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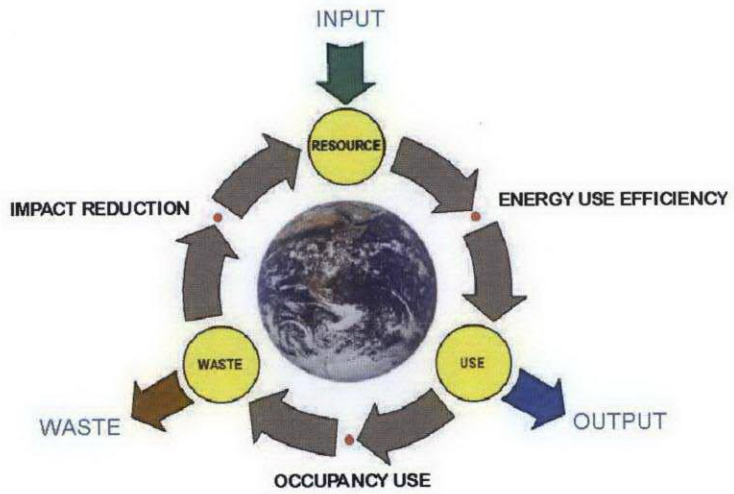
60 CHARLOTTE STREET, LONDON
OUTLINE SUSTAINABILITY STATEMENT



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INTRODUCTION

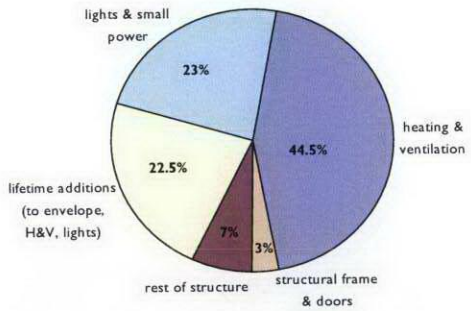
This aim of this report is to provide an overview of the sustainability issues related to the re-development of 60 Charlotte Street and to identify technologies that are being incorporated in the design.

The key to designing an environmentally smart, sustainable building is shaping the design of the building and the services so that it is capable of being operated efficiently while keeping the occupants comfortable and productive.

Sustainable architecture involves a holistic approach to the design of buildings; an approach where all the resources that go into a building, materials, fuels or the contribution of the users, need to be considered.

The construction, use and demolition of buildings is responsible for 50% of the man-made emissions of CO_2. At every stage of the building life, from obtaining the building materials for construction, up to demolition, energy will be consumed. As most of the energy consumed comes from non-renewable fossil fuels, the supply of this energy will carry with it similar environmental impacts.

Building energy consumption in a 60-year life



From the chart above it can be seen that much of a building's CO_2 emissions are as a result of the operational requirements of the building over a 60 year lifetime. Reducing or eliminating the need for mechanical and electrical systems provides substantial reduction in greenhouse gases as well as embodied energy.

The main principles defining a "sustainable" approach to building design are:

- Reduce energy consumption in operation
- Reduce energy and resource depletion
- Ensure an adequate level of occupant comfort
- Conserve water supplies & manage waste
- Minimise external pollution to the environment
- Minimise internal pollution and damage to health

1.0 BENCHMARKING – BREEAM ENVIRONMENTAL ASSESSMENT

A recognised method of benchmarking and establishing the environmental credentials of buildings is to use the BREEAM assessment methodology, developed by BRE, which provides an indication of the overall "sustainability" performance of a development, covering the following main areas:

- Construction issues
- Health & Well Being
- Energy
- Transport
- Water
- Materials
- Pollution
- Ecology & Land Use

The Breeam for Offices has been used as a benchmarking tool for the environmental performance of the proposed scheme. The project has been registered with BRE and an official Breeam assessment is underway by Cundall (as licensed BREEAM Assessors). The expected rating for the scheme is 55.2% ("Very Good"), and the summarised Breeam checklist as it currently stands is included in the Appendix of this report.

The sections that follow in this report describe the sustainability issues related to the development, covering the main issues as addressed within Breeam and identifying measures that can be incorporated in the design, with the aim to produce a more sustainable and comfortable building.

2.0 ENERGY, COMFORT & CO_2 EMISSIONS

The design of the proposed scheme will reduce the carbon emissions from the building by selecting efficient mechanical & electrical systems, and efficient controls to manage the energy used during operation.

2.1 LOW ENERGY DESIGN

The city-centre location of the scheme precludes a natural mode of ventilation, particularly for the office areas at lower floors. An air-conditioning solution is proposed for the office accommodation, using a simultaneous Heating and Cooling VRV system, to replace the existing fan coil unit system which is at the end of its operating life.

Various options were considered with an aim to satisfy a number of requirements, i.e. flexibility, space, acoustics, maintenance issues etc.

The scheme will be energy-efficient with low running costs, and meet the requirements of the revised Part L2 Regulations.

By careful consideration of the passive elements of the design, substantial reductions in energy usage are achieved, as well as improved comfort. The aim for the design is to optimise the passive building elements, to limit the need for mechanical systems and reduce energy consumption. The optimum balance is required between a range of requirements accounting for factors such as site restrictions and orientation.

The key elements that were considered are:

- Thermal Comfort
- Building envelope
- Solar control
- Daylight

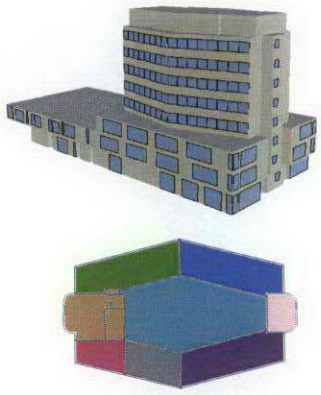
2.2 THERMAL COMFORT

Research has established that improved occupant comfort can have a number of psychological benefits, and, in an office environment, it can reduce absenteeism and increase productivity.

The aim is to provide comfortable conditions for the occupants in the office areas, taking into account the different requirements of the space.

Comfort is partially subjective and it can be influenced by a number of factors which include:

- Contact with the external environment, e.g. view to outside
- Control over air flows
- Air temperature
- Radiant temperature
- Air Velocity / air movement
- Humidity
- Air quality



3-d and plan views of thermal model

Comfort criteria

The following criteria are generally recommended for Air-Conditioned office areas:

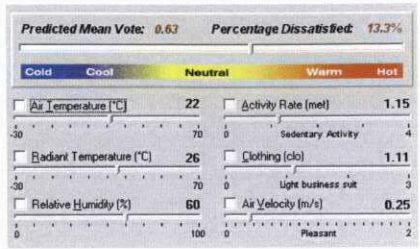
- CIBSE recommends that the Resultant Temperature should be in the range of 22°C -24°C
- BCO recommends that an Air Temperature of 24°C should not be exceeded

To analyse properly the performance of a space, dynamic thermal modelling was carried out for the various office areas in all floors, so as to optimise the heating/cooling requirements.

ISO 7730

There are a number of factors that contribute to the perception of comfort, which are not accounted for, when just measuring Air Temperature or Resultant Temperature. ISO 7730 uses a different method, taking into consideration all the parameters that affect human comfort and looking at their individual and combined effect.

ISO 7730 is an international standard, which predicts the Percentage of People Dissatisfied (PPD) likely to occur in a space. The standard is based on the statistical analysis of large groups of people. It takes into account the air & radiant temperatures, humidity, air velocity, clothing, activity levels, age, gender and metabolism. The image gives a typical output from the process.



2.3 BUILDING ENVELOPE

The performance of the building envelope can have a significant long-term effect and improving insulation standards can improve the efficiency of the building over its whole life. Any areas of new construction will, as a minimum, achieve the thermal performances for heat losses through the building fabric as set out in the Part L2 Regulations. All existing windows in the lower floors to be replaced by double glazed windows will be upgraded to meet the minimum standards required. A new curtain walling system will replace the existing cladding in all upper floors (3^{rd} to 7^{th}), including double low-e glazing. This will reduce significantly the heat losses through the glazing and therefore the winter heating demand. Internal insulation will be added to parts of the existing envelope, which will also improve its performance. Continuity of the envelope insulation will be achieved and cold bridges eliminated.

2.4 SOLAR CONTROL

Solar heat gain can rapidly cause overheating in a space if not controlled to carefully defined limits. The combination of areas/types of glazing and type of solar control (internal blinds etc.) will prevent overheating and glare from occurring, without compromising the daylight entering the space.

In the design of building facades, the aim was to balance the following sometimes competing objectives:

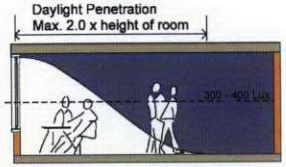
- Provide a thermal barrier which will define the energy requirements of the building. For the building to be energy-efficient, heating and cooling loads should be minimised.
- Ensure the thermal comfort in the occupied spaces: reduction of high radiant gains and efficient solar control in the summer, thermal insulation in the winter reducing the heating requirements.
- Provide views to outside & satisfy the occupants' psychological need for contact with the outside.
- Provide adequate daylight penetration which results in a more visually comfortable environment.
- Prevent glare which causes visual discomfort/disability.

A number of façade orientations exist in the building, having different solar control requirements. All glazing in the existing windows will be replaced with new double glazing and new cladding in the upper floors will also include double glazing, which will significantly improve solar control and reduce excessive solar gains and radiant temperatures, whilst allowing high levels of light transmission through the space.

High performance solar control glasses will be used on all elevations, offering a good compromise between solar reduction, high levels of light transmission whilst providing a neutral appearance to the glass.

Internal blinds will be installed to all office perimeter glazing as part of the tenant fit-out.

2.5 DAYLIGHT



Properly used daylighting can result in substantial energy savings by reducing the need for artificial lighting, whilst creating and reinforcing a positive link to the outside environment.

In many commercial buildings, artificial lighting accounts for as much as 40% of the energy consumption therefore daylighting can significantly reduce artificial lighting usage and energy costs. Also, long term research of naturally lit buildings over the past 20 years demonstrates that the integration of natural daylight into work spaces provides improved staff satisfaction and personal health, as well as higher productivity. Increasingly, natural light is being credited with providing flexible, attractive and effective internal spaces.

The proposed scheme will maximise natural lighting in the office areas, providing a pleasant environment for the occupants, as well as reducing the energy consumption associated with artificial lighting.

Artificial lighting will be designed to be dimmed or switched off in perimeter areas, which will reduce the electrical energy consumption while reducing unnecessary heat gains to the space.

The levels of natural light are frequently changing and in order to quantify light levels the "Daylight Factor" concept was developed. The Daylight Factor (DF) is the ratio of the illuminance at a point on a given plane, due to light received directly or indirectly from a sky of assumed luminance distribution (CIE Sky), to the illuminance on a horizontal plane due to an unobstructed sky.

BS8206: Part2 recommends the following criteria for the Daylight Factor:

- For a light/bright appearance of the space, the average Daylight Factor should not be less than 2%.
- If the average Daylight Factor exceeds 5%, then the electric lighting can be switched off for the majority of the time, and energy saved during daytime.

The above criteria will be achieved in the proposed scheme. The shape of the floor plate in the upper floors enhances daylight penetration from all orientations deep into the office space. All new glazing will be selected so as to offer good daylight transmission in the space and improve the daylight at all levels.

2.6 ENERGY EFFICIENCY

After maximising the contribution of the passive elements of the building to the overall energy balance, the aim will be to minimise, where possible, the energy used in conventional mechanical and electrical services options, through appropriate design measures & controls.

Buildings in use are the biggest source of energy demand in the UK. Saving energy has major environmental, as well as comfort and economical benefits. Up to about 20-30% of a building's energy demand can typically be saved through the application of cost-effective energy efficiency measures.

Low-energy lighting

Reducing the energy consumption for lighting can significantly reduce overall energy costs and CO_2 emissions. Energy efficient internal lighting (e.g. modular fluorescent light fittings with high frequency control gears) will be installed in the office areas, including common areas such as stairwells and entrances, to comply with CIBSE LG3 and LG7. Lighting for the office areas will be controlled separately for perimeter areas and groups of workstations. Occupancy sensing will also be installed on all internal lighting.

External lighting will be energy-efficient, complying with CIBSE LG6, and also with the ILE Guidelines for the reduction of light pollution, being controlled during the night down to minimum recommended levels.

Heating & cooling system

The majority of the office space in all upper floors will be comfort cooled and heated by an efficient perimeter VRV system. An electric heating system will serve the small heating requirement for some of the lower floors. A heat recovery system will be incorporated within the AHU, to maximise the reuse and distribution of waste heat. The heating/cooling systems will have zone and thermostatic controls.

Metering

Submetering on all major energy uses and separate metering by floor plate will be installed, which helps identify areas of high energy consuming activities and allows managers and tenants to set future targets and where possible alter operational procedures so as to minimise energy consumption.

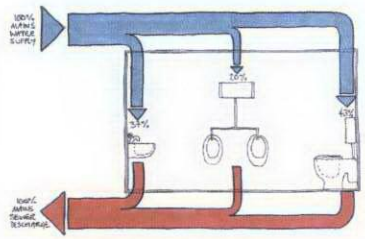
2.7 CO_2 EMISSIONS & PART L2 COMPLIANCE

The revisions to Part L2 Regulations came into effect on the 6th April 2006. **Approved Document L2B – Conservation of fuel and power in existing buildings other than dwellings** outlines the approved method of showing compliance with the building regulations.

As the proposed scheme is a refurbishment of above 1000m^2, the minimum standards will be met for the building fabric and services. More details on the requirements for Part L2 compliance for the scheme are given in the separate study carried out by Cundall/Genesys Environmental.

The proposed building will be designed to comply with the revised Regulations, where applicable to refurbishment projects, and meet the minimum recommended standards.

3.0 WATER CONSERVATION



Typical Office Water Usage

Water consumption in the UK has risen significantly over the last decades. Trying to meet the increasing demand by creating new sources of water supply is both expensive and damaging to the environment.

The adjacent image identifies where water is used within a typical office building. Approximately 98% of the water used is discharged into the wastewater sewer; the remaining 2% is lost in distribution.

Good water management can contribute to reducing the overall level of water consumption maintaining a vital resource for all the community and the environment and also having financial benefits.

3.1 WATER-EFFICIENT APPLIANCES

Water efficient appliances reduce the amount of water consumed by as much as 70% in comparison to standard fittings and appliances. Many of these systems have relatively low cost yielding payback on investment in as little as 3 years.

Technologies that are to be incorporated into the proposed scheme are:

Low Flush WC's

4.5ls flush WCs are proposed, which would significantly reduce the water consumption without any inconvenience to the user or a reduction in the effectiveness of the system.

Controls on taps

Infrared control is proposed for the taps, so that they are automatically operated only when required, which reduces water wastage from taps being left on or from minor leaks.

3.2 WATER METERING & LEAK DETECTION

Water metering will be provided on all mains supplies, as well as a water leak detection system. Metering and monitoring water use can help control water demand and efficiently manage the available resources. It can also help to inform on action plans for reducing water consumption and lead to cost and performance improvements over time.

A water leak detection system will help minimise the risk of leaks, which can result in significant losses and costs and have the potential to cause major damage. These may otherwise have remained undetected, as toilet accommodation is often unoccupied for long periods outside the hours of operation.

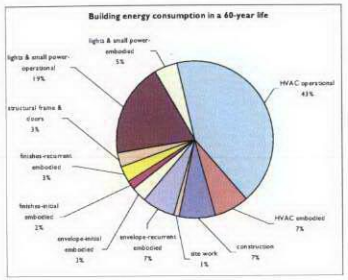
Proximity detection will also be incorporated for all WCs, so that water supply can be shut off when the toilet accommodation is unoccupied, preventing waste water from minor leaks.

4.0 MATERIALS

The production, use and disposal of building materials accounts for significant quantities of energy and resources in the UK and internationally. About 10% of the UK national energy consumption is used in the production and transport of construction products and materials (embodied energy).

Of this 10%, approximately half is used in winning and manufacture of the materials and half is used in transport (i.e. getting them to the processing plant and/or to site).

In the life cycle of a building, embodied energy (initial -for extraction, process, transport- and recurrent, for maintenance, replacements etc.) of finishes, envelope and services accounts for 25-30% of the overall energy consumed.



The environmental impacts involved in production and delivery of different construction materials will vary according to the type of material and the amount of transportation involved in delivery.

4.1 MATERIALS SELECTION

The majority of the main structure and building envelope for this scheme will be maintained, after cleaning/repairs. Any new materials used, e.g. in redevelopment of the facades, new partitions, insulation, finishes etc, will be selected aiming at::

- Minimum dependence on non-renewable sources
- Minimum dependence on ozone depleting and other potentially polluting building materials
- Use where possible robust materials with big life span and low maintenance, so as to minimise the energy use for replacing/retrofitting during the building's life cycle
- Design systems/components for potential re-use in the future
- Sustainable and natural materials where possible
- Encourage products that provide environmental control to minimise energy use
- Cost-effective selection of sizes
- Non-toxic materials for construction workers and end users
- Easily maintained finishes and components

4.2 BUILDING MATERIAL REUSE

Reuse of buildings and part of buildings, such as facades and structural elements, steel etc., can significantly reduce demand for new construction materials and so environmental burdens resulting from the development. The proposed scheme is based on re-using a very high percentage of the existing building's structure, therefore the environmental impact from it will be minimised. Demolition, with the exception of the façade removal, is limited thus it is unlikely that waste materials will be available for re-use.

4.3 SUSTAINABLE TIMBER & ENVIRONMENTAL CERTIFICATION

Any new timber used in the proposed re-development will from sustainable sources, in order to minimise environmental impact. Properly managed timber and timber products are the only truly renewable construction material in common use.

For all other materials, the aim will be to source them where possible from suppliers who can provide environmental certificates for their products demonstrating that quality control has been undertaken during their extraction/process phases.

5.0 POLLUTION

Buildings have the potential for major pollution both from their construction and operation, largely through pollution to the air (e.g. dust emissions, ozone depletion & global warming) but also through pollution to watercourses and ground water. The proposed development will aim to minimise the above impacts, both at the design stage and onsite.

Ozone Depletion & Global Warming

CFCs and HCFCs used in insulants and refrigerants have a profound impact on the amount of damage done to the ozone layer. They cause long term damage to the Earth's stratospheric ozone layer, exposing living organisms to harmful radiation from the sun. They also have significant global-warming potentials and so contribute to global warming. Production & use of CFCs is no longer permitted and EC regulations will require phasing out of HCFCs by 2015. However, products that replace the above, are often potent global warming contributors.

All new insulation materials for fabric and services within the proposed re-development will be specified to have zero Ozone Depleting Potential and where possible, low Global Warming Potential, (GWP<5) in either manufacture or composition in order to reduce their impact to the environment.

The refrigerants used in the existing AC installation will be replaced by CFC and HCFC-free refrigerants.

Preventing refrigerant leaks

A refrigerant leak detection system has been specified for the VRV condenser units, which will help prevent potential leaks.

Refrigerant leaks are responsible for substantial releases of ozone depleting and greenhouse gases to the atmosphere. Leakage can result in up to 40% loss in efficiency of plant, which appears to be running satisfactorily.

Detecting and preventing leaks as early as possible is therefore essential to not only reducing the potential environmental damage but also minimising costs for operational losses and remedial measures.

Light Pollution

The external lighting design will comply with the ILE Guidance notes for the reduction of light pollution, 2000, ensuring that all external lighting will automatically switch to the lower levels of lighting recommended during the night.

6.0 TRANSPORT

Ease of access to sites is essential; however, access to sites by car in particular is unsustainable, as it causes increased congestion, emission of pollutants, noise, increased stress levels etc.

The central city location of the development means that there is very good access to it using public transport which will minimise the need for private car use. Two underground stations and a number of bus routes are in immediate proximity to the site. Many local amenities are also at walking distance, which also reduces the number of vehicle journeys to and from the building.

In addition, 19 cycling spaces will be provided, as well as storage, showers (for the office areas), lockers etc, so as to encourage the occupants and visitors to the building to use this carbon-free mode of transport.

7.0 WASTE MANAGEMENT

Buildings and building sites produce a significant amount of waste per year. Most of the waste produced in the UK is disposed in landfill sites and only a small percentage of it is recycled or reused.

The Environment Agency signals that landfill sites are filling up and the UK's levels of waste are growing. Measures are being taken at a national level to tackle this significant problem.

Reducing waste is an important means of:

- Reducing unnecessary expenditure
- Reducing the amount of natural resources used for production of new materials
- Reducing energy for waste disposal
- Reducing levels of contamination and pollution arising from waste disposal

The aim for the proposed scheme will be to minimise the impact of waste in the environment, taking the following into consideration:

Effective management of waste (sorting/recycling) during works on site

All unwanted materials during works on site will be disposed of in a way that is environmental good practice and compliant with regulations, and recycled where possible.

The implementation of a Site Waste Management Plan will help to manage the site construction waste produced. Data obtained from monitoring site construction waste can then be used to check performance against benchmarks set for site construction waste and the effectiveness of any solutions implemented.

The proposed building is a refurbishment and demolition is likely to be limited. Therefore the environmental burden and the associated waste produced with transporting, disposing of large volumes of materials/components will be reduced.

Using standardised components/avoid over sizing

The potential of standardisation and prefabrication of components will be identified, in order to reduce waste of materials.

Encourage recycling of materials

During operation, and in order to simplify the effective operation of a recycling policy, building management will aim to provide recycling facilities for all areas, for sorting materials separately. In addition, a central dedicated space will be allocated in the ground floor for recyclable materials, and an agreement established with the local authority on the frequency of collection.

8.0 SITE ISSUES

Construction sites are responsible for significant impacts, especially at a local level. These arise from disturbance, pollution and waste. Therefore attention will be given to site-related parameters in order to minimise the impacts of the proposed scheme to the area during the construction works.

The construction site will be managed in an environmentally sound manner in terms of resource use, storage, waste management, pollution and good neighbourliness.

8.1 CONSIDERATE CONSTRUCTORS SCHEME

During construction works, the site will comply with the Considerate Constructors Scheme and get a formal certification under the scheme, aiming for higher than the average score. The different sections of the CC scheme ensure that the site is:

- Considerate
- Safe
- Responsible
- Accountable
- Respectful
- Environmentally aware
- Clean
- Good neighbour

8.2 OTHER CONSTRUCTION SITE IMPACTS

Areas that will be taken into consideration in order to minimise the impact of the construction site on its surroundings as well as the global environment, are:

- **To monitor, report and set targets for the CO_2 arising from the transport activities to and from site.**

  Local suppliers will be used where possible so as to minimise the impact of transport. Monitoring all deliveries to and from site and estimating the associated CO_2 emissions, will help the project and site management staff / suppliers to establish benchmarks and aid future decision making towards improving site and transport efficiency.

- **To monitor, report and set targets for the water consumption arising from site activities.**

  Regular measurements of water consumption will be recorded and displayed on site, which could help to show consumption over the project duration and encourage setting targets for future reduction policies.

- **To adopt best practice policies regarding air, surface and ground water pollution**

  Construction sites can potentially have a major impact in polluting the air, through dust emission, as well as watercourses and ground water of the area in vicinity.

- **To use sustainable timber on-site during construction.**

  There will be limited use of formwork etc on site, however any timber used will be specified to be from sustainable sources.

9.0 LAND USE & ECOLOGY

The site being in a city centre location is expected to have limited ecological value. Also, the fact that the redevelopment occurs on an existing building on already occupied land reduces the burden on undeveloped land which minimises ecological and environmental impact.

All existing trees on the site will be maintained and protected during construction works. There are no other ecological features on the site therefore the proposed redevelopment is not expected to be affecting the ecology balance of the site.

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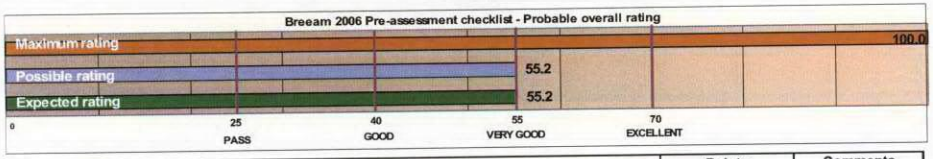
APPENDIX – BREEAM Summary Checklist

What follows is the detailed Breeam Assessment Checklist as it stands at this stage.

The bar chart at the top indicates that currently a "Very Good" rating is achieved (55.2%).

The project has been registered with BRE and an official Breeam assessment is underway by Cundall (as licensed Breeam assessors), which will be followed through to certification.



	Criteria for Assessment	Available Points		Issue Score	Comments
	SECTION 1: Management				Tick Y(Yes), N(No), or P(Possible) in the middle points column
M1	**2 Credits available**: 1 for evidence that comissioning will be monitored on behalf of the client and carried out in line with current Building Regs and (where applicable) best practice.	1	Y	1	
	1 for evidence that seasonal commissioining will be carried out in the first year of occupation.	1	Y	1	
M4	**2 Credits available**: 1 for evidence that there is a commitment to comply with best practice site management principles.	1	Y	1	GT have confirmed that the site will comply with the CC Scheme
	1 for evidence that there is a commitment to go significantly beyond best practice principles (score above 32)	1	Y	1	GT advised that a score higher than 32 will be targeted
M5	Construction Site impacts. 1 credit when 2 or more items a-g are achieved. 2 credits when 4 or more items are achieved. 3 credits when 6 or more are achieved. 1 credit when site timber is from sustainable sources.	1	Y	1	GT have confirmed that items b,c,d,e,f,g can be achieved, so three credits can be awarded.
	a. Monitor, report and set targets for CO_2 or energy arising from site activities	1	Y	1	
	b. Monitor, report and set targets for CO_2 or energy arising from transport to and from site	1	Y	1	
	c. Monitor, report and set targets for water consumption arising from site activities	1	Y	1	
	d. Monitor construction waste on site	1	Y	1	GT have confirmed that sustainable timber will be used 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 occuring on the site				
M12	Evidence of a simple building users guide, suitable for non-technical occupants and building managers	1	Y	1	It has to be a separate guide or stand-alone section within the O&M manuals
	Total Credits this section (expected)	9		9	
	Total Credits this section (possible)			0	
	Issue score expected (%)	100		100.0%	
	Issue score possible (%)			0.0%	

	SECTION 2: Health and Well-being				
HW1	Evidence that at least 80% of the office is adequately daylit	1	N	0	Daylight calculations have not been carried out
HW2	Evidence that all occupants have a view out - max. 7m radius from a window	1	N	0	Subject to internal layouts
HW3	Occupant controlled system of glare control (internal/external blinds) to be specified or commitment that they will form part of the fit-out agreement	1	N	0	Blinds to form part of the fit-out agreement and be installed by the tenants
HW4	All office lighting specified with high frequency ballasts	1	Y	1	
HW5	Evidence that all internal and external lighting is specified in accordance with appropriate CIBSE guidance for maintained lux levels.	1	Y	1	
HW6	Office lighting to be zoned to allow separate control. 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 c. Workstations adjacent to windows/atria and other areas	1	Y	1	
HW8	Evidence that external façade windows to all occupied areas are openable and at least on opposite sides for spaces more than 7m deep. Openable area should be a minimum of 5% of the floor area, spread evenly.	1	N	0	
HW9	Air inlets/exhausts at least 10m apart, and inlets over 20m of sources of external pollution (for a/c & mixed-mode buildings), or windows at least 10m away from sources of external pollution (for naturally ventilated buildings)	1	N	0	
HW11	12l/s/person fresh air in a/c or mech.vent.systems, or trickle vents (400mm^2/m^2) in nat.vent.buildings	1	Y	1	
HW14	Evidence that thermal comfort has been analysed at the design stage to inform on appropriate servicing strategies	1	N	0	
HW15	Evidence that local control is provided for temperature adjustment	1	Y	1	
HW16	Evidence that the risk of waterborne and airborne legionella contamination has been minimised **AND** there is no humidifcation or steam only humidification	1	Y	1	
HW17	Where indoor ambient noise levels are shown to achieve, in occupied areas, 35-40 dB LAeqT in small offices, 40-45 dB LAeqT in medium offices and 45-50 dB LAeqT in large offices	1	Y	1	Revised report from Hann Tucker (10/04/07) confirms that the credit is achieved.
	Total Credits this section (expected)	13		7	
	Total Credits this section (possible)			0	
	Issue score expected (%)	100		53.8%	
	Issue score possible (%)			0.0%	

	SECTION 3: Energy				
E1	Up to 15 Credits available where the building achieves a percentage improvement above the requirement for CO_2 emissions as set out in the 2006 Building Regulations.				
	+1% improvement over 2006 building regulations	1	Y	1	It has been considered that a calculation will be carried out and at least 1% improvement targeted over current Building Regs.
	+2% improvement over 2006 building regulations	2			
	+4% improvement over 2006 building regulations	3			
	+6% improvement over 2006 building regulations	4			
	+8% improvement over 2006 building regulations	5			
	+10% improvement over 2006 building regulations	6			
	+12% improvement over 2006 building regulations	7			
	+14% improvement over 2006 building regulations	8			
	+18% improvement over 2006 building regulations	9			
	+22% improvement over 2006 building regulations	10			
	+30% improvement over 2006 building regulations	11			
	+40% improvement over 2006 building regulations	12			
	+50% improvement over 2006 building regulations	13			
	+60% improvement over 2006 building regulations	14			
	+70% improvement over 2006 building regulations	15			
E2	Sub-metering of all substantive energy uses	1	Y	1	
E3	Tenancy electrical sub-metering or by floor plate/department if single tenanted	1	Y	1	
E4	Evidence that all external lighting uses energy efficient luminaires and where all lighting has daylight sensors	1	Y	1	
	Total Credits this section (expected)	18		4	
	Total Credits this section (possible)			0	
	Issue score expected (%)	100		22.2%	
	Issue score possible (%)			0.0%	

	SECTION 4: Transport				
T1	**2 credits are available**: 1 for evidence that good access is available to and from public transport for commuting	1	Y	1	
	1 for evidence that good access is available to and from public transport for business travel	1	Y	1	
T2	Up to 10 Credits are available based on the CO_2 emissions from transport, use BREEAM calculator	10			Based on NLA 3800.4m^2 and 20 car parking spaces.
	Number of credits achieved: **Possible**				
	Expected	8			
T5	**2 credits are available**: 1 for evidence that there is access to covered, secure and well lit cycle racks and showers	1	Y	1	19 cycling spaces would be needed and 1 showers (19 are provided and 2 showers). Revised RJ proposal meets criteria
	1 credit where, in addition to the above, there area changing facilities & lockers or dedicated drying space	1	Y	1	Revised RJ proposal meets criteria, lockers location to be indicated on drawings
T8	Evidence that a travel plan has been developed that addresses the specific needs of the users of the assessed development	1	N	0	
	Total Credits this section (expected)	15		12	
	Total Credits this section (possible)			0	
	Issue score expected (%)	100		80.0%	
	Issue score possible (%)			0.0%	

	SECTION 5: Water consumption				
W1	Water consumption (result from calculator)				
	Predicted water consumption 4.5-5.5 m^3 per person/yr	1			Based on 4.5ls WCs, <9ls/min showers, IR operated taps, no urinals & no greyrain water recycling, 2 credits can be awarded
	Predicted water consumption 1.5-4.4 m^3 per person/yr	2	Y	2	
	Predicted water consumption <1.5 m^3 per person/yr	3			
W2	Provision of water meters with pulsed output on all supplies of the building	1	Y	1	
W3	Major water leak detection system provided on all mains supplies	1	Y	1	
W4	Proximity detection water shut off to all urinals and WCs	1	Y	1	
	Total Credits this section (expected)	6		5	
	Total Credits this section (possible)			0	
	Issue score expected (%)	100		83.3%	
	Issue score possible (%)			0.0%	

SECTION 6: Materials					
MW1	Where major building elements (ext.walls, roof, windows, upper floors) have a low environmental impact as a result of their specification (Use calculator and see guidance from BRE Green Guide to Specification or Envest sofware)	1	Y	1	RJ/CR provided information. Based on calculator, 3 credits can be awarded.
		1	Y	1	
		1	Y	1	
		1	N	0	
MW3	Carpets/other floor finishes in tenant areas of spec.buildings only installed in a limited show area and where the future occupant has specified them, or if tenant agrees to the specified finishes	1	Y	1	It was confirmed by RJ during Breeam workshop
MW5	Evidence that 50% of the façade is re-used and 80% of this comprises in-situ reused material	1	N	0	
MW6	Evidence that design reuses at least 80% of an existing primary structure and for part refurb part new build the volume of the reused structure comprises at least 50% of the final volume	1	Y	1	To be confirmed by calculations
MW7	Significant use (over 25%) of recycled aggregates for "high grade" uses (i.e. building structure, ground slabs, roads etc)	1	N	0	It was confirmed by CR during Breeam workshop
MW8	Up to three credits where evidence is provided that the majority of materials in the following elements within the building are responsibly sourced (EMS/ISO certificates from suppliers) a. Roof b. Frame c. Walls (external) d. Floors (ground, upper) e. Foundations/substructure f. Doors g. Windows	1	N	0	Not possible given the status of procurement
		1	N	0	
		1	N	0	
MW12	Evidence that there is a dedicated, central storage space for materials that can be recycled. $2m^2$ per $1000m^2$ of floor area, up to a maximum of $10m^2$	1	Y	1	To be provided at ground floor level
	Total Credits this section (expected)	12		6	
	Total Credits this section (possible)			0	
	Issue score expected (%)	100		50.0%	
	Issue score possible (%)			0.0%	

SECTION 7: Land Use and Ecology					
LE1	Re-use of previously developed site (within the last 50 yrs.)	1	Y	1	
LE2	Steps to contain or clean the site on contaminated land	1	Y	1	No additional groundworks
LE3	Evidence that the land is defined as having low ecological value and all existing features of ecological value will be fully protected during construction works.	1	Y	1	It was confirmed during Breeam workshop that all existing trees on site will be protected. GT to confirm methods used.
LE4	**2 Credits available:** 1 where the ecological value of the site as a result of the development is less than zero and equal or greater to minus nine species i.e a small negative change	1			Neutral impact has been assumed on the ecology of the site.
	1 Credit where there is no negative change in the ecological value i.e equal to or greater than zero species.	2	Y	2	
LE5	**3 Credits available:** 1 where evidence demonstrates that the design team has appointed a professional to advise on enhancing and protecting the ecological value of the site and implemented these recommendations	1	N	0	It was agreed following Breeam workshop that this credit will not be pursued.
	2 Credits where, following implementing professional advice, the ecological value of the site is increased	2	N	0	
LE6	**2 Credits available:** 1 where evidence demonstrates that the client has committed to achieving the mandatory requirements and at least **2** additional requirements as listed in the credit Compliance requirements	1	N	0	It was agreed following Breeam workshop that these credits will not be pursued.
	1 Credit where the client has committed to achieving the mandatory requirements and at least **4** additional requirements as listed in the credit Compliance requirements	1	N	0	
	Total Credits this section (expected)	11		5	
	Total Credits this section (possible)			0	
	Issue score expected (%)	100		45.5%	
	Issue score possible (%)			0.0%	

SECTION 8: Pollution					
P1	Refrigerant GWP <5 or no refrigerants	1	N	0	
P2	**2 Credits available:** 1 Credit where refrigerant leaks can be detected or no refrigerants	1	Y	1	It was confirmed during Breeam workshop
	1 Credit where evidence demonstrates the provision of automatic refrigerant pump down is made to a heat exchanger with isolation valves, or no refrigerants	1	N	0	This has not been included
P4	Insulants GWP <5. It indludes all insulation for building fabric, building services, internal sound proofing.	1	N	0	This is currently not being achieved for all products.
P6	NOx emissions from space heating systems 100 or <mg/kWh deliv.heat.energy.	1			Based on electric heating, no credits for the NOx emissions can be achieved.
	Acid rain - NOx emissions 70 or less mg/kWh	2			
	Acid rain - NOx emissions 40 or less mg/kWh	3			
P7	**3 Credits available:** 2 Credits where the development is situated in a flood zone with a low annual probability of flooding OR the development is in a flood zone with a medium annual probability of flooding and the ground level, car parking and access to the building are above the design flood level	2	Y	2	Based on the flood maps of the Environment Agency, the site is in a zone of low annual probability of flooding
	1 Credit where evidence demonstrates that Sustainable Urban Drainage techniques are specified	1	N	0	
P8	On site treatment e.g oil separators/filtration (or no car parks/no roof plant included)	1	N	0	It was agreed following Breeam workshop that this credit will not be pursued.
P11	**3 Credits available:** 1 Credit where evidence that there is a a feasibility study considering renewable and low emissions energy and the results implemented	1	N	0	Preliminary study has been undertaken but the technologies were found not feasible
	2 Credits where the first credit is achieved and at least 10% of the total energy demand is supplied from local renewable or low emission sources	2	N	0	
	3 Credits where the first credit is achieved and at least 15% of the total energy demand is supplied from local renewable or low emission sources	3	N	0	
P12	Evidence demonstrates that the external lighting design is compliant with the ILE guidance notes for the reduction of obtrusive light, 2005.	1	Y	1	
	Total Credits this section (expected)	15		4	
	Total Credits this section (possible)			0	
	Issue score expected (%)	100		26.7%	
	Issue score possible (%)			0.0%	

OVERALL BREEAM 2006 Expected Score	100.0	55.2	VERY GOOD
OVERALL BREEAM 2006 Possible Score		55.2	VERY GOOD