POLLUTION SECTION

P1	Refrigerant GWP - Building Services	0

Compliance Requirements:
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.

Refrigerant	*GWP*
R134a(HFC-134a)	*1300*
R407C (HCFC-407C)	*1600*
R290 (HC290 propane)	*3*
R600 (HC600 butane)	*3*
Ammonia	*0*

*HFCs **do not** comply. HCs, ammonia and the specification of no refrigeration **do** comply.*

Current Status:
At the meeting of 6/10/06, it was stated that the refrigerant likely to be specified was R22, which has a Global Warming Potential of 1700, and therefore this would not achieve any credits.

In an email from Nick Baker dated 24/10/07 it was confirmed that refrigerants will be used in the chillers for offices, however the refrigerant has not been confirmed.

Currently no credits have been targeted.

P2	Preventing Refrigerant Leaks	0

Compliance Requirements:
First Credit:
One credit is awarded where evidence provided demonstrates that refrigerant leaks can be detected or where there are no refrigerants specified for use in the building or development.

Second Credit:
One credit is awarded where evidence provided demonstrates that the provision of automatic (following the detection of a leak) 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."

Current Status:
At the meeting of 6/10/06, it was stated that a refrigerant leak detection system was not part of the current design scheme, however it could be incorporated into the design if necessary.

In an email dated 24/10/07 Nick Baker confirmed that Refrigerant Leak detection will not be installed.

No credits will be achieved.

P4	Insulant GWP	0

Compliance Requirements:
One credit is awarded where evidence provided demonstrates that the specification of building services, building fabric and sound insulating materials avoids the use of substances with a global warming potential (GWP) of 5 or more in either manufacture or composition

*Insulants blown with HFCs **do not** comply. Mineral wools and insulants blown with CO_2 or Pentane **do** comply.*

Current Status:
At the meeting of 23/10/07, it was assumed that it is unlikely that the insulation specified for the building fabric and services would have a GWP of less than 5.

Currently it has been assumed that this credit will not be achieved.

P6	NOx Emissions of Heating Source	0

Compliance Requirements:
Up to three credits available, depending on the dry NOx emissions from delivered space heating energy:

1 credit where dry NOx emissions are ≤100 mg/kWh (at 0% excess O2);
2 credits where dry NOx emissions are ≤70 mg/kWh (at 0% excess O2);
3 credits where dry NOx emissions are ≤40 mg/kWh (at 0% excess O2).

Current Status:
Details on this credit could not be provided at the time of the meeting of 23/10/07.

In an email dated 24/10/07 Nick Baker confirmed that under floor water heating will be used. The Nox emissions of the specified heating system is still to be provided and so currently it has been assumed that no credits will be achieved.

P7	Flood Risk / Water Run-off	T2

Compliance Requirements:

Part A (2 Credits):

Two credits are awarded where evidence provided demonstrates that the assessed development is situated in a flood zone that is defined as having a low annual probability of flooding.

OR

One credit is awarded where evidence provided demonstrates that the assessed development is located in a zone defined as having a medium annual probability of flooding and the ground level of the building, car parking and access is at least 600mm above the design flood level for the site's location.

Part B (1 Credit):

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.

Current Status:

The assessor verified the location of the Delancey Street (NW1 7NL) development with the Environment Agency Flood Risk maps. This area was identified to have a chance of flooding each year from rivers or the sea of 0.1% (1 in 1000) or less. In terms of BREEAM this is defined to be an area with a low annual probability of flooding, which would enable 2 credits to be awarded.

To achieve the additional 3rd credit, SUDS techniques must be specified to attenuate 50% of the peak flow rate of water run off from hard surfaces.

At this stage it is assumed that 2 credits shall be achieved.

P8	Minimising Water Course Pollution	0

Compliance Requirements:

One credit is awarded where evidence provided demonstrates that on site treatment such as oil separators/interceptors or filtration have been specified for areas at risk from pollution, i.e. vehicle manoeuvring areas, car parks, waste disposal facilities, delivery facilities or plant areas.

Current Status:

At the meeting of 23/10/07 it was discussed that there would be minimal parking provision and possibly spaces provided for servicing vehicles, in which case the necessary infiltration measures will have to be implemented.

The credit has not been assumed at this stage however it could be incorporated at a later date.

P11	Renewable & Low Emission Energy	*T1*

Compliance Requirements:
Part A (1 Credit):
Once credits is awarded where evidence provided demonstrates that a feasibility study considering renewable and low emission energy has been carried out and the results implemented.

Part B (2 Credits)
Up to two credits are awarded where the first credit is achieved and where evidence provided demonstrates that a percentage of total energy demand for the building/development is supplied from local renewable, or low emission energy, sources."

Current Status:
At the meeting of 06/10/06 it was stated that a renewable feasibility study will be carried out for the Delancey Street development.

This has since been developed.

In an email dated 24/10/07 Nick Baker confirmed that the client has confirmed Ground Source Heat Pump is included and that solar thermal will be used for the unit to the rear as well. Currently no credits have been targeted however one credit could be achieved if any of the technologies suggested in the feasibility report are implemented.

P12	Reduction of night time light pollution	*T1*

Compliance Requirements:
One credit is awarded 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 (www.ile.org.uk/documents/RLP%202005.pdf).

Current Status:
At the meeting of 6/10/06, it was stated that all external lighting would be designed to comply with the ILE Guidance notes.

It is assumed that this credit shall be achieved.

Appendix A The Rating System for BREEAM 2006 for Offices

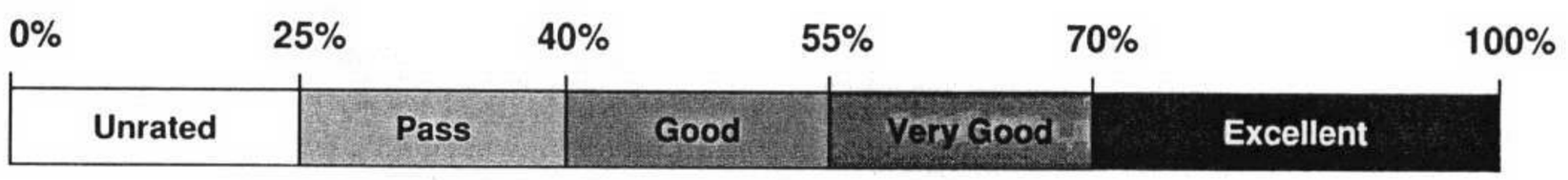
Buildings are awarded two ratings under BREEAM. The rating depends on how many environmental credits are achieved under each section and their relative environmental importance. The two ratings that are awarded are:

- An overall BREEAM rating of Pass, Good, Very Good or Excellent, depending on the overall number of credits achieved.
- An Environmental Performance Index on a scale of 1 to 10. This is derived from the number of Core credits achieved. Core credits are those issues that can either be implemented at the design stage or after the building has been built e.g. installation of water meters.

The overall rating is derived from the percentage of credits achieved under each heading, multiplied by the Environmental Weighting Factor:

CATEGORY	Number of credits available	Weighting factor	Value of each credit
Management	9	15%	1.67%
Health and wellbeing	13	15%	1.15%
Energy Transport	18 15	25%	0.76%
Water consumption	6	5%	0.83%
Materials	12	10%	0.83%
Land use Ecology	10	15%	1.50%
Pollution	15	15%	1.00%

The total of all these scores is the overall rating and a rating is awarded according to the following scale:



The Environmental Performance Index is based on the percentage of core credits achieved, multiplied by the Environmental Weighting Factor. The final score is derived from the following scale:

Appendix B Additional Guidance

M5 Construction Site Impacts

Up to 4 credits are available where the following is met:

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

i. Monitor and report CO2 or energy arising from site activities
ii. Monitor and report on transport to and from site to enable CO2 emissions arising from transport to be calculated
iii. Monitor construction waste on site
iv. Sort and recycle construction waste on site
v. Adopt best practice policies in respect to air (dust) pollution
vi. Adopt best practice policies in respect to water (ground) and surface) pollution
vii. Monitor, report and set targets for water consumption arising from site activities

Plus 1 credit where

All timber formwork, site hoardings and other temporary site timber used is procured from sustainably managed sources.

The following information is required to demonstrate compliance with the points as noted above:

i. Monitor and report CO2 or energy arising from 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. Appropriate target levels of energy consumption per month must also be displayed. 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 and how actual consumption compares to the targets set. The design/site management team are to nominate an individual who will be responsible for the monitoring and collection of data.

ii. Monitor and report on transport to and from site to enable CO2 emissions arising from transport to be calculated
Compliance is demonstrated by the 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.

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 the total figure of kg of CO2 for the project. BREEAM does not require this information to be converted to CO2 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 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) 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.

iii. Commitment to monitor and minimise site construction waste
To achieve this, the assessor must receive written confirmation that the site's construction waste is being monitored and targets are being set to minimise the waste. 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 SMARTstartTM scheme is to be used to set and monitor targets for waste minimisation. More information on this scheme can be found on the BRE's website http://www.bre.co.uk/services/smartwaste.html

iv. Commitment to sort and recycle construction waste on site
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:

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 4.5m3 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.

v. 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 (see below).

vi. 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.

vii. Commitment to monitor, report and set targets for water consumption arising from site activities:
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. Appropriate target levels of water consumption per month must also be displayed. 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 and how actual consumption compares to the targets set. The design/site management team need to nominate an individual who will be responsible for the monitoring and collection of data.

1 additional credit may be achieved where there is a:

Commitment to source timber used during construction from sustainably managed sources. Timber used during construction includes formwork, site hoardings and other temporary site timber.

M12: Building User Guide (BUG) Model Content

1 credit where evidence provided demonstrates the provision of a simple guide that covers information relevant to the tenant/occupants and non-technical building manager on the operation and environmental performance of the building.

The guide must be relevant to the non-technical building user and appropriate to the stakeholder that will occupy the building.

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.

Model Content

The list below indicates the type of information that should be included to meet the needs of the Facilities Management (FM) Team/Building Manager and the general users (staff).

1. Building Services Information
    a. **General 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.
    b. **FM** – As above plus, 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
    a. **General User** - Include information on the location of fire exits, muster points, alarm systems and fire fighting systems.
    b. **FM** – As above plus, 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:

    a. **General User** – Information on the operation of innovative features such as automatic blinds, lighting systems etc., and guidance on the impacts of strategies covering window opening and the use of blinds, lighting and heating controls
    b. **FM** - As above plus, information on air tightness 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); energy targets and benchmarks for the building type, information on monitoring such as the metering and sub-metering strategy, and how to read, record and present meter readings.

4. Water Use
    a. **General User** – details of water saving features and their use and benefits, e.g. aerating taps, low flush toilets, leak detection, metering etc.
    b. **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
    a. **General User** – details of car-parking and 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.

b. **FM** - As above plus, 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

   a. **General User** – Information on the location of recyclable materials storage areas and how to use them appropriately.

   b. **FM** – As above plus, information on recycling, including recyclable building/office/fit out components, waste storage and disposal requirements; examples of Waste Management Strategies and any cleaning/maintenance requirements for particular materials and finishes.

7. Re-fit/Re-arrangement Considerations

   a. **General User** – 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.

   b. **FM** - As above plus, 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., the potential impact of increasing occupancy and any provision made in the original design to accommodate future changes.

8. Reporting Provision

   a. **General User** – Contact details of FM/manager, maintenance team, and/or help desk facility; and details of any building user group if relevant.

   b. **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

Details of the proposed content and suggested suppliers of any training and/or demonstrations in the use of the building's services, features and facilities that will be needed. This could include:

   a. **General User** - Training in the use of any innovative/energy saving features.

   b. **FM** – As above plus, training in emergency procedures and setting up, adjusting, and fine tuning, the systems in the building.

10. Links & References

This should include links to other information including websites, publications and organisations. In particular, the 'Carbon Trust' 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 manager there should be references to the appropriate sections in the Operation and Maintenance Manual.

HW17: Acoustic Performance (Indoor Noise)

1 CREDIT Where evidence provided demonstrates that the building design can be shown to achieve the appropriate indoor ambient noise levels.

Compliance requirements

Design

At this stage the following demonstrates compliance:

1. Indoor ambient noise level in unoccupied offices falls within the following ranges;
    a. 35-40dB LAeq, T in small offices
    b. 40-45dB LAeq, T in medium offices
    c. 45-50dB LAeq, T in large offices

Note;

1. Where T is taken as the normal working day (typically 8 hours between 09.00 and 17.00). Noise from both internal sources (e.g. mechanical ventilation systems, plant noise) and external sources (e.g. traffic noise transmitted via the building façade) should be included, and, where windows are openable as part of the ventilation strategy, these should be assumed to be open for the purposes of the calculation. Noise from occupants and office equipment (e.g. computers) should not be included.

2. For refurbishments (where compliance can be demonstrated via an acousticians measured levels) where works that affect the fabric and services of the building the acoustic assessment must be undertaken after these major items of refurbishment are complete. Measurements should be carried out with the building services running. For mechanically ventilated spaces, the plant should be running at its maximum design duty. For naturally ventilated spaces the ventilators and windows should be open.

3. Small offices are defined as single occupancy cellular office space.

E1: Reduction of CO_2 Emissions – Further Guidance

Up to 15 Credits where the building demonstrates a percentage improvement above the requirement for CO2 emissions as set out in the Building Regulations.

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.

The percentage improvement in the CO2 Emission rate is used to allocate the number of credits, as illustrated in the table below.

Credits	Percentage improvement over 2006 building regulation requirement.
1	+1%
2	+2%
3	+4%
4	+6%
5	+8%
6	+10%
7	+12%
8	+14%
9	+18%
10	+22%
11	+30%
12	+40%
13	+50%
14	+60%
15	≥70%

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.

Example:

In a naturally ventilated office building the notional building emissions rate has been calculated to be 119 kgCO2/m², for compliance with Part L of the Building Regulations the predicted Building Emissions Rate (BER) must be at least 23% better than this.

The BER has been calculated, using the approved calculation method, to be 53 kgCO2/m². This is a 55% improvement over the notional building emissions rate (119 - 53 = 66 66/119 x 100 = 55%). This improvement is 32% (55 - 23 = 32) better than the Target Emissions Rate (TER) requirement to comply with Building Regulations, it is this value that is required to determine the number of credits to be awarded, therefore 32% corresponds to 11 credits.

W1: Water consumption – Example Specifications

Up to 3 credits are awarded where the specification includes taps, urinals, WCs and showers that consume less water in use than standard specifications for the same type of fittings.

Credits are awarded as follows:

Water Consumption	Number of credits available
4.5 to <5.5m^3 per person/year	1
1.5 to <4.4m^3 per person/year	2
<1.5m^3 per person/year	3

Example Specifications Achieving 1 Credit

WC: 6 litre
Urinals: No Controls
Washbasin Taps: Regular Taps
Showers: No showers

Water Consumption 4.88 m^3 per person/year

WC: 6 litre
Urinals: Pressure control device
Washbasin Taps: Regulated, aerating or auto shut-off taps
Showers: < 15, >9 litres per minute

Water Consumption 5.07 m^3 per person/year

Example Specifications Achieving 2 Credits

WC: 6 litre
Urinals: Pressure control device
Washbasin Taps: Regulated, aerating or auto shut-off taps
Showers: < 6, >4.5 litres per minute

Water Consumption 4.23 m^3 per person/year

WC: 6 litre
Urinals: IR proximity control
Washbasin Taps: Regulated, aerating or auto shut-off taps
Showers: <9, >6 litres per minute

Water Consumption 4.25 m^3 per person/year

Achieving 3 Credits

3 credits can only be achieved if suitable grey or rainwater harvesting is specified.

W1: Water consumption – Checklist

Up to 3 credits are awarded on the basis of the predicted water consumption for sanitary use within the building

Building: Delancey Street

The following information is required in order to calculate the predicted water consumption of the building. Please tick the appropriate box:

		Tick type specified
WCs		
	9 litre flush	
	7.5 litre flush	
	6.0 litre flush	
	4.5 litre flush	
	6/3 litre dual flush	
	4/2 litre dual flush	
	Waterless toilets	

Urinals		
	No controls	
	Pressure control device	
	I.R. proximity control	
	Waterless urinal	

Taps: Wash hand basins with taps		
	Regular taps	
	With flow regulator	
	Auto shut off	
	Aerating taps	

Showers		
	Flow rate >15 litres/min	
	<15 and >9 litres/min	
	<9 and > 6 litres/min	
	<6 and > 4.5 litres/min	
	<4.5 litres	

		water collected (%)
Grey water	Collection flushing WCs, urinals etc	

		rainwater collection
Rainwater	Collection area (m^2)	m^2
	Rainfall (average cm/year) define location	
	% of rainwater used within building	%
	Type of rainfall collection area e.g. Pitched tile roof, flat smooth roof, gravel roadway, block pavement	

Number of occupants based on 1 per 10m^2	

Credits are awarded as follows

Water Consumption	*Number of credits available*
4.5 to <5.5m^3 per person/year	*1*
1.5 to <4.4m^3 per person/year	*2*
<1.5m^3 per person/year	*3*

MW1: Materials Specification – Major Building Elements

Up to 4 credits where evidence provided demonstrates that the major building elements specified have an 'A rating', as defined in the Green Guide to Specification.

(ENVEST II can be used as an alternative to the Green Guide to Specification approach. Further information on this method can be provided by the assessor)

The following information is required in order to calculate the number of credits for materials specification. Please complete the specification and area for each building element split by type where more than one is specified for an element.

The assessor will check the specification for each element against The Green Guide to Materials Specification. The data will then be entered into the BREEAM calculator to determine the actual number of credits achieved.

	Specification	***Area (m^2)***	***Rating***
1	**Upper Floor Slab (all floors except ground floor)**		(assessor to complete)
Type 1			
Type 2			
2	**Windows**		
Type 1			
Type 2			
Type 3			
Type 4			
3	**External Walls**		
Type 1			
Type 2			
Type 3			
Type 4			
4	**Roof**		
Type 1			
Type 2			
Type 3			
Type 4			

MW8: Responsible Sourcing of Materials – Guidance

Up to 3 credits Where materials used in key building elements are responsibly sourced.

This credit is based on how responsibly sourced the materials for the following building elements are:

- Roof
- Frame
- Walls (external)
- Floors (ground, upper)
- Foundations/substructure
- Doors
- Windows

Proportions of Materials Used

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

All materials which form less than 10% of a total element can be excluded

How Responsibly Each Material Is Sourced

Tier	Requirements	Examples of compliant schemes	Checklist of documentation required
1	Third party certification scheme with CoC and rigorous stakeholder consultation (at both standard setting and during implementation)	FSC CSA	CoC certificate or letter of intent/order form/contractual commitment indicating material complies with appropriate certification scheme Where any timber is used - signed CITES statement from supplier(s) (if known) or Client. Commitment from Client to source all materially legally or, where suppliers are known, letter from suppliers stating they will supply only legally sourced materials
2	Third party certification scheme with CoC and stakeholder consultation.	PEFC SFI	As above
3	Environmental Management System at extraction[1] & process[2] stages	ISO 14001 EMAS BS8555 (for SME's)	Letter of intent /contractual commitment regarding EMS requirement at process and extraction stage or EMS certificate/listed information from relevant appointed suppliers Commitment from Client to source all materially legally or, where suppliers are known, letter from suppliers stating they will supply only legally sourced materials
4	Certification scheme for timber. Environmental Management System at process[2] stages for other materials	MTCC Verified[3] timber SGS Timber Tropical forest trust EMAS ISO 14001	Commitment from Client to source all materially legally or, where suppliers are known, letter from suppliers stating they will supply only legally sourced materials **Timber** CoC certificate or letter of intent/order form/contractual commitment indicating material complies with appropriate certification scheme Signed CITES statement from supplier(s) (if known) or Client **Non timber materials** Letter of intent or contract specification regarding EMS requirement at process stage or EMS certificate/listed information from relevant appointed suppliers

Notes:

1. **The extraction stage** is considered to be the stage of extraction of the raw materials e.g. clay, aggregate, hematite, bauxite, stone etc. See Table 2 in Checklist A7 for further details.
2. **The process stage** is considered to be the stage at which either the product or the components of a product are processed e.g. brick, cement, metals, glass, etc. or the reclamation of materials such as PFA.
3. **Verified timber**, as outlined here, is a third party certification scheme which demonstrates legal sourcing of timber.

LE3: Checklist A4 – Land of Low Ecological Value

Section 1: Ecological features of the site.		
Instruction: criteria 1.1-1.5 can be used to determine the presence of existing ecological features across the total site. However, if YES is recorded against **any** question in Section 1 for the *construction zone,* then it cannot be defined as *land of low ecological value* and the credit cannot be awarded. If the *construction zone* records a NO against **all** the questions in Section 1 then proceed to Section 2.		
1.1	Does the site contain any trees or hedges above 1m high or with a trunk diameter greater than 100mm?	YES ☐ NO ☐
1.2	Are there any ponds, streams or rivers on, or running through the site?	YES ☐ NO ☐
1.3	Is there any marsh or other wetland present on the site?	YES ☐ NO ☐
1.4	Are there any meadows or species-rich grassland present on the site?	YES ☐ NO ☐
1.5	Is there any heath land such as heather present on site?	YES ☐ NO ☐
Section 2: Type of land to be used for the new building		
Instruction: in addition to answering NO to all the questions in Section 1, if YES is recorded against one or more of the questions in Section 2 then the *construction zone* can be defined as *land of low ecological value*. This credit can then be awarded, as long as all features of ecological value (as defined in Section 1) in the surrounding site and boundary area are adequately protected from damage.		
2.1	Does the *construction zone* consist of land which is entirely within the floor plan(s) of existing building(s) or building(s) demolished within the past 2 years?	YES ☐ NO ☐
2.2	Does the *construction zone* consist of land which is entirely covered by other constructions such as sporting hard surfaces, car parking or such constructions which have been demolished within the past two years?	YES ☐ NO ☐
2.3	Does the *construction zone* consist of land which is contaminated by industrial or other waste to the extent that it would need decontamination before building?	YES ☐ NO ☐
2.4	Does the *construction zone* consist of land which is a mixture of either existing building, hard surfaces and/or contaminated land?	YES ☐ NO ☐
2.5	Does 80% of the land within the *construction zone* comply with statements 2.1, 2.2 or 2.3 and the remaining 20% of the ground area of the building extend into land which has been either; a. Used for single-crop arable farming for at least 5 years, OR b. Consists of regularly cut lawns and sports fields	YES ☐ NO ☐

LE4: Mitigating Ecological Impact

1. Category of landscape (Urban or Rural)
Provides the ecological context, relating to the site and its surroundings, not just the site itself.

2. Plot type
Relating solely to the site. The approximate area dedicated to each use should be entered below:

Landscape Type	Plot type:	Land types BEFORE construction (m^2)	Land types AFTER construction (m^2)
URBAN	Existing 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 AREA (m^2):		

Please turn over for a RURAL site

Landscape Type	Plot type:	Land types BEFORE construction (m^2)	Land types AFTER construction (m^2)
RURAL	Existing Building		
	Hard landscaped Area		
	Garden Planting		
	Arable fields		
	Arable - Tall Grassland/herbs		
	Arable - Fertile Grassland		
	Arable - Infertile grassland		
	Arable - Lowland wooded		
	Pastural - Crops weeds		
	Pastural - Tall Grassland/herbs		
	Pastural - Fertile Grassland		
	Pastural - Infertile grassland		
	Pastural - Lowland wooded		
	Pastural - Upland wooded		
	Pastural - Moorland		
	Marginal Upland - Fertile grassland		
	Marginal Upland - Infertile grassland		
	Marginal Upland - Upland wooded		
	Marginal Upland - Moorland grass/mosaic		
	Marginal Upland - Heath/bog		
	Upland - Wooded		
	Upland - Moorland grass/mosaic		
	Upland - Heath/bog		
	TOTAL LAND AREA (m^2):		

Definitions (ref.: Digest of Environmental Statistics No. 20 1998 HMSO)

Arable: *land dominated by crop growing as well as intensively managed grasslands*

Crops/Weeds: *highly disturbed vegetation of arable fields and their boundaries*

Fertile Grass: *agriculturally improved grasslands, intensive pasture*

Infertile Grass: *diverse group of semi improved and semi natural grasslands, mainly present in lowlands; often found on streamside and roadside verges.*

Lowland wooded: *includes wooded vegetation of hedges and broadleaved woods.*

Upland wooded*: acidic vegetation types, inc. semi natural woodland, conifer plantations, bracken and wooded streamsides*

Marginal Upland: *upland areas dominated by mixtures of low intensity agriculture, forestry and semi-natural vegetation*

Pastural*: mainly grazing/grasslands*

Tall grassland/herb: *typical vegetation of overgrown lowland field boundaries, ditches and roadside verges*

Upland: *land generally above a height for suitable mechanised farming and frequently dominated by semi natural vegetation*

Wildlife Garden Planting: *garden planting that uses native species and those that have a known attraction or benefit to local fauna.*

LE5: Enhancing site Ecology

3 credits are awarded as follows;	
1	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.
2	Where evidence is provided to demonstrate a positive increase in the ecological value of the site of up to (but not including) 6 species.
3	Where evidence is provided to demonstrate a positive increase in the ecological value of the site of 6 species or greater.

Compliance requirements

Design

At this stage the following demonstrates compliance;

First credit;

1. A professional has been appointed to report on enhancing and protecting the ecology 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. This credit does not specify what the high and low level leakage rates should be, however the equipment installed must have the flexibility to distinguish between different flow rates to enable the system to be programmed to suit the owner/occupiers 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;

1. An individual who meets all of the following requirements is deemed to be a suitably qualified ecologist:
   a. . Holds a degree or equivalent qualification (e.g. N/SVQ level 5) in ecology or a related subject.

b. Is a practising ecologist, with a minimum of 3 years relevant experience (within the last 5 years). Such experience must clearly demonstrate a practical understanding of factors affecting ecology in relation to construction and the built environment; including, acting in an advisory capacity to provide recommendations for ecological protection, enhancement and mitigation measures. Examples of relevant experience are; ecological impact assessments; Phase 1 and 2 habitat surveys and habitat restoration.
c. Is covered by a professional code of conduct and subject to peer-review.

2. Peer review is defined as the process employed by a professional body to demonstrate that potential or current full members maintain a standard of knowledge and experience required to ensure compliance with a code of conduct and professional ethics.

3. 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) Chartered Institution of Water and Environmental Management (CIWEM)
   b. Institute of Ecology and Environmental Management (IEEM)
   c. Institute of Environmental Management and Assessment (IEMA)
   d. Landscape Institute (LI)

4. The suitably qualified ecologist are to present their recommendations based on a site specific survey. The content of the Ecology Report is to be representative of the existing site's ecology prior to the commencement of initial site preparation works (i.e. before RIBA stage K, Operations On Site, and after RIBA stage B, Feasibility). Where the ecologist has made no on-site visit, the credit cannot be awarded on the basis of the ecologist's report.

5. Where it is not possible to determine 'actual' number of species per vegetation plot type, either because an on-site ecological survey has not been conducted, or, because construction works have already commenced, the second and third credits cannot be achieved.

6. Where recommendations from the report have not yet been implemented because the assessment is being carried out at an early stage of design, the first credit can be awarded where the client commits to implementing the 'general' recommendations from the Ecology Report for ecological enhancement and protection of the site.

7. 'General' recommendations for enhancing and protecting the ecological value of the site are to include, and go beyond, compliance requirements for all current EU and UK legislation relating to protected species and habitats. These 'general' recommendations may include measures such as: horticultural good practice (e.g. no, or low, use of non-residual pesticides); installing bird, bat and/or insect boxes at appropriate locations on site; avoiding clearance/works at key times of the year, e.g. breeding seasons; etc.

8. As a minimum, a suitably qualified ecologist verifying an Ecology Report must have read and reviewed the report and found it to:
   a. represent sound industry practice
   b. report and recommend correctly, truthfully and objectively
   c. be appropriate given the local site conditions and scope of works proposed
   d. avoids invalid, biased and exaggerated statements.

9. Only native floral species and those with a known attraction or benefit to local fauna can be considered for the purpose of increasing the number of species on site, as well as general enhancement.

LE6: Long Term Impact on Biodiversity – Further Guidance

1 Credit where evidence is provided to demonstrate that the client has committed to achieving the mandatory requirements listed below and at least two of the additional requirements.
2 Credits 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.

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.

Additional Requirements

1. The contractor is required to nominate a 'Biodiversity Champion' with the authority to influence site activities and ensure that detrimental impacts on site biodiversity are minimised in line with the recommendations of a suitably qualified ecologist, as defined in Ecological Value of Land and Protection of Ecological Features, LE3.
2. The contractor is required to train all relevant site work-force on how to protect site ecology during the project. Specific training should be carried out for the entire site workforce to ensure they are aware of how to avoid damaging site ecology. Training should be based on the findings and recommendations for protection of ecological features highlighted within a report prepared by a suitably qualified ecologist.
3. The contractor is required to record actions taken to protect biodiversity and monitor their effectiveness throughout key stages of construction. The requirement commits the contractor to make such records available where publicly requested.
4. The client requires that a new ecologically valuable habitat, appropriate to the local area, be created. This includes habitat that supports nationally, regionally or locally important biodiversity, and/or which is nationally, regionally or locally important itself; including any habitat listed in the UK Biodiversity Action Plan (UK BAP), Local Biodiversity Action Plan (LBAP), those protected within statutory sites (e.g. SSSIs), or those within non-statutory sites identified in local plans.
5. The client requires the contractor to programme site works to minimise disturbance to wildlife. For example, site preparation, ground works, and landscaping have been, or will be, scheduled at an appropriate time of year to minimise disturbance to wildlife. Timing of works may have a significant impact on, for example, breeding birds, flowering plants, seed

germination, amphibians etc. Actions such as phased clearance of vegetation may help to mitigate ecological impacts. This additional requirement will be achieved where a clear plan has been produced detailing how activities will be timed to avoid any impact on site biodiversity in line with the recommendations of a suitably qualified ecologist.

6. The client requires actions to be taken to protect/enhance biodiversity, take full account of the UK Biodiversity Action Plan (UK BAP) and use local biodiversity experts (e.g. the local wildlife trust) to help identify ecologically important habitats/species on site. A suitably qualified ecologist can advise on incorporating UKBAP issues into the project (information is also available at: www.ukbap.org.uk).

Notes;

1. A Biodiversity Champion does not have to be an ecologist or ecological expert but must have sufficient authority and time on site to influence activities and ensure that they have minimal detrimental impact on biodiversity).
2. Local biodiversity expertise should be sought, at, or before, the design stage to help identify species of local biodiversity importance on site. It is likely that their recommendations will draw on the Local Biodiversity Action Plan (LBAP) where one exists.
3. The steps taken in the above requirements will depend on the nature of the site and the surrounding areas. It is likely that either all, or none, of the optional items will apply. Where the optional items and the mandatory management plan are deemed, in writing by the appointed, suitably qualified ecologist not to be applicable, all credits can be awarded. However, all other mandatory items must be met. This is likely to be the case in the majority of assessments in central town/city areas which have a high proportion of existing development and no existing external landscaped areas within the boundary of the assessed site.
4. Where a site is deemed to have no ecological value, e.g. a brownfield city centre site, it is still necessary to employ a suitably qualified ecologist to achieve this credit. The ecologist must confirm that all the mandatory items (1) and (2) have been achieved and provide guidance on how to achieve optional items (6) and (7). Note that in such cases, mandatory item (2) and additional requirements (6) and (7) are likely to be applicable in relation to any ecological enhancements (e.g. green roofs, bird boxes, etc.) adopted in order to achieve the Enhancing Site Ecology credit (LE5).
5. The refurbishment of a listed building may be exempt from the credit requirements if they conflict with the need to maintain the building's listed features, or are counter to the conservation requirements. However confirmation is still required from a suitably qualified ecologist that all possible requirements/enhancements have been achieved before the credit can be awarded (i.e. if no ecological advisor has been appointed then this credit cannot be awarded).
6. Where only some of the additional items are applicable BRE should be contacted for advice on awarding the credit.

Credit No: P12 Reduction of Light Pollution

To ensure that night-time lighting is concentrated in the appropriate areas and that upward lighting is minimised, reducing unnecessary, light pollution, energy consumption and nuisance to neighbouring properties.

1 credit	Where evidence provided demonstrates that the external lighting design is in compliance with the guidance in the Institution of Lighting Engineers (ILE) Guidance notes for the reduction of obtrusive light, 2005.

Compliance requirements

Design

At this stage the following demonstrates compliance;

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.

Note;

1. All external fittings should comply.

2. Flush stud lights used for safety purposes in vehicle manoeuvring areas may be excluded from the assessment, subject to approval from BRE.

3. Compliance checking of the design should be carried out against Table 1 of the ILE

guidance (and its accompanying notes). This gives four sets of recommendations:

a. Limits to the average upward light ratio of the luminaires, to restrict sky glow.

b. Limiting illuminances at the windows of nearby properties for which light trespass might be an issue.

c. Limiting the intensity of each light source in potentially obtrusive directions beyond the site boundaries.

d. Limiting the average luminance of the building, if it is floodlit.

In each case the limiting values depend on the location of the site of the building (for example rural, urban or city centre). A calculation of illuminance (b) or intensity (c) is not required if all luminaires are of cut off types, and are angled so that light to potentially obtrusive directions is blocked.

4. The guidance notes recommend the setting of a curfew, during which all non-essential external lighting is switched off. This will normally include floodlighting, signage and all lighting that is not required for safety or security.