102
Camley Street, London N1C 4PF

Sustainability Statement

June 2014

REGENT RENEWAL LTD

SUSTAINABILITY STATEMENT REV 2

FOR

102 CAMLEY STREET, LONDON

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REVISION HISTORY

Version No.	Version Date	Summary of Changes	Changes Marked
Rev 1	16/06/2014	Draft planning document	
Rev 2	26/06/2014	Updated figures and incorporating comments	

APPROVALS

This document requires the following approvals.

Name	Title
Anthony Coumidis	Director

Signed…… dated…….

For and on behalf of McBains Cooper Consulting Limited

1.0 EXECUTIVE SUMMARY

This Sustainability Statement has been prepared by McBains Cooper Consulting Ltd for the proposed mixed use development (residential and B1 employment units) at 102 Camley Street, in support of a planning application to London Borough of Camden. The Sustainability Statement provides details of sustainable design and construction measures used to achieve BREEAM and Code for Sustainable Homes ratings. It has been prepared as part of a series of documents to support the application, in conjunction with which it should be read and presents a strategy in accordance with local, regional and national policy

The main policy and guidance context of the responses includes:

- UK national sustainable development policies
- The London Plan 2011 (Draft Further Alterations to the London Plan January 2014) and the Mayor's Supplementary Planning Guidance – Revised Sustainable Design and Construction (2014)
- The requirements of Camden Council as outlined in the Core Strategy (2010), Development Policies (2010 – 2015) and Planning Guidance 3 – Sustainability (April 2011);

The proposed development has a mix of uses, including residential (154 dwellings) and B1 employment areas (1,620m^2 GEA).

The scheme consists of predominantly residential dwellings and a Code for Sustainable Homes (Nov 2010) pre assessment workshop and assessment has been undertaken. The development is a targeting a Level 4 rating and thus a final score in excess of 68%, including all mandatory criteria.

The B1 employment element of the scheme will be assessed under the BRE Environmental Assessment Method (BREEAM) New Construction 2011 and is targeting a total score of over 70% to achieve an 'Excellent' rating.

Following pre assessment workshops and subsequent reviews amongst the project team, the targeted scores are as follows:

BREEAM New Construction 2011 (Offices)	73.48%	"Excellent"
Code for Sustainable Homes (Residential)	71.65%	"Level 4"

As the employment units will be fitted out and managed separately, there are a number of credits that will be met through the provision of a Tenancy Agreement between the developer and prospective tenant. These have been listed in section 3.0 within this report.

The design team have attended several pre application meetings with LB Camden and received positive feedback regarding the proposed development at pre application meeting with the GLA on 20th May 2014. This report also aims to address comments received at and following this meeting.

Key sustainability aims of the development include the following:

- Rainwater harvesting for external irrigation for the extensive soft landscaping areas will be considered to reduce the use on potable water use.

- The materials selected for the major building elements selected following a review in accordance with BRE's Green Guide to Specification to target materials with a low environmental impact.

- Waste during construction and operation will be carefully managed to minimise volumes destined for landfill and to maximise recycling rates.

- A significant area of green roof (~175m^2) is proposed in order to improve biodiversity, provide additional, natural, insulation to reduce heat losses and gains through the roof of the building and addressing the effects of the heat island effects, as well as benefits in terms of attenuating rainwater runoff.

- Provision of outdoor space for each dwelling, in the form of private balconies or communal amenity space at roof level or the landscaped areas at ground floor

- Acoustic insulation at least 5dB better than Building Regulations to reduce the likelihood of noise disruption between dwellings.

- An Air Quality Assessment (AQA) has been undertaken by Arup for the proposed development and concludes the development will have a negligible impact on local air quality.

- Safe and secure cycle storage for residents in a communal basement store accommodating over 180 cycle spaces

2.0 INTRODUCTION

McBains Cooper Consulting Limited has been appointed by Regent Renewal Ltd (the applicant) to produce a Sustainability Statement for the proposed mixed use development at 102 Camley Street to respond to national, regional and local policy, guides and regulations.

The site borders the Network Rail and Channel tunnel Rail Link (CTRL) railway line leading into St Pancras station to the east, offices and warehouse to the north and the Regents Canal to the south. The 102 Camley Street site is currently occupied by a Class B8 warehouse whose tenants have surrendered their short term lease and relocated to a purpose built unit in Tottenham, North London.

In order to increase the efficiency of the land used, the current building will not be refurbished and it is proposed that the existing warehouse is demolished to redevelop the site to provide a mixed use development comprising 1,620m^2 GEAof flexible commercial/employment floorspace and 154 residential dwellings.

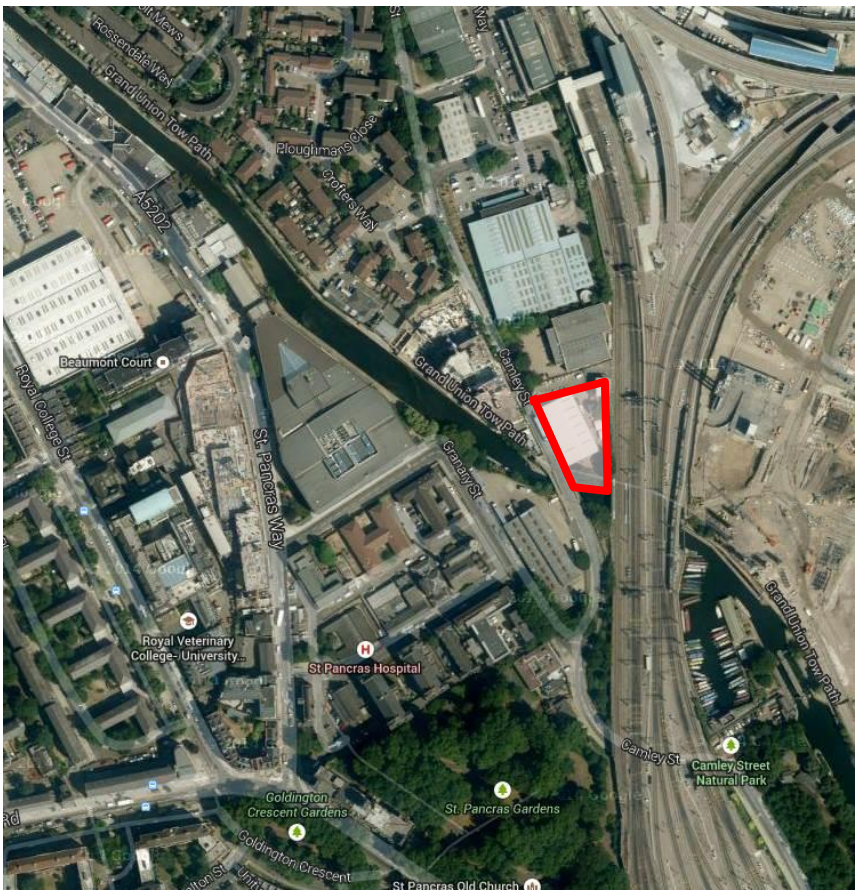

Figure 1: Site location

This document describes the approach taken with regards to the environmental sustainability of the proposed development. It aims to address the requirements as set out in the following policy and environmental assessment documents:

- Revised Sustainable Design and Construction Supplementary Planning Guidance (SPG) (April 2014);
- Code for Sustainable Homes November 2010
- BREEAM New Construction 2011 (Offices)

Please note that this document does not intend to provide a full response to policies referenced and should be read in conjunction with statements and specialist reports such as the:

- Design and Access Statement (GHA)
- Engineering Constraints Report (Arup)
- Energy Strategy (McBains Cooper)
- Ecology and Biodiversity Statement (Aspect Ecology)
- Transport Statement (TTP Consulting)
- Residential planning noise and vibration report (Sandy Brown)
- Air Quality Assessment (Arup)

The remainder of this Statement is structured as follows:

- Chapter 2 – BREEAM New Construction 2011 (Offices)
- Chapter 3 – Code for Sustainable Homes November 2010 (Residential)
- Appendix A – BREEAM New Construction 2011 Pre-Assessment (Offices)
- Appendix B – Code for Sustainable Homes November 2010 Pre-Assessment (Residential)

3.0 BREEAM New Construction 2011 (Offices)

The B1 employment element of the proposed development covers an area of 1,620m^2 GEA and will be assessed separately to the residential element under BREEAM New Construction 2011 (Offices).

Over and above the requirements of the London Borough of Camden Development Policy DP22, the development will target of BREEAM rating of 'Excellent'.

A detailed breakdown of the individual credits can be found in Appendix A. Please note that while specific credits may change as the detailed design progresses, the target rating of 'Excellent' remains. The strategy shown in the Appendix is, therefore, indicative. Below is a summary of targeted credits under each category.

breeam	% of Total Score **AVAILABLE**	% of Total Score **TARGETED**
TARGET RATING	**Excellent**	
Energy	19	14.44
Water	6	4.00
Materials	12.5	8.33
Waste	7.5	4.29
Pollution	10	5.38
Health and wellbeing	15.00	11.79
Management	12.00	8.18
Ecology	10	7.00
Transport	8	8.00

BREEAM New Construction 2011 (Offices)	**73.48%**	(outlining a possible route to an 'Excellent' rating)

Given the speculative nature of the employment areas, a number of the credits requirements will be met this stage through a legal binding tenancy agreement. An indicative list of such credits has been provided below, which will be updated should any of the targeted credits change.

Credit name	Summary of requirements to be included within Tenancy Agreement
Man 01 Sustainable Procurement	Compliant commissioning and seasonal commissioning of building services to be carried out. Commitment to monitor energy and water consumption for at least 12 months post occupation, analyse discrepancies and adjust systems accordingly.
Man 04 Stakeholder Participation	Building user guide and post occupancy evaluation by third party
Hea 01 Visual comfort	High frequency ballasts and adequate glare control
Hea 02 Indoor air quality	Air quality plan to be produced and all relevant products will be specified to meet the VOC testing and emission levels required.
Hea 04 Water quality	Mains fed chilled water supply to be provided
Ene 02 Energy monitoring	Building Management System (BMS) and compliant sub-metering to be specified.
Ene 03 External lighting	Specific luminaire efficacy (lumens/circuit Watt) levels met for the bulding, pathways, roads, car parks, signs, uplighting. Controls (time switch or daylight sensor) with manual override is also required.
Ene 04 Low and zero carbon technology	CHP providing hot water and space heating; heat pumps providing cooling; PV generating electricity to be used onsite.
Ene 08 Energy efficient equipment	Office equipment, domestic sized equipment and electric heating must be selected from ECA technology list, have an Energy Star rating or meet UK government Buying Standards
Wat 01 Water consumption	Taps, WCs, to meet requirements for 2 credits
Wat 02 Water monitoring	Water meter on the mains water supply linked to the BMS
Wat 03 water leak detection and prevention	Flow control devices in WC areas and leak detection system on supply to and within the building.
Mat 01 Lifecycle impacts	Internal floor finishes/coverings to be specified in accordance with the BRE's Green Guide and achieve A or A+ ratings
Mat 05 Designing for robustness	Highly trafficked areas liable to damage should be identified and protected (e.g. kick plates on doors)

The key sustainability measures include the following:

- An estimated improvement in regulated CO_2 emissions equal to or in excess of 40% over Part L 2010 by following the energy hierarchy (Be Lean, Be Clean Be Green): minimising energy demand in the first instance, the installation of Combined Heat and Power unit to provide approximately 60% of the site wide hot water and space heating load, a Heat Pump system to meet two thirds of the peak cooling demand of the employment areas and a large area of PV array (75m^2 – 100m^2 or 10 – 15 kWp).
- High efficiency lighting;
- Excellent quality materials with long life span;
- Rainwater harvesting for external irrigation of soft landscaped areas to be considered
- Commitment to high standard of construction practices in targeting Beyond Practice scores under the Considerate Constructors Scheme

4.0 CODE FOR SUSTAINABLE HOMES (Nov 2010)

An initial Code for Sustainable Homes Pre-Assessment meeting was held on 21st March 2013 at McBains Cooper's offices in London to review the credits requirements and set a route to achieving an overall score in excess of 68% in order to reach a Code Level 4 rating. Subsequent discussions have taken place on an individual basis with the Code Assessor and at Project Team meetings.

The residential element consists of 154 dwellings and each of these apartments is expected to achieve a Code for Sustainable Homes Level 4. Please refer to Appendix B for a complete Code for Sustainable Homes Pre-Assessment of a typical sample flat. Please note that while specific credits may change as the detailed design progresses, the commitment for achieving Level 4 remains. The strategy shown in the Appendix is, therefore, indicative.

A summary of the expected credit scores for each category has been provided below:

Code for Sustainable Homes Technical Guide November 2010 Communities and Local Government	% of Total Score **AVAILABLE**	% of Total Score **TARGETED**
TARGET RATING	**Code Level 4**	
Energy	36.40	21.37
Water	9.00	6.00
Materials	7.20	3.6
Surface water runoff	2.20	1.10
Waste	6.40	5.60
Pollution	2.80	2.80
Health and wellbeing	14.00	10.50
Management	10.00	10.00
Ecology	12.00	8.00

Based on the Pre-Assessment exercise outlined above and current design intent, it is anticipated that the following overall score is targeted by the development:

Code for Sustainable Homes	**71.65 %**	**"Level 4"**

The key sustainability measures include credits under:

- **Fabric Energy Efficiency,** which demonstrates the extent to which we have followed a "fabric first" approach and adopted the Energy Hierarchy of Be Lean, Be Clean Green as a basis for the energy strategy (for details, please refer to the Energy Strategy);
- **Provision of outdoor space for each dwelling**, in the form of private balconies, winter gardens or communal amenity space at roof level or the landscaped areas at ground floor
- **Energy display devices in all dwellings**, to enable the tenant to monitor live/historic electrical and thermal energy consumption in energy and fiscal terms facilitating demand reduction by switching equipment off or using them at off peak times.
- **Acoustic insulation to achieve at least 5dB improvement on Building Regulations** to reduce the likelihood of noise disruption between dwellings.
- **Noise emissions to surrounding areas will be attenuated** to ensure those at noise sensitive premises do not exceed 5 dB below the minimum measured background noise level. Please refer to the Acoustics Strategy Report for further details.
- **Rainwater harvesting for external irrigation** of soft landscaped areas to be considered
- **Safe and secure cycle storage** for residents in a communal basement store accommodating over 180 cycle spaces
- **Commitment to high standard of construction practices** in targeting Beyond Practice scores under the Considerate Constructors Scheme and the monitoring of energy and water use during construction
- **Significant increase in biodiversity** through the inclusion of large area of green roof (~175m^2) and ground level soft landscaped area.

To achieve Code Level 4, there is a requirement for an overall score of 68% and a specific number of mandatory credits under Ene 1 (Carbon Dioxide Emissions reduction), and Wat 1 (Potable Water Use).

The ambitious energy strategy estimates a reduction in regulated CO_2 emissions of at least 40% over Part L 2010 and thus would exceed the 25% required to achieve Code Level 4.

Through the careful specification of sanitary ware and water efficient white goods, all dwellings will not exceed the maximum internal water usage of 105 L/p/day required for Code Level 4 and the London Plan 2011. Water metering will be installed to measure each individual dwelling.

5.0 DRAINAGE AND SUSTAINABLE DRAINAGE SYSTEMS (SuDS)

Rainwater recycling is to be considered for external irrigation of the soft landscaped areas and a large area of green roof (~175m^2) contributes to improved attenuation of surface water runoff rates and volumes. Further attenuation is proposed in the form of attenuation cells at roof slab level and / or underground storm cells to achieve a 50% reduction in the rate of run-off compared to the existing site, taking into account expected increases in rainfall due to climate change, in line with London Draft Water Strategy.

In terms of flood risk, the Environment Agency flood maps indicates the development will be located in Flood Zone 1, and at a Low risk of flooding.

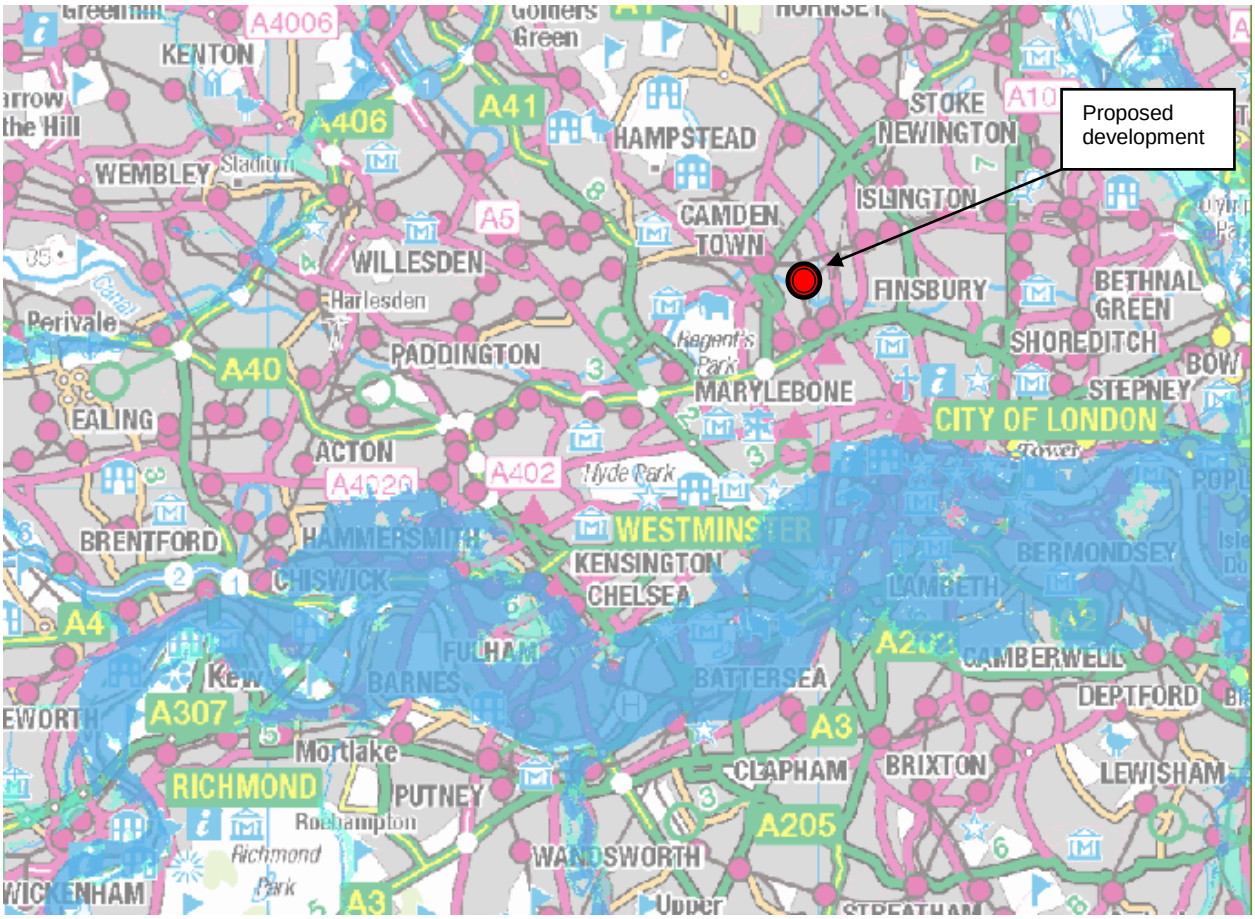

Figure 2: Environment Agency flood risk map

For more details, please refer to the Engineering Statement included within the planning submission.

6.0 SITE WASTE MANAGEMENT

6.1 Construction waste and site management

"The Mayor is committed to a policy framework for waste management which starts from the position that the best approach is to reduce the amount of waste that arises in the first place. Where this is not possible, he supports an approach based on the waste hierarchy that emphasises re-use, and then recycling and composting, before energy recovery and disposal."

The London Plan 2011, Waste

Waste is an increasingly important issue both during construction and throughout the lifespan of the building.

Waste will be minimised during construction of the proposed development, and a Site Waste Management plan will be produced in order to maximise recycling during demolition and construction, and to minimise the quantity of waste destined for landfill.

The use of pre fabrication for certain elements of the scheme, such as bathroom pods, will be investigated with such processes known to reduce waste, and improve efficiency in terms of construction programme and safety.

The Contractor will have to sign up to the Considerate Constructors Scheme and achieve a minimum of 35 points. The Considerate Contractors Scheme is a UK Certification Scheme that encourages the considerate management of construction sites. The Scheme is operated by the Construction Confederation and points are awarded in increments of 0.5 over the following five sections:

- Care about Appearance
- Respect the Community
- Protect the Environment
- Secure everyone's Safety
- Value their Workforce

To achieve certification under this scheme, a score of at least 25 is required; however, the Contractor will be expected to go significantly beyond best practice and required to achieve a minimum of 35 points under the scheme, as full credits are targeted under the relevant BREEAM and Code for Sustainable Homes credits (Man02 Responsible Construction Practices and Man 2 Considerate Constructor's Scheme).

The Contractor will also be required to:

a. Monitor, report and set targets for CO_2 or energy arising from site activities;
b. Monitor, report and set targets for CO_2 or energy arising from transport to and from site;
c. Monitor, report and set targets for water consumption arising from site activities;
d. Implement best practice policies in respect of air (dust) pollution arising from the site;
e. Implement best practice policies in respect of water (ground and surface) pollution occurring on the site;
f. Have in place an environmental materials policy, used for sourcing of construction materials to be utilised on site;
g. Operate an Environmental Management System; and
h. Provide evidence that at least 80% of site timber is responsibly sourced and 100% is legally sourced.

A principal aim during construction will be to reduce the amount of waste generated and exported from site.

A Site Waste Management plan will be produced by the contractor in order to minimise waste production and maximise recycling during demolition and construction. A commitment to divert 90% of waste from landfill will be expected through reuse or recycling in line with London Plan aspirations for construction and demolition waste by 2020. All relevant contractors will be required to investigate opportunities to minimise and reduce waste generation, such as:

- Agreements with material suppliers to reduce amount of packaging or to participate in a packaging take-back scheme;
- Implementation of a 'just-in-time' material delivery system to avoid materials being stockpiled on-site for long periods of time, which increases the risk of their damage and disposal as waste;
- Attention to material quality requirements to avoid over ordering and generation of wasted materials;
- Segregation of waste at source where practical; and
- Re-use and recycling of materials off-site where re-use on-site is not practical (e.g. through use of an off-site waste segregation facility and re-sale for direct re-use or re-processing).

The disposal of all waste or other materials removed from the site will be in accordance with the requirements of the Environment Agency, COPA, Environment Act 1995 and the Duty of Care Regulations 1991.
In addition to the usual waste associated with a normal construction project, there may also be contaminated materials for the ground and excavation stages. The control, handling and disposal of these

materials will require special attention; the necessary requirements for achieving this will be provided within the Construction Management Statement to be submitted following detailed design.
As a general principle, the generation of waste on site will be minimised by ensuring that wherever possible, materials are delivered cut to size and/or ready for use. Packaging will be minimised, consistent with offering adequate protection, and as far as possible will be recyclable to the materials supplier.

During the ground works stage of the project, waste disposal will be treated as part of the general disposal of unwanted materials. Skips will be covered to prevent dust and debris blowing around the site, and will be cleared on a regular basis.

As the building becomes closed in, the rubbish will be collected into lightweight floor-based wheeled skips that can pass through the doorways of the building. These will then be taken to ground floor level by hoist, and either disposed of into larger skips, or if suitable, placed into a compactor to reduce the volume of the waste before it is taken off site. In the final stages of the building works, and when the envelope is complete, protected lifts will be used to clear the remaining waste materials.

6.2 Operational waste

The development will have separate waste stores for the residential dwellings and B1 areas. Dedicated area for recyclable waste, both internally within the dwellings, and in the communal store will be provided whilst collection from site is awaited.

Facilities for the management of waste and recycling during the operation of the building will be provided in accordance with the relevant Code for Sustainable Homes and BREEAM requirements. The size of the external, residential storage will be sized based upon the most onerous requirements of either the British Standard 5906 or the LB Camden.

Furthermore, it is proposed that dedicated storage will be provided for compostable kitchen waste in the form of a 7L ‘caddy’ within each dwelling, and a designated bin in the communal store. .Consultation with the London Borough of Camden confirms that the council would collect the organic waste and transfer to offsite composting facilities.

7.0 MATERIALS

Materials included within the main building elements and hard landscaping proposals relevant to the corresponding sections of the BREEAM and Code for Sustainable Homes assessments will be selected according to the BRE's Green Guide to Specification with a preference for A or A+ rated materials. The Responsible Sourcing of materials in the main building elements is also targeted as part of the sustainability assessments, and therefore suppliers will be required to prove appropriate environmental processes are adhered to. The use of

In relation to materials and the operation of the building, robust measures will be incorporated into the design to protect high use and exposed areas from deterioration and accidental damage in order to minimise frequency of replacement. Example measures include kick plates on doors, raised kerbs and bollards where manoeuvring or delivery areas interface with the building.These measures will all contribute to minimising the amount of waste generated over the building lifetime as well as complementing a robust construction waste strategy.

8.0 AIR QUALITY

An Air Quality Assessment (AQA) has been undertaken by Arup for the proposed development. A baseline evaluation describing the current air quality conditions in the vicinity of the site and an assessment of air quality impacts associated with traffic generated by the scheme are included within the study. Given that the scheme is predominantly residential and that the development will be car free, except 2 no. car parking spaces for disabled residents as required by LB Camden, the impacts on local air quality from vehicles are likely to be negligible. The assessment was conducted using the Design Manual for Roads and Bridges – Environmental Assessment (DMRB) and Environmental Protection UK (EPUK) screening criteria

The site of the proposed development is located within the London Borough of Camden Air Quality Management Area (AQMA) which has been assigned due to excessive levels of NO_2 (annual mean concentration) and PM_{10} (24-hour concentrations) with respect to the national standards.

The effects of the construction process has also been assessed using the qualitative approach described in the latest Institute of Air Quality Management (IAQM) guidance and with appropriate mitigation measures there is likely to be a negligible impact from the dust distribution caused by construction activities onsite

The impact on air quality of the nearby mainline railway was reviewed, including local monitoring results and emissions from both stationary and moving trains are not considered significant at the proposed site location.

Dispersion modelling have been undertaken to and indicated that emissions associated with the operation of the CHP unit and gas boilers are to have negligible impact on the surrounding area.

The draft GLA supplementary planning guidance (SPG) ' The control of dust and emissions during construction and demolition' has been reviewed all potential mitigation measures are considered in the above.

For more details, please refer to the Air Quality Assessment included within the planning submission.

9.0 ECOLOGY AND LANDSCAPING

The existing site includes a food distribution warehouse and thus predominantly comprises hardstanding and buildings, with minimal vegetation present in the form of small garden areas and planting in the south and a small number of conifers and young trees along the eastern boundary. An ecologist surveyed the site in April 2014 to evaluate the habitats and species present on site and concluded that there was no reason to suggest that any ecological designations, habitats of nature conservation interest or any protected species will be adversely affected by the proposed development.

In line with the ecologist's recommendations for potential enhancements to the site, the following are to be included within the design and construction of the scheme:

- General construction safeguards and protective measures;
- Safeguards in respect of nesting birds during habitat clearance works;
- Provision of Bird Boxes
- Green roof areas and native/drought resistant planting, if possible, to increase ecological value;
- Management of new/retained habitats for the benefit of wildlife.

The provision of external lighting will also consider its impacts on the new residential dwellings and surrounding buildings. It is proposed that all external lighting (except for safety and security lighting) will be switched off between 23:00 hrs and 07:00 hrs and be designed in line with ILP Guidance 'Notes for the reduction of obtrusive light (2011)'

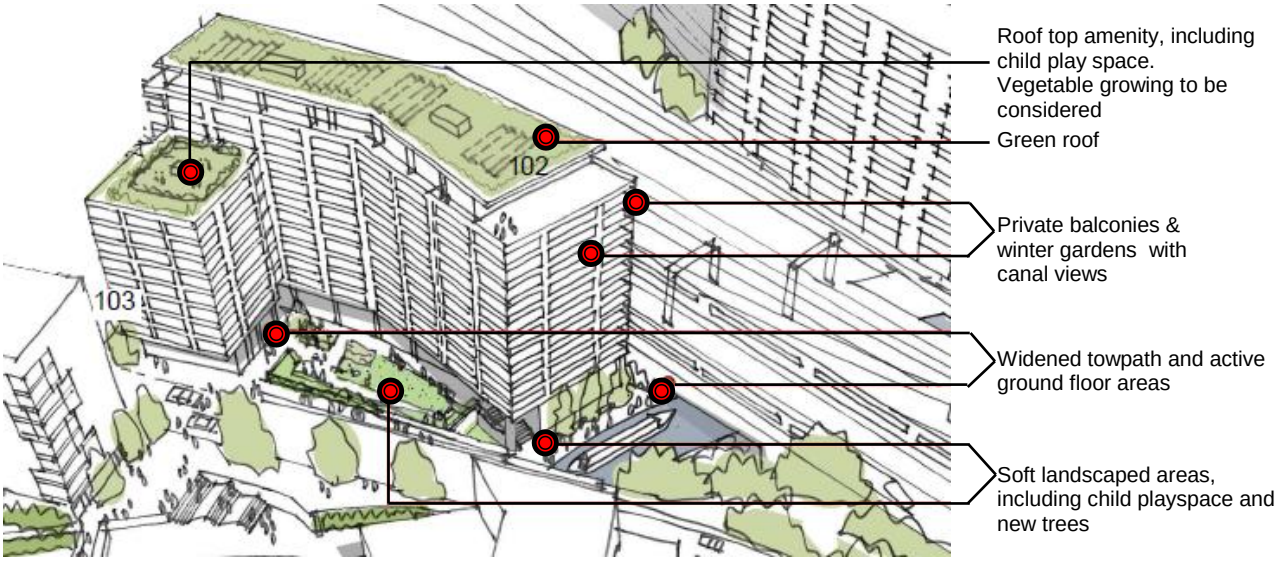

Figure 3: Overview of soft landscaping design for the proposed scheme

10.0 TRANSPORT

The site is well served in terms of public transport links given the proximity of the site to Kings Cross – St. Pancras International rail and London Underground station. The station provides rail links to the north and south of the UK and direct express trains to Paris and Brussels via the Eurostar. Connections across the city are afforded with London Underground services on the Victoria, Northern, Piccadilly, Circle, Metropolitan and Hammersmith & City lines. The manual PTAL rating of the proposed development in relation to the station entrance achieves the maximum level of 6a.

Further details are provided in the Transport Assessment prepared by TTP.

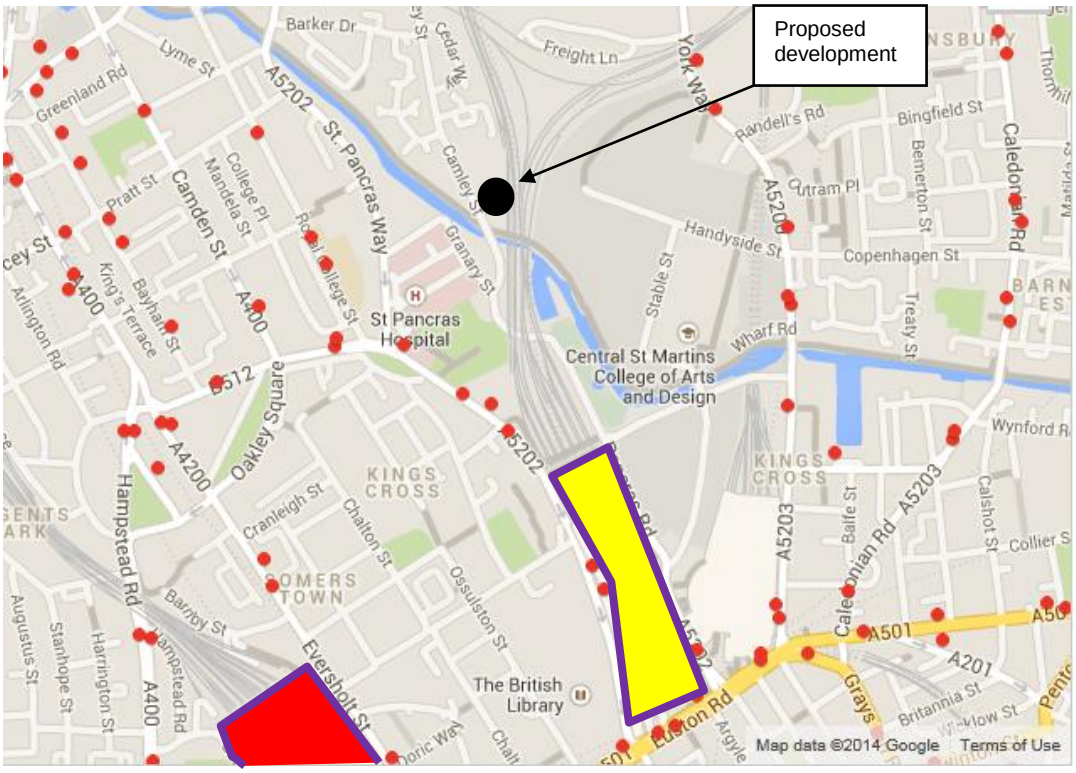

Figure 4: Local transport links to the proposed development

Bus stops

National rail station

National & international rail station

11.0 CONCLUSION

This Sustainability Statement presents how the proposed development will target the requirements to achieve a Code for Sustainable Homes Level 4 and BREEAM 'Excellent' rating in the residential element and employment units respectively. The overall scores are summarised in the table below.

BREEAM New Construction 2011 (Offices)	**73.48%**	**"Excellent"**
Code for Sustainable Homes	**71.65%**	**"Level 4"**

Further commitments that will also contribute towards a highly sustainable development include:

- **Fabric Energy Efficiency,** which demonstrates the extent to which we have followed a "fabric first" approach in the energy strategy which targets an overall reduction in regulated CO_2 emissions of at least 40%, with the inclusion of CHP, heat pumps and PV array.
- **Provision of outdoor space for each dwelling**, in the form of private balconies or communal amenity space at roof level or the landscaped areas at ground floor
- **Acoustic insulation at least 5dB better than Building Regulations** to reduce the likelihood of noise disruption between dwellings**.**
- **Rainwater harvesting for external irrigation** of soft landscaped areas to be considered
- **An Air Quality Assessment (AQA)** has been undertaken by Arup for the proposed development and concludes the development will have a negligible impact on local air quality.
- **Safe and secure cycle storage** for residents in a communal basement store accommodating over 180 cycle spaces
- **Commitment to high standard of construction practices** in targeting Beyond Practice scores under the Considerate Constructors Scheme and the monitoring of energy and water use during construction
- **Significant increase in biodiversity** through the inclusion of large area of green roof (~175m^2) and ground level soft landscaped area.

APPENDIX A

BREEAM New Construction 2011 Pre-Assessment (Offices)

Revision	Date	Author / Reviewer
1	20.03.2014 (for BREEAM update meeting 21.03.14)	Tim Pegg / Marietta Vafea
2	03.04.2014 (following BREEAM pre assessment meeting 21.03.14)	Tim Pegg / Marietta Vafea
3	26.06.2014 (incorporaling design team feedback)	Tim Pegg / Marietta Vafea

Credit awarded
Compliant evidence provided but further evidence required
No compliant evidence provided
Potential credit
Not targeted

Targeted rating and score:	102 CAMLEY STREET	EXCELLENT	73.48%

MCBAINS COOPER

Ref	Title		Credits available	Targeted Credits	Evidence Required	Responsibility	Notes
Management							
Man 1	Sustainable Procurement **(8 credits)**	**Project Brief and Design**					
		One credit From RIBA Stage B, define client, building occupier, design team and contratctor role and resposibilities during: design, construction, commissioning & handover and occupation phase (until Stage L). Definitions should cover: a) end user requirements, b)aims of design, c) particular installation.construction requirements, d) occupiers budget & technical expertise in maintaining any proposed systems, e) usuability & mangeability of any proposals, f) production of documentation, g) comissioning, training & after care support. **(points 1 & 2)** Training schedule included within main programme of works for relevant building occupiers / facilites manager / premises manage items a - e in BREEAM guidance e..g Building User Guide contents **(point 3)**	1	1	**For points 1- 3:** Documentation indicating when the collaboration began and the roles and responsibilities of the project team for the required phases: - Meeting minutes	**Indigo / Tenant**	
					- Schedule of defined responsibilities / roles from design to occupation covering items listed a - g	**Indigo / Tenant**	
					- Construction programme	**Indigo / Tenant**	
					Point 3 - The training schedule within main programme of works	**Indigo / Tenant**	
		One credit when a BREEAM accredited professional is appointed to facilitate the setting of BREEAM related performance targets for the project (no later than at Concept Design stage). Defined BREEAM performance targets have been contractually agreed (no later than at Concept Design stage) **(point 4-6)**	1	0	**For points 4-13:** - The AP appointment letter.	**Not targeted**	**Not targeted**
					- Relevant section/clauses of the building specification or contract		
		One credit when criteria above has been achieved. The appointed AP is engaged to monitor and report progress against BREEAM targets by attending key project / design team meetings during the feasibility and design stages. The AP prepare regular written reports for the client and project team re progress against defined BREEAM performance targets **(points 7-9)**	1	0	- Project programme indicating the dates by which the key work stages (Preparation and Design) are to be completed.	**Not targeted**	**Not targeted**
					- Meeting notes/minutes, recorded correspondence or schedules that can demonstrate BREEAM issues are a regular agenda item and AP attendance.		
		One credit when the AP is engaged to monitor and report progress against BREEAM targets by attending key project team meetings during the production of information, tendering and construction stages, including RIBA stage L post-practical completion. The defined BREEAM performance targets from a requirement of the principal contractors contract (when agreed at or before RIBA stage C or equivalent) The AP prepares regular reports for the client and project team . BREEAM's assesor final post-construction stage certification report is required to achieve all three credits at the final post-contruction stage of the assessment **(points 9-13)**	1	0	- The AP progress report (for each work stage).	**Not targeted**	**Not targeted**
					- Design stage BREEAM assessment report.		
		Construction and Handover					
		One credit when the main contractor accounts for a thermographic survey within the project budget and programme of works. The survaey is undertaken in accordance with the appropriate standards and a professional (Valid Level 2 certificate in thermography). The survey confirms continuity of insulation, avoidance of excessive thermal bridging & avoidance of air leakage paths through fabric. Defects are rectified **(points 14- 17)**	1	1	- Project budget	**Contractor (include within Prelims)**	
					- Programme of works		
					- Relevant section/clauses of the building specification or contract and/or letter of appointment		
		One credit where evidence provided demonstrates that an appropriate project team member has been appointed to monitor and programme pre-commissioning, commissioning and when necessary, re-commisioning on behalf of the client to ensure commissioning will be carried out in line with current best practice. The main contractor accounts for the commissioning programme, responsibilities and criteria within the programme of works. A specialist commissioning manager is appointed for complex systems at the design stage. **(points 18-21)**	1	1	- Commissioning responsibilities schedule	**M & E**	
					- Relevant section/clauses of the building specification or contract	**M & E**	
					- Main Contractors programme is required, incorporating the commissioing programme.	**Contractor**	
					- Commissioning Schedule	**M & E**	
		After Care					
		One credit when seasonal commissioning will be carried out during the first year of occupation, post construction (or post fit out). **(point 22)**	1	1	Appointment letter(s) and/or commissioning responsibilities schedule. Names of companies and individuals should be confirmed for all commissioning responsibilities e.g. specialist commissioing company.	**M & E**	
		One credit when the above is achieved and there is a mechanism to collect the energy and water consumption data for at least 12 months after occupation, compare this to what was expected and anaylse discrepancies and adjust systems accordingly. There is a contract or commitment to provide aftercare support to all building occupiers **(point 23 & 24)**	1	1	Appointment letter(s) and/or commissioning responsibilities schedule. Detailed commitments required to criteria 22 and 23.	**Client**	
					Evidence of either existing procedures or a commitment/ contract to put in place a mechanism to: 1. Collect, compare and analyse relevant data.	**Client**	
					2. Undertake suitable adjustments if necessary.	**Client**	
					Evidence of a commitment/contract to provide compliant aftercare support and training.	**Client**	
Man 2	Responsible construction practices **(2 credits)**	**Up to two credits** where the principal contractor has used a 'compliant' organisational, local or national considerate construction scheme Where the principal contractor's performance against the compliant scheme has been confirmed by independent assessment and verification (one when achieves' compliance' and two when 'exceeds compliance')	2	2	A copy of the relevant section / clauses of the main contract/ building specification OR A formal letter of commitment from the client/developer	**Contractor (include within Prelims)**	
					Where relevant for multi residential buildings : *- Evidence in line with the Design Stage eveidence requirements of the CSH issue Man2 or* *- A copy of the Design Stage CSH certificate and report from yhe CSH online reporting system*	***N/A***	

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Ref	Title		Credits available	Targeted Credits	Evidence Required	Responsibility	Notes
Man 3	Construction Site Impacts **(5 credits)**	**Energy Consumption: (points 2 & 3)** **One credit** when monitoring and recording data on energy consumption from the use of the construction plant, equipment and site accommodation Using the collated data to report energy consumption and CO2 emissions via BREEAM reporting tool	1	1	Relevant section/clauses of the building specification or contract OR A signed and dated letter of commitment to meet the relevant criteria	**Contractor** (include within Prelims)	
		Water Consumption: (points 4 &5) **One credit** when monitoring and recording data on water consumption from the use of the construction plant, equipment and site accommodation Using the collated data to report waterconsumption via BREEAM reporting tool	1	1		**Contractor** (include within Prelims)	
		Transport of construction materials and waste (points 6&7) **One credit** when monitoring and recording data on transport resulting from delivery of the majority of construction materials to site and construction waste from site (at minimum should cover transport of materials from factory gate to building site, materials used in major building elements, including insulation, ground works and landscaping) Transport of construction waste, including fuel consumption and CO2 emissions Using the collated data to repot separately for materials, waste, fuel consumption, CO2 emissions, distance travelled via BREEAM reporting tool	1				**Not targeted**
		Timber Procurement (point 8) **One credit** when confirming that all site timber used on site is source according to UK's policy	1	1		**Contractor** (include within Prelims)	
		Construction site management (points 9&10) **One credit** when the principal contractor operates an Environmental Management System (EMS) covering their main operations. The EMS must be third party certified OR its structure is in compliance with BS8555 2003 Implement best practice pollution prevention policies and procedures on site in compliance with relevant regulations	1	1		**Contractor** (include within Prelims)	
Man 4	Stakeholder participation **(4 credits)**	**Consultation (points 1- 6)** **One credit** where evidence provided demonstrates that from RIBA Stage B consultation of relevant bodies has been, or is being, undertaken to inform the design and progress of feedback integration into the design & project progress given to the consultees e.g. local community and building users. In addition, advice should also have been sought from any relevant national and local history, archaeological bodies or military history groups regarding the heritage value of the building/ site/ surroundings. The process has influenced the design or resulted in modifications to the design/ building use or operation. **(additional requirements for schools, NHS, etc apply)**	1	1	**Points 1- 6:** - A list of the stakeholders consulted.	**Indigo**	
					- A consultation plan setting out the process and the scope of the consultation.	**Indigo**	
					- Agenda/minutes from consultation meetings.	**Indigo**	
					- Documentation demonstrating consultation feedback and subsequent actions.	**Indigo**	
					Healthcare buildings only; Good Corporate Citizen (GCC) documentation and review/reporting commitments	**N / A**	
		Inclusive & Accesible design (points 7- 9) **One credit** when the building is designed fit for purpose and accessible by all potential users. Access statement developed in line with CABE '*Design & Access Statements, How to write, read and use them*', with particular emphasis on disabled users, different age groups, parents with children. Provision of facilities made for future building occupants	1	1	**Points 7- 9:** - The access statement and/or access strategy.	**Architect**	
					- Design drawings AND/OR relevant section/clauses of the building specification or contract	**Architect**	
		Building user information (points 10-12) **One credit** when Building User Guides are provided for all users. The guides cover all functions and uses of the building for its effective use. Building and site related information is made readily available to all future building users.	1	1	**Points 10-12:** Relevant section/clauses of the building specification or contract OR Letter of commitment from the client/developer	**Contractor** (include within Prelims)	
		Post Occupancy Evaluation (POE) and Information dissemination (points 13&14) **One credit** when the client makes a commitment to carry out an independet POE one year after building occupation to gain building perfomance feedback (including sustainability performance) Makes the commitment to carry out the appropriate dissemnination of information, even when the information is commercially or security sensitive.	1	1	**Points 13 & 14:** Signed and dated commitment by the client/developer or future building occupier	**Client** / **Tenant**	

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Ref	Title		Credits available	Targeted Credits	Evidence Required	Responsibility	Notes
Man 5	Life cycle costs (LCC) and service life planning **(3 credits)**	**One Credit** when a LCC analysis has been carried out based on the proposals developed during concept design / design development) conducted according to the relevant process and standards, considering construction, operation and mainetance stages for a study period of 60 years. A critical appraisal has been completed at the feasibility stage of building procurement in accordance with relevant regulations **(points 1-3)**	1		**Points 1-3:** - Relevant sections of the feasibility stage life cycle cost analysis report / documentation		**Not targeted**
					- Relevant sections of the feasibility stage appraisal documentation		
		Two Credits when the above is achieved and the anlaysis demonstrates that elements in at least two of the following building components have been analysed at a strategic and system level, comparing alternative options: Envelope, Services, Finishes, External Spaces. The options meet the perfomance criteria for the building and the lowest discounted LCC over the period is preferred due to reasons stated in the guide. The selected option is of critical value within the project **(points 4-7)**	2		**Points 4-7:** - Relevant sections of the feasibility stage life cycle cost analysis report / documentation		**Not targeted**
					- Relevant sections of the feasibility stage appraisal documentation		
					- Details of alternative options considered including benefits of selected options (in terms of criteria 6) and evidence that the element is of critical value		
		Three points when the above is achieved and the model is updated during the design development / technical design. The results of the sudy have been implemented in the specification design and final construction of the building. A maintenance strategy has been developed and informed the LCC analysis **(points 8-11)**	3		**Points 8-11:** - Relevant sections of the feasibility stage life cycle cost analysis report / documentation updated for the detailed design		**Not targeted**
					- Relevant sections of the feasibility stage appraisal documentation updated for the detailed design		
					- Details of alternative options considered including benefits of selected options (in terms of criteria 6) and evidence that the element is of critical value updated for the detailed design		
					- Design drawings or relevant section/clauses of the building specification or contract demonstrating implementation of the preferred option(s) from the latest LCC analysis		
					- A copy of the maintenance strategy AND/OR		
					- A letter of commitment from the client/developer to provide the maintenance strategy, if document not available.		
					- Evidence of how the maintenance strategy was/will be informed by the LCC analysis above		
Health & Wellbeing							
Hea 1 (4 credits according to building type)	Visual Comfort (includes daylighting, glare control, view out etc)	**PRE REQUISITE:** fluorescent and compact fluorescent lamps are fitted with high frequency ballasts.	pre requisite	pre requisite	- written confirmation / specification	**M & E**	**pre requisite**
		Daylight: - Occupied spaces: 2% daylight factor over 80% of area EITHER (a) OR (b) and c) a) uniformity ratio b) view of sky from desk height (0.7m) c) room depth criterion - Retail areas: 35% have point daylight factors > 2%	1	0 (+1 potential)	**Daylighting:** - Design drawings.	**Daylight consultant to advise on whether credit/s can be achieved**	**Potential credit**
					- Daylight calculations	**Daylight consultant**	
					- Where relevant for multi-residential buildings: *Evidence in line with the Design Stage evidence requirements of the CSH issue Hea 1 OR* *A copy of the Design Stage CSH certificate and report from the CSH online reporting system confirming the number of credits achieved for CSH Issue Hea 1*		**N / A**
		Glare control: - Occupant glare control e.g. internal / external blinds	1	1	- Design drawings - Relevant section/clauses of the building specification or contract - Window schedule	**Architect**	
		View out: Workstations within 7m window with adequate view out. Window must be ≥ 20% of this wall area. Where the room depth is greater than the 7m requirement, compliance is only possible where the percentage of window/opening is the same as or greater than the values in table 1.0 of BS 82062.			Details of blinds, inc for reception/concierge areas to be provided. Distances to window, and % of glazed wall areas to be provided	**Architect**	
		Internal lighting: - inline with SLL Code for Lighting 2012 - areas of computer use: SLL Lighting Guide 7 The above include: - luminance to avoid screen reflections - uplighting - direct lighting - ceiling illuminance - average wall illuminance - zoning and controls inline with requirements for specific areas: e.g. office, seminar rooms, etc.	1	1	**Internal & External Lightning:** - Design drawings and/or room data sheets/schedules..	**M & E**	
		External lighting: Illuminance levels for lighting in all external areas within the construction zone are specified in accordance with BS 5489-1:2013+A2:2008 Lighting of roads and public amenity areas			- Relevant section/clauses of the building specification or contract OR a letter of formal confirmation of compliance from the relevant design team member.	**M & E**	
					Visual Arts: Correspondence from the design team or Trust (e.g. letter, email, meeting minutes) **OR** A copy of the Trust arts policy and strategy.	**N / A**	**N / A**

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Ref	Title		Credits available	Targeted Credits	Evidence Required	Responsibility	Notes
Hea 2	Indoor air quality **(6 credits)**	**Minimising air pollution:** **One credit** when an air quality plan has been produced which considers issues stated in the BREEAM guidance. Intakes/extracts are 20m apart, and 10m from external sources of pollution e.g. roads. CO_2 sensors lead ventilation levels. **(points 1-5)**	1	0 (+1 potential)	**Points 1-5:** - Copy of the indoor air quality plan	**M & E**	**Potential credit**
					- Relevant section/clauses of the building specification or contract Design drawings	**M & E**	
		One credit when the above has been achieved and all decorative paints and varnishes have met the stated requirements, at least 5 out of 8 products stated in table 5-3 of the guide have met the requirements and emission levels for Volatile Organic Compound emssions **(points 6-8)**	1	1	**Points 6-8:** - Copy of the indoor air quality plan	**Tenant / Architect**	
					- Relevant section/clauses of the building specification or contract	**Tenant / Architect**	
		One credit when criterion 1 is achieved and post construction testing (and any remedial works) for fomaldehyde and total VOC concentrations are confirmed as at compliant levels. **(points 9-14)**	1	1	**Points 9-14:** - Copy of the indoor air quality plan	**Tenant / M & E**	
					- Commitment to carry out necessary testing post construction	**Tenant / Contractor (Prelims)**	
		Potential for natural ventilation: (not valid for prisons) **One credit** when spaces are designed to be capable of providing fresh air entirely via a natural ventilation strategy, which is able to provide at least two levels of user control on the supply of fresh air **(points 15 & 16)**	1	0 (+1 potential)	**Points 15-16:** - Relevant section/clauses of the building specification or contract	**M & E**	**Potential credit**
					- Formal letter from the design team with details of the ventilation strategy and calculations/results from appropriate software modelling tool(s)	**M & E**	
					- Manufacturers'/suppliers' literature	**M & E**	
		Laboratory fume cupboards and containment areas: **One credit** when fume cupboards are specified, manufatured and installed according to the relevant standards and regulations. Including specific rules for ducted fume cupboards. **(points 17 & 18)**	2		**Points 17-22:** - Relevant section/clauses of the building specification or contract		**n / a**
		Buildings with Containment Level 2 and 3 Laboratory Facilities: **One credit** when ventilation systems are designed in compliance with best practice and regulations, filters and emergency buttons provided according to applicable standards **(points 19-22)**			- Formal letter from the design team with details of the ventilation strategy and calculations/results from appropriate software modelling tool(s)		
					- Manufacturers'/suppliers' literature		
Hea 3	Thermal comfort **(2 credits)**	**One credit** where evidence provided demonstrates that thermal modelling has been carried out using software in accordance with CISBE AM11 Modelling demonstrate that building design and services startegy can deliver thermal comfort levels in occupied spaces in line with CIBSE Guide A. The software for simulation provides full thermal analysis. The building complies with any requirement in terms of 'time out range' metric and the TOR metric is reported via BREEAM repoting tool. **(points 1-5)**	1	1	**Points 1-5:** - Relevant section/clauses of the building specification or contract or correspondence (e.g. letter, email or meeting minutes) from the design team	**M & E**	
					- Thermal modelling results. Modelling using AM11 compliant software with reference to thermal comfort levels in accordance with CIBSE Guide A	**M & E**	
					- TOR data from the design team	**M & E**	
		Two credits when the above is achieved and the thermal modelling analysis has informed the temperature control strategy for the building and users. The streategy has addressed zones in the building, user knowledge, occupancy type, etc., how the proposed systems will interact with each other. **(Points 6-8)**	1	1	**Points 6-8:** - Thermal comfort strategy highlighting the points that have been considered and decisions taken accordingly	**M & E**	
					- Relevant section/clauses of the building specification or contract	**M & E**	
					- Design drawings	**M & E**	
Hea 4	Water Quality **(1 credit)**	**Building services water systems: minimising risk of contamination:** All water systems are design in compliance with H&S Executive Legionnaires Disease and other applicable regulations. A failsafe humidification system willbe provided when required. **(points 1&2)**	1	1	**Points 1&2:** Relevant section/clauses of the building specification or contract.	**M & E**	
		Building Occupants: Provision of fresh drinking water: Wholesome supply of accesible, freash and clean drinking water should be supplied (building specific requirements) **(point 3)**			**Point 3:** Design Drawings Provision of mains fed water cooler in staff area would allow the credit to be achieved.	**Tenant / M & E**	
Hea 5 **(2 credits according to building type)**	Acoustic Performance	**Pre requisite:** A suitably qualified acoustician is appointed at appropriate stage to provide early design advice	pre requisite	pre requisite	**For All Buildings** - Professional report / study and calculations from the acoustician.	**Acoustician**	
		Indoor ambient noise levels comply with the "good practice" criteria levels of BS8233:1999, Pre completion testing and any remedial works should ensure this. The **sound insulation** between acoustically sensitive rooms and other occupied areas comply with relevant sections of BS 8233. This includes general office type areas, meeting rooms, hotel bedrooms.	1	1	- Letter of appointment or other confirmation demonstrating when the acoustician was appointed.	**Tenant / Acoustician**	
		Reverberation times compliant with Table 8 of BS8233 1999, or BB 93 as appropriate.	1	1	- Relevant section/clauses of the building specification or contract and/or formal letter from the project team regarding commitments	**Tenant / Acoustician**	
					Multi-residential Only Where pre-completion testing will be carried out a letter from the developer confirming the intent to: 1. Meet the relevant sound insulation performance levels 2. Use a Compliant Test Body to complete testing Where Robust Details will be used; 1. Confirmation that the Robust Details chosen will achieve the required performance standards for sound insulation (as applicable) 2. Confirmation that the relevant plots are registered with RDL (the Purchase Statement)	**N / A**	
Hea 6	Safety & Security **(2 credits)**	**Safe access:** **One credit** where evidence demonstrates the provision of dedicated cycle lanes, drop-off areas, pedestrain crossings of a vehicle access route, footpaths to the entrance and to connect public footpaths, access to public transport nodes, special delivery areas where relevant, etc **(points 1-11)**	1	1	**Points 1-11:** Design drawings (including a scaled site plan), AND/OR relevant sections of the specification highlighting all necessary compliant features and dimensions. Locations for delivery lay bys and delivery routes to be provided. Pedestran and cycle routes confirmed as physically separate from delivery routes	**Architect**	
		Security of site and Building: **One credit** is provided when the project team has accounted for security considerations through consultation with a qualified security consultant prior or during the concept design stage The final design embodies recommendations/ solutions by qualified consultant and conform either to Secure by Design Principles and / or Safer Parking schemes. A site specific security risks, strategy and recommendations	1	1	**Points 12&13:** Correspondence from or a copy of the report/feedback from the ALO/CPDA/Security Consultant confirming: 1. Scope of their advice/involvement 2. The stage of design in which their advice was sought 3. Summary of their recommendations ALO to be consulted and recommendations incorporated to be incorporated / justified where not.	**Architect**	
					Point 14: Design drawings AND/OR relevant sections of the specification or contract	**Architect**	

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Ref	Title		Credits available	Targeted Credits	Evidence Required	Responsibility	Notes
		A site specific security risks, strategy and recommendations should be applicable where relevant **(points 12-14)**			**Points 12,13 & 14:** Where relevant for multi-residential and CSH assessed buildings: Evidence in line with the Design Stage evidence requirements of the CSH issue Man 4. OR A copy of the Design Stage CSH certificate and report from the CSH online reporting system confirming the number of credits achieved for CSH issue Man 4.	**Architect**	

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Ref	Title		Credits available	Targeted Credits	Evidence Required	Responsibility	Notes
Energy							
Ene 1	Reduction of CO2 Emissions **(15 credits)**	Up to fifteen credits where evidence provided demonstrates an improvement in the energy efficiency of the building's fabric and services and therefore achieves lower building operational related CO2 emissions.	15	11	**Points 1- 4:** A copy of the Building Regulations Output Document from the approved software, as follows: 1. England Wales (Part L): Approved Documents checks (BRUKL) The output documents must be based on the "As designed" stage of analysis.	**M & E**	**11** **(intial McBains calculations** **PV area to be confirmed**
					Where relevant for multi-residential buildings, a copy of the calculations based on design stage SAP outputs.	**M & E**	
					Points 5-7 (Exemplary Level Criteria): As above, plus: 1. A copy of a report, calculations/outputs from the manufacturer, supplier, engineer or software modelling confirming: a. The total carbon neutral energy generation (kWh/yr) b. The source of the carbon neutral energy c. Calculated estimate of energy consumption from 'unregulated' systems/process (kWh/yr) (required only if confirming 'carbon negative' status') d. Calculated estimate of exported energy surplus (required only if confirming 'carbon negative' status'). 2. Written confirmation from the developer/client/owner-occupier that any surplus carbon neutral energy generated by the development and exported to the Grid will not be used to claim Renewable Obligation Certificates (ROCS), via an accredited generator.	**M & E**	
Ene 2 (2 credit available for this building type)	Energy Monitoring	**One credit** where evidence provided demonstrates the provision of direct sub-metering of energy uses within the building.	1	1	- Relevant section/clauses of the building specification or contract. Labelling of meters should be provided a.Space Heating b.Domestic Hot Water c.Humidification d.Cooling e.Fans (major) f.Lighting g. Small Power (lighting and small power can be on the same sub-meter where supplies are taken at each floor/department). h.Other major energy-consuming items where appropriate	**M & E**	
					- Design drawings	**M & E**	
		One credit when an accesible BEMS or sub-meters are provided covering the energy supply to all tenanted or relevant functions/ departments of a building in case of single occupancy	1	1	- Relevant section/clauses of the building specification or contract.	**Tenant / M & E**	
					- Design drawings	**Tenant / M & E**	

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Ref	Title		Credits available	Targeted Credits	Evidence Required	Responsibility	Notes
Ene 3	External Lighting	One credit where energy-efficient external lighting is specified and all light fittings are controlled for the presence of daylight.	1	1	Relevant section/clauses of the building specification or contract Confirmation to be provided that external lighting will be controlled by photo cell and timer clock. Confirmation of lumens/circuit Watt according to colouring index and location e.g. car park, pathway etc. Design drawings. *Where relevant for multi residential buildings;* *Evidence in line with the Design Stage evidence requirements of CSH issue Ene 6* *OR* *A copy of the Design Stage CSH certificate and report from the CSH online reporting system confirming the number of credits achieved for CSH issue Ene 6.*	**M & E** **(It is understood that all towpath lighting falls outside the building boundary line and thus outside of this BREEAM assessment)**	
Ene 4	Low & Zero carbon technologies **(5 credits)**	**Feasibility Study / Renewable supply contract :** **One credit** when a feasibility study has been carried out by a energy specialist to establish the most appropriate local low or zero carbonenergy source. A local LZC energy technology has been specified for the building in line with the reccommendations for the feasibility study **OR** the organization that occupies the building has in place a contract with an energy supplier to provide electrity from a 100% renewable source. (for a minimum period of 3 years from the date the building becomes occupied) **(Point 4)** **2 credits:** 10% regulated CO_2 reduction from LZC **3 credits:** 20 regulated CO_2 reduction from LZC	3 (Feasibility) or 4 (Life cycle assessment)	3	- The feasibility study report. This study covers as a minimum: **a)** Energy generated from LZC energy source per year. **b)**.Life cycle cost of the potential specification, accounting for payback **c)** Local planning criteria, including land use and noise **d)** Feasibility of exporting heat/electricity from the system **e)**Any available grants. **f)**.All technologies appropriate to the site and energy demand of thedevelopment. **g)**.Reasons for excluding other technologies **h)**.Where appropriate to the building type, connecting the proposed building to an existing local community CHP system or source of waste heat or power OR specifying a building/site CHP system or source of waste heat or power with the potential to export excess heat or power via a local community energy scheme.	**M & E**	
					- Design drawings or relevant section/clauses of the building specification or contract. **(Points 1-3)**	**M & E**	
					- Name and details of supplier		
					- Details of the source of supply.		
					- A copy of the contract or other formal documentation confirming the length of contract to supply 100% renewable energy. **(Point 4)**		
		Life cycle assessment: The feasibility study includes a Life Cycle Assessment accounting for embodied carbon and operational carbon emissions, in line with ISO 14044:2006 and achieves a life cycle reduction of 10% or 20%. The LCA must be conducted according to standards and consider a period of 60 years **(Point 5-7)**			- Evidence (as outlined above) confirming compliance with the first credit.		**Not targeted**
					- Report, calculations/outputs from the manufacturer, supplier, engineer or approved modelling software confirming carbon savings as a result of the installed LZC technology.		
					- A copy of the LCA study report/findings (if relevant) demonstrating the percentage carbon saving over the lifetime of the LZC system.		
		Free cooling: **One credit** when regardless of the reduction, BREEAM credits, etc achieved above, the building uses any of the cooling methods stated in the guidelines and the first credit within the BREEAM issue Hea 3 has been achieved **(point 8)**	1		- Correspondence from the building services engineer summarising the 'purpose designed' free cooling strategy.		**Not targeted**
					- The results from a dynamic simulation model demonstrating the feasibility of the free cooling strategy.		
					- Evidence as required for the first credit within the BREEAM issue Hea 03 Thermal Comfort		
Ene 5	Energy Efficient Cold Storage **(2 credits)**	**One credit** 1. The refrigeration system, it's controls and components have been designed, installed and commissioned as follows: a. In accordance with the Commercial Refrigeration Code of Conduct for Reducing Car-bon Emissions8 (see Compliance note). b. Use robust and tested refrigeration systems/components, normally defined as those included on the Enhanced Capital Allowance (ECA) Energy Technology Product List9 or an equivalent list (see Compliance note for list of components). 2. The refrigeration plant has been commissioned to comply with the criteria for com-missioning outlined in BREEAM issue Man 01 Sustainable Procurement.	1	**N / A**	- Relevant section/clauses of the building specification or contract or other documentary evidence, such as a letter from the design team.		**N / A**
					- Evidence as outlined under BREEAM issue Man 01 for the relevant criteria. **(points 2,3 & 5)**		
					- A letter from the manufacturer/supplier or copies of their technical literature AND/OR a print out of the ETPL listing the specific products. **(points 1,3&5)**		
		Two credits 3. Criteria 1 and 2 are achieved. 4. With reference to The Carbon Trust Refrigeration Road Map10, the installed refrigeration system demonstrates a saving in indirect greenhouse gas emissions (CO2eq.) with respect to the 'baseline' building through specification of technologies described in 'CO2e. saving options available when designing a new store/retail concept'.	1	**N / A**	- Evidence as outlined under BREEAM issue Man 01 for the relevant criteria. **(points 2, 3 & 5)**		**N / A**
					- A letter from the manufacturer/supplier or copies of their technical literature AND/OR a print out of the ETPL listing the specific products. **(points 1, 3 & 5)**		
		Exemplary level criteria The following outlines the exemplary level criteria to achieve an innovation credit for this BREEAM issue: 5. Criteria 1 and 2 are achieved. 6. With reference to The Carbon Trust Refrigeration Road Map, the installed refrigeration sys-tem is of a type described in 'Future technologies'. The system must demonstrate a saving in indirect greenhouse gas emissions (CO2eq.) in concept or through previous experience, with respect to currently available technologies listed in Figure 7 of the Road Map.	1	**N / A**	- Documentary evidence confirming the type of technology specified and estimated savings in indirect greenhouse emissions, including a description of how this saving is achieved. Calculations should be carried out by an appropriately qualified professional (e.g. a building services engineer) including justifications for assumptions and methodologies for savings in indirect greenhouse emissions. **(points 4 & 6)**		**N / A**
					- Evidence as outlined under BREEAM issue Man 01 for the relevant criteria. **(points 2, 3 & 5)**		
					- A letter from the manufacturer/supplier or copies of their technical literature AND/OR a print out of the ETPL listing the specific products. **(points 1, 3 & 5)**		

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Ref	Title		Credits available	Targeted Credits	Evidence Required	Responsibility	Notes
Ene 6	Energy efficient transportation systems **(2 credits)**	**One credit** where either lifts,e scalators or moving walks are required a. An analysis of the transportation demand and usage patterns for the building has been carried out by the design team to determine the optimum number and size b.The energy consumption has been estimated for one of the following: i. At least two types of system (for each transportation type required) or ii. An arrangement of systems (e.g. for lifts, hydraulic, traction, MRL) or iii. A system strategy which is 'fit for purpose' (scheduling) c.The lift/escalator/moving walk system/strategy with the	1	**N / A**	Professional report / study of transportation analysis AND/OR Calculations **(Points 1&2)**	**N / A**	
		Two credits when the following energy efficiency features are included: 2. Criterion 1 is achieved. 3. For lifts, of the following energy-efficient features the three that offer the greatest potential energy savings are specified: a. The lifts operate in a stand-by condition during off-peak periods. b. The lift car uses energy-efficient lighting and display lighting c. The lift uses a drive controller capable of variable-speed, variable-voltage, variable-frequency (VVVF) control of the drive motor. d. The lift has a regenerative drive unit so that any energy generated by a traction lift (due to running up loaded to less than the counterbalancing ratio or running down loaded to more than the counter balancing ratio) or by a hydraulic lift (due to run-ning down) is returned back to the electricity utility supplier or used elsewhere in the building. 4. For escalators and/or moving walks, each escalator and/or moving walk complies with **EITHER** of the following: a. It is fitted with a load sensing device that synchronises motor output to passenger demand through a variable speed drive. **OR** b. It is fitted with a passenger sensing device for automated operation (auto walk), so the escalator operates in stand-by mode when there is no passenger demand.	1	**N / A**	Relevant section/clauses of the building specification or contract AND EITHER	**N / A**	
					- Manufacturers products details OR Formal letter of commitment from the system(s) manufacturer/supplier (Points 3&4)	**N / A**	
Ene 07 **(# credits according to building type)**	Energy efficient laboratory systems	**One credit** when School, Sixth Form College and Further Education buildings only (criteria 1-3) 1.Recirculatory filtered fume cupboards (as oppose to ducted fume cupboards) are specified as the preferred option for the majority of applications (see Compliance notes where ducted fume cupboards may be acceptable). 2.If ducted fume cupboards are specified, the fume cupboards have a face velocity of less than or equal to 0.5 m/s (see Compliance notes). 3.The specification of fume cupboards has been carried out in accordance with all relevant guidelines and recommendations contained in; a.Schools and sixth form: Building Bulletin 8813 and if relevant: i.BS7989:200114 (for recirculatory fume cupboards) ii.BS EN 14175-215 (for ducted fume cupboards, if applicable) b.Further Education colleges: In accordance with the above British Standards, or for fume cupboards in labs for subjects up to and including A' Level, compliance with Building Bulletin 88 would also be acceptable. ADDITIONAL CRITERIA APPLY FOR OTHER BUILDINGS WITH LABORATORIES			**Other buildings including Higher Education buildings** - Evidence as required for compliance with the relevant Hea 02 criteria.		**N / A**
					- Drawings, relevant section/clauses of the building specification or contract		
					- Modelling results / calculations / manufacturers information		
					- Formal correspondence from the design team		
					School, Sixth Form College and Further Education buildings Relevant section/clauses of the building specification or contract AND/OR supplier/manufacturers documentation		
Ene 08	Energy efficient equipment **(2 credits)**	**Two credits** 1. Identify from a list in page 165 the functions/equipment categories that are or will be present within the assessed building. 2. Identify which 1 category will be responsible for the significant majority of unregulated energy consumption in the building. **Offices** categories: 1) Small power, plug in equipment - from ECA technology list, Energy Star rating, or UK Govt Buying Standards 2) only mech vent over 20c and cooling over 22c int. temp; auto powerdown of equipment not in use, and overnight	2	2	The following where appropriate: - Relevant section/clauses of the building specification or contract	**Tenant / M & E** **(Arup / McBains to advise on possible route to achieve these credits)**	
					- Manufacturers product details		
					- Documentation confirming compliance with the relevant scheme or standard outlined in the criteria e.g. details of compliance with the ECA scheme		
					- Design drawings and/or calculations		
					HEALTHCARE ONLY *Life cycle analysis report/documentation and details of how this has informed the procurement* *Documentation detailing the fit for purpose exercise and subsequent option selection.*	***N/A***	
Ene 09	Drying space **(1 credit)**	**One credit** 1. For self contained dwellings: An adequate internal or external space with posts and foot-ings, or fixings capable of holding: a. 1-2 bedrooms: 4m+ of drying line b. 3+ bedrooms: 6m+ of drying line. AND/OR 2. Individual bedrooms: An adequate internal or external space with posts and footings, or fixings capable of holding: a. 2m+ of drying line per bedroom for developments with up to 30 individual bedrooms plus b. 1.0m of additional drying line for each bedroom over the 30 individual bedroom threshold. AND 3. The space (internal or external) is secure.	1		Design drawings AND/OR relevant section/clauses of the building specification or contract AND/OR a formal letter of instruction from the developer to a contractor/supplier		**N / A**
					Where relevant for multi residential buildings: *Evidence in line with the Design stage evidence requirements of CSH issue Ene 4* *OR* *A copy of the Design stage CSH certificate and report from the CSH online reporting system confirming the number of credits achieved for CSH issue Ene 4.*	***N/A***	

Targeted rating and score:	102 CAMLEY STREET	EXCELLENT	73.48%

Ref	Title		Credits available	Targeted Credits	Evidence Required	Responsibility	Notes
Transport							
Tra 1 **(3 credits according to building type)**	Public Transport Accesibility	**Up to five credits** 1. The public transport Accessibility Index (AI) for the assessed building is calculated and BREEAM credits awarded in accordance with the table of building types, AI benchmarks and BREEAM credits are included on page 173	3	3	- Scale map highlighting the location of the building and all public transport nodes in proximity of the building. - Timetables for each service at each public transport node considered. - The calculated Accessibility Index for the building.	**Transport Consultant**	
		OR **One credit** for a dedicated bus service	1		A formal letter from the future building occupier confirming provision of and details for the dedicated bus service(s).		***N/A***
Tra 2 **(1 credit according to building type)**	Proximity to amenities	**One credit** where evidence provided demonstrates that the building is located within 500m of key accessible local amenities appropriate to the building type and its users	1	1	Marked-up site plan or map highlighting: · Location of assessed building · Location and type of amenities · The route to the amenities · Plan/map scale	**Architect**	
					Where the amenities do not currently exist, but are due to be developed, a letter from the client/developer confirming: · The location and type of amenities to be provided · The timescale for development of the amenities	N / A	
Tra 3 **(2 credits according to building type)**	Cyclist Facilities	**Up to two credits** depending on building type where evidence is provided to demonstrate that there is adequate provision of: Offices: 1 space per 10 staff and 2 facilities (a - c below) Hotels: 1. hotels require 1 space/10 staff. NO spaces needed for visitors. 2 out of 3 facilities required: a)showers b)changing rooms+lockers c)drying space 2. lockers in or adjacent to changing rooms	2	2	Design drawings and/or relevant section/clauses of the building specification or contract. Ensure showers and changing rooms provision BREEAM compliant. Confirm staff numbers to minimise number of spaces and showers required. Has the number of spaces been dictated by planning requirements? No. of spaces / showers can be reduced by 50% due to city centre location and assuming 50% of credits scored for Tra 1	**Architect**	
					Plus (if relevant to building type): 1. The location and size of the wheelchair and buggy storage facilities 2. Location and no. of charging points 3. Assumptions and calculations used to determine number of public users	**Architect**	
Tra 4 **(2 credits according to building type)**	Maximum car parking capacity	Up to two credits are available: Where evidence provided demonstrates that the number of parking spaces provided for the building has been limited First credit **For Sheltered housing and care homes:** Where evidence provided demonstrates that there is no more than one parking space provided for every **four** building users **For all other users:** Where evidence provided demonstrates that there is no more than one parking space provided for every **three** building users Second credit **For Sheltered housing and care homes:** Where evidence provided demonstrates that there is no more than one parking space provided for every five building users **For all other users:** Where evidence provided demonstrates that there is no more than one parking space provided for every four building users	2	2	- Drawings or relevant section/clauses of the building specification or contract confirming the number and type of parking spaces provided for the building.	**Architect**	
					- Relevant documentation or correspondence from the design team or client confirming the number of building users.	**Architect**	
					- Where relevant, confirmation of the buildings' Accessibility Index (as per BREEAM issue Tra 01)	**Architect**	
					For healthcare buildings, relevant documentation or correspondence from the design team or client confirming: 1. The number of patients' and residential beds 2. The number of consulting, examination, treatment, therapy room and A&E cubicle rooms.	**Architect**	
Tra 5	Travel Plan **(1 credit)**	One credit when a travel plan has been developed as part of the feasibility and design stages which considers all types of travel. The travel plan is structured to meet the needs of the particular site and takes in consideration the findings of a site-specifi transport survey. The travel plan includes a package of measures that have been used to steer the design of the development in order to meet the travel plan objectives and minimise car-based travel patterns. Where the building's final occupier is known, they confirm that the travel plan will be implemented post construction and supported by the building's management during building operation.	1	1	- A copy of the Travel Plan.**Transport consultant to confirm walking/cycling constraints identified by existing occupants or local, simliar buildings**	**Transport Consultant**	
					- A copy of the site-specific transport survey/assessment **(points 1-4)**	**Transport Consultant**	
					Design drawings demonstrating examples of design measures implemented in support the travel plan's findings. OR Where a detailed site plan is not available, a formal letter from the client confirming that measures will be implemented into the final design in support the travel plan's findings. **(point 3)**	**Client**	
					A letter of confirmation from either the building's occupier, or in the case of a speculative development, the developer. **(point 5)**	**Transport Consultant**	
Water							
Wat 1	Water Consumption **(5 credits)**	**Up to five credits** available where evidence provided demonstrates that the water consumption is undertaken using the BREEAM Wa1 1 calculation and compared against national baseline performance. The specification includes taps, urinals, WCs and showers that consumes less potable water in use than standard specifications for the same specifications for the same type of fittings.	5	2	- Completed copy of the BREEAM Wat 01 calculator.	**Tenant / M & E**	
					- Relevant section/clauses of the building specification/ design drawings confirming technical details of; 1. Sanitary components 2. Rainwater and greywater collection system OR where detailed documentary evidence is not available at this stage; Completed BREEAM Wat 01 calculator	**Tenant / M & E**	
					- A letter of instruction to a contractor/supplier or a formal letter from the developer giving a specific undertaking, providing sufficient information to allow the water calculations to be completed.	**Tenant / M & E**	

Targeted rating and score:	102 CAMLEY STREET	EXCELLENT	73.48%

Ref	Title		Credits available	Targeted Credits	Evidence Required	Responsibility	Notes
Wat 2	Water monitoring **(1 credit)**	**One credit** 1.The specification of a water meter on the mains water supply to each building; this includes instances where water is supplied via a borehole or other private source. 2.Water-consuming plant or building areas, consuming 10% or more of the building's total water demand, are either fitted with sub meters or have water monitoring equipment inte-gral to the plant or area (see Compliance notes). 3.Each meter (main and sub) has a pulsed output to enable connection to a Building Man-agement System (BMS) for the monitoring of water consumption. 4.If the site on which the building is located has an existing BMS, managed by the same occu-pier/owner (as the new building), the pulsed water meter(s) for the new building must be connected to the existing BMS.	1	1	- Relevant section/clauses of the building specification or contract. Confirm that mains water meter will be fitted and linked to the BMS. Sub metering for plant or areas > 10% of total water demand is to be confirmed.	**M & E**	
					- Design drawings	**M & E**	
Wat 3	Water leak detection and prevention **(2 credits)**	**One credit - Leak detection** 1. A leak detection system which is capable of detecting a major water leak on the mains water supply **within** the building and **between** the building and the utilities water meter. 2. The leak detection system is: a. Audible alarm when activated b. Activated when the flow of water passing through the water meter/data logger is at a flow rate above a pre-set maximum for a pre-set period of time c. Able to identify different flow and therefore leakage rates, e.g. continuous, high and/or low level, over set time periods d. Programmable to suit the owner/occupiers' water consumption criteria e. Where applicable, designed to avoid false alarms caused by normal operation of large water-consuming plant such as chillers. **One credit - sanitary supply shut off** 3. One of the following types of flow control device is fitted to each WC area/facility to ensure water is supplied only when needed (and therefore prevent minor water leaks). Ensuite bathrooms in hotels apply, but not in student halls. a. A time controller b. A programmed time controller i.e. an automatic time switch device to switch water on and/or off at predetermined times. c. A volume controller i.e. an automatic control device to turn off the water supply once the maximum preset volume is reached. d. A presence detector and controller i.e. an automatic device detecting occupancy or movement in an area to switch water on and turn it off when the presence is removed. e. A central control unit i.e. computer-based control unit for an overall man-aged water control system, utilising some or all of the types of control elements listed above	2	2	- Relevant section/clauses of the building specification or contract. Details to be provided relating to the leak detection system Sanitary shut off confirmed to be provided to the staff WC.	**M & E**	
					- Design drawings	**M & E**	
					- Manufacturers product details	**M & E**	
Wat 4	Water efficient equipment **(1 credit)**	**One credit** 1. Where an irrigation method specified for internal or external planting and/or landscaping, it complies with ANY ONE of the following: a. Drip feed subsurface irrigation that incorporates soil moisture sensors. The irrigation control should be zoned to permit variable irrigation to different planting assem-blages. b. Reclaimed water from a rainwater or greywater system. The storage system must be appropriately sized c. External landscaping and planting that relies solely on precipitation, during all sea-sons of the year. d. All planting specified is restricted to species that thrive in hot and dry conditions. e. Where no dedicated, mains-supplied irrigation systems (including pop-up sprinklers and hoses) are specified and planting will rely solely on manual watering by building occupier or landlord. 2. Where a sub surface drip feed irrigation system is installed for external areas, a rainstat must also be installed to prevent automatic irrigation of the planting and the landscape during periods of rainfall. 3. Where a vehicle wash system is specified, it uses a full or partial reclaim unit which contains one or more of the	1	1	- Documentation detailing the planting and irrigation strategy. Rainwater harvesting or drip feed irrgation to be provided.	**Drainage engineer**	
					- Relevant section/clauses of the building specification or contract AND/OR design drawings (where necessary)	**Drainage engineer**	
					- Manufacturers product details	**Drainage engineer**	
Materials							
Mat 1 **(5 credits according to building type)**	Life Cycle impacts	BREEAM awards credits on the basis of the building's quantified environmental life cycle impact through assessment of the main building elements, as set out in Table 9-1 (page 222) External walls Windows Roof Upper floor slab Internal walls (not for office developments) Floor finishes / coverings	5	3	- Specification providing a detailed description of each applicable element and its constituent materials specification.	**Architect / Tenant**	
					- Design drawings or specification detailing the location and area (m2) of each applicable element.	**Architect / Tenant**	
					- A copy of the output from the BREEAM Mat 01 calculator, including Green Guide rating and element number1 for each specification assessed.	**Architect / Tenant**	
					- And if relevant: 1.Copies of Environmental Product Declarations 2.A link/reference to the EPD's Product Category Rules 3.Online Green Guide calculator output 4.Environmental Profile certificate(s) (or certificate number)	**Architect / Tenant**	
					Where relevant for multi-residential buildings: *Evidence in line with the Design stage evidence requirements of the CSH Issue Mat 1 OR* *A copy of the Design Stage CSH certificate and report from the CSH online reporting system confirming the number of credits achieved for CSH Issue Mat 1.*	**N/A**	
Mat 2	Hard landscaping and boundary protection **(1 credit)**	**One credit** where evidence provided demonstrates that at least 80% of the combined area of external hard landscaping and boundary protection specifications achieve an A or A+ rating, as defined by the Green Guide to Specification.	1	1	- Relevant section/clauses of the building specification or contract	**Architect / Landscape**	
					- Design drawings and calculations confirming: 1. A detailed description of each applicable element and its constituent materials.	**Architect / Landscape**	
					2. Location and area (m2) of each applicable element.	**Architect / Landscape**	
					- The Green Guide rating and element number for the assessed specifications.	**Architect / Landscape**	

Targeted rating and score:	102 CAMLEY STREET	EXCELLENT	73.48%

Ref	Title		Credits available	Targeted Credits	Evidence Required	Responsibility	Notes
Mat 3	Responsible sourcing of materials **(3 credits)**	Each of the applicable specified materials comprising the main building elements are assigned a responsible sourcing tier level and points awarded as stated in page 239 and tables 11-1 & 11.2 pages 246-247	3	1 (+1 potential)	**ALL** Design plan and/or specification confirming: - The building elements.	**Contractor (prelims)**	
					- Details of the materials specification for each element.	**Contractor (prelims)**	
					- A copy of the output from the BREEAM Mat 03 calculator **AND EITHER**	**Contractor (prelims)**	
					- A letter of intent from the design team or other detailed documentary evidence confirming the product shall be sourced from suppliers capable of providing certification to the level required for the particular tier claimed **OR** **-** A copy of the relevant responsible sourcing scheme certificate(s) for the relevant specifications/products.	**Contractor (prelims)**	
		Additional information on Mat 3			***Recycled Materials:*** *Documentation stating specific recycled materials* *A letter of intent to use suppliers who can provide an EMS certificate (or equivalent) for the recycling process.*		
					Timber procurement *Written confirmation from the supplier/s that all timber is sourced in compliance with the UK Government Timber Procurement Policy for legal and sustainable sourcing* ***OR*** *Copies of the actual chain of custody evidence in accordance with CPET requirements* ***OR*** *A specification or letter of intent from the design team confirming that all timber will be procured in accordance with the policy.*		
					Green Dragon Environmental Standard ® 2006 (Safon Amgylcheddol Y Ddraig Werdd ®): *Written confirmation from supplier(s) that the Green Dragon Environmental Standard has been completed up to and including Level 4. Confirmation is taken from a Green Dragon Standard certificate stating the company's achievement of Level 4.* *As company's achieving Level 4 will normally be required to undertake annual audits, this certification should be dated within 1 year at the point of the last purchase made from the company.* *For smaller companies with low environmental impacts, a renewal date of within 2 years is acceptable.*		
					Small company EMS, (see relevant definitions) *Written confirmation from the supplier/s confirming that:* *1. The company EMS is structured in compliance with BS 8555 2003 (or equivalent).* *2. The EMS has completed phase audits one to four as outlined in BS 8555. This can be found in company documentation demonstrating the process and typical outputs from phase four audits such as an EMS manual/ paperwork and guidance to staff.* *3. Where independent certification exists to demonstrate these phases, it can be used as evidence*		
Mat 4	Insulation **(2 credits)**	**PRE REQUISITE**:Any new insulation specified for use within the following building elements must be assessed: a. External walls b. Ground floor c. Roof d. Building services				**M & E + Architect**	
		One credit where evidence provided demonstrates that thermal insulation products used in the building have a low embodied impact relative to their thermal properties, determined by the Green Guide to Specification ratings.	1	1	Design drawings AND/OR relevant section/clauses of the building specification or contract confirming: 1. The location of insulating materials. 2. The area (m2) and thickness (m) or volume (m3) of insulation specified.	**M & E + Architect**	
					- Manufacturer's technical details confirming the thickness and thermal conductivity of the insulating materials specified.	**M & E + Architect**	
					- A copy of the output from the BREEAM Mat 04 calculator.	**M & E + Architect**	
					- The Green Guide rating and element number for the assessed insulation specifications.	**M & E + Architect**	
					And if relevant: 1. Copies of Environmental Product Declarations 2. A link/reference to the EPD's Product Category Rules 3. Online Green Guide calculator output 4. Environmental Profile certificate(s) (or certificate number) **(points 1-4)**	**M & E + Architect**	
		One credit where evidence provided demonstrates that thermal insulation products used in the building have been responsibly sourced.	1	1	Responsible sourcing: Evidence as outlined in BREEAM issue Mat 03 confirming compliance for the insulating materials**. (Point 5)**	**Contractor (prelims)**	
Mat 5	Designing For Robustness **(1 credit)**	**One credit** where protection is given to vulnerable parts of the building such as areas exposed to high pedestrian traffic, vehicular and trolley movements.	1	1	- Design drawings illustrating vulnerable areas/parts of the building. Annotated drawings with robust measures and confirm kerb distances away from building.	**Architect**	
					- Design drawings and/or relevant section/clauses of the building specification or contract confirming the durability measures specified.	**Architect**	
Waste							
Wst 1	Construction Waste Management **(4 credits)**	**Up to three credits** are available where evidence provided demonstrates that the amount of non-hazardous construction waste (m3/100m2 or tonnes100m2) generated on site by the development is the same as or better than good or best practice levels. **One credit** where evidence provided demonstrates that a significant majority of non-hazardous construction waste generated by the development will be diverted from landfill and reused or recycled.	4	2	- A copy of the compliant Site Waste Management Plan and where relevant, a copy of the pre-demolition audit	**Contractor (prelims)**	
					- Relevant section/clauses of the building specification or contract	**Contractor (prelims)**	
					- A letter from the client or their representative	**Contractor (prelims)**	
					Where relevant for multi-residential buildings: *Evidence in line with the Design Stage evidence requirements of the CSH Issue Was 2 OR* *A copy of the Design Stage CSH certificate and report from the CSH online reporting system confirming the number of credits achieved for CSH Issue Was 2*	**N/A**	
Wst 2	Recycled aggregates **(1 credit)**	**One credit** where evidence provided demonstrates the significant use of recycled or secondary aggregates in 'high-grade' building aggregate uses.	1	0	- Relevant section/clauses of the building specification or contract		**credit not targeted**
					- Project team calculations		
					- Documentation confirming the source of recycled/secondary aggregates and that the required amount can be provided		
Wst 3	Operational waste **(1 credit)**	**One credit** where there is dedicated space to cater for the segregation and storage of operational recyclable waste volume generated by the building, its occupants and activities. These should be clearly labelled, accessible and of the appropriate capacity. Special provisions should be made for a consistent stream of waste. **SECTOR SPECIFIC REQUIREMENTS APPLY**	1	1	- Design drawings and/or relevant section/clauses of the building specification or contract confirming provision and scope of dedicated facilities. Recyclable waste storage area to be provided. 2m per 1000m2 required as long as no catering facilities are to be provided.	**Architect**	**Assumed that no catering facilities are provided**
					- Project team meeting minutes / letter confirming likely building waste streams and indicative volumes. **(points 1-3)**	**Architect**	
					- Documentary evidence from the design team confirming compliance with the relevant Healthcare Technical Memorandum (e.g letter or relevant signed meeting minutes) **(point 4)**	**Architect**	
					- The school's recycling policy and a description of their waste management procedures **OR** A written commitment from the school, or relevant authorising body, to develop and implement a recycling policy and appropriate operational procedures. **(point 5)**	**Architect**	
					As for criteria 1-3 AND where relevant *Evidence in line with the Design Stage evidence requirements of the CSH issue Was 1 and Was 3.* *OR* *A copy of the Design Stage CSH certificate and report from the CSH online reporting system confirming the number of credits achieved for CSH issue Was 1 and Was 3.* ***(points 6-9)***	**N/A**	
	Speculative floor and	**One credit** **Office building types only** 1. For tenanted areas (where the future occupant is not			- Design drawings and/or relevant section/clauses of the building specification or contract	**Architect**	

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Ref	Title		Credits available	Targeted Credits	Evidence Required	Responsibility	Notes
Wst 4	Speculative floor and ceiling finishes **(1 credit)**	known), prior to full fit-out works, carpets, other floor finishes and ceiling finishes have been installed in a show area only. 2. In a building developed for a specific occupant, that occupant has selected (or agreed to) the specified floor and ceiling finishes.	1	1	- A letter from the client, project team or building user where the future occupant is known	**Architect**	

Targeted rating and score:	102 CAMLEY STREET	EXCELLENT	73.48%

Ref	Title		Credits available	Targeted Credits	Evidence Required	Responsibility	Notes
Land Use & Ecology							
LE1	Site selection **(2 credits)**	**Previously developed land: One credit** where evidence provided demonstrates that the majority of the footprint of the proposed development falls within the boundary of previously developed land.	1	1	Design drawings (including existing site plan), report or site photographs confirming: 1. Type and duration of previous land use. 2. Area (m2) of previous land use. Proposed site plan showing; 3. Location and footprint (m2) of proposed development and temporary works.	**Architect**	
		Contaminated land: One credit 2. The site is deemed to be significantly contaminated as confirmed by a contaminated land specialist's site investigation, risk assessment and appraisal, which has identified: a. The degree of contamination b. The contaminant sources/types c. The options for remediating sources of pollution which present an unacceptable risk to the site. 3. The client or principal contractor confirms that remediation of the site will be carried out in accordance with the remediation strategy and its implementation plan.	1	0	A copy of the specialist's land contamination report. Design drawings (including existing site plan) showing contaminated areas and areas to be remediated in relation to any proposed development	**Civil Engineer**	
					A letter from the principal contractor or remediation contractor confirming: 1. The remediation strategy for the site. 2. Summary details of the implementation plan. If a contractor has not yet been appointed, a letter from the client, or their representative confirming that the appointed contractor will undertake necessary remediation works to mitigate the risks identified in the specialist report. **(point 3)**	**Civil Engineer to confirm if any contamination**	
LE 2	Ecological value of site AND Protection of ecological features **(1 credit)**	**One credit** where evidence provided demonstrates that the construction zone is defined as land of **low** ecological value and all existing features of ecological value will be fully protected from damage during site preparation and construction works. In all cases the principal contractor is required to construct ecological protection prior to any preliminary site construction or preparation works.	1	1	A completed copy of Table 11-1 (pag. 288) signed and dated by the client or a design team member **AND**	**Ecologist**	
					EITHER Plans, site photographs and specifications confirming presence, or otherwise, of ecological features and the protection measures specified.	**Ecologist / Contractor (Prelims)**	
					OR Ecologist's report highlighting information required in accordance with the Appendix F 'Relating Ecology Reports to BREEAM'.	**Ecologist**	
					Where relevant for multi residential buildings: *Evidence in line with the Design stage evidence requirements of the CSH Issues Eco 1 and Eco 3 OR A copy of the Design Stage CSH certificate and report.*	***N/A***	
LE 3	Mitigating Ecological impact **(2 credits)**	**Up to two credits** are available: One credit where evidence provided demonstrates that the change in the site's existing ecological value, as a result of development, is minimal. Two credits where evidence provided demonstrates that there is no negative change in the site's existing ecological value as a result of development.	2	2	Design drawings including proposed and existing (pre-development) site plan/survey. AND	**Ecologist**	
					EITHER 1. A completed copy of the BREEAM LE 03/LE 04 calculator OR 2. Ecologist's report highlighting information required in Appendix F OR a copy of Appendix F completed by the ecologist AND written confirmation from the client/design team detailing how the ecologist's recommendations will be implemented.	**Ecologist**	
					Where relevant for multi-residential buildings; *Evidence in line with the Design stage evidence requirements of the CSH Issues Eco 4* *OR* *A copy of the Design Stage CSH certificate and CSH compliance report confirming the change in ecological value for the site.*	**N/A**	

Targeted rating and score:	102 CAMLEY STREET	EXCELLENT	73.48%

McBAINS COOPER

Ref	Title		Credits available	Targeted Credits	Evidence Required	Responsibility	Notes
LE 4 **(3 credits according to building type)**	Enhancing Site Ecology	**One credit** (except buildings on HM Prison sites where two credits are available for compliance with criteria 1 and 2) 1. A suitably qualified ecologist (SQE) has been appointed to report on enhancing and pro-tecting the ecology of the site and: a. The SQE provides an Ecology Report with appropriate recommendations for protection and enhancement of the site's ecology. b. The report is based on a site visit/survey by the SQE (see also compliance note 'timing of ecologist's survey and report').. 2. The general recommendations of the Ecology Report for enhancement and protection of site ecology have been, or will be, implemented.	3	2	Ecologist's report highlighting information required in Appendix F or a copy of Appendix F completed by the ecologist.	**Ecologist**	**Potential credit**
		Two credits (all building types except those on HM Prison sites) 3. Criteria 1 and 2 are achieved. 4. The recommendations of the Ecology Report for enhancement and protection of site eco-ogy have been implemented, and the suitably qualified ecologist confirms that this will result in an increase in ecological value of the site up to (but not including) 6 plant species. 5. The increase in plant species has been calculated using the BREEAM LE03/LE04 calculator, using actual plant species numbers.		(+1 potential)	Design drawings including proposed and existing (pre-development) site plan/survey	**Ecologist**	
		Three credits (all building types except those on HM Prison sites) 6. The requirements of the first credit are achieved. 7. The recommendations of the Ecology Report for enhancement and protection of site ecol-ogy have been implemented, and the suitably qualified ecologist confirms that this will result in an increase in ecological value of the site of 6 plant species or greater. 8. The increase in plant species has been calculated using the BREEAM LE 03/LE 04 calculator, using actual plant species numbers.			Written confirmation from the client/design team confirming how the ecologist's recommendations will be implemented.	**Ecologist**	
					Where relevant for multi residential buildings: *Evidence in line with the Design stage evidence requirements of the CSH Issues Eco 4* *OR* *A copy of the Design Stage CSH certificate and CSH compliance report confirming the change in ecological value for the site.*	**N/A**	
LE 5 **(2 credits according to building type)**	Long term impact on biodiversity	There is a committment to achieving the mandatory requirements and appropriate number of additional criteria as listed in the guidelines (pag. 303) **Mandatory criteria** 2. A suitably qualified ecologist (SQE) has been appointed prior to commencement of activ-ities on site. 3. The suitably qualified ecologist confirms that all relevant UK and EU legislation relating to protection and enhancement of ecology has been complied with during the design and construction process. 4. A landscape and habitat management plan, appropriate to the site, is produced covering at least the first five years after project completion. This is to be handed over to the build-ing 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 or local Biodiversity Action Plan.	1	1	Ecologist's report highlighting information required in Appendix F or a copy of Appendix F completed by the ecologist AND	**Ecologist**	
					EITHER A copy of the site's landscape and habitat management plan OR Relevant section/clauses of the building specification or contract confirming its development and scope OR A letter from the client confirming a commitment to produce the management plan and its' scope	**Ecologist**	
		Additional criteria - FOUR items = 1 credit 5. The principal contractor nominates a 'Biodiversity Champion' with the authority to influence site activities and ensure that detrimental impacts on site biodiversity are mini-mised in line with the recommendations of a suitably qualified ecologist.	1	1	Relevant section/clauses of the building specification or contract or an appointment letter from the Contractor. **(point 5)**	**Ecologist + Contractor (Prelims)**	
		6. The principal contractor trains the site workforce on how to protect site ecology during the project. Specific training must be carried out for the entire site workforce to ensure they are aware of how to avoid damaging site ecology during operations on site. Training should be based on the findings and recommendations for protection of ecological features highlighted within a report prepared by a suitably qualified ecologist.			Training schedule or letter of confirmation from the principal contractor committing to provide relevant training OR A copy of the specification clause requiring the training of the site's workforce by the principal contractor. **(point 6)**	**Ecologist + Contractor (Prelims)**	
		7. The principal contractor records actions taken to protect biodiversity and monitor their effectiveness throughout key stages of the construction process. The requirement commits the principal contractor to make such records available where publicly requested.			A letter from the principal contractor confirming monitoring and reporting criteria for the development OR A copy of the specification clause requiring the principal contractor to undertake monitoring and reporting. **(ponit 7)**	**Ecologist + Contractor (Prelims)**	
		8. Where a new ecologically valuable habitat, appropriate to the local area, is 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)2 , Local Biodiversity Action Plan (LBAP), those protected within statutory sites (e.g. SSSIs), or those within non-statutory sites identified in local plans.			A copy of the proposed site plan highlighting the new ecologically valuable habitat. A SQE's report or letter confirming that the habitat supports the relevant biodiversity action plan(s) **(point 8)**	**Ecologist**	
		9. Where flora and/or fauna habitats exist on site, the contractor programmes site works to minimise disturbance to wildlife. For example, site preparation, ground works, and land-scaping have been, or will be, scheduled at an appropriate time of year to minimise dis-turbance 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.			The SQE's report or letter confirming actions required with respect to programming site works to minimise disturbance.	**Ecologist + Contractor**	
					The principal contractor's programme of works. OR Relevant section/clauses of the building specification or contract confirming that the programme of site works will minimise disturbance to wildlife in accordance with the SQE's recommendations. **(point 9)**	**Ecologist + Contractor (Prelims)**	
					Documentary evidence from the design team or wildlife group confirming: 1. Scope of the partnership. 2. Details and remit of the wildlife group. 3. A description of the process for ongoing support that the group commit to give to the partnership.	**Ecologist + Contractor (Prelims)**	
		ADDITIONAL CRITERIA APPLY FOR SCHOOL BUILDINGS			4. Details of meetings and actions to date (**FOR SCHOOL BUILDINGS**)	**N/A**	

Targeted rating and score:	102 CAMLEY STREET	EXCELLENT	73.48%

McBAINS COOPER

Ref	Title		Credits available	Targeted Credits	Evidence Required	Responsibility	Notes
Pollution							
Pol 1	Impact of refrigerants **(3 credits)**	**Up to three credits** 1. Where the building does not require the use of refrigerants within its installed plant/sys-tems.	3		Documentary evidence confirming the absence of refrigerant in the development		
		OR alternatively, where the building does require the use of refrigerants,upto TWO credits can be awarded as follows: **Two credits** 2. Where the systems using refrigerants have Direct Effect Life Cycle CO2 equivalent emissions (DELC CO2e) of ≤100 kgCO2e/kW cooling capacity. OR 3. Where air-conditioning or refrigeration systems are installed the refrigerants used have a Global Warming Potential (GWP) ≤10. One credit only 4. Where the systems using refrigerants have Direct Effect Life Cycle CO2 equivalent emissions of (DELC CO2e) of ≤1000 kgCO2e/kW cooling capacity.	3	Not targeted	- A copy of the specification clause or letter from the M&E engineer / system manufacturer confirming relevant refrigeration type and system information.	**M & E**	
		One credit - Leak detection and shutdown 5. Where systems using refrigerants are contained in a moderately air tight enclosure (or a mechanically ventilated plant room), and an automated permanent refrigerant leak detection system is installed covering high-risk parts of the plant OR where a refrigerant leak-age/charge loss detection system is specified, which is not based on the principle of detecting or measuring the concentration of refrigerant in air. 6. The automatic shutdown and pump down of refrigerant occurs on the detection of refrigerant leakage/charge loss. 7. Automatic pump-down to either a separate storage tank or into the heat exchanger is acceptable, but only where automatic isolation valves are fitted to contain the refrigerant once fully pumped down. 8. The alarm threshold that triggers automatic pump down upon detection of refrigerant in the plant room/enclosure is set to a maximum of 2000ppm (0.2%), but lower levels can be set. 9. Use a robust and tested automated permanent refrigerant leak detection system, normally defined as that included on		1	- A completed copy of the BREEAM Pol 01 Calculator. Detailed response required to each item 5 - 9	**M & E** **Arup to advise whether further credits can be assumed**	
Pol 2	NOx emissions **(3 credits)** Except industrial buildings (2 credits)	**Up to three credits** are available: **One credit** where evidence provided demonstrates that the dry NOx emissions from delivered space heating energy are ≤100 mg/kWh (at 0% excess O2). **Two credits** where evidence provided demonstrates that the dry NOx emissions from delivered space heating energy are ≤70 mg/kWh (at 0% excess O2). **Three credits** where evidence provided demonstrates that the dry NOx emissions from delivered space heating energy are ≤40 mg/kWh (at 0% excess O2).	3	1	- Relevant section/clauses of the building specification or contract - Manufacturer's product details - Calculations from the project team	**M & E** **Arup to advise whether further credits can be assumed**	
					Where relevant for multi residential buildings: *Evidence in line with the Design Stage evidence requirements of the CSH Issue Pol 2* *OR* *A copy of the Design Stage CSH certificate and report from the CSH online reporting system confirming the number of credits achieved for CSH Issue Pol 2.*	N/A	

Targeted rating and score:	102 CAMLEY STREET	EXCELLENT	73.48%

Ref	Title		Credits available	Targeted Credits	Evidence Required	Responsibility	Notes
Pol 3	Surface water run off **(5 Credits)**	**Flood Risk** **Two credits** where evidence provided demonstrates that the assessed development is located in a zone defined as having a **low** annual probability of flooding. **One credit** where evidence provided demonstrates that the assessed development is located in a zone defined as having a medium or high annual probability of flooding AND the ground level of the building, car parking and access is above the design flood level for the site's location.	2	1	**Flood risk credits** - Flood risk assessment - Design drawings - Where appropriate, correspondence from the appropriate statutory body confirming reduced annual probability of flooding due to existing flood defences.	**Flood Risk Consultant** **to confirm risk of flooding from all sources considered under BREEAM**	
					Where relevant for multi residential buildings: *Evidence in line with the Design or Post Construction Stage requirements of the CSH Issue Sur 2 or certificate demonstrating compliance.*	**N/A**	
		Surface Water Run-Off **One credit** where evidence provided demonstrates that peak rate surface water run-off attenuation measures are specifiedto ensure post development run off is less than the existing site, taking account for climate change. **One credit** where flooding will not occur in the event of local drainage system failure and peak volume will be less than existing site, including an allowance for climate change.	2	2	**Surface water run off credits** - Statement from the appropriate consultant confirming that they are qualified in line with the BREEAM definition.	**Drainage consultant**	
					- Consultants report containing all information necessary to demonstrate compliance including. 1. Type and storage volume (l) of the drainage measures 2. Total area of hard surfaces (m2) 3. Peak/Volume flow rates (l/s) pre and post development for the return period events 4. Additional allowance for climate change designed in to the system 5. Impact on the building of flooding from local drainage system failure	**Drainage consultant**	
					Where relevant for multi residential buildings: *Evidence in line with the Design or Post Construction Stage requirements of the CSH Issue Sur 1 or certificate demonstrating compliance.*	**N/A**	
		Minimising Watercourse Pollution **One credit** when measures to minimise water course pollution are in place, design and detailed according to applicable guidelines, including the SUDS Manual. The Appropriate Drainage Consultant confirms that there is no discharge from the developed site for rainfall up to 5mm.	1	0	**Minimising watercourse pollution** - The consultants report detailing the design specifications, calculations and drawings to support the	**Drainage consultant**	
					- Design drawings and/or relevant section/clauses of the building specification or contract indicating 1. High and low risk areas of the site 2. Specification of SUDS, source control systems, oil/petrol separators and shut-off valves as appropriate	**Drainage consultant**	
					- A letter or other formal correspondence from the project team: 1. Confirming water pollution prevention systems are designed in accordance with PPG3 and the SUDS manual (where appropriate) 2. Outlining indicative examples of compliance with PPG3 and the SUDS manual 3. Confirming a copy of the drainage plan will be produced and handed over to the building occupier. 4. Confirming design of all external storage and delivery areas is in compliance with relevant Pollution Prevention Guidance 5. Outlining indicative examples of compliance with the PPG.	**Drainage consultant**	
Pol 4	Reduction of Night Time Light Pollution **(1 credit)**	**One credit** 1. The external lighting strategy has been designed in compliance with Table 1 (and its accompanying notes) of the ILE Guidance notes for the reduction of obtrusive light, 2005 , 2. All external lighting (except for safety and security lighting) can be automatically switched off between 2300hrs and 0700hrs. 3. If safety or security lighting is provided and will be used between 2300hrs and 0700hrs, 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 4. Illuminated advertisements, where specified, must be designed in compliance with ILE Tech-nical Report 5 – The Brightness of Illuminated Advertisements18.	1	1	- Design drawings	**Tenant / M & E**	
					- Relevant section/clauses of the building specification or contract or external lighting design data/calculations Confirmation required that all non security lighting will be turned off 2300 - 0700. Confirmation required that security lighting turned on between 2300 - 0700 will be in accordance with the lower levels of Table 2 (and its accompanying notes) of the ILP Guidance notes for the reduction of obtrusive light, 20111.	**Tenant / M & E**	
					- In the case of the external lighting design, the M&E engineer or lighting designer must provide indicative examples of where and how the strategy complies with the assessment criteria. Confirmation requried that no illuminated advertisements will be installed, or if so, that they are compliant with ILE Technical Report 5 – The Brightness of Illuminated Advertisements.	**Tenant / M & E**	
Pol 5 (1 credit)	Noise attenuation	**One credit** 1. The credit can be awarded by default where there are or will be no noise-sensitive areas or buildings within 800m radius of the assessed development. 2. If sensitive areas exist within 800m radius a noise impact assessment in compliance with BS 7445:199120 has been carried out and the following noise levels measured/determined: a. Existing background noise levels at the nearest or most exposed noise-sensitive development to the proposed development or at a location where background conditions can be argued to be similar. b. The rating noise level resulting from the new noise-source (see also Compliance note: Compliance at the design stage). 3. The noise impact assessment must be carried out by a suitably qualified acoustic consultant holding a recognised acoustic qualification and membership of an appropriate pro-fessional body (see Relevant definitions in the Additional Information section). 4. The noise level from the proposed site/building, as measured in the locality of the nearest or most exposed noise-sensitive development, is a difference no greater than +5dB during the day (0700hrs to 2300hrs) and +3dB at night (2300hrs to 0700hrs) compared to the back-ground noise level. 5. Where the noise source(s) from the proposed site/building is greater than the levels described in criterion 4, measures have been installed to attenuate the noise at its source to a level where it will comply with criterion 4.	1	1	Design drawings highlighting: 1. All existing and proposed noise-sensitive buildings local to, and within, the site boundary 2. Proposed sources of noise from the new development 3. Distance (m) from these buildings to the assessed development.	**Acoustician / M & E**	
					(point 2-3) The acoustician's report, acoustician's qualifications and professional status. OR Relevant section/clauses of the building specification or contract requiring a noise assessment by a suitably qualified acoustician in compliance with BS 4142:1997. OR A letter from the client or design team confirming that they will appoint an acoustician to carry out a noise assessment in compliance with BS 4142:1997 (point 4) Acoustician's report with recommendations for noise attenuation measures. AND	**Acoustician / M & E**	
					EITHER A marked-up design plan highlighting the specification of the acoustician's attenuation measures OR A formal letter from the client or design team confirming where relevant, that attenuation measures recommended by an appointed suitably qualified acoustician will be installed.	**Acoustician / M & E**	

Targeted rating and score:	102 CAMLEY STREET	EXCELLENT	73.48%

Ref	Title		Credits available	Targeted Credits	Evidence Required	Responsibility	Notes
Innovation - Exemplary Level Criteria (up to 10 points)							
Innovation	Man 01 Sustainable Procurement		1				
Innovation	Man 012 Responsible Construction practices		1				
Innovation	Hea 01 Visual Comfort		1				
Innovation	Ene 01 Reduction of CO2 Emissions		1				
Innovation	Ene 04 Low or zero carbon technologies		1				
Innovation	Wat 01 Water consumption	**Examplary level of performance in existing BREEAM issues**	1				
Innovation	Mat 01 Life cycle impacts		1				
Innovation	Mat 03 Responsible sourcing materials		1				
Innovation	Wst 01 Construction site waste management		1				
Innovation	Wst 02 Recycled aggregates		1				
Innovation	Approved Innovations	One innovation credit can be awarded for each innovation application approved by BRE Global, where the building complies with the criteria defined within an Approved Innovation application form.			A copy of the Approved Innovation application or confirmation of the Approved Innovation reference number. AND Relevant documentary evidence demonstrating specification of the approved innovation.		

APPENDIX B

Code for Sustainable Homes November 2010 Pre-Assessment (Residential)

breglobal

Results

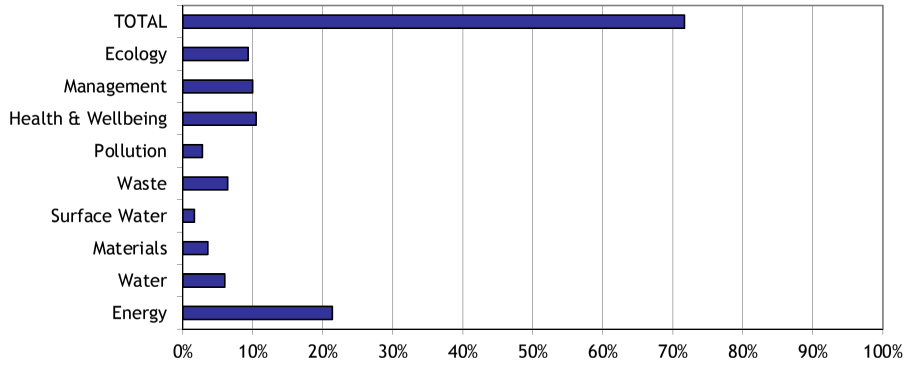
Development Name:	102 Camley Street
Dwelling Description:	Typical flat
Name of Company:	McBains Cooper
Code Assessor's Name:	Tim Pegg
Company Address:	McBains Cooper 120 Old Broad Street, London, EC2N 1AR
Notes/Comments:	This assesment is based upon a pre assessment workshop (21.03.2014) and subsequent correspondence with the project team.

PREDICTED RATING - CODE LEVEL: 4

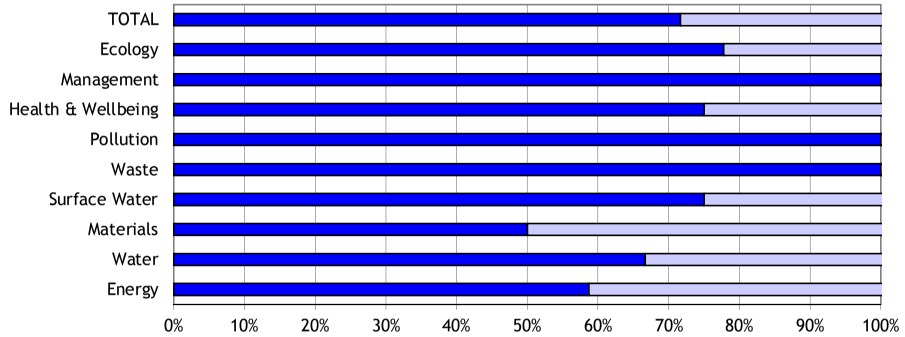
Mandatory Requirements: All Levels

% Points:	71.65%	- Code Level: 4
Breakdown:	Energy	- Code Level: 4
	Water	- Code Level: 4

Graph 1: Predicted contribution of individual sections to the total score and percentage of total achievable score



Graph 2: Predicted percentage of credits achievable: Total and by Category



NOTE: The rating obtained by using this Pre Assessment Estimator is for guidance only. Predicted ratings may differ from those obtained through a formal assessment, which must be carried out by a licensed Code assessor.

CATEGORY 1 ENERGY	Overall Level: 4	Overall Score	71.65	Assumptions Made	Evidence Required (The below cells can be formatted by assessors if required.)
% of Section Credits Predicted: 58.70		Credits	Level		
Contribution to Overall % Score: 21.37 points		18.2 of 31 Credits	Level 4		
Ene 1 Dwelling Emission Rate	Credits are awarded based on the percentage improvement of the Dwelling Emission Rate (DER) over the Target Emission Rate (TER) as calculated using SAP 2009. Minimum standards for each Code level apply. The Code energy calculator can be used to calculate a predicted score. Enter the predicted score ☐ What is the predicted number of credits? 4.2 OR Are zero net CO_2 emissions achieved?	4.2 of 10 Credits	Level 4	Minimum requirement of 40% improvement over Building Regulations 2010) for GLA	
Ene 2 Fabric Energy Efficiency	Credits are awarded based on the Fabric Energy Efficiency (kWh/m^2/yr) of the dwelling. Minimum standards apply at Code levels 5 and 6. The Code energy calculator can be used to calculate a predicted score. Enter the predicted score Apartments, Mid-terrace ○ OR End terrace, Semi and Detached ◉ OR Staggered Mid terrace ○ What is the predicted number of credits? 4.0	4.0 of 9 Credits	-	Potential credits available - SAP calculations to confirm	
Ene 3 Energy Display Devices	Credits are awarded where a correctly specified Energy Display Device is installed monitoring electricity and/or primary heating fuel consumption. Select whether the EDD monitors electricity and/or fuel None Specified ○ Primary Heating only ○ OR Electricity only ○ OR Electricity and primary heating fuel ◉	2 of 2 Credits	-	Energy Display Devices specifications to be inline with Code requirements	

Issue		Credits	Level	Assumptions Made	Evidence Required
Ene 4 Drying Space	One credit is awarded for the provision of either internal or external secure drying space with posts and fittings or fixings capable of holding 4m+ of drying line for 1-2 bed dwellings and 6m+ for dwellings with 3 bedrooms or greater. Will drying space meeting the criteria be provided? Yes ◉ OR No ○	1 of 1 Credits	-	Internal or external drying line in the bathroom or private balcony of adequate length (4m+) can be provided	
Ene 5 Energy Labelled White Goods	Credits are awarded where each dwelling is provided with either information about the EU Energy Labelling Scheme, White Goods with ratings ranging from A+ to B or a combination of the previous according to the technical guide. Select the appropriate option below EU Energy labelling information **only** A+ rated appliances A rated washing machine and dishwasher B rated tumble dryer or washer dryer EU Energy labelling information provided	1 of 2 Credits	-	A+ rated fridge/freezer to be provided; A rated washing machine; A rated dishwasher; B rated tumble dryer	
Ene 6 External Lighting	Credits are awarded based on the provision of space lighting* with dedicated energy efficient fittings and security lighting fittings with appropriate control gear.. Space Lighting None provided ○ OR Non Code compliant lighting ○ OR Code compliant lighting ◉ Security Lighting None provided ○ OR Non Code compliant lighting ○ OR Code compliant lighting and controls ◉ Dual lamp luminaires Compliant with both above criteria ☐ * Statutory safety lighting is not covered by this requirement	2 of 2 Credits	-	All external space and security lighting Code compliant (maximum Wattage and appropriate sensors/ dimers)	

Issue		Credits	Level	Assumptions Made	Evidence Required
Ene 7 Low or Zero Carbon Technologies	Credits are awarded where there is a 10% or 15% reduction in CO_2 emissions resulting from the use of low or zero carbon technologies. Select % contribution made by low or zero carbon technologies Less than 10% of demand ○ OR 10% of demand or greater ○ OR 15% of demand or greater ◉	**2 of 2 Credits**	-	CHP to be provided	
Ene 8 Cycle Storage	Credits are awarded where adequate, safe, secure and weather proof cycle storage is provided according to the Code requirements. Fill in the development details below Number of bedrooms: 2 Number of cycles stored per dwelling* 1.0 * if you have storage for 1 cycle per two dwellings insert 0.5 in number of cycles stored per dwelling	**1 of 2 Credits**	-	Based on area schedule (Rev E - 25.02.2014) 128 cycle spaces required for 1 credit. 256 cycle spaces for 2 credits.	
Ene 9 Home Office	A credit is awarded for the provision of a home office. The location, space and services provided must meet the Code requirements. Will there be provision for a Home Office? Yes ◉ OR No ○	**1 of 1 Credits**	-	More detailed internal layouts required showing how a desk can fit in a room with minimum wall length 1.80m, operable window/ adequate ventilation; two double power sockets; a telephone point; a data point; Daylight calculations to prove average daylight factor 1.5% in room designated for home office	

CATEGORY 2 WATER	Overall Level: 4	Overall Score	71.65	Assumptions Made	Evidence Required (The below cells can be formatted by assessors if required.)
% of Section Credits Predicted: 66.66		Credits	Level		
Contribution to Overall Score: 6.00 points		4 of 6 Credits	Level 4		
Wat 1 Indoor Water Use	Credits are awarded based on the predicted average household water consumption, calculated using the Code Water Calculator Tool. Minimum standards for each code level apply. Select the predicted water use / Mandatory Requirement greater than 120 litres/ person/ day ○ OR ≤ less than 120 litres/ person/ day ○ OR ≤ less than 110 litres/ person/ day ○ OR ≤ less than 105 litres/ person/ day ◉ OR ≤ less than 90 litres/ person/ day ○ OR ≤ less than 80 litres/ person/ day ○	3 of 5 Credits	Level 3 AND Level 4	Water efficient appliances; low-flow taps; dual/low flush toilets; small baths; low flow showers	
Wat 2 External Water Use	A credit is awarded where a compliant system is specified for collecting rainwater for external irrigation purposes. Where no outdoor space is provided the credit can be achieved by default. Select the scenario that applies No internal or communal outdoor space ○ OR Outdoor space with collection system ◉ OR Outdoor space without collection system ○	1 of 1 Credits	-	Balconies do not require water butts. Other external spaces would require all irrigation water to harvested from rainwater. Landscaping water features to adhere to water quality standards and supplied by harvested rain water	

CATEGORY 3 MATERIALS	Overall Level: 4	Overall Score	71.65	Assumptions Made	Evidence Required (The below cells can be formatted by assessors if required.)
% of Section Credits Predicted: 50.00		Credits	Level		
Contribution to Overall Score: 3.60 points		12 of 24 Credits	All Levels		
Mat 1 Environmental Impact of Materials	Mandatory Requirement: At least three of the five key building elements must achieve a Green Guide 2008 Rating of A+ to D. Tradable Credits: Points are awarded on a scale based on the Green Guide Rating of the specifications. The Code Materials Calculator can be used to predict a potential score. Mandatory Requirement Will the mandatory requirement be met? ☑ Enter the predicted score What is the predicted number of credits? 9	9 of 15 Credits	All Levels	Materials' specification in accordance with the Green Guide to Specification; no materials rated worse than D; target minimum B Architect to undertake materials review with BRE Green Guide to Specificaton.	
Mat 2 Responsible Sourcing of Materials - Basic Building Elements	Credits are awarded where materials used in the basic building elements are responsibly sourced. The Code Materials Calculator can be used to predict a potential score. Enter the predicted Score What is the predicted number of credits? 2	2 of 6 Credits	-	Responsible sourcing of materials from suppliers that operate Environmental Management Systems To be included within Contractor Prelims	
Mat 3 Responsible Sourcing of Materials - Finishing Elements	Credits are awarded where materials used in the finishing elements are responsibly sourced. The Code Materials Calculator can be used to predict a potential score. Enter the predicted Score What is the predicted number of credits? 1	1 of 3 Credits	-	As above	

CATEGORY 4 SURFACE WATER RUN-OFF	Overall Level: 4	Overall Score	71.65	Assumptions Made	Evidence Required (The below cells can be formatted by assessors if required.)
% of Section Credits Predicted:	75.00%	Credits	Level		
Contribution to Overall Score:	1.65 points	3 of 4 Credits	All Levels		
Sur 1 Management of Surface Water Run-off from developments	Mandatory Requirement: Peak rate of run-off into watercourses is no greater for the developed site than it was for the pre-development site and that the additional predicted volume of rainwater discharge caused by the new development is entirely reduced as far as possible in accordance with the assessment criteria. Desiging the drainage system to be able to cope with local drainage system failure. Tradable Credits: Where SUDS are used to improve water quality of the rainwater discharged or for protecting the quality of the receiving waters. Mandatory Requirement Will the mandatory requirement be met? ☑ Select the appropriate option No SUDS ☐ No runoff into watercourses for the first 5 mm of rainfall ☐ Runoff from hard surfaces will receive an appropriate level of treatment ☑	1 of 2 Credits	All Levels	Drainage engineer to advise whether it can be ensured that there is no discharge from the whole site for rainfall depths up to 5 mm	
Sur 2 Flood Risk	Credits are awarded where developments are located in areas of low flood risk or where in areas of medium or high flood risk appropriate measures are taken to prevent damage to the property and its contents in accordance with the Code criteria in the technical guide. Select the annual probability of flooding (from PPS25*) Zone 1 - Low ◉ OR Zone 2 - Medium ○ OR Zone 3 - High ○ Select the apropriate option(s) Low risk of flooding from FRA** ☑ All measures of protection are demonstrated in FRA ☐ Ground floor level and access routes are 600 mm above design flood level ☐ * Planning Policy Statement 25 - Planning and Flood Risk ** FRA - Flood Risk Assessment	2 of 2 Credits	-	Drainage engineer to advise on level of flood risk from all sources listed in Code guidance document.	

CATEGORY 5 WASTE	Overall Level: 4	Overall Score	71.65	Assumptions Made	Evidence Required (The below cells can be formatted by assessors if required.)
% of Section Credits Predicted:	100.00%	Credits	Level		
Contribution to Overall Score:	6.40 points	8 of 8 Credits	All Levels		
Wa 1 Storage of non-recyclable waste and recyclable household waste	Mandatory Requirement: The space provided for waste storage should be sized to hold the larger of either all external containers provided by the Local Authority or the min capacity calculated from BS 5906. Tradable Credits are awarded for adequate internal and/ or external recycling facilities.			Architect to ensure largest external storage volume is provided, from local authority requirements and BS 5906. Wa 1 Checklist to be completed, including allowance for wheelchair access.	

Mandatory Requirement

Will the minimum space be provided and be accessible to disabled people? ☑

Internal Recyclable household waste storage

Where there is no external recyclable waste storage and no Local Authority collection scheme

Internal storage (capacity 60 litres) ☐ — **0 of 2 Credits**

Local Authority collection Scheme

Post Collection sorting

Internal storage (capacity 30 litres) ☑ — **4 of 4 Credits** — **All Levels**

Pre-collection sorting

Internal storage (3 separate bins, capacity 30 litres) ☐

External Storage, no Local Authority collection scheme

3 separate internal storage bins (capacity 30 litres) ☐

AND

Houses

External Storage(capacity 180 litres) ☐ — **0 of 4 Credits**

Flats

Private recycling operator ☐

3 or greater types of waste collected ☐

Issue		Credits	Level	Assumptions Made	Evidence Required
Wst 2 Construction Site Waste Management	A credit is awarded where a compliant SWMP is provided with targets and procedures to minimise construction waste. Credits are available where the SWMP include procedures and commitments for diverting either 50% or 85% of waste generated from landfill. SWMP details Does the SWMP include: + No SWMP ○ + SWMP with targets and procedures to minimise waste? ○ + SWMP with procedures to divert 50% of waste ○ + SWMP with procedures to divert 85% of waste ◉	3 of 3 Credits		To be included within the Contractor's Prelims.	
Wst 3 Composting	A credit is awarded where individual home composting facilities are provided, or where a community/ communal composting service, either run by the Local Authority or overseen by a management plan is in operation. Select the facilities available No composting facilities ○ Individual composting facilities ○ OR Communal/ community composting*? ◉ Local Authority ☑ OR Private with management plan ☐ * including if an automated waste collection system is in place	1 of 1 Credit	-	Architect has confirmed that Local Authority offer collection of kitchen and green waste, and the requisite space will be provided within the design.	

CATEGORY 6 POLLUTION	Overall Level: 4	Overall Score	71.65	Assumptions Made	Evidence Required (The below cells can be formatted by assessors if required.)
% of Section Credits Predicted:	100.00%	Credits	Level		
Contribution to Overall Score:	2.80 points	4 of 4 Credits	All Levels		
Pol 1 Global Warming Potential (GWP) of Insulants	A credit is awarded where all insulating materials only use substances (in manufacture AND installation) that have a GWP of less than 5. Select the most appropriate option All insulants have a GWP less than 5 (●) OR Some insulants have a GWP of less than 5 ( ) OR No insulants have a GWP of less than 5 ( )	1 of 1 Credits	-	Careful specification of insulation in all main building elements and pipes and hot water storage tank	
Pol 2 NOx Emissions	Credits are awarded on the basis of NOx emissions arising from the operation of the space and water heating system within the dwelling. Select the most appropriate option Greater than 100 mg/kWh ( ) OR Less than 100 mg/kWh ( ) OR Less than 70 mg/kWh ( ) OR Less than 40 mg/kWh (●) OR Class 4 boiler ( ) OR Class 5 boiler ( ) OR All space and hot water energy requirements are met by systems who do not produce NOx emissions ( )	3 of 3 Credits	-	M & E to specify serviced by highly efficient, low-NOx boilers and CHP.	

CATEGORY 7 HEALTH & WELLBEING	Overall Level: 4	Overall Score	71.65	Assumptions Made	Evidence Required (The below cells can be formatted by assessors if required.)
% of Section Credits Predicted:	75.00%	Credits	Level		
Contribution to Overall Score:	10.50 points	9 of 12 Credits	No level		
Hea 1 Daylighting	Credits are awarded for ensuring key rooms in the dwelling have high daylight factors (DF) and a view of the sky. Select the compliant areas Room Kitchen: Avg DF of at least 2% ☐ Living Room*: Avg DF of at least 1.5% ☑ Dining Room*: Avg DF of at least 1.5% ☑ Study*: Avg DF of at least 1.5% ☑ 80% of working plane in all above rooms receive direct light from the sky? ☐ Any room used for Ene 9 Home Office must also achieve a min DF of 1.5%.	1 of 3 Credits	-	Daylight calculations to be conducted to confirm this.	
Hea 2 Sound Insulation	Credits are awarded where performance standards exceed those required in Building Regulations Part E. This can be demonstrated by carrying out pre-completion testing or through the use of Robust Details Limited. Select a type of property Detached Property ○ Attached Properties: - Separating walls and floors only exist between non habitable spaces ○ - Separating walls and floors exist between habitable spaces ◉ Select a performance standard Performance standard not sought ○ Airborne: 3db higher; Impact: 3dB lower ○ OR Airborne: 5db higher; Impact: 5dB lower ◉ OR Airborne: 8db higher; Impact: 8dB lower ○	3 of 4 Credits	-	Initial acoustic advise is that 5dB improvement on Building Regulations is possible. Acoustician has advised of potential route to a 4th credit.	

Issue		Credits	Level	Assumptions Made	Evidence Required
Hea 3 Private Space	A credit is awarded for the provision of an outdoor space that is at least partially private. The space must allow easy access to all occupants. Will a private/ semi-private space be provided? Yes, private/semi-private space will be provided ◉ OR No private/semi-private space ○	1 of 1 Credits	-	Architect to confirm that all dwellings have sufficient private space.	
Hea 4 Lifetime Homes	Mandatory Requirement: Lifetime Homes is mandatory when a dwelling is to achieve Code Level 6. Tradable credits: Credits are awarded where the developer has implemented all of the principles of the Lifetime Homes scheme. Mandatory Requirement Dwelling to achieve Code Level 6? ☐ Lifetime Homes Compliance All Lifetime Homes criteria will be met ◉ OR Exemption from LTH criteria 2/3 applied ○ Credit not sought ○	4 of 4 Credits	No level	All flats to meet Lifetime Homes requirements	

CATEGORY 8 MANAGEMENT	Overall Level: 4	Overall Score	71.65	Assumptions Made	Evidence Required (The below cells can be formatted by assessors if required.)
% of Section Credits Predicted: 100.00%		Credits	Level		
Contribution to Overall Score: 10.00 points		9 of 9 Credits	All Levels		
Man 1 Home User Guide	Credits are awarded where a simple guide is provided to each dwelling covering information relevant to the 'non-technical' home occupier, in accordance with the Code requirements. Tick the topics covered by the Home User Guide Operational Issues? ☑ Site and Surroundings? ☑ Is available in alternative formats? ☑	3 of 3 Credits	-	A non-technical guide to be supplied to each flat in accordance with CSH-required contents. To be included within the Contractor's Prelims.	
Man 2 Considerate Constructors Scheme	Credits are awarded where there is a commitment to comply with best practice site management principles using either the Considerate Constructors Scheme or an alternative locally/ nationally recognised scheme. Select the appropriate scheme and score No scheme used ○ Considerate Constructors OR Best Practice ○ OR Significantly Beyond Best Practice ◉ Alternative Scheme* OR Mandatory + 50% optional requirements ○ OR Mandatory + 80% optional requirements ○ * In the first instance, contact a Code Service Provider if you are considering to use an alternative scheme.	2 of 2 Credits	-	To be included within Contractors' Prelims	
Man 3 Construction Site Impacts	Credits are awarded where there is a commitment and strategy to operate site management procedures on site as following: Tick the impacts that will be addressed Monitor, report and set targets, where applicable, for: - CO_2/ energy use from site activities ☑ - CO_2/ energy use from site related transport ☐ - water consumption from site activities ☑ Adopt best practice policies in respect of: - air (dust) pollution from site activities ☑ - water (ground and surface) pollution on site ☑ 80% of site timber is reclaimed, re-used or responsibly sourced ☑	2 of 2 Credits	-	To be included within Contractors' Prelims .	

Issue		Credits	Level	Assumptions Made	Evidence Required
Man 4 Security	Credits are awarded for complying with Section 2 - Physical Security from Secured by Design - New Homes. An Architectural Liaison Officer (ALO), or alternative, needs to be appointed early in the design process and their recommendations incorporated. Secured by Design Compliance Credit not sought ○ OR Secured by Design Section 2 Compliance ◉	2 of 2 Credits	-	Architect to organise meeting with local authority Secured by Design officer	

CATEGORY 9 ECOLOGY	Overall Level: 4	Overall Score	71.65	Assumptions Made	Evidence Required (The below cells can be formatted by assessors if required.)
% of Section Credits Predicted:	77.00%	Credits	Level		
Contribution to Overall Score:	9.33 points	7 of 9 Credits	All Levels		
Eco 1 Ecological Value of Site	One credit is awarded for developing land of inherently low value. Credit not sought OR Land has ecological value OR Land has low/ insignificant ecological value* * Low ecological value is determined either a) by using Checklist Eco 1 across the whole development site; or b) where an suitably qualified ecologist is appointed and can confirm or c) produces an independent ecological report of the site, that the construction zone is of low/ insignificant value; AND the rest of the development site will remain undisturbed by the works. Tick the appropriate boxes	1 of 1 Credits	-	Ecologist's advice following site survey (April 2014) states that existing habitats are extremely unlikely to provide any significant ecological value.	
Eco 2 Ecological Enhancement	A credit is awarded where there is a commitment to enhance the ecological value of the development site. Will a Suitably Qualified Ecologist be appointed to recommend appropriate ecological features? AND Will all key recommendations be adopted? AND 30% of other recommendations be adopted? Type and provision of existing features	1 of 1 Credits	-	Ecologist to provide recommendations which are to be included within landscaping proposals and Contractor Prelims, as relevant.	
Eco 3 Protection of Ecological Features	A credit is awarded where there is a commitment to maintain and adequately protect features of ecological value. Site with features of ecological value? OR Site of low ecological value (as Eco 1)? AND All* existing features potentially affected by site works are maintained and adequately protected? *If a suitably qualified ecologist has confirmed that a feature can be removed due to insignificant ecological value or poor health conditions, as long all the rest have been protected, then this box can be ticked. Change in Ecological Value Ratio of Net Internal Floor Area: Net Internal Ground Floor Area	1 of 1 Credits	-	The ecologist's advice following April 2014 survey is that the habitats present within the site are unlikely to provide potential opportunities for any protected, rare species.	

Issue		Credits	Level	Assumptions Made	Evidence Required
Eco 4 Change of Ecological Value of Site	Credits are awarded where the change in ecological value has been calculated in accordance with the Code requirements and is calculated to be: Major negative change: fewer than -9 Minor negative change: between -9 and -3 OR Neutral: between -3 and +3 Minor enhancement: between +3 and +9 Major enhancement: greater than 9	**2 of 4 Credits**	-	Minor enhancement following ecologist's advice.	
Eco 5 Building Footprint	Credits are awarded where the ratio of combined floor area of all dwellings on the site to their footprint is: Credit Not Sought OR Houses: 2.5:1 OR Flats: 3:1 OR Houses: 3:1 OR Flats: 4:1 OR Houses & Flats Weighted (2.5:1 & 3:1) OR Houses & Flats Weighted (3:1 & 4:1)	**2 of 2 Credits**		High-rise so both credits awarded.	

APPENDIX C

Responses to Revised Sustainable Design & Construction SPG (April 2014)

TABLE 1.1 SUMMARY OF THE MAYOR'S PRIORITIES AND BEST PRACTICE

RESOURCE MANAGEMENT		Relevant section of the Sustainability strategy - Proposed Development
LAND		
Optimising the use of land		
Mayor's Priority	**London Plan policy**	
Through both their Local Plans and planning decisions, boroughs should ensure development patterns reflect the strategic spatial vision for London's growth as set out in Chapter 2 of the London Plan.	1.1, 2.6, 2.7, 2.8, 2.9, 2.10, 2.11, 2.12, 2.13, 2.14, 2.15, 2.16, 2.17, 2.18, 3.3, 6.1	**Section 2.0.** Brownfield site, increasing density (residential/ employment) .
Mayor's Priority	**London Plan policy**	
Through both their Local Plans and planning decisions, boroughs should aim for 100% of development to be delivered on previously developed land.	1.1, 3.3	**Section 2.0**
Mayor's Priority	**London Plan policy**	
Developers should optimise the scale and density of their development, considering the local context, to make efficient use of London's limited land.	3.4, 4.3, 7.6	**Section 2.0**
Basements and lightwells		
Mayor's best practice	**London Plan policy**	
Where there is pressure for basement developments, boroughs should consider whether there are any particular local geological or hydrological issues that could particularly effect their construction, and adopt appropriate policies to address any local conditions.	3.5, 5.12, 5.13, 5.14, 7.13, 7.19, 7.21	**Refer to 'Basement Impact Study' (Arup)**
Mayor's Priority	**London Plan policy**	
When planning a basement development, developers should consider the geological and hydrological conditions of the site and surrounding area, proportionate to the local conditions, the size of the basement and lightwell and the sensitivity of adjoining buildings and uses, including green infrastructure.	5.12, 5.13, 7.13, 7.19	**Refer to 'Basement Impact Study' (Arup)**
Mayor's Priority	**London Plan policy**	
When planning and constructing a basement development, developers should consider the amenity of neighbours.	5.3, 5.18, 6.3, 7.14, 7.15	**Refer to 'Basement Impact Study' (Arup)**
Local food growing		
Mayor's Priority	**London Plan policy**	
To protect existing established food growing spaces.	2.18, 3.2, 5.3, 5.10, 5.11, 7.18, 7.22.	**Section 9.0**
Mayor's best practice	**London Plan policy**	
To provide space for individual or communal food growing, where possible and appropriate.	2.18, 3.2, 5.3, 5.10, 5.11, 5.21, 7.18, 7.22.	**Section 9.0**
Mayor's best practice	**London Plan policy**	
To take advantage of existing spaces to grow food, including adapting temporary spaces for food growing.	2.18, 3.2, 5.3, 5.10, 5.11, 5.21, 7.18, 7.22.	**Section 9.0**

SITE LAYOUT AND BUILDING DESIGN		Relevant section of the Sustainability strategy - Proposed Development
Mayor's best practice	**London Plan policy**	
Any existing buildings that can be practically refurbished, retrofitted, altered, or extended should be retained and reused.	5.3, 5.4	**Section 2.0**
Mayor's best practice	**London Plan policy**	
A mix of uses, where suitable should be included to provide a range of services commensurate to the public transport accessibility.	4.3, 6.1	**Sections 2.0 and 10.0**
Mayor's Priority	**London Plan policy**	
The design of the site and building layout, footprint, scale and height of buildings as well as the location of land uses should consider: Existing features • the possible retention and reuse of existing buildings and structures; and • the retention of existing green infrastructure, including trees and other ecological features, and potential for its improvement and extension; • access routes to public transport and other facilities that minimise the use of private transport; New design of development • the existing landform; • the potential to take advantage of natural systems such as wind, sun and shading; • the principles sets out London Plan policies 7.1 and 7.6; • the potential for adaption and reuse in the future; • potential for incorporating green infrastructure, including enhancing biodiversity; • potential for incorporating open space, recreation space, child play space; • energy demands and the ability to take advantage of natural systems and low and zero carbon energy sources; • site wide infrastructure; • access to low carbon transport modes; • the promotion of low carbon transport modes, including walking and cycling; • potential to address any local air quality, noise disturbance, flooding and land contamination issues; and • the potential effect on the micro-climate.	2.18, 5.2, 5.3, 5.4, 5.6, 5.7, 5.9, 5.10, 5.11, 5.12, 5.13, 5.16, 5.18, 5.21, 6.1, 6.7, 6.9, 6.10, 6.11. 6.13, 7.1, 7.6, 7.14, 7.15, 7.18, 7.19, 7.21, 7.22	**Sections 2.0, 9.0 and 10.0** **Sections:** **– existing landform (2.0)** **– energy strategy (3.0)** **– Policies 7.1 & 7.6 (9.0)** **– green infrastructure & play space (9.0)** **– energy strategy (4.0)** **– transport(9.0)** **– air quality (8.0)** **– flooding (5.0)**
Energy and carbon dioxide emissions		
Mayor's Priority	**London Plan policy**	
The overall carbon dioxide emissions from a development should be minimised through the implementation of the energy hierarchy set out in London Plan policy 5.2.	5.2, 5.3	**Sections 3.0 and 4.0**

		Relevant section of the Sustainability strategy - Proposed Development
Mayor's Priority	**London Plan policy**	
Developments should be designed to meet the following Regulated carbon dioxide standards, in line with London Plan policy 5.2.	5.2	**Sections 3.0 and 4.0**

Residential buildings	
Year	Improvements beyond 2010 Building Regulations
1st October 2013 - 2016	40 per cent
2016 - 2031	Zero carbon

Non-domestic buildings	
Year	Improvements beyond 2010 Building Regulations
1st October 2013 - 2016	40 per cent
2016 - 2019	As per the Building Regulation requirements
2019 - 2031	Zero carbon

Mayor's best practice	**London Plan policy**	
Developments should contribute to ensuring resilient energy infrastructure and a reliable energy supply, including from local low and zero carbon sources.	5.1, 5.5, 5.6, 5.7, 5.8, 5.17	**Refer to Energy Strategy Section 6.1**
Mayor's best practice	**London Plan policy**	
Developers are encouraged to include innovative low and zero carbon technologies to minimise carbon dioxide emissions within developments and keep up to date with rapidly improving technologies.	5.2, 5.17	**Refer to Energy Strategy Section 6.1**
Energy demand assessment		
Mayor's Priority	**London Plan policy**	
Development applications are to be accompanied by an energy demand assessment	5.2	**Refer to Energy Strategy**
Use less energy		
Mayor's Priority	**London Plan policy**	
The design of developments should prioritise passive measures.	5.2, 5.3, 5.9	**Sections 3.0 and 4.0**
Mayor's best practice	**London Plan policy**	
Developers should aim to achieve Part L 2013 Building Regulations requirements through design and energy efficiency alone, as far as is practical.	5.2, 5.3	**Refer to Energy Strategy Sections 1.0. 3.2 and 5.0.**
Efficient energy supply		
Mayor's Priority	**London Plan policy**	
Where borough heat maps have identified district heating opportunities, boroughs should prepare more detailed Energy Master Plans (EMPs) to establish the extent of market competitive district heating networks.	5.5, 5.6	**Refer to Energy Strategy Section 6.1**
Mayor's Priority	**London Plan policy**	

		Relevant section of the Sustainability strategy - Proposed Development
Developers should assess the potential for their development to: • connect to an existing district heating or cooling network; • expand an existing district heating or cooling network, and connect to it; or • establish a site wide network, and enable the connection of existing buildings in the vicinity of the development.	5.5, 5.6	**Refer to Energy Strategy Section 6.1**
Mayor's Priority	**London Plan policy**	
Where opportunities arise, developers generating energy or waste heat should maximise long term carbon dioxide savings by feeding the decentralised energy network with low or zero carbon hot, and where required, cold water.	5.5, 5.6	**Refer to Energy Strategy Section 6.1**
Renewable energy		
Mayor's Priority	**London Plan policy**	
Boroughs and neighbourhoods should identify opportunities for the installation of renewable energy technologies in their boroughs and neighbourhoods.	5.4, 5.7	**Refer to Energy Strategy Section 7.0**
Mayor's Priority	**London Plan policy**	
Major developments should incorporate renewable energy technologies to minimise overall carbon dioxide emissions, where feasible.	5.7	**Refer to Energy Strategy Section 7.0**
Carbon dioxide off-setting		
Mayor's Priority	**London Plan policy**	
Boroughs should establish a carbon off-set fund and identify suitable projects to be funded.	5.2, 5.4	**N / A as 40% regulated CO_2 reduction under Part L 2010 is achieved.**
Where developments do not achieve the Mayor's carbon dioxide reduction targets set out in London Plan policy 5.2, the developer should make a contribution to the local borough's carbon dioxide off-setting fund.	5.2, 5.4	
Retrofitting		
Mayor's Priority	**London Plan policy**	
Boroughs should set out policies to encourage the retrofitting of carbon dioxide and water saving measures in their borough.	5.4, 5.15	**N / A as existing building not to be retained**
Mayor's Priority	**London Plan policy**	
Where works to existing developments are proposed developers should retrofit carbon dioxide and water saving measures.	5.4, 5.15	**N / A as existing building not to be retained**
Monitoring energy use		
Mayor's best practice	**London Plan policy**	
Developers are encouraged to incorporate monitoring equipment, and systems where appropriate to enable occupiers to monitor and reduce their energy use.	5.2, 5.3	**Section 3.0**
Supporting a resilient energy supply		
Mayor's best practice	**London Plan policy**	

		Relevant section of the Sustainability strategy - Proposed Development
Developers are encouraged to incorporate equipment that would enable their schemes to participate in demand side response opportunities.	5.2, 5.3	Section 4.0
Water efficiency		
Mayor's Priority	**London Plan policy**	
Developers should maximise the opportunities for water saving measures and appliances in all developments, including the reuse and using alternative sources of water.	5.3, 5.13, 5.15	Section 4.0 and 5.0
Mayor's Priority	**London Plan policy**	
Developers should design residential schemes to meet a water consumption rate of 105 litres or less per person per day.	5.3, 5.15	Section 4.0
Mayor's Priority	**London Plan policy**	
New non-residential developments, including refurbishments, should aim to achieve the maximum number of water credits in a BREEAM assessment or the 'best practice' level of the AECB (Association of Environment Conscious Building) water standards.	5.3, 5.15	Water credits score to contribute towards 'Excellent' rating. AECB levels to be considered.
Mayor's Priority	**London Plan policy**	
Where a building is to be retained, water efficiency measures should be retrofitted.	5.3, 5.4, 5.15	N / A as existing building not to be retained
Mayor's Priority	**London Plan policy**	
All developments should be designed to incorporate rainwater harvesting.	5.3, 5.13, 5.15	Section 5.0
Mayor's best practice	**London Plan policy**	
All residential units, including individual flats / apartments and commercial units, and where practical, individual leases in large commercial properties should be metered.	5.15	Section 3.0 and 4.0
Materials and waste		
Design phase		
Mayor's Priority	**London Plan policy**	
The design of development should prioritise materials that: o have a low embodied energy, including those that can be re-used intact or recycled; at least three of the key elements of the building envelope (external walls, windows roof, upper floor slabs, internal walls, floor finishes / coverings) are to achieve a rating of A+ to D in the BRE's *The Green Guide* of specification; o can be sustainably sourced; at least 50% of timber and timber products should be sourced from accredited Forest Stewardship Council (FSC) or Programme for the Endorsement of forestry Certification (PEFC) source; o are durable to cater for their level of use and exposure; and will not release toxins into the internal and external environment, including those that deplete stratospheric ozone	5.3, 5.20, 7.6, 7.14	Section 3.0 and 4.0

		Relevant section of the Sustainability strategy - Proposed Development
Mayor's Best Practice	**London Plan Policy**	
The design of developments should maximise the potential to use pre-fabrication elements.	5.3, 7.6	Section 6.1
Construction phase		
Mayor's Priority	**London Plan Policy**	
Developers should maximise the use of existing resources and materials and minimise waste generated during the demolition and construction process through the implementation of the waste hierarchy.	5.3, 5.20	Section 3.0 and 4.0
Occupation phase		
Mayor's Priority	**London Plan Policy**	
Developers should provide sufficient internal space for the storage of recyclable and compostable materials and waste in their schemes.	5.3, 5.17	Section 6.2
Mayor's Priority	**London Plan Policy**	
The design of development should meet borough requirements for the size and location of recycling, composting and refuse storage and its removal.	5.3, 5.17	Section 6.2
Nature conservation and biodiversity		
Mayor's Priority	**London Plan policy**	
There is no net loss in the quality and quantity of biodiversity.	5.3, 7.19	Section 9.0
Mayor's Priority	**London Plan policy**	
Developers make a contribution to biodiversity on their development site.	5.3, 7.19	Section 9.0

Climate change adaptation		
Tackling increased temperature and drought		
Overheating		
Mayor's Priority	**London Plan policy**	
Developers should include measures, in the design of their schemes, in line with the cooling hierarchy set out in London Plan policy 5.9 to prevent overheating over the scheme's lifetime	5.3, 5.9	Refer to Energy Strategy Section 5.0 F
Heat and drought resistant planting		
Mayor's Best practice	**London Plan policy**	
The design of developments should prioritise landscape planting that is drought resistant and has a low water demand for supplementary watering.	5.3, 5.15	Section 9.0
Resilient foundations		
Mayor's Best practice	**London Plan policy**	
Developers should consider any long term potential for extreme weather events to affect a building's foundations and to ensure they are robust	5.3, 7.6	Refer to 'Engineering Statement' (Arup)

		Relevant section of the Sustainability strategy - Proposed Development
Increasing green cover		
Urban greening		
Mayor's Priority	**London Plan policy**	
Developers should integrate green infrastructure into development schemes, including by creating links with wider green infrastructure network.	2.18, 5.3, 5.10, 5.11	**Section 9.0**
Mayor's Priority	**London Plan policy**	
Major developments in the Central London Activity Area (CAZ) should be designed to contribute to the Mayor's target to increase green cover by 5% in this zone by 2030.	5.10	**Section 9.0**
Trees		
Mayor's Priority	**London Plan policy**	
Developments should contribute to the Mayor's target to increase tree cover across London by 5% by 2025.	5.3, 5.10, 7.21	**Section 9.0**
Mayor's Priority	**London Plan policy**	
Any loss of a tree/s resulting from development should be replaced with an appropriate tree or group of trees for the location, with the aim of providing the same canopy cover as that provided by the original tree/s.	5.3, 5.10, 7.21	**Section 9.0**
Flooding		
Surface water flooding and Sustainable drainage		
Mayor's Priority	**London Plan policy**	
Through their Local Flood Risk Management Strategies boroughs should identify areas where there are particular surface water management issues and develop policies and actions to address these risks	5.3, 5.12	**Section 5.0**
Mayor's Priority	**London Plan policy**	
Developers should maximise all opportunities to achieve greenfield runoff rates in their developments	5.12, 5.13	**Section 5.0**
Mayor's Priority	**London Plan policy**	
When designing their schemes developers should follow the drainage hierarchy set out in London Plan policy 5.13	5.13	**Section 5.0**
Mayor's Priority	**London Plan policy**	
Developers should design Sustainable Drainage Systems (SuDS) into their schemes that incorporate attenuation for surface water runoff as well as habitat, water quality and amenity benefits.	5.3, 5.13, 5.14	**Section 5.0**
Flood resilience and resistance of buildings in flood risk areas		
Mayor's Priority	**London Plan policy**	
Development in areas at risk from any form of flooding should include flood resistance and resilience measures in line with industry best practice.	5.3, 5.12, 5,13	**Section 5.0**
Flood Risk Management		
Mayor's Priority	**London Plan policy**	
Developments are designed to be flexible and capable of being adapted to and mitigating the potential increase in flood risk as a result of climate change.	5.3, 5.12	
Mayor's Priority	**London Plan policy**	

		Relevant section of the Sustainability strategy - Proposed Development
Developments incorporate the recommendation of the TE2100 plan for the future tidal flood risk management in the Thames estuary.	5.3, 5.12	**N / A as located over 2 miles from River Thames**
Mayor's Priority	**London Plan policy**	
Where development is permitted in a flood risk zone, appropriate residual risk management measures are to be incorporated into the design to ensure resilience and the safety of occupiers.	5.3, 5.12	**Section 5.0**
Other sources of flooding		
Mayor's Priority	**London Plan policy**	
All sources of flooding need to be considered when designing and constructing developments.	5.3, 5.12, 5.13	**All sources considered under BREEAM 2011 assessment.**

POLLUTION MANAGEMENT		Relevant section of the Sustainability strategy - Proposed Development
Land contamination		
Mayor's Priority	**London Plan policy**	
Developers should set out how existing land contamination will be addressed prior to the commencement of their development.	3.2, 5.3, 5.21	**Sections 5.7 – Potential for Contamination and 5.11 Recommendations in ' Geotechnical desk Study' (Arup)**
Mayor's Priority	**London Plan policy**	
Potentially polluting uses are to incorporate suitable mitigation measures.	3.2, 5.3, 5.21	
Air quality		
Mayor's Priority	**London Plan policy**	
Developers are to design their schemes so that they are at least 'air quality neutral'.	7.14	**Section 8.0**
Mayor's Priority	**London Plan policy**	
Developments should be designed to minimise the generation of air pollution.	5.3, 7.14	**Section 8.0**
Mayor's Priority	**London Plan policy**	
Developments should be designed to minimise and mitigate against increased exposure to poor air quality.	3.2, 5.3, 7.14	**Section 8.0**
Mayor's Priority	**London Plan policy**	
Developers should select plant that meets the standards for emissions from combined heat and power and biomass plants set out in Appendix 7.	7.14	**Section 8.0**
Mayor's Priority	**London Plan policy**	
Developers and contractors should follow the guidance set out in the emerging *The Control of Dust and Emissions during Construction and Demolition SPG* when constructing their development.	5.3, 7.14	**Section 8.0**
Noise		
Mayor's Priority	**London Plan policy**	
Areas identified as having positive sound features or as being tranquil should be protected from noise.	3.2, 7.15	**Section 4.0 & Acoustic Strategy Report**
Mayor's Priority	**London Plan policy**	
Noise should be reduced at source, and then designed out of a scheme to reduce the need for mitigation measures.	3.2, 5.3, 7.6,.7 .15	**Section 4.0 & Acoustic Strategy Report**
Light pollution		
Mayor's Priority	**London Plan policy**	
Developments and lighting schemes should be designed to minimise light pollution.	5.2, 5.3, 6.7	**Section 9.0**
Water pollution		
Surface water runoff		
Mayor's Priority	**London Plan policy**	

		Relevant section of the Sustainability strategy - Proposed Development
In their aim to achieve a greenfield runoff rate developers should incorporate sustainable urban drainage systems (SuDS) into their schemes which also provide benefits for water quality.	5.3, 5.13, 5.14	Section 5.0
Mayor's best practice	**London Plan policy**	Relevant advice will be included within the Building User Guide required under BREEAM 2011
Encourage good environmental practice to help reduce the risk from business activities on the London water environment.	5.3, 5.13, 5.14	
Mayor's best practice	**London Plan policy**	Section 6.0
Encourage those working on demolition and construction sites to prevent pollution by incorporating prevention measures and following best practice.	5.3, 5.14	
Wastewater treatment		
Mayor's Priority	**London Plan policy**	
Residential developments discharging domestic sewage should connect to the public foul sewer or combined sewer network where it is reasonable to do so.	5.3, 5.14	The scheme will connect into the local sewer network.
Mayor's Priority	**London Plan policy**	
Commercial developments discharging trade effluent should connect to the public foul sewer or combined sewer network where it is reasonable to do so subject to a trade effluent consent from the relevant sewerage undertaker.	5.3, 5.14	The scheme will connect into the local sewer network.
Mayor's Priority	**London Plan policy**	
Developments should be properly connected and post-construction checks should be made by developers to ensure that mis-connections do not occur.	5.3, 5.14	Careful post construction snagging procedures and labelling will be undertaken. A CCTV survey will verify underground pipe layout and connections.