

10 Table Requirements (Table 2)

<table>
<tr><th>CREDIT REF</th><th>REQUIREMENTS</th><th>Max Available</th><th>Value %</th><th>CREDIT Awarded</th><th>COMMENTS</th></tr>
<tr><td colspan="6">Management</td></tr>
<tr><td>M1</td><td>Commissioning

<table><tr><td>Criteria</td><td>Credits</td></tr><tr><td>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.</td><td>1</td></tr><tr><td>Where evidence provided demonstrates that seasonal commissioning will be carried out during the first year of occupation, post construction.</td><td>1</td></tr></table>
Compliance Requirements:

1. An appropriate project team member(s) is appointed to monitor pre-commissioning and commissioning, or re-commissioning on behalf of the client;
2. The design team confirms the relevant appointment(s) and that commissioning will be carried out in line with current Building Regulations and BSRIA/CIBSE guidelines where applicable.
3. Pre-commissioning, commissioning and quality monitoring requirements set out under this credit are passed on to the appropriate contractors and all trades on site.
4. A specialist commissioning agent is appointed (by either client or contractor) for complex systems, such as: Air conditioning; Mechanical ventilation, displacement ventilation, complex passive ventilation; Building management systems (BMS); Renewable energy sources.

Note;
1. The commissioning agent could be a person from within the contractor or sub-contractor organisation, provided they are not involved in the general installation works. The commissioning agent for complex systems should be a specialist contractor rather than a</td><td>2</td><td>1.67 each</td><td>1</td><td>These credits are sought after. The monitoring of commissioning will be undertaken.

One credit is assumed and will be awarded once the appropriate information is provided to the assessor.

Undertaking seasonal commissioning is also recommended for the building to achieve a VERY GOOD.

Rider Hunt to establish additional costs.</td></tr>
</table>

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
	general sub-contractor and must not be a member of the design team. 2. Where the building is largely naturally ventilated, using simple cross flow ventilation, relying solely on openable windows and trickle vents (except in areas where mechanical ventilation is legally required), the appointment of a specialist commissioning agent is not required to award this credit. **Information to be Provided:** At the design stage examples of information that could be provided include copies of design drawings, specification and preliminary documents, letters of correspondence or minutes from meetings signed off by all parties. Specific documentation required at this stage; First credit; 1. Copies of the letters of appointment to design team members specifically mentioning responsibility for commissioning and listing the relevant systems for which commissioning is required; **OR** 2. A set of meeting minutes dated and signed by the design team naming the commissioning monitor, with a schedule of commissioning responsibilities, signed by the relevant design team members, may be accepted in place of an appointment letter. 3. Confirmation that ALL the relevant building services, including the heating system, are covered in the documentation, **these should be listed**. 4. Copies of the relevant clauses from the specification, mentioning specifically that all commissioning is to be carried out in line with **best practice and current building regulations as well as BSRIA and CIBSE guidelines for commissioning**. 5. Where there are complex systems, written confirmation of the appointment and responsibility of a commissioning agent. This can be EITHER: a. In the form of a letter of appointment to a commissioning agent; OR b. If the tender has not yet been let or an agent selected, a written commitment to appoint such an agent. Second credit; 1. The documentation required for the first credit includes a requirement for seasonal commissioning in line with the compliance requirements.				

<table>
<tr><th>CREDIT REF</th><th>REQUIREMENTS</th><th>Max Available</th><th>Value %</th><th>CREDIT Awarded</th><th>COMMENTS</th></tr>
<tr><td>M4</td><td>

Considerate Constructors

<table>
<tr><th>Criteria</th><th>Credits</th></tr>
<tr><td>Where evidence provided demonstrates that there is a commitment to comply with best practice site management principles.</td><td>1</td></tr>
<tr><td>Where evidence provided demonstrates that there is a commitment to go significantly beyond best practice site management principles.</td><td>1</td></tr>
</table>

Compliance Requirements:

At this stage EITHER of the following demonstrates compliance;
1. The contractor commits to comply with the Considerate Constructors Scheme (CCS) and achieve formal certification under the scheme, credits awarded as follows; (see Checklist A1)
a. One credit where there is a commitment to achieve a CCS score between 24 and 31.5;
b. Two credits where there is a commitment to achieve a CCS score between 32 and 40
2. The contractor commits to comply with an alternative, independently assessed scheme monitoring construction site impacts, credits awarded as follows; (see Checklist A2)
a. One credit where the site is to be independently assessed using the alternative scheme, AND the alternative scheme addresses all the mandatory items plus 50% of the optional items in Checklist A2 AND there is a contractual commitment from the project team to achieve these.
b. Two credits where the site is to be independently assessed using the alternative scheme AND the alternative scheme addresses all the mandatory items plus 80% of the optional items in Checklist A2 AND there is a contractual commitment from the project team to achieve these.

Information to be Provided:

At the design stage examples of information that could be provided include copies of, design drawings, specification and preliminary documents, letters of correspondence or minutes from meetings signed off by all parties.

Specific documentation required at this stage;
1. Information from the client or design team confirming:
a. A contractual commitment from the contractor, or on the contractor, to comply with the

</td><td>2</td><td>1.67 each</td><td>2</td><td>The contractor is yet to be appointed however. The developer should ensure that BREEAM requirements are included in the tender documents to the Contractor. The Contractor must also commit to these requirements such as registering with the CCS.

See Appendix A for details of Checklist A1 and Checklist A2.

Two credits are assumed and will be awarded once the appropriate information is provided to the assessor.</td></tr>
</table>

<table>
<tr><th>CREDIT REF</th><th>REQUIREMENTS</th><th>Max Available</th><th>Value %</th><th>CREDIT Awarded</th><th>COMMENTS</th></tr>
<tr><td></td><td>Considerate Constructors Scheme and for them to achieve the appropriate score OR
b. A contractual commitment from the contractor, or on the contractor, to comply with an equivalent local or nationally recognised independently assessed scheme.
2. Information from the design team to complete the appropriate checklist.
3. Completed BREEAM Checklist A1 or A2 as applicable.</td><td></td><td></td><td></td><td></td></tr>
<tr><td>M5</td><td>Construction Site Impacts

<table><tr><th>Criteria</th><th>Credits</th></tr><tr><td>Where evidence provided demonstrates that 2 or more of items a-g, listed below are achieved.</td><td>1</td></tr><tr><td>Where evidence provided demonstrates that 4 or more of items a-g, listed below are achieved.</td><td>2</td></tr><tr><td>Where evidence provided demonstrates that 6 or more of items a-g, listed below are achieved.
a. Monitor, report and set targets for CO_2 or energy arising from site activities;
b. Monitor, report and set targets for CO_2 or energy arising from transport to and from site;
c. Monitor, report and set targets for water consumption arising from site activities;
d. Monitor construction waste on site;
e. Sort and recycle construction waste;
f. Adopt best practice policies in respect of air (dust) pollution arising from the site;
g. Adopt best practice policies in respect of water (ground and surface) pollution occurring on the site.</td><td>3</td></tr><tr><td>Where evidence provided demonstrates that all site timber is responsibly sourced.</td><td>1</td></tr></table>
Compliance Requirements

At this stage the following demonstrates compliance;
1. Please see Checklist A3 for compliance requirements.
2. To consider an item (a-g) achieved, the requirements in the relevant box on Checklist A3 must be met.</td><td>4</td><td>1.67 each</td><td>3</td><td>The contractor is yet to be appointed. The developer should ensure that BREEAM requirements are included in the tender documents to the Contractor. The Contractor must also commit to the requirements stated in Checklist A3 and ensure sustainable timber from FSC sources are used throughout the construction process.

Three credits are assumed and will be awarded once the appropriate information is provided to the assessor.

See Appendix B for details of Checklist A3.</td></tr>
</table>

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
	Information to be Provided: At the design (and fit out) stage examples of information that could be provided include copies of, design drawings, specification and preliminary documents, letters of correspondence or minutes from meetings signed off by all parties. Specific documentation required at this stage; EITHER of the following; a. Documentary evidence that the requirements of checklist A3 'Construction Site Impacts' are met. This must include details (e.g. name or job title) of the individual/stakeholder who will have responsibility for ensuring compliance, where required by Checklist A3 OR b. Where the client has made it a requirement in the contractor's contract that the site impacts are monitored and minimised in line with the requirements of Checklist A3 'Construction Site Impacts'. The assessor must ask for written confirmation to demonstrate this and check that the requirements on the contractor are in line with those required to achieve the credit(s).				
M12	***Builders User's Guide*** Where evidence can be provided to demonstrate that there is provision of a simple guide, containing information relevant for the 'non-technical' builder manager and tenant / occupants. This guide can be contained in the Operation and Maintenance (O&M) manuals, but must be an extractable or 'stand alone' section. **Compliance Requirements** At this stage the following demonstrates compliance; 1. Providing a copy of the Building User Guide that contains the information described under the 'User Guide Contents' heading (see Appendix C). 2. The guide must be relevant to the non-technical building user and appropriate to the stakeholder that will occupy the building. 3. For assessments where the development will be landlord/agent managed with tenants, the guide must be applicable to non-technical site based staff of both stakeholders. 4. If the stage of design does not permit the guide to be examined, the project team must	1	1.67	1	The design team has stated that this will be provided. This should also be included in the Contractor's obligations as something that they may have to produce. See Appendix C for Building Users Guide Contents.

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
	provide a copy of the O&M manual contents list showing: • That the Building User Guide occupies a separate section within the manual; OR • That the contents list of the Building User Guide itself contains the required information (see Appendix C). 5. If the stage of design is not sufficient for contents lists to be provided, the project team must provide written confirmation that; • Such a guide will be produced and that it will contain the required information (see Appendix C) OR • The developer must confirm that the specification will include a requirement for the project team to develop a user guide covering the information outlined below. Note; 1. The guide can be contained in the Operation & Maintenance manual (O&M manual), but must be an extractable or 'stand alone' section. 2. The presence of a building O&M manual does not meet this requirement. The latter provides the detailed specialist information required by technical Facilities Managers (FMs) and maintenance staff/contractors. **Information to be provided** 1. A copy of the Building User Guide, or a contents list describing what the proposed Building Users Guide will include. 2. Where the guide is not yet complete, written confirmation/specification clause confirming that the Guide will be developed to the required BREEAM standard.				
Health and Wellbeing					
HW1	***Daylighitng*** Where at least 80% of net lettable office floor area is adequately daylit. **Compliance Requirements** 1. Adequate daylighting in accordance with the guidance in the CIBSE Window Design Guide, BS8206 Part 2 and the BRE Site Layout Guide i.e; • An average daylight factor of at least 2%	1	1.15	0	Festus Moffat of John Robertson and Architects has stated that there are offices in the basement which will not achieve this credit.

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
	PLUS either (b) OR (c AND d) below • 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). OR • A view of sky from desk height (0.7m) is achieved AND • 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. **Information to be Provided:** At the design and fit out stages examples of information that could be provided include copies of, design drawings, specification and preliminary documents, letters of correspondence or minutes from meetings signed off by all parties. Specific documentation required at this stage; 1. Comprehensive calculations to demonstrate that the above daylighting criteria are met in at least 80% of office areas. 2. For speculative offices the calculations are provided based on both open plan and 'notional' cellular layouts.				

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
HW2	***View Out*** Where evidence provided demonstrates that all desks are within a 7m radius of a window. ***Compliance Requirements*** 1. All work stations must be situated a maximum of 7m away from a window or permanent opening providing a view. 2. The view cannot be an internal view across the room, as this could be obstructed by partitions or filing cabinets during a reorganisation. 3. Roof lights or high level windows are also not acceptable for this credit. 4. A view out can be a view into a courtyard, atrium, other building etc. and does not have to be an attractive or green field view. Where the view is into an internal courtyard or atrium the desk/workstation nearest the window must be at least 10m from the back wall of the courtyard/atrium. 5. The window (or opening) must provide a view of landscape or buildings (rather than sky) at seated eye level in office areas. **Information to be Provided:** Drawings showing the layout of workstations. These may be notional where no final layout is possible. If the rooms are less than 7m in depth, the layout is not required.	1	1.15	0	Festus Moffat of John Robertson and Architects has stated that there are offices in the basement which will not achieve this credit.

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
HW3	***Glare Control*** Where evidence provided demonstrates that an occupant controlled glare control system (e.g. internal or external blinds) is fitted. **Compliance Requirements** An occupant controlled glare system is specified for the building. (The extent of provision required is set out below) Note: 1. In speculative buildings this will often be provided as a part of the fit out. In these circumstances 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. 2. Provision of occupant controlled glare control is required on all windows to occupied rooms. **Information to be Provided**: At the design and fit out stages examples of information that could be provided include copies of, design drawings, specification and preliminary documents, letters of correspondence or minutes from meetings signed off by all parties. Specific documentation required at this stage; 1. Confirmation from the design team of the extent and details of any glare control provision including information as to how these are controlled by the occupants. 2. Marked up drawings showing the location of blinds.	1	1.15	1	Festus Moffat of John Robertson and Architects has stated that this will be part of fit out. Credit is assumed and will be awarded once appropriate information is provided.

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
HW4	***High Frequency Lighting*** Where evidence provided demonstrates that high frequency ballasts are installed on all fluorescent and compact fluorescent lamps. ***Compliance Requirements*** The design team has provided confirmation that all fluorescent and compact fluorescent lamps to occupied areas will be specified/installed with high frequency ballasts. **Information to be Provided:** The design team must provide evidence that confirms that high frequency ballasts have been specified/installed. This could be EITHER: a. A lighting specification OR b. Plan.	1	1.15	1	WSP Buildings to include this in their Mechanical and Electrical Specification. Credit is assumed and will be awarded once appropriate information is provided.
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. ***Compliance Requirements*** 1. Illuminance (lux) levels are specified in accordance with Part Two of the CIBSE Code for Lighting 2002 and its 2004 Addendum [1]. As well as principal functional areas, this includes all ancillary areas. 2. For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 7, 'Lighting for offices' [2]. Compliance checking should be carried out against guidance in sections 3.3, 4.6, 4.7, 4.8 and 4.9 of the Guide. 3. External Lighting - Lux levels must be specified in accordance with CIBSE Lighting Guide 6, 'The outdoor environment'. ***Information to be Provided:***	1	1.15	1	WSP Buildings to include this in their Mechanical and Electrical Specification. Credit is assumed and will be awarded once appropriate information is provided.

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
	1. Details of the lighting installation. 2. Confirmation of the maintained illuminance levels in each space. For areas where computer screens are regularly used: 3. Confirmation that the design is in compliance with the luminance limits in Lighting Guide 7 [2]. 4. Where the installation comprises direct lighting (downlighting), documentary evidence is to be provided that confirms that for typical office layouts, wall and ceiling illuminances will be within the ranges specified in LG7 [2] where the installation comprises direct lighting (downlighting).				

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
HW6	***Lighting Zones*** Where evidence provided demonstrates that lighting, in all occupied areas, is zoned to allow separate control. ***Compliance Requirements*** 1. Lighting in all occupied areas is zoned to allow separate control. For offices separate zones should be provided for (as a minimum): a. Office and circulation spaces, b. Office zones of no more than four workplaces in office areas, based on one workplace per $10m^2$. c. Workstations adjacent to windows/atria and other areas. 2. In the case of speculative office buildings, the control system has the capacity to be zoned, as detailed in item 1, 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. **Information to be Provided:** At the design and fit out stages examples of information that could be provided include copies of, design drawings, specification and preliminary documents, letters of correspondence or minutes from meetings signed off by all parties. Specific documentation required at this stage; 1. Confirmation of the control systems specified, including details of the installation and its zoning.	1	1.15	1	WSP Buildings to include this in their Mechanical and Electrical Specification. Credit is assumed and will be awarded once appropriate information is provided.

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
HW8	***Potential for Natural Ventilation*** Where evidence provided demonstrates that external façade windows to all occupied areas are openable **Compliance Requirements** 1. 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. 2. Where mechanical ventilation and/or air conditioning is installed, the areas/distances are verified, along with the facility for openable windows. 3. For a naturally ventilated building which does not rely on openable windows, or which has a plan depth greater than 15m, the design team must demonstrate (by calculation) that the ventilation strategy provides adequate cross flow of air. **Information to be Provided:** 1. Evidence of the following in either drawings, specifications and calculations; a. Details of the window/ventilation opening specifications, b. The area of opening c. The internal area of each room d. The depth of the room 2. Where mechanical ventilation and/or air conditioning is installed, the areas/distances should still be verified, along with the facility for openable windows. 3. For a naturally ventilated building with a plan depth greater than 15m, calculations that demonstrate that the ventilation strategy provides adequate cross flow of air.	1	1.15	0	No natural ventilation. Credit not awarded.

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
HW9	***Internal Air Pollution*** Where air intakes serving occupied areas avoid major sources of external pollution and recirculation of exhaust air. **Compliance Requirements** 1. Air-conditioned and mixed-mode buildings: Where location of air intakes/outlets are over 10m apart to minimise recirculation AND intakes are over 20m from sources of external pollution. 2. Naturally-ventilated buildings: Where location of openable windows/ventilators are over 10m from sources of external pollution. **Information to be Provided** 1. The design team should provide general arrangement drawings showing locations of intakes, extracts, openable windows, ventilators and sources of external pollution. 2. For air-conditioned & mixed-mode buildings the design team must provide marked up drawings showing the location of intakes and outlets in relation to each other and any roads (including site roads), car parks, other extracts or pollution sources. 3. For naturally-ventilated buildings the design team should provide general arrangement drawings showing locations of intakes, extracts, openable windows, ventilators and sources of external pollution.	1	1.15	0	The air intakes and outlets are less than 10m apart and the sources of external pollution are less than 20m. Credit not achieved.

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
HW11	***Ventilation Rates*** Where evidence provided demonstrates that each space within the development achieves recommended minimum fresh air rates. **Compliance Requirements** **Mechanically ventilated and air conditioned buildings:** 1. Fresh air is provided at a rate of 12 litres per second per person in accordance with the top of the range recommended in the British Council for Offices Guide to Best Practice in the Specification of Offices. 2. Where smoking is permitted this should be in dedicated smoking rooms only with a ventilation rate of at least 32 litres per second per person. This must be achieved through mechanical means and the room must also be separated from all other occupied areas by lobbies and serviced by separate ventilation systems to prevent re-circulation. **Information to be provided:** 1. Design calculations or performance specification requirements confirming the required fresh air rates. 2. In the case of naturally ventilated buildings, drawings, calculations and/or specification details confirming the following; a. Details of the window/ventilation opening specifications, b. The area of opening c. The internal area of each room d. The depth of the room(s) 3. Calculations/results of modelling will be required for any complex passive ventilation strategy.	1	1.15	1	WSP Buildings to include this in their Mechanical and Electrical Specification. Credit is assumed and will be awarded once appropriate information is provided.
HW14	***Thermal Comfort*** Where thermal comfort levels are assessed at design stage, this is used to evaluate appropriate servicing options, and appropriate thermal comfort levels are achieved.	1	1.15	1	WSP Buildings to include this in their Mechanical and Electrical Specification. Credit is assumed and will be awarded once appropriate information is provided.

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
	Compliance Requirements 1. Completion of feasibility studies aimed at optimising thermal comfort. 2. The studies/modelling are used to guide the following design decisions (that influence thermal comfort levels): a. Basic building form and orientation b. Internal layout c. Exploiting the effect of trees and building overshading on solar heat gain and shielding effects on transmission losses. d. Balancing the maximisation of daylight for reduced lighting energy use against increased cooling loads and thermal comfort levels. e. Checking for overheating risk. 3. Thermal comfort levels meet the requirements set out in CIBSE Guide A; 4. 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. However, in smaller buildings (<1500m2 gross floor area), an alternative simpler means of calculation may be appropriate, in such circumstances the assessor should seek written confirmation from the design team that the requirements above are met. **Buildings with cooling (comfort cooling/air-conditioning)** 1. All buildings serviced in this way require this type of study. 2. The design team confirm the following; a. The air-conditioning system has been sized to maintain thermal comfort conditions (in accordance with CIBSE Guide A) b. The recommended comfort criteria in section 1.3 will be met. **Information to be Provided:** 1. Feasibility studies aimed at optimising thermal comfort. 2. Confirmation from the design team indicating that a thermal comfort assessment has been undertaken				

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
HW15	***Thermal Zoning*** Where local control is available for temperature adjustment in office areas to reflect differing load requirements. **Compliance Requirements** 1. The heating/cooling system is designed to allow independent occupant thermal control, in all separate rooms/areas (including floors) within the building. 2. 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). 3. Where long-lag systems are specified these are designed to service the base load only and responsive secondary heating is provided which is zoned as above. **Information to be Provided:** At the design and fit out stages examples of information that could be provided include copies of, design drawings, specification and preliminary documents, letters of correspondence or minutes from meetings signed off by all parties. Specific documentation required at this stage; 1. Details of the thermal zoning and the method of control to be employed.	1	1.15	1	WSP Buildings to include this in their Mechanical and Electrical Specification. Credit is assumed and will be awarded once appropriate information is provided.

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
HW16	***Microbial Contamination*** Where evidence provided demonstrates that the risk of waterborne and airborne legionella contamination has been minimised. ***Compliance Requirements*** 1. 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. 2. Where no humidification is present, or only steam humidification is provided. Note; 1. Designers may refer to CIBSE TM13 "Minimising the risk of Legionnaires disease", 2002 to demonstrate that a design meets the requirements of ACoP L8. **Information to be Provided:** 1. Written confirmation from the design team that the proposed water systems design/plant procurement meets the requirements of ACoP L8 or CIBSE TM13. 2. Written confirmation from the design team of all types of water systems present in the development. Where systems are not specified, i.e. cooling towers, humidification etc, confirmation must be provided in the form of drawings and specification clauses. 3. Where the design responsibility is to be passed onto the contractor/installer of the water system then the relevant specification clause must be provided to demonstrate compliance with the above requirements.	1	1.15	1	WSP Buildings to include this in their Mechanical and Electrical Specification. Credit is assumed and will be awarded once appropriate information is provided.

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
HW17	***Acoustic Performance*** Where evidence provided demonstrates that the building design can be shown to achieve the appropriate indoor ambient noise levels. ***Compliance Requirements*** Indoor ambient noise level in unoccupied offices falls within the following ranges; a. 35-40dB $L_{Aeq,T}$ in small offices b. 40-45dB $L_{Aeq,T}$ in medium offices c. 45-50dB $L_{Aeq,T}$ in large offices ***Information to be Provided:*** Calculations demonstrating the indoor ambient noise levels for each type of space are in compliance with those outline in the compliance requirements section of this credit. In refurbishment situations compliance can be demonstrated where a suitably qualified acoustic consultant provides noise level measurements taken in the building.	1	1.15	0	WSP Acoustics to confirm that this will be achieved. **Obtaining this credit is recommended for the building to achieve a VERY GOOD.**
Energy					
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. **Compliance Requirements** 1. 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. Until such point as the NCM is integrated into all UK regulations Approved Document Part L2A New Buildings and other dwellings 2006 must be used when assessing this credit.	15	0.76 each	0	WSP Buildings to provide calculations to confirm the percentage improvement of CO_2 emission rate. Please see table provided and use the Refurbishment column as an indication of the target required. **2 credits are recommended for the building to achieve a VERY GOOD.**

2. The percentage improvement in the CO_2 Emission rate is used to allocate the number of credits, as illustrated in the table below.

Credits	Percentage improvement over the requirements of Approved Document Part L2A New Buildings other than dwellings 2006.	
	New Buildings	Refurbishment
1	+1%	-50%
2	+2%	-25%
3	+4%	+0%
4	+6%	+4%
5	+8%	+7%
6	+10%	+10%
7	+12%	+12%
8	+14%	+14%
9	+18%	+18%
10	+22%	+22%
11	+30%	+30%
12	+40%	+40%
13	+50%	+50%
14	+60%	+60%
15	≥ 70%	≥ 70%

3. Note that the above benchmarks work on a basis of a percentage improvement over the base requirement to achieve Building Regulation (2006) compliance. These are set as an additional percentage as there are different base requirements depending on building services strategies.

Information to be Provided:

A copy of the report produced by the approved calculation tool illustrating;

- The predicted Building CO_2 Emissions Rate (BER) and the Target CO_2 Emission Rate (TER) from the equivalent notional building in $kgCO_2/m^2$
- The percentage improvement over Building Regulations 2002, obtained from the

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
	method used to show compliance to 2006 Building Regulations. • Percentage improvement over Building Regulations 2002 required for 2006 Building Regulations compliance. • The name of the approved software used to carry out the modelling. • Confirmation of the expertise and experience of the individual carrying out the modelling in compliance with the requirements of the Building Regulations.				
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. **Compliance Requirements** 1. 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 2. Lighting is often the biggest single user of electrical energy in offices and should therefore be metered. As this can be difficult to achieve cost effectively, due to traditional distribution methods, it is acceptable, within a single floor, for lighting and small power to be combined for metering purposes, provided that sub-metering is provided for each floor plate. **Information to be Provided:** 1. Drawings or specification clause indicating location and function of sub-meters. 2. Details of a building management system (BMS) where this is to provide a breakdown of the energy use by each function. Where pulsed output meters are specified, a BMS can be used to monitor the sub-meters automatically although this is not required to award the credit.	1	0.76	1	WSP Buildings to include this in their Mechanical and Electrical Specification. Credit is assumed and will be awarded once appropriate information is provided.

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
E3	***Sub-metering of Areas / Tenancy*** Where evidence provided demonstrates sub-metering of energy use by tenancy/areas is installed within the building. **Compliance Requirements** 1. Provision of sub-meters covering all potential tenancy or function areas within the building as follows; • Speculative buildings - A commitment to install meters to separate tenancy areas. • Single occupancy buildings - A commitment to install sufficient sub metering to allow for monitoring of different departments or areas of an organisation. Metering by floor plate should normally be sufficient to achieve this. **Information to be Provided:** 1. Drawings or specification clause indicating location and function of sub-meters. 2. Details of a building management system (BMS) where this is to provide a breakdown of the energy use by each tenant/function area. Where pulsed output meters are specified, a BMS can be used to monitor the sub-meters automatically although this is not required to award the credit	1	0.76	1	WSP Buildings to include this in their Mechanical and Electrical Specification. Credit is assumed and will be awarded once appropriate information is provided.

<table>
<tr><th>CREDIT REF</th><th>REQUIREMENTS</th><th>Max Available</th><th>Value %</th><th>CREDIT Awarded</th><th>COMMENTS</th></tr>
<tr><td>E4</td><td>External Lighting

Where energy efficient external luminaires are specified and all light fittings controlled for the presence of daylight.

Compliance Information

1. 80% of external luminaires have an efficacy of at least 100 luminaire-lumens/circuit-Watt.
2. Light fittings are controlled through a time switch or daylight sensor to allow for daylight control

Information to be Provided:

1. Confirmation of the efficacy for external light circuits (including luminaires) in the development OR a specification document stating that all external lighting must have an efficacy of at least 100 luminaire-lumens/circuit-Watt.
2. Confirmation of the daylight/timer controls on the light fittings.</td><td>1</td><td>0.76</td><td>1</td><td>WSP Buildings to include this in their Mechanical and Electrical Specification.

Credit is assumed and will be awarded once appropriate information is provided.</td></tr>
<tr><td colspan="6">Transport</td></tr>
<tr><td>T1</td><td>Provision of Public Transport

<table><tr><td>Criteria</td><td>Credits</td></tr><tr><td>Where good access is available to and from public transport networks for commuting.</td><td>1</td></tr><tr><td>Where there is good access to and from public transport networks for business travel.</td><td>1</td></tr></table>
Compliance Requirements

First credit;
1. The distance from the building entrance to the public transport node (i.e. bus stop, station etc.) is less than 500m.
2. The transport node has a service at least once every 15 minutes at peak times (i.e.</td><td>2</td><td>0.76 each</td><td>2</td><td>Holbrook House is very close to Holborn underground station and bus routes on Kingsway.

2 credits have been assumed and will be awarded once the appropriate information is provided.</td></tr>
</table>

<table>
<tr><th>CREDIT REF</th><th>REQUIREMENTS</th><th>Max Available</th><th>Value %</th><th>CREDIT Awarded</th><th>COMMENTS</th></tr>
<tr><td></td><td>8.00am-10.00am and 5.00pm to 7.00pm) to a local urban centre.

Second credit;
1. The distance from the building entrance to the public transport node (i.e. bus stop, station etc.) is less than 500m.
2. The transport node has a service at least once every 30 minutes through the working day (i.e. 8.00am - 7.00pm) to a major transport node serving local and regional infrastructure systems.

Information to be Provided:

Details of the local public transport provision, including:
• Location of bus stops and distance from main building entrance;
• Routes served;
• Frequency of services at peak times;
• And details of local urban centres.</td><td></td><td></td><td></td><td></td></tr>
<tr><td>T2</td><td>Transport CO_2

<table><tr><th>Where total commuting CO_2 emissions are estimated to be:</th><th>Credits</th></tr><tr><td><1300 kg/person/year</td><td>1</td></tr><tr><td><1200 kg/person/year</td><td>2</td></tr><tr><td><1100 kg/person/year</td><td>3</td></tr><tr><td><1000 kg/person/year</td><td>4</td></tr><tr><td><900 kg/person/year</td><td>5</td></tr><tr><td><800 kg/person/year</td><td>6</td></tr><tr><td><700 kg/person/year</td><td>7</td></tr><tr><td><600 kg/person/year</td><td>8</td></tr><tr><td><500 kg/person/year</td><td>9</td></tr><tr><td><400 kg/person/year</td><td>10</td></tr></table>
Information to be Provided:

Drawings, specification documents and maps etc. This must cover;
• Nett lettable area/occupancy</td><td>10</td><td>0.76 each</td><td>10</td><td>Festus Moffat of John Robertson and Architects has stated that there will be 5 car parking spaces provided for approximately 800 employees. This achieves 10 credits.

10 credits have been assumed and will be awarded once the appropriate information is provided.</td></tr>
</table>

<table>
<tr><th>CREDIT REF</th><th>REQUIREMENTS</th><th>Max Available</th><th>Value %</th><th>CREDIT Awarded</th><th>COMMENTS</th></tr>
<tr><td></td><td>• Location (region and location type)
• Number of car parking spaces</td><td></td><td></td><td></td><td></td></tr>
<tr><td>T5</td><td>Cyclist Facilities

<table><tr><th>Criteria</th><th>Credits</th></tr><tr><td>Where evidence is provided to demonstrate that there is adequate provision of covered, secure and well lit cycle racks and showers.</td><td>1</td></tr><tr><td>Where in addition to the above information is provided to demonstrate that there is adequate provision of changing facilities and lockers for clothes or a dedicated drying space for wet clothes</td><td>2</td></tr></table>
Compliance Requirements

First credit;
1. Compliant cycle storage facilities and showers must be provided for 10% (5% for City Centres) of the building occupants

Second credit;
1. At least one of the following facilities must be provided:
a. Compliant changing facilities and lockers for clothes OR
b. Compliant drying space for wet clothes

Note;
1. Cycle rack requirements;
• Racks are covered and protected from the rain, and designed to allow both a wheel and the frame to be locked securely to the structure OR
• Racks are provided for building occupants in a locked shed with CCTV surveillance and where cycle racks are provided for other cyclists (i.e. visitors) these must be provided in accordance with the above. Fixtures to lock bikes are not required for locked sheds.
• There are a minimum distance of 0.8m between cycle racks to enable cycles to be moved in and out easily without moving others.
• Other structures such as railings, lampposts, etc. do not comply in any instance.</td><td>2</td><td>0.76 each</td><td>2</td><td>Festus Moffat of John Robertson & Architects has stated that 60 cycle stands will be provided in the basement for 800 building occupants. 4 showers have also been stated.

NOTE: BREEAM requires 40 cycle spaces and 4 showers to be provided for 800 occupants.

2 credits have been assumed and will be awarded once the appropriate information is provided.</td></tr>
</table>

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
	• Adequate lighting is provided in accordance with BS5489 Part 1 – Lighting of roads and amenity areas. • The racks are within 0-50m of the main building entrance • Cyclist facilities are in a prominent position, close to and in view of building entrances. 2. Shower requirements; • One shower is provided for every 10 cycle storage racks. • These are available for others to use in addition to cyclists. 3. Changing facilities and lockers requirements; • Lockers are either in or adjacent to the changing rooms. • Each locker is at least 400mm high by 200mm wide by 400mm deep to allow space for a cycle helmet, spare shoes and waterproof clothing. • The number of lockers is at least equal to the number of cycle spaces provided, and both male and female users should be catered for. • Changing facilities are a minimum of $1m^2$ per cyclist to allow enough room for a locker (where provided in the changing space) and seat. Toilet cubicles do not count as changing facilities unless there is sufficient private space equipped with coat hooks and lockers. The size of a standard disabled WC compartment (as defined in Approved Documents Part M) gives an indication of the space required for this use. 4. Drying space requirements (for wet clothes); • This is a specially designed and designated space (a plant room does not comply) and heating/ventilation should be provided. 5. The use of single wheel bike rack holders provides less security and can cause damage to cycles, therefore they do not comply with the requirements of this credit. The provision of 'Sheffield' type stands or equivalent would qualify as these are recognised as being particularly secure. **Information to be Provided:** Design plans and/or documentation confirming ; • The number and type of cycle racks provided; • The proximity of the racks to the main building entrance; • The racks are covered, with adequate lighting provided in accordance with BS5489 Part 1 – Lighting of roads and amenity areas.				

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
	• The number and location of showers, changing rooms and lockers provided. • Size and location of changing/drying space provided.				
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. **Compliance Requirements** 1. A travel plan has been developed as part of the feasibility and design stages. 2. The travel plan is structured to meet the needs of the particular site and takes into consideration the findings of a site specific transport assessment that covers the following (as a minimum): • Current local environment for walkers and cyclists • Public transport links serving the site • Current facilities for cyclists 3. The plan demonstrates how and what measures have been, or will be taken to minimise the impact of traffic, as a result of the new development. 4. The findings of the travel plan have been used to steer the design of the development in order to meet the travel plan objectives. This must be demonstrated by the project/design team using specific examples such as: • Providing parking priority spaces for car sharers • Providing dedicated cycle storage facilities and cycle lanes on site (adjoining lanes off site where applicable) • Negotiating improved bus services, i.e. altering bus routes or offering discounts • Restricting and/or charging for car parking • Making the site pedestrian friendly, i.e. safe crossing points, direct routes, well lit and sign posted to other amenities and public transport nodes. 5. The travel plan addresses the following types of travel: Commuter journeys; Business travel; Visitors/customers; Deliveries; 6. The travel plan includes a package of measures that address constraints and opportunities for the following: Walking; Cycling; Public transport; Use of the private car for travel to work; Mopeds/motorcycles; Reducing the need to travel; Visitors/customers; Deliveries.	1	0.76	1	A travel plan is required as a part of the S106 agreement. This credit has been assumed and will be awarded once the appropriate information is provided.

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
	Information to be Provided: 1. The plan itself or firm confirmation that a plan will be developed. 2. Evidence of what the plan will or does include, this can be as part of a contract document or letter of appointment. The documentation should illustrate the other compliance requirements 3. Evidence from the design team illustrating specific examples of how the travel plan has influenced the design.				
Water					
W1	***Water Consumption*** Where the specification includes taps, urinals, WCs and showers that consume less water in use than standard specifications for the same type of fittings. **Compliance Requirements** The following scale is used for awarding the credits: • 1 credit where consumption is 4.5 - 5.5m^3 per person per year • 2 credits where consumption is 1.5 - 4.4m^3 per person per year • 3 credits where consumption is <1.5m^3 per person per year **Information to be Provided** 1. The specified type(s) and where more than one type, the proportion of each different type of the following fittings; WCs; Urinals; Showers; Taps 2. Details including storage capacity and amounts/proportions of any rainwater collection or greywater recycling system (where specified).	3	0.83 each	2	Festus Moffat of John Robertson and Architects has stated that the appropriate water efficient fittings will be provided to achieve 2 credits. Two credits have been assumed and will be awarded once the appropriate information is provided.

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
W2	***Water Meter*** Where a water meter with a pulsed output is installed on all mains supplies to the building. **Compliance Requirements** 1. The specification of a water meter on the mains water supply to the building, this includes where water is supplied via a borehole or other private source. 2. The water meter has a pulsed output to enable a future connection to a Building Management System (BMS) for the monitoring of water consumption. **Information to be Provided:** 1. Confirmation of the building's water meter arrangement from the project team. 2. Confirmation that the meter(s) have a pulsed output.	1	0.83	1	WSP Buildings to include this in their Mechanical and Electrical Specification. Credit is assumed and will be awarded once appropriate information is provided.
W3	***Major Leak Detection*** Where a leak detection system is specified or installed. **Compliance Requirements** 1. A leak detection system is specified/ installed. 2. The system 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. 3. The leak detection system is: • Audible when activated; • Activated when a continuous flow of water passes through the water meter at a flow rate above a pre-set minimum for a pre-set period of time; • Able to identify different leakage rates, e.g. continuous, high and/or low level leaks, over set time periods; • Programmable to suit the owner/occupiers' requirements; and • Where applicable, designed to avoid false alarms caused by normal operation of large water consuming plant such as chillers. 4. The system need not cut off the water supply when the alarm is triggered.	1	0.83	0	This requirement is currently not included in the designs. **Obtaining this credit is recommended for the building to achieve a VERY GOOD.**

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
	Information to be Provided: 1. Confirmation that leak detection system(s) are specified on all the water supplies to the building(s). This confirmation should include leak detection for the water supplies within the building and between the building and the site boundary. 2. Provision of appropriate technical details to demonstrate compliance with the above requirements. 3. A commitment from the design team/constructor to pre-set the alarm to monitor a continuous, high and/or low level leak over a set period to suit the predicted average water consumption of the building. This can then be altered by the facilities manager to suit the owner / occupier.				
W4	***Sanitary Supply Shut-off*** Where proximity detection shut off is provided to the water supply to all urinals and WC's. **Compliance Requirements** 1. Solenoid valves are specified for each toilet area in the building (controlling the water supply to all urinals and WC's) and these are linked to EITHER • Infra-red movement detectors OR • Sensors placed at or on entry doors. 2. Shut off systems may control combined toilet areas (for example the male and female toilets within a core) provided that the source of the leak within that area can be isolated once the building is occupied. **Information to be Provided** Evidence from the project team to demonstrate the specification/presence of proximity detection shut off systems to all urinals and WCs within the assessed building.	1	0.83	0	This requirement is currently not included in the designs. **Obtaining this credit is recommended for the building to achieve a VERY GOOD.**

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
Materials					
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. **Compliance Requirements** The following elements are considered; • External Walls • Windows • Roof • Upper Floor Slabs (All floor slabs except ground floor) **Information to be Provided** 1. Evidence from the design team which confirms the material's specification(s) and the appropriate Green Guide rating. 2. Evidence from the design team of the relevant proportions/areas of different specifications.	4	0.83 each	0	Festus Moffat of John Robertson and Architects to provided information for the building elements. **Obtaining one credit is recommended for the building to achieve a VERY GOOD.** Please complete and return table in Appendix D.

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
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. **Compliance Requirements** 1. For tenanted areas the design team must provide written confirmation that carpets and other floor finishes will be installed in a show area only prior to tenant fit out works. A show area could be either a floor plate, or an office. However, to award this credit it must be less than 25% of the net lettable floor area. 2. In a building developed for a specific occupant, the design team should provide written confirmation that the future occupant has selected (or agreed to) the specified floor finishes. **Information to be Provided:** 1. Where the future occupant is not known, written confirmation is required to indicate that carpets/other floor finishes will only be installed in a show area prior to tenant fit out works. This confirmation must clearly define the extent of the show area otherwise the show area must be illustrated on appropriate drawings. 2. Where the future occupant is known, written confirmation that carpets and other floor finishes are specified (or agreed to) by the future occupant is required	1	0.83	1	Festus Moffat of John Robertson and Architects has stated that this will be achieved. This credit is assumed and will be awarded once the appropriate information is provided.
MW5	***Re-use of Building Façade*** 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 (see conditions below). **Compliance Requirements** 1. At least 50% of the total façade (by area) is reused. 2. At least 80% of the reused façade (by mass) comprises in-situ reused material.	1	0.83	1	Festus Moffat of John Robertson and Architects has stated that this will be achieved. This credit is assumed and will be awarded once the appropriate information is provided.

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
	Information to be Provided: 1. Drawings clearly demonstrating the reuse of 50% of total façade by area. 2. Calculations demonstrating that more than 80% (by mass) of the reused façade comprises in-situ reused material. These calculations should be simply based on the volume of each material and its density, with totals compared for the new and retained parts of the structure.				
MW6	***Reuse of Building Structure*** Where a design reuses at least 80% of an existing primary structure **by gross building volume.** Where a project is part refurbishment and part new build, the volume of the reused structure must comprise at least 50% of the final structure's volume. **Compliance Requirements** 1. Where at least 80% by volume of the existing primary structure is reused without significant strengthening or alteration works. 2. Where a project is part refurbishment and part new build the reused structure should comprise at least 50% by volume of the final building, i.e. any new build extension to a building being refurbished should not be larger than the original building to qualify for this credit. **Information to be Provided** 1. Drawings or calculations indicating the sections of the existing structure to be reused, 2. Drawings or calculations indicating the areas to be demolished and the total new structure. 3. Where appropriate, calculations or confirmation must also be provided to demonstrate that any strengthening or alteration is not deemed to be 'significant' in terms of the credit requirements for the mass of materials used.	1	0.83	1	Festus Moffat of John Robertson and Architects has stated that this will be achieved. This credit is assumed and will be awarded once the appropriate information is provided.
MW7	***Recycled Aggregates*** Where significant use of crushed aggregate, crushed masonry or alternative aggregates (manufactured from recycled materials) are specified for 'high grade' aggregate uses (such	1	0.83	0	This credit is unlikely to be achieved. Not sought after.

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
	as the building structure, ground slabs, roads, etc.). **Compliance Requirements** 1. 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 EITHER; • Obtained on site, OR • 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. 2. '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. Note; Crushed masonry used as fill material for general landscaping is not considered to be 'high grade'. This practice is now common place on construction sites due to landfill costs. **Information to be Provided** 1. Details of the specified uses and required weight of all aggregates and recycled aggregates; 2. Any commitment to use recycled aggregates must be supported by: • Details of where the materials will be sourced; and • Confirmation that the amount and quality required can be sourced as claimed.				
MW8	***Responsible Sourcing of Materials*** Where materials used in key building elements are responsibly sourced. **Compliance Requirements**	3	0.83	0	Festus Moffat of John Robertson and Architects to provide relevant information. **Obtaining one credit is recommended for the building to achieve a VERY**

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
	1. 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; Windows 2. For each of the elements above determine what proportion of the following materials (by volume) form part of the element. • Metals (steel, aluminium etc.); Concrete (including blocks, tiles etc.); Brick; Stone; Glass; Composites; Timber; Plastics **Information to be Provided:** 1. A copy of the specification or letter of intent which states the relevant materials will come from a certified source (EMS or timber certification). 2. For materials certified through the EMS route any one of the following must also be provided; • If suppliers are unknown, a letter of intent to use suppliers who can provide an EMS certificate (or equivalent) for the process and/or extraction stages of their product. • ISO 14001 certificate OR signed and dated letter from manufacturer to the developer outlining the following ISO 14001 accreditation information, name of the certifying body, certificate approval date, certificate expiry date, certificate approval number. • EMAS certificate OR signed and dated letter from manufacturer to the developer outlining the following EMAS accreditation information, name of the certifying body, certificate approval date, certificate expiry date, certificate approval number. 3. For materials certified through the timber certification scheme route the following must also be provided; • A letter from timber suppliers confirming that all timber used in the building has been or will be legally sourced. • Where the stage of assessment allows (i.e. if the design is sufficiently progressed and suppliers have been identified), order forms and/or purchase invoice slips from the suppliers confirming that a full chain of custody (CoC) can be met for all elements gaining the credits. Ideally a copy of the CoC certificate (s) should be supplied.				**GOOD.**

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
MW12	***Storage of Recyclable Waste*** 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). **Compliance Requirements** 1. Provision of a central dedicated storage space with the following characteristics: • 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. 2. The size of the space allocated must be at least: • $2m^2$ per $1000m^2$ of net floor area, • $10m^2$ for buildings with net floor area over $5,000m^2$. **Information to be Provided**: 1. The location and scale of any storage provision should be established. 2. Evidence should also be sought that the space is clearly labelled for the purpose of recyclable waste, and is not used for any other use. 3. Plans should be marked up to show the location and size of the storage space together with details of the labelling.	1	0.83	1	Festus Moffat of John Robertson and Architects has stated that a space of $10m^2$ will be provided. This credit is assumed and will be awarded once the appropriate information is provided.

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
Land Use and Ecology					
LE1	***Reuse of land*** Where evidence is provided to demonstrate that the footprint of the proposed development largely falls within the boundary of land previously developed. **Compliance Requirements** At least 75% of the proposed development's footprint is on an area of land which has previously been developed or used for industrial purposes in the last 50 years. **Information to be Provided:** Details of previous land use, e.g. maps, reports and site photographs. This evidence must prove conclusively that at least 75% of the site has been previously developed with in the last 50 years.	1	1.5	1	This is a refurbishment and will achieve this credit by default.
LE2	***Contaminated Land*** 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. ***Compliance Requirements*** If the site is contaminated, the design team must provide the assessor with a copy of a professional report on the land contamination. Note; • The report should identify the degree of contamination and make recommendations for the treatment, containment or removal in line with the Contaminated Land Exposure Assessment (CLEA) procedure, published by DEFRA and the Environment Agency. • The contractor responsible for remediation of the site must confirm that the report recommendations and CLEA requirements have been, or will be, implemented in full. • If a contractor has not yet been appointed, the specification must state that the contractor responsible for the site remediation is also responsible for demonstrating compliance with the contaminated land report recommendations and CLEA	1	1.5	0	This site is not contaminated and therefore will not achieve this credit.

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
	requirements. Either the design team, or contractor, must confirm this before this credit is awarded. **Information to be Provided:** 1. Report defining the site as contaminated. 2. Contract documents or letters of appointment detailing the requirement/commitment to implement the necessary remedial steps identified in the report. These should include steps to be taken to decontaminate or contain contamination of the site prior to development.				
LE3	***Ecological Value of Land and Protection of Ecological Faetures*** 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. ***Compliance Requirements*** 1. Land within the construction zone is defined as 'land of low ecological value' using either; • The BREEAM checklist OR • A suitably qualified ecological consultant who has identified the land as being of 'low ecological value' within an ecological assessment report, based on a site survey. 2. All existing features of ecological value on the surrounding site and boundary area are adequately protected from damage during clearance, site preparation and construction as listed below; • Trees of over 100 mm trunk diameter, and/or of significant ecological value, are to be protected by barriers. Barriers must prohibit construction works in the area between itself and the tree trunk. Minimum distance between tree trunk and barriers must be either the distance of branch spread or half tree height, whichever is the greater. • In all cases trees must be protected from direct impact and from severance or asphyxiation of the roots. • Hedges and natural areas requiring protection must either have barriers erected	1	1.5	1	A refurbishment of a building (with no new construction), where all existing features of ecological value are protected, will achieve this credit by default.

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
	and be protected, or, when remote from site works or storage areas, be protected with a prohibition of construction activity in their vicinity. • Watercourses and wetland areas are to be protected by cut-off ditches and site drainage to prevent run-off to natural watercourses (as this may cause pollution, silting or erosion). 3. In all cases, the contractor is required to construct ecological protection prior to any preliminary construction or preparation works (e.g. clearing of the site or erection of temporary site facilities). **Information to be Provided:** 1. Where using checklist A4: • Evidence confirming compliance with the checklist, such as site photographs and surveys, or • The assessor confirms compliance during a site visit. This is acceptable provided the visit occurs before any work or preparation work begins on the site. 2. Where using an appointed ecologist; • A copy of the ecologist's report, or a copy of the relevant section, confirming the land is of little or no ecological value. • Details of the appointed ecologist's professional status. 3. A copy of the contract specification confirming the provision of compliant protection measures for all existing ecologically valuable features.				

<table>
<tr><th>CREDIT REF</th><th>REQUIREMENTS</th><th>Max Available</th><th>Value %</th><th>CREDIT Awarded</th><th>COMMENTS</th></tr>
<tr><td>LE4</td><td>Mitigating Ecological Impacts

<table><tr><td>Criteria</td><td>Credits</td></tr><tr><td>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.</td><td>1</td></tr><tr><td>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.</td><td>2</td></tr></table>
Information to be Provided

1. Details of vegetation plot types and their areas existing on site prior development (evidence could include maps, plans and photographs)
2. Details of vegetation plot types and their areas existing on site after development (evidence could include maps and plans).</td><td>2</td><td>1.5 each</td><td>2</td><td>No negative change in the ecological value of the site has been assumed and therefore 2 credits can be assumed.

Two credits have been assumed and will be awarded once the appropriate information is provided to the assessor.

The architect to complete and return the Ecological value table in Appendix E.</td></tr>
<tr><td>LE5</td><td>Enhancing Site Ecology

<table><tr><td>Criteria</td><td>Credits</td></tr><tr><td>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.</td><td>1</td></tr><tr><td>Where evidence is provided to demonstrate a positive increase in the ecological value of the site of up to (but not including) 6 species.</td><td>2</td></tr><tr><td>Where evidence is provided to demonstrate a positive increase in the ecological value of the site of 6 species or greater.</td><td>3</td></tr></table>
Compliance Requirements

First credit
1. A professional has been appointed to report on enhancing and protecting the ecology</td><td>3</td><td>1.5 each</td><td>0</td><td>These credits are not sought after.</td></tr>
</table>

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
	of the site. 2. This professional provides an Ecology Report with appropriate recommendations for protection and enhancement of the site's ecology. 3. Where the report has been prepared by a professional who does NOT comply with the requirements of a 'suitably qualified ecologist' (as defined in note 1 below), the report has been verified by a professional who does meet these requirements. 4. Written commitment from the design team, or client, confirming that the general recommendations of the Ecology Report, for enhancing and protecting the ecological value of the site, have been, or will be, implemented. Second credit 1. The first credit must be achieved. 2. Written commitment from the design team, or client, confirming that the recommendations of the Ecology Report have been, or will be, implemented; and where the suitably qualified ecologist confirms that these actions will result in an increase in the ecological value of the site of up to (but not including) 6 species. 3. Increase in number of floral species has been calculated using Ecology calculator 2 within the spreadsheet tool, using 'actual' species numbers. Third credit; 1. The first credit must be achieved. 2. Written commitment from the design team, or client, confirming that the recommendations of the Ecology Report have been, or will be, implemented; and where the suitably qualified ecologist confirms that these actions will result in an increase in the ecological value of the site of 6 species or greater. 3. Increase in number of species is to be calculated using Ecology calculator 2 within the spreadsheet tool, using 'actual' species numbers. Note: Full members of the following organisations, who meet the above requirements (in note 1) are deemed suitably qualified ecologists: a. Association of Wildlife Trust Consultancies (AWTC) b. Chartered Institution of Water and Environmental Management (CIWEM) c. Institute of Ecology and Environmental Management (IEEM) d. Institute of Environmental Management and Assessment (IEMA) e. Landscape Institute (LI)				

<table>
<tr><th>CREDIT REF</th><th>REQUIREMENTS</th><th>Max Available</th><th>Value %</th><th>CREDIT Awarded</th><th>COMMENTS</th></tr>
<tr><td></td><td>Information to be Provided:

First credit;
1. Copy of the Ecology Report providing survey analysis, advice and recommendations on protection and enhancement of ecological features and EITHER;
• Written confirmation from the report's author, or verifier, that they comply with the definition of a suitably qualified ecologist OR;
• Where the author of the Ecology Report is not a suitably qualified ecologist, written confirmation from the third party confirming they have read and reviewed the appointed ecologist's report and that, in their professional opinion, the report;
- Represents sound industry practice
- Reports and recommends correctly, truthfully and objectively
- Is appropriate given the local site conditions and scope of works proposed
- Avoids invalid, biased and exaggerated statements.
2. Confirmation from the client that the recommendations for general enhancement and protection for site ecology, provided in the Ecology Report, will be implemented.

Second and third credits;
1. Confirmation from the author of the (verified) Ecology Report of the change in ecological value for the site, based on implemented recommendations. This could be in a letter or identified within the Ecology Report.</td><td></td><td></td><td></td><td></td></tr>
<tr><td>LE6</td><td>Long Term Impact on Biodiversity

<table><tr><th>Criteria</th><th>Credits</th></tr><tr><td>Where evidence is provided to demonstrate that the client has committed to achieving the mandatory requirements listed below and at least two of the additional requirements.</td><td>1</td></tr><tr><td>Where evidence is provided to demonstrate that the client has committed to achieving the mandatory requirements listed below and at least four of the additional requirements.</td><td>2</td></tr></table></td><td>2</td><td>1.5 each</td><td>0</td><td>These credits are not sought after.</td></tr>
</table>

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
	Compliance Requirements Mandatory Requirements A suitably qualified ecologist (as defined in Enhancing Site Ecology, LE5), appointed prior to commencement of activities on site, must confirm in writing that: 1. 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. 2. An appropriate management plan is produced covering at least the first 5 years after project completion. This is to be handed over to the building occupants and includes: a. Management of any protected features on site, b. Management of any new, existing or enhanced habitats, c. A reference to the current or future site level Biodiversity Action Plan. 3. Where there is a commitment to produce a management plan, information is provided detailing: a. Scope of management plan b. Key responsibilities, and with whom these responsibilities lie, e.g. owner, landlord, occupier, FM, other. **Information to be Provided:** Evidence/confirmation for each of the above actions or requirements where they have been implemented/achieved.				

<table>
<tr><th>CREDIT REF</th><th>REQUIREMENTS</th><th>Max Available</th><th>Value %</th><th>CREDIT Awarded</th><th>COMMENTS</th></tr>
<tr><td colspan="6">Pollution</td></tr>
<tr><td>P1</td><td>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.

Compliance Requirements

1. The building has no refrigerants OR
2. The refrigerants used within the building services have a GWP less than 5.

Information to be Provided

1. A copy of the relevant specification clause stating the refrigerant to be used. If the specification is not written the appropriate stakeholder/design team member must confirm, in writing, the refrigerant to be specified.
2. If several different types of system are to be installed, the type of refrigerant used in each piece of equipment must be specified.
3. If there are no refrigerants present in the development, then this credit is awarded. Compliance in such instances can be demonstrated using drawings and/or specification clauses.</td><td>1</td><td>1.0</td><td>0</td><td>This credit is unlikely to be achieved.</td></tr>
<tr><td>Pol0-3</td><td>Preventing Refrigerant Leaks

<table><tr><th>Criteria</th><th>Credits</th></tr><tr><td>Where evidence provided demonstrates that refrigerant leaks can be detected or where there are no refrigerants specified for use in the building or development.</td><td>1</td></tr><tr><td>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.</td><td>1</td></tr></table></td><td>2</td><td>1.0 each</td><td>0</td><td>These credits are unlikely to be achieved.</td></tr>
</table>

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
	Compliance Requirements First credit (Refrigerant leak detection); 1. EITHER systems using refrigerants are contained in a moderately air tight enclosure (or a mechanically ventilated plant room), and a refrigerant leak detection system is specified/installed covering high-risk parts of the plant (evaporator or condenser coils can be omitted from this), OR 2. Where an automatic permanent refrigerant leak detection system is specified, which is NOT based on the principle of detecting or measuring the concentration of refrigerant in air, OR 3. Where there are no refrigerants specified for use in building services/in the development. Second credit (Refrigerant recovery system); 1. The automatic shutdown and pump down of refrigerant occurs on the detection of high concentrations of refrigerant in the plant room/enclosure. For the majority of cases only systems in mechanically ventilated/moderately air tight plant rooms (or enclosures) comply. 2. The alarm threshold is set to a maximum of 2000ppm (0.2%), but lower levels can be set. **Information to be Provided:** Refrigerant leak detection; 1. Details of the leak detection system installed and the containment for such equipment. 2. If there are no refrigerants present in the development, then this credit is awarded. Compliance in such instances can be demonstrated using drawings and/or specification clauses. 3. If several different types of system are to be installed, the assessor should ask for the type of refrigerant used in each piece of equipment specified. Refrigerant recovery system; 1. The assessor should obtain details of any automatic refrigerant recovery equipment installed and ask the design team/stakeholder to confirm: a. Details of the enclosure/plant room where the refrigeration plant is installed; and b. The alarm threshold that will be set.				

<table>
<tr><th>CREDIT REF</th><th>REQUIREMENTS</th><th>Max Available</th><th>Value %</th><th>CREDIT Awarded</th><th>COMMENTS</th></tr>
<tr><td>P4</td><td>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

Compliance Requirements

1. Insulants used within the building fabric and services avoid the use of substances with a global warming potential (GWP) of 5 or more in either manufacture or composition.
2. Insulants used within the building fabric and services avoid the use of substances with an ozone depleting potential (ODP) in either manufacture or composition.
3. The criteria apply to insulation products used in the following building areas:
• Building fabric including (but not exclusively); walls, roof, floor, window frames, doors, cavity closures and lintels.
• Building services including (but not exclusively); chilled water pipework, refrigerant pipework, ductwork, hot & cold water pipes and water tanks etc.
• Internal sound proofing.

Information to be Provided:

1. Appropriate information on the insulation used for the above building areas that can confirm compliance with the credit requirements.
2. This must include details on the insulation used including the type, manufacturer and technical specification.</td><td>1</td><td>1.0</td><td>1</td><td>WSP Buildings has stated that mineral wool will be used in the pipework. Festus Moffat of John Robertson and Architects has stated that the appropriate insulants will be used to obtain this credit.

This credit has been assumed and will be awarded once the appropriate information is provided.</td></tr>
<tr><td>P6</td><td>NO_x Emissions of Heating Source

<table><tr><td>Where evidence provided demonstrates that the maximum dry NOx emissions from delivered space heating energy are:</td><td>Credits</td></tr><tr><td>≤100 mg/kWh (at 0% excess O2).</td><td>1</td></tr><tr><td>≤70 mg/kWh (at 0% excess O2).</td><td>2</td></tr><tr><td>≤40 mg/kWh (at 0% excess O2).</td><td>3</td></tr></table></td><td>3</td><td>1.0 each</td><td>2</td><td>WSP Buildings has stated that a boiler with ≤70 mg/kWh will be specified.

Two credits have been assumed and will be awarded once the appropriate information is provided.</td></tr>
</table>

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
	Compliance Requirements 1. Where manufacturers details demonstrate that the space heating has maximum dry NOx emission levels as defined in the Credit Criteria. The emissions should be estimated under normal operating conditions (not standby). 2. Where the heating load for a super insulated/exemplar environmental building is 7% of the heat load for a Building Regulations compliant building of the same size and type, 1 credit can be awarded regardless of the primary fuel used. Figures used for calculations of the percentage of total heat demand are based on the output from a Building Regulations compliant energy model. 3. Where electricity for the heat pumps is provided from a local zero emission renewable source such as PV's, wind etc., there are no resulting emissions. This source of heating can therefore be counted as having zero NOx emissions. **Information to be Provided:** 1. Specification clauses confirming the heating system specified. 2. Manufacturer's details for the type(s) of boiler specified and its dry NO_X emission rate in mg/kWh. 3. Where the design achieves item 2 of the compliance requirements, a copy of the report produced by the Building Regulations compliant energy model is required illustrating; • The predicted total heat demand of the building as designed. • The predicted total heat demand of a building of the same form, size and type that is Building Regulations compliant. • Confirmation of the expertise and experience of the individual carrying out the modelling.				

<table>
<tr><th>CREDIT REF</th><th>REQUIREMENTS</th><th>Max Available</th><th>Value %</th><th>CREDIT Awarded</th><th>COMMENTS</th></tr>
<tr><td>P7</td><td>

Flood Risk / Water Run-off

<table>
<tr><td>Criteria</td><td>Credits</td></tr>
<tr><td>Where evidence provided demonstrates that the assessed development is located in a zone defined as having a low annual probability of flooding. OR</td><td>2</td></tr>
<tr><td>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 floodlevel for the site's location.</td><td>1</td></tr>
<tr><td colspan="2">1 further credit is awarded as follows;</td></tr>
<tr><td>Where evidence provided demonstrates that Sustainable Urban Drainage techniques are specified to minimise the risk of localised flooding, resulting from a loss of flood storage on site through development.</td><td>1</td></tr>
</table>

Compliance Requirements

Two credits;
1. Where the assessed development is situated in a flood zone that is defined as having a low annual probability of flooding.
OR
One credit;
1. Where the assessed development is situate in a flood zone that is defined as having a medium annual probability of flooding.
AND
2. The ground level of the building, and access to it and the site, are designed (or zoned) so they are at least 600mm above the design flood level of the flood zone in which the assessed development is located (see note 6 & 7)
AND
3. The Sustainable Urban Drainage credit is achieved.

One credit;
1 Where the assessed development is situated in a flood zone that is defined as having a</td><td>3</td><td>1.0 each</td><td>0</td><td>These credits are not sought after.

To obtain 2 credits and a VERY GOOD rating the development is recommended to obtain confirmation that the building is in a zone defined as having a low annual probability of flooding.

Rider Hunt to provide analysis of the additional costs to obtain these credits.</td></tr>
</table>

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
	low / medium / high annual probability of flooding and where Sustainable Urban Drainage techniques are specified to attenuate 50% / 75% / 100% (respectively) of the peak flow rate of water run off, from hard surfaces to natural watercourses or municipal drainage systems, during a design storm event. **Information to be Provided:** 1. Written confirmation from the design team of the flood zone or annual probability of flooding in their sites location. The information must state how/where this definition/information was sourced i.e. from the Local Authority, EA or SEPA, flood maps etc. 2. Where appropriate to awarding the credit, confirmation from the design team or third party of; • The design flood level for the site/flood zone • Site plans or specification outlining the range of ground levels of the building, car park and site access (lowest to highest). 3. Where awarding the Sustainable Urban Drainage credit, the following information is required; • The type and storage volume (l) of the attenuation measures. • Total area of hard surfaces (m^2), the peak flow rate (l/s), the rainfall intensity of the design storm event. • Written confirmation of advice and approval from the relevant statutory body for the attenuation facilities specified.				

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
P8	***Minimising Water Course 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. **Compliance Requirements** 1. Specification of source control systems such as permeable surfaces or infiltration trenches where run-off drains from relatively low risk areas such as roofs and smaller car parks (see note 6 below). These offer a sufficient means of treatment, removing the need for a separator. This is likely to be the case with the majority of developments and the specification/provision of such facilities will achieve the credit. 2. Specification of oil/petrol interceptors or filtration where there is a high risk of contamination or spillage of substances such as petrol and oil. Guidance on the types of separators is outlined in the Additional information section. 3. Where soakaways or other holding facilities are present, surface run off are passed through the oil interceptor device prior to discharge to the soakaways. 4. Confirmation from the Local Authority and/or Environment Agency that they are content with proposals. **Information to be Provided:** 1. Written confirmation from the appropriate stakeholder/member of the project team that appropriate facilities for drainage and pollution control have been specified in accordance with current best practice guidelines. 2. Where soakaways or other such systems are proposed, confirmation is required that advice and approval has been obtained from the relevant statutory body. Local hydrological and geological conditions may dictate the type(s) of system that may be used. Confirmation could include correspondence with the EA and/or hydrological and geological survey reports.	1	1.0	0	No information was provided regarding this credit. **Obtaining this credit is recommended for the building to achieve a VERY GOOD rating.** Rider Hunt to provide analysis of the additional costs to obtain this credit.

<table>
<tr><th>CREDIT REF</th><th>REQUIREMENTS</th><th>Max Available</th><th>Value %</th><th>CREDIT Awarded</th><th>COMMENTS</th></tr>
<tr><td>P11</td><td>Renewable & Low Emission Energy

<table><tr><th>Criteria</th><th>Credits</th></tr><tr><td>Where evidence provided demonstrates that a feasibility study considering renewable and low emission energy has been carried out and the results implemented.</td><td>1</td></tr><tr><td>Where evidence provided demonstrates that the first credit has been achieved and 10% of total energy demand for the building/development is supplied from local renewable, or low emission energy, sources.</td><td>2</td></tr><tr><td>Where evidence provided demonstrates that the first credit has been achieved and 15% of total energy demand for the building/development is supplied from local renewable, or low emission energy, sources.</td><td>3</td></tr></table>
Compliance Requirements

First credit;
1. The design team have confirmed that a feasibility study has been commissioned/undertaken to establish the most appropriate renewable or low emission energy source for the building/development.
2. A renewable and/or low emission energy technology has been specified for the building/development in line with the recommendations of the above feasibility study.
3. The feasibility study has been carried out at RIBA stage C (outline proposals).

Second credit
1. The first credit must be achieved.
2. A ‘local’ renewable and/or low emission energy technology has been specified for the building/development that provides at least 10% of the total energy demand (kWh) for that building/development, in line with the recommendations of the above feasibility study.
3. Figures used for calculations of the percentage of energy provided by renewables are based on the output from a Building Regulations compliant energy model.

Third credit
1. The first credit must be achieved.
2. A ‘local’ renewable and/or low emission energy technology has been specified for the building/development that provides at least 15% of the total energy demand (kWh) for that building/development, in line with the recommendations of the above feasibility study.</td><td>3</td><td>1.0</td><td>1</td><td>This credit has been assumed on the basis that Festus Moffat of John Robertson and Architects has stated that a study has been undertaken and the use of renewable energy was considered unfeasible.

This information should be provided to the assessor for this credit to be awarded.</td></tr>
</table>

CREDIT REF	REQUIREMENTS	Max Available	Value %	CREDIT Awarded	COMMENTS
	3. Figures used for calculations of the percentage of energy provided by renewables are based on the output from a Building Regulations compliant energy model. **Information to be Provided** 1. A copy of the feasibility study report. 2. Written confirmation from the design team that the feasibility study has been undertaken in accordance with the design stage requirements. 3. Specification clauses, and where applicable drawings, detailing the renewable and/or low emission energy technology implemented as a result of the feasibility study.				
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. **Compliance Requirements** 1. The external lighting design is in compliance with Table 1 (and its accompanying notes) of the ILE Guidance notes for the reduction of obtrusive light, 2005, see additional information below. 2. All external lighting (except for safety and security lighting) can be automatically switched off between 2300 and 0700. This can be achieved by providing a timer for all external lighting set to the appropriate hours. 3. If safety or security lighting is provided and will be used between 2300 and 0700, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 1 of the ILE's Guidance notes, for example by using an automatic switch to reduce the lighting levels at 2300 or earlier. **Information to be Provided:** 1. The appropriate specification or drawing demonstrating that the lighting in each of the external areas complies with the requirements. 2. Confirmation from the stakeholder/design team that the external lighting design is in compliance with the relevant ILE Guidance notes.	1	1.0	0	The alleyway at the rear of the building will require lighting and this credit may not be achievable as a result.

11 Appendix A – M4 Considerate Constructors

Checklist A1 Considerate Constructors

NOTE: For each of the eight sections (below) the Considerate Constructors Scheme awards a score on a scale of 0 to 5 (with half points). The score achieved or required must be entered into boxes 1-8 below i.e. EITHER 0; 0.5; 1; 1.5; 2.0; 2.5; 3.0; 3.5; 4.0; 4.5; OR 5.0.

- When a firm commitment is made to achieve certification under the Considerate Constructors Scheme without reference to particular scores, a score of 3 should be entered in each of the boxes 1-8 below. This gives a total score of 24 in box 9 below and subsequently one credit can be awarded.
- When a firm commitment is made to require the constructor to achieve certification AND a score greater than 3 is required in one or more sections, the scores required should be added in boxes 1 to 8 below and totalled accordingly.

POST CONSTRUCTION REVIEW
When formal certification can be demonstrated the actual scores achieved in each section should be quoted. No points will be achieved if any score falls below 3, as certification cannot be achieved.

Considerate Section	Score achieved		1
Environmentally Aware Section	Score achieved		2
Site Cleanliness Section	Score achieved		3
Good Neighbour Section	Score achieved		4
Respectful Section	Score achieved		5
Safe Section	Score achieved		6
Responsible Section	Score achieved		7
Accountable Section	Score achieved		8
TOTAL Considerate Constructors Score	(sum of 1-8)		9

Total CC score achieved is less than 24	0 credits
Total CC score is between 24 to 31.5 incl.	1 credit
Total CC score is between 32 and 40 incl.	2 credits

Award Credits based on total CC Score based on the table above 10

Checklist A2 Considerate Constructors

Compliance with an alternative to the Considerate Constructors Scheme

- 1 credit can be awarded where the assessment stakeholder confirms in writing that the alternative scheme is to be independently assessed and the assessor confirms that the alternative scheme addresses all the mandatory items plus 50% of the optional items in Checklist A2 (complete box 1).
- 2 credits can be awarded where the assessment stakeholder confirms in writing that the alternative scheme is to be independently assessed and the assessor confirms that the alternative scheme addresses all the mandatory items plus 80% of the optional items in Checklist A2 (complete box 2).

POST CONSTRUCTION REVIEW
When certification can be demonstrated the actual items achieved in each section should be quoted.

Where the mandatory criteria + 50% of optional criteria are achieved / committed to

Score achieved 1 credit

☐ 1

OR

Where the mandatory criteria + 80% of optional criteria are achieved / committed to

Score achieved 2 credits

☐ 2

The assessor should ensure that the commitment is to specific criteria and not a general commitment to satisfy the above statements.

Total Credits for Alternative Independently Assessed Scheme ☐

12 Appendix B – M5 Construction Site Impacts

Compliance Requirements:

1 credit is available where 2 of the following are achieved;
2 credits are available where 4 of the following are achieved;
3 credits are available where 6 of the following are achieved;

- Monitor and report CO_2 or energy arising from site activities.
- Monitor and report transport to and from site to enable CO_2 emissions arising from transport to be calculated.
- Monitor, report and set targets for water consumption arising from site activities.
- Monitor construction waste on site.
- Sort and recycle construction waste on site.
- Adopt best practice policies in respect to air (dust) pollution.
- Adopt best practice policies in respect to water (ground and surface) pollution.

2 credits are recommended from this.

AND 1 credit for

- Timber for formwork, site hoardings and other temporary site timber uses is procured from sustainably managed sources, independently certified to FSC/PEFC standards.

For M5 criteria written confirmation of the following should be provided:

- *Commitment to monitor and report CO_2 or energy arising from :*

(i) Site Activities

Compliance is demonstrated by the design/ site management team confirming in writing that monthly measurements of energy will be recorded and displayed on site. This may be as simple as checking the meters and displaying some form of graphical analysis in the site office to show consumption over the project duration. The assessor should ask the design/site management team to nominate an individual who will be responsible for the monitoring and collection of data.

(ii) Commercial Transport to and from the Site

Compliance is demonstrated by the design/site management team confirming in writing that a site monitoring system will be in place to monitor and record deliveries. This system will need to record:

- The number of deliveries,
- The mode of transport,
- The kilometres/miles travelled for all deliveries.

Note:

- Where the delivery is specifically for the site, a figure of total distance travelled should be used, i.e. a round trip (from the point of origin, to the site and back to the point of origin).

- Where the delivery to the site is part of a multiple delivery route, the recorded figure for distance travelled should be the distance travelled to the site (from the previous delivery), plus the distance to the next delivery or return.

  This information can then be used to estimate a total figure for kg of CO_2 for the project.

BREEAM does not require this information to be converted to CO_2 but the information must be made available to the senior project and site management staff / suppliers to establish benchmarks and aid future decision making towards improving site and transport efficiency.

If the client wishes to convert this information into CO_2 emissions, there are tables provided in the Additional Guidance section of this credit which can be used.

If the design team or contractor confirms that the project is aiming to achieve the "Construction Site Transport" 'measures for traffic movements and distances' (published April 2003, see references) then this aspect has been achieved automatically. The information obtained for this item can also be used to satisfy the DTI's Environmental KPI on transport.

Information for Monitoring on Site Transport CO_2

Good Practice Guide (GPG) 273 describes types of software systems available to monitor transport routes. These systems could be adapted to provide the information requested by the transport section of this credit in addition to providing the other benefits outlined in GPG 273 (such as savings in cost and time).

The following tables are taken from the DEFRA 'Guidelines for Company Reporting on Greenhouse Gas Emissions' and COPERT II emission factors, and can be used to convert the information gathered from monitoring deliveries into total kg CO_2.

Table 1: Standard road transport fuel conversion factors					
Fuel used	Total units used	Units	x	kg $CO_{2\ per\ unit}$	total kg CO_2
Petrol		litres	×	2.31	
Diesel (inc. low sulphur)		litres	×	2.68	
Compressed Natural Gas		kg	×	2.67	
Liquid Petroleum Gas		litres	×	1.51	

Table 2: Standard road transport fuel conversion factors					
Size of car and distance units	**Total units travelled**	**Units**	**x**	**kg $CO_{2\ per\ unit}$**	**total kg CO_2**
Small Petrol Car Max. 1.4 litre engine.		litres	×	0.28	
		km	×	0.17	
Medium Petrol Car Max. 1.4 -2.1 litre engine.		litres	×	0.36	
		km	×	0.22	
Large petrol car		litres	×	0.44	

above 2.1 litres		km	×	0.27	
Average Petrol Car		litres	×	0.33	
		km	×	0.20	

Source: Guidelines for Company Reporting on Greenhouse Gas Emissions, DEFRA.

Table 3: Standard road transport fuel conversion factors

Size of car and distance units	Total units travelled	Units	x	kg $CO_{2\ per\ unit}$	total kg CO_2
Small Diesel Car 2.0 litres and under		litres	×	0.19	
		km	×	0.12	
Large diesel car over 2.0 litres Petrol Car Max. 1.4 -2.1 litre engine.		litres	×	0.23	
		km	×	0.14	
Average Diesel Car		litres	×	0.20	
		km	×	0.12	

Source: Guidelines for Company Reporting on Greenhouse Gas Emissions, DEFRA.

Table 4: Freight road mileage Conversion Factors

Type of lorry	Total km travelled	x	Litres fuel per km	x	Fuel conversion factor		Total kg CO_2
Articulated		x	0.35	x	Petrol	2.31	
				x	Diesel	2.68	
				x	LPG	1.51	
Rigid		x	0.40	x	Petrol	2.31	
				x	Diesel	2.68	
				x	LPG	1.51	

Source: Guidelines for Company Reporting on Greenhouse Gas Emissions, DEFRA.

- *Commitment to monitor, report and set targets for water consumption arising from site activities*

  1. Compliance is demonstrated by the design / site management team confirming, in writing, that monthly measurements of water consumption will be recorded and displayed on site.
  2. Appropriate target levels of water consumption must be set and displayed (targets could be annual, monthly or project targets).

3. As a minimum monitoring must include checking the meters and displaying some form of graphical analysis in the site office to show consumption over the project duration and how actual consumption compares to targets set.
4. The design/site management team is to nominate an individual who will be responsible for the monitoring and collection of data.

Note:
1. Targets for water consumption during the construction process can be set using DTI's Environmental KPI benchmarks. These documents do not specify targets but facilitate projects in setting appropriate targets (see references section of main credit for further details).
2. BREEAM does not require targets to be met but is encouraging the process of setting , monitoring and reporting against targets.

- *Commitment to monitor site construction waste*

  To achieve this, the assessor must receive written confirmation that the site's construction waste is being monitored. Confirmation can be in the form of a site specific waste policy or procedure, specification, letter of appointment or other formally written document. This point can be awarded where the client or contractor confirms that BRE's SMARTstart™ scheme is to be used.

- *Commitment to sort and recycled site construction waste*

  The objective of monitoring site construction waste is to identify methods of waste reduction, reuse and/or recycling. To achieve this, the assessor must receive written confirmation that the site's construction waste will be sorted into at least five of the following categories and recycled / reused as appropriate:

Key Waste Group	**Examples of Products in the Key Waste Group**
Ceramics *	Bricks, ceramic tiles, clay roof tiles, ceramic toilets and sinks
Inert *	Solid, clays, sand, gravel, natural stone
Metals *	Radiators, metal formwork, metal sinks, cables and wires, metal bars
Packaging	Paint pots, pallets, cardboard, bubble wrap, cable drums, wrapping bands
Plastic	Gutters and downpipes, DPC, upvc windows and doors, socket boxes
Concrete *	Concrete pipes, kerb stones, paving slabs, concrete rubble, solid blocks
Insulation	Glass fibre, mineral wool, purlboard, breather paper
Miscellaneous	Office waste, canteen waste, vegetation, ad hoc materials
Plaster / Cement	Plasterboard, render, plaster, cement, fibre cement sheets, mortar
Timber *	Plywood, chipboard, noggins, battens, doors, windows, timber off cuts and surplus materials
Chemicals and Oils	Hydraulic oil, engine oil, lubricating oil, transmission oil, liquid fuel, cleaning agents, mould oil
Architectural Features	Chimneys, facades, fireplaces, roof tiles and reclaimed bricks.

Waste must either be recycled on site or sorted and collected for recycling locally. Confirmation of this can be in the form of a site specific waste policy or procedure, specification, letter of appointment for a waste / recycling contractor, or other formally written document.

In some cases such as minor refurbishments it will not be feasible to recycle 5 of the key waste groups. This may be because the materials are not present or because there is insufficient quantity (i.e. less than 4.5m^3 of material). In such cases the point may be awarded if all applicable groups on the list above, are being recycled. It should be possible to recycle the five

basic materials (marked*) locally, other recyclable material groups will be dependent on local facilities / sites. Note: www.bremap.co.uk can be used to locate the nearest recycling facilities.

Where space on site is too limited to allow waste materials to be segregated, a waste contractor may be used to separate and process recyclable materials off site. Where this is the case, sufficient documentary evidence should be produced to prove that segregation of materials is carried out to the correct standards and that materials are re-used / recycled as appropriate.

- *Commitments to adopt best practice policies in respect to air (dust) pollution*

  To achieve this, the assessor must receive written confirmation of the site's procedures to minimise air / dust pollution. This can include 'dust sheets', regular proposals to damp down the site in dry weather, covers to skips etc. The site team must also indicate how this information is disseminated to site operatives.

The Environment Agency publish good practice guidelines on construction related pollution and Control of Dust from Construction and Demolition Activities; BRE (Feb 2003).

- *Commitment to adopt best practice policies in respect to water (ground and surface) pollution*

  To achieve this, the assessor must receive written confirmation of the site's procedures to minimise water pollution following best practice guidelines outlined in the following documents.

  PPG 1 – General guide to the prevention of pollution. Environment Agency
  PPG 5 – Works in, near or liable to affect watercourses. Environment Agency
  PPG 6 – Working at demolition and construction sites. Environment Agency

  The site team must also indicate how this information is disseminated to site operatives.

- *Commitment to source timber used during construction from sustainably managed sources*

  Timber used during construction includes formwork, site hoardings and other temporary site timber. To achieve this credit

  EITHER

  40% by volume of timber and composite timber products, used during construction must be independently certified to FSC standards.

  OR

  60% by volume of timber and composite timber products, used during construction must be independently certified to PEFC standards.

  All remaining timber must be covered by a government approved felling licence demonstrating that it was legally felled. For further guidance on sustainable timber sources, certification schemes, and awarding the credit for a mix of both FSC and PEFC certified timber, refer to Mat 1-7.

  Useful References

  Sustainability Action Plan (or Achieving Sustainability in Construction Procurement); Government Construction Client's Panel (GCCP), Office of Government Commerce (OGC)

  Transport

  "Construction Site Transport", April 2003. Measures for traffic movements and distances, BRE and DTI.
  Available from: www.bre.co.uk/pdf/constructiontraffic.pdf .

Guidelines for Company Reporting on Greenhouse Gas Emissions, Annex 6 Transport conversion tables, DEFRA 2002.

COPERT II Computer programme to Calculate Emissions from Road Transport - Methodology and Emissions Factors. Technical report No 6.
http://reports.eea.eu.int/TEC06/en

Good Practice Guide (GPG) 273

Pollution

PPG 1 – General guide to the prevention of pollution. Environment Agency
PPG 5 – Works in, near or liable to affect watercourses. Environment Agency
PPG 6 – Working at demolition and construction sites. Environment Agency
Control of Dust from Construction and Demolition Activities; BRE (Feb 2003)

Construction Waste

Waste minimisation, an environmental good practice guide for industry – Environment Agency.
Special Publication 133: Waste minimisation in construction, a site guide – CIRIA 1997.
Waste minimisation and recycling in construction – Technical review: CIRIA 1999
Waste minimisation and recycling in construction – Design Manual: CIRIA 1998

SMARTWASTE™: http://www.bre.co.uk/search.jsp?q=smartwaste

www.bremap.co.uk

Action Energy: www.actionenergy.org.uk

13 Appendix C – M12 Building Users Guide

The list below indicates the type of information that could be included to meet the needs of the FM Team/Office Manager and the General Office User.

1. Building Services Information

- **General Office User** - Information on heating, cooling and ventilation in the building and how these can be adjusted e.g. thermostat location and use, implications of covering heating outlets with files, bags etc. and use of lifts and security systems
- **FM** – As above. In addition a non technical summary of the operation and maintenance of the building systems (including BMS if installed) and an overview of controls.

2. Emergency Information

- **General Office User** - Include information on the location of fire exits, muster points, alarm systems and fire fighting systems.
- **FM** – As above. Additional details of location and nature of emergency and fire fighting systems, nearest emergency services, location of first aid equipment

3. Energy & Environmental Strategy

This should give owners and occupiers information on energy efficient features and strategies relating to the building, and also provide an overview of the reasons for their use e.g. economic and environmental savings. Information could include:

- **General Office User** – Include information on the operation of innovative features such as automatic blinds, lighting systems etc., and provide guidance on the impacts of strategies covering window opening and the use of blinds, lighting and heating controls
- **FM** - As above plus information on airtightness and solar gain (e.g. the impact of leaving windows/doors open in an air conditioned office or use of blinds in winter with respect to solar gain). Also include energy targets and benchmarks for the building type, information on monitoring such as the metering & sub-metering strategy and how to read, record and present meter readings.

4. Water Use

- **General Office User** – Include details of water saving features and their use and benefits e.g. aerating taps, low flush toilets, leak detection, metering etc.
- **FM** – As above plus details of main components (including controls) and operation. Recommendations for system maintenance and its importance e.g. risk of legionella.

5. Transport Facilities

- **General Office User** – Include details of car-parking & cycling provision, local public transport information, maps and timetables. Information on alternative methods of transport to the workplace e.g. car sharing schemes, local 'green' transport facilities.
- **FM** - As above. Additionally provide information on conditions of access, maintenance and appropriate use of car parking and cycling facilities e.g. number of spaces provided.

6. Materials & Waste Policy

- **General Office User** – Include information on the location of recyclable materials storage areas and how to use them appropriately.
- **FM** – As above plus information on recycling, including recyclable building/office/fit out components, waste storage and disposal requirements. Include examples of Waste Management Strategies to be inserted by Client/Tenant and any special cleaning / maintenance requirements for particular materials and finishes.

7. Re-fit / Re-arrangement Considerations

- **General Office User** – Include an explanation of the impact of re-positioning of furniture i.e. may cover grilles / outlets, implications of layout change e.g. installation of screens.
- **FM** - As above. Also list environmental recommendations for consideration in any refit. Relevant issues covered in BREEAM should be highlighted e.g. the use of natural ventilation, use of Green Guide 'A' rated materials, re-use of other materials etc. Flag up the potential impact of

increasing occupancy and any provision made in the original design to accommodate future changes.

8. Reporting Provision

- **General Office User** – Include contact details of FM / Office Manager, maintenance team, and/or help desk facility. Also include details of any building user group if relevant.
- **FM** – As above plus contact details of suppliers/installers of equipment and services and their areas of responsibility for reporting any subsequent problems.

9. Training

Provide details of the proposed content and suggested suppliers of any training and/or demonstrations that will be needed in the use of the building's services,

- **General Office User** - Training in the use of any innovative / energy saving features.
- **FM** – As above and also include training in emergency procedures and setting up, adjusting, and fine tuning, the systems in the building.

10. Links & References

Include links to other information including websites, publications (Econ 19) and organisations. In particular, the 'Action Energy' programme should be referenced and links provided to its website and good practice guidance.

11. General

Where further technical detail may be required by the FM Team or Office Manager there should be references to the appropriate sections in the Operation and Maintenance Manual.

14 Appendix D – MW1 Materials specification

	Description of Elements	Area m^2	Area that is 'A' rated
Wall		Fill in this column	Fill in this column
Roof			
Upper floor			
Windows			

15 Appendix E – LE4 Ecological Value

Plot type	*BEFORE* Land types before construction / m^2	*AFTER* Land types after construction / m^2
URBAN		
Building		
Hard landscaped Area		
Urban Parkland - Tall grassland/herb		
Urban Parkland - Fertile grassland		
Urban Parkland - Infertile grassland		
Urban Parkland - Lowland wooded		
Urban Parkland - Upland wooded		
Urban Planting -Wildlife Garden Planting		
Urban or Industrial Land, Derelict < 1 year		
Urban or Industrial Land, Derelict < 10 year - Tall grassland/herb		
Urban or Industrial Land, Derelict < 10 year - Fertile grassland		
Urban or Industrial Land, Derelict < 10 year - Infertile grassland		
Urban or Industrial Land, Derelict < 20 year - Tall grassland/herb		
Urban or Industrial Land, Derelict < 20 year - Fertile grassland		
Urban or Industrial Land, Derelict < 20 year - Infertile grassland		
Urban or Industrial Land, Derelict < 30 year - Tall grassland/herb		
Urban or Industrial Land, Derelict < 30 year - Fertile grassland		
Urban or Industrial Land, Derelict < 30 year - Infertile grassland		
TOTAL LAND AREAS:		