

PLOT E AND TELECOM HOUSE

Outline Application
Sustainability Statement

Hoare Lea
July 2015

Station Hill
Sackville Developments (Reading) Limited

Updated Sustainability Statement
Rev. C
July 2015

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Audit Sheet

Rev.	Description	Prepared and checked by	Reviewed by	Date
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B	Planning issue report	L. Wille	J. Godefroy	23.07.2015
C	Updated planning issue – change to offices target	L. Wille	-	24.07.2015

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1.0 Executive Summary

This report describes the Sustainability Statement supporting the proposed Station Hill development in Reading. The Station Hill proposal is the redevelopment of brownfield land between Reading mainline station and Reading town centre, bound by Station Hill and Reading mainline station to the north, Station Road to the east, Friar Street to the south, and Greyfriars Road to the west.

The site is bound by Station Hill and Reading Mainline Station to the north, Station Road to the east, Friar Street to the south, and Greyfriars Road to the west. The development proposes 6,000-13,500m^2 retail units Gross External Area (GEA) retail uses, 69,000-122,000m^2 (GEA) of office space, 26,000-41,500m^2 (GEA) of residential units (equivalent to approx. 300-475 units), associated parking (550-1,000 spaces) and new pedestrian routes through the site.

The project has been developed with energy efficiency, environmental performance and the local context in mind. It should be noted that due to the outline nature of the scheme, a number of features cannot be confirmed at this stage and therefore this report focuses on overall principles, performance targets, and masterplan principles rather than detailed design considerations. This sustainability statement responds specifically to:

- UK national sustainable development policy
- The Reading Borough Council Core Strategy (2008, altered 2015) and the Supplementary Planning Document on Sustainable Design and Construction (July 2011)

The proposals summarised within this report promote a design centred on a low energy and sustainable development with ambitious carbon performance and BREEAM targets.

On January 12th 2015 outline planning permission was granted for the Station Hill Development. It is now proposed to incorporate the neighbouring Telecom House Site (48-51 Friar Street & 4-20 Garrard Street) to enable the development to incorporate an additional 12,000 m^2 GEA of residential floorspace (and associated back of house areas) in order to deliver up to 175 more homes than the 2015 outline planning permission. This updated energy strategy takes into account the enlarged scheme and builds on the discussions undertaken with the Planning Authorities and their consultants (Thames Valley Energy - TVE) previously. The proposed strategy remains broadly the same, though with updates due to changes in Building Regulations and planning guidance.

Energy and CO_2 savings

The energy strategy has followed the principles of the energy hierarchy: Be Lean – Be Clean – Be Green.

The aim is to adopt a 'fabric and energy efficiency first' approach, followed by the implementation of a Low and Zero Carbon technology to achieve **overall CO_2 emission reductions over Part L 2013 of 5-15%**. This target is currently proposed to be achieved entirely through passive design, energy efficiency and potentially with CHP, though opportunities for renewables can be reviewed further at detailed design stage.

A summary of the energy strategy is given in this sustainability statement. For full detail on the energy proposal refer to the Energy Strategy Report submitted as part of this planning application.

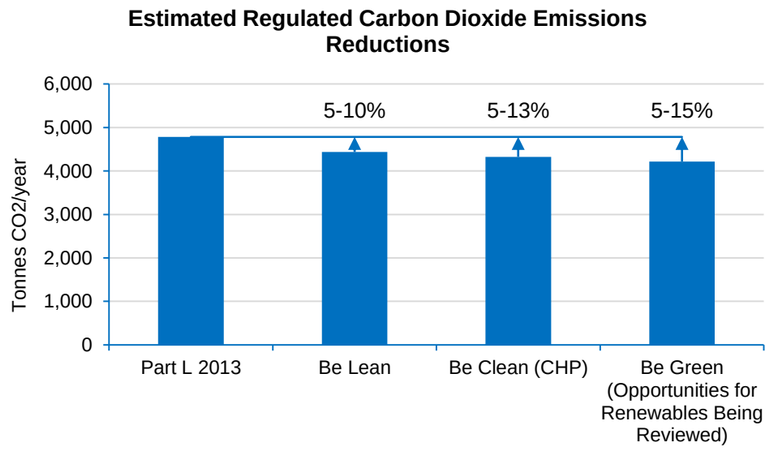


Figure 1.1: Site-wide carbon reduction strategy

Environmental assessment methods

In addition to the carbon reduction strategy, the applicant aims to achieve:

BREEAM New Construction 2011 'Very Good' for commercial areas (i.e. retail and offices), with a potential uplift to Excellent for the offices, subject to tenant cooperation (as the spaces are expected to be provided as CAT A spaces only).

Summaries of these pre-assessments are given in this sustainability statement and the full pre-assessments reports can be found in Appendices A and B.

The Code for Sustainable Homes (CfSH) has been revoked by Government, and amendments to the Building Regulations will be made in the autumn of 2015 to incorporate some aspects of this, i.e. optimal standards on water and access. A new voluntary scheme called the 'Home Quality Mark' (HQM) is being developed by the Building Research Establishment but is not yet available.

The Applicant proposes to undertake a review of the assessment methodologies at the detailed design stage, once the HQM is available.

Among the key sustainability measures which are currently considered, and the key performance levels targeted, the following should be noted:

Water Strategy

Water consumption in the development will be minimised by the specification of highly efficient water installations. This will limit water consumption in apartments to 105 litres per person per day. This is in line with the previous Code Level 4 requirement and equivalent to the forthcoming optional level to be set in Building Regulations Part G.

The site currently comprises predominantly hardstanding and therefore flows to local sewers with little attenuation. The redevelopment provides the opportunity to reduce surface water runoff through

Sustainable Drainage Systems. Rainwater harvesting will be incorporated for irrigation of external areas where possible.

Materials and Other Resources

Materials with low environmental impact will be implemented where feasible. Recycled, sustainably and locally sourced materials will be used where possible. Materials with recycled or reclaimed content will be prioritised where possible. A full review of the materials specified for the development will be undertaken during the detailed design development stages using the BRE's Green Guide to Specification.

Waste Management

A strategy to monitor, sort and recycle construction waste on site will be prepared by the contractor in order to limit construction waste sent to landfill. A dedicated area for waste recycling will be provided in each dwelling, and centrally in waste stores. Collection currently envisaged to be by private management.

Transport Strategy

The site benefits from excellent access to public transport, being located within very short walking distance (~5 minutes) of Reading Station which is a main transport hub for the region. A number of bus routes stop at the Reading Town Centre Old Bus Station which is located on the site and at Reading Station, including a direct bus service to Heathrow Airport. Public transport and cycling will be promoted to and from the development, and the site will include secure and sheltered bicycle parking spaces for residents as well as for the site's commercial uses.

Further Measures

A Building / Home User's Handbook will be produced on completion to give details of operation and energy performance. The main contractor will conform to the Code of Considerate Practice and achieve a best practice score of no less than 35. The project will seek to adhere to the principles of Secured by Design and Lifetime Homes.

2.0 Site location and design strategy

2.1 Site Context

The site is bounded by Station Hill to the North, Greyfriars Road to the West and Garrard Street to the South, with a section of the site extending south as far as Friar Street (see Figure 2). The proposals for Station Hill aspire to create a high quality development that draws upon, and contributes to, its prominent location in the local area. Following the grant of outline planning permission, the site has been enlarged to incorporate Telecom House.

The design has evolved through a dialogue with Reading Borough Council and other statutory stakeholders to define an appropriate response to this prominent site.

The scheme is mixed use, and is commercial-led with retail units on most of the ground floor, and a mix of offices (northern part of the site) and residential units (southern part of the site) on upper floors. The existing Friar's Walk multi-storey car park is being retained and refurbished as part of the scheme.

The design takes a holistic approach to sustainability, addressing matters from passive design to energy and water savings, community energy CHP, Low and Zero Carbon technologies, sourcing of materials, waste management, transport and more.

The purpose of this statement is to promote sustainable development and to integrate the principles of sustainability into the preparation and adoption of plans.

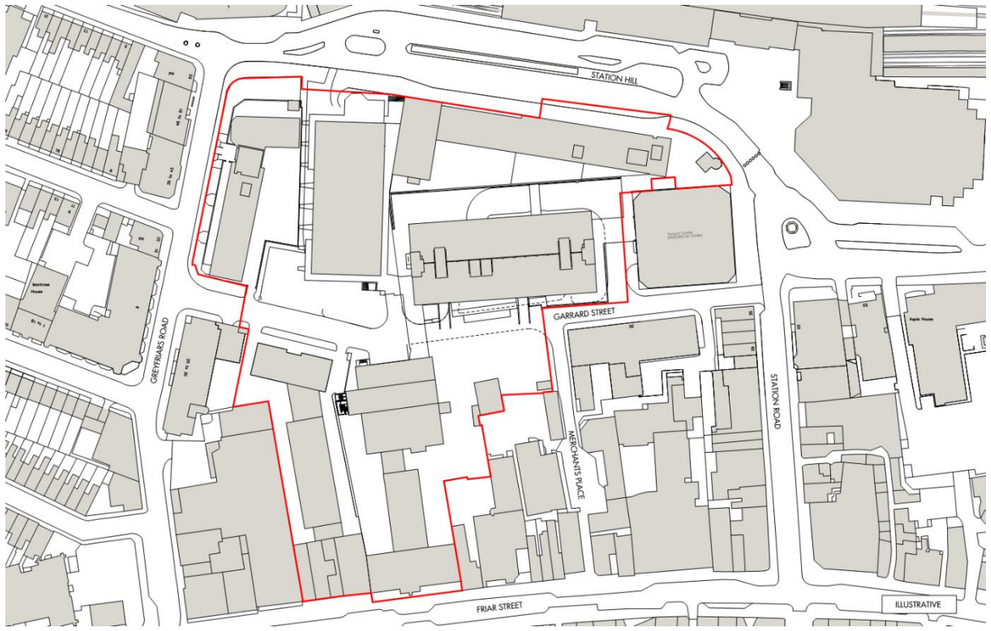


Figure 2: Illustrative parameter plan showing site location and boundaries

2.2 Approach

The approach to sustainability is split up into three sections:

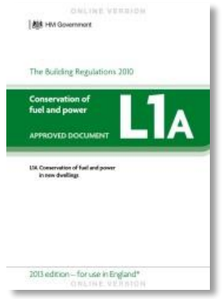
- Section 4.0 contains an overview of energy & sustainability policies, regulations and guidance considered for the proposed development.
- Section 5.0 contains an overview of the sustainability strategy proposed for the development
- Section 6.0 contains a response to relevant policies from the Reading Borough Council Core Strategy

Two documents are appended to this report for further reference:

- Appendix A: BREEAM 2011 New Construction Pre-assessment (Offices)
- Appendix B: BREEAM 2011 New Construction Pre-assessment (Retail)

3.0 Planning Context: Summary of National Regulations and Planning Policies

3.1 National Regulations - Building Regulations Part L



On a national level, the leading requirement applicable to the project's energy strategy is Part L of the Building Regulations: L1A for the new build residential buildings and L2A for new-build non-domestic buildings. Under Building Regulations Approved Document Part L: Conservation of Fuel and Power (2013), compliance is achieved for new buildings by demonstrating that the Dwelling Emission Rate (DER) does not exceed the Target Emission Rate (TER).

A further Part L requirement is for limiting the effects of solar gains in summer.

Part L1A 2013 has also introduced Fabric Energy Efficiency Standards (FEES) for residential buildings. This is a measure of the performance of the façade alone, separate to the assessment of the carbon performance of each dwelling.

The Government increased the targets for carbon emission reductions in April 2014. The target for residential units (sector-wide) was increased by 6% compared to Part L 2010 levels. The target for non-domestic areas (sector-wide) was increased by 9% compared to Part L 2010 levels (with separate targets set for various building types)..

The targets for the development have been updated to show performance against Part L 2013. The new proposed targets are estimated to be approximately equivalent to the previous outline strategy proposal.

Potential scale-back from future zero carbon target

Since 2007 there has been a target set by the UK Government for all new residential development to achieve Zero Carbon status for regulated energy uses from 2016, and all new commercial development to achieve this standard from 2019 onward.

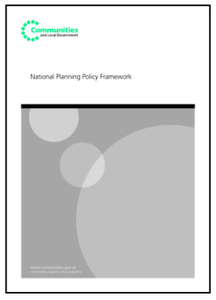
However, in July of 2015 the UK Government issued a statement as part of the HM Treasury's Productivity Report in which it is proposed that, for housebuilders:

> *The government does not intend to proceed with the zero carbon Allowable Solutions carbon offsetting scheme, or the proposed 2016 increase in on-site energy efficiency standards, but will keep energy efficiency standards under review, recognising that existing measures to increase energy efficiency of new buildings should be allowed time to become established.*

The announcement did not specifically mention proposals for zero carbon non-domestic buildings, but it has been widely interpreted by the industry as signalling that these have also been dropped.

This does not change the over-all target for the UK, set within the EU Directive on the Energy performance of buildings, which states that all new buildings must be nearly zero energy buildings by 31 December 2020 (and public buildings by 31 December 2018). This target is subject to a cost-optimum analysis to be carried out by the UK Government in 2017.

3.2 National Planning Guidance



National Planning Policy Framework (NPPF), 2012

The National Planning Policy Framework (NPPF) was published in March 2012 and has superseded all Planning Policy Statements (PPS) and Planning Policy Guidance (PPG) documents, with the exception of PPS10 (Waste). The NPPF sets out the Government's strategy on the delivery of sustainable development.

The NPPF places responsibility for policy making with the Local Planning Authority, who shall communicate their policies through Local Plans and facilitate the creation of Neighbourhood Plans. The NPPF states that there is a presumption in favour of sustainable development. The following is extracted from paragraph 14 of the NPPF:

"For decision-taking this means: approving development proposals that accord with the development plan without delay; and where the development plan is absent, silent or relevant policies are out of date, granting permission unless:

- *any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole; or*
- *specific policies in this Framework indicate development should be restricted."*

In respect of energy policy contained within the NPPF, paragraph 96 sets out that:

"In determining planning applications, local planning authorities should expect new development to:

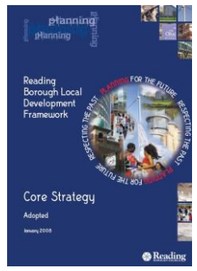
- *comply with adopted Local Plan policies on local requirements for decentralised energy supply unless it can be demonstrated by the applicant, having regard to the type of development involved and its design, that this is not feasible or viable; and*
- *take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption."*



Clean Air Act, 1993

The release of pollutants to air from biomass combustion is regulated under two main instruments: The Clean Air Act 1993 or Pollution Prevention Control (PPC) Act (1999) and their associated regulations. There are a number of CEN (European Committee for Standardization) standards for the solid fuel heaters and boilers which set out minimum requirements for construction and performance. The standard BS EN 303 Part 5 applies to biomass fuelled boilers up to 300kW. It also allows classification of appliances based on particulate emission standards as well as other measures of combustion quality. In smoke control areas, the Clean Air Act – The Smoke Control Areas Order, 2008 states that unauthorised fuels such as wood fuels may be used if the appliance (stove, burner etc.) is on the Exempt Appliances list, which means that the appliance has been tested and shown capable of burning an unauthorised solid fuel without emitting smoke.

3.3 Reading Planning Policy and Guidance



Reading Borough Council Core Strategy – Adopted in January 2008 (altered January 2015)

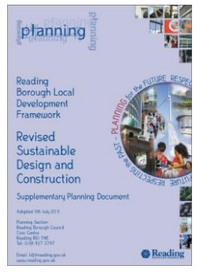
The Reading Borough Council Core Strategy (2008) sets out the key elements of the planning framework for the area of Reading.

The Local Plan includes the following planning policies which relate to sustainable design and development:

- Policy CS1 (Sustainable Construction and Design)
- Policy CS 2 (Waste Minimisation)
- Policy CS 20 (Implementation of The Reading Transport Strategy)
- Policy CS 22 (Transport Assessments)
- Policy CS 24 (Car/ Cycle Parking)
- Policy CS 29 (Provision of Open Space)
- Policy CS 34 (Pollution and Water Resources)
- Policy CS 35 (Flooding)
- Policy CS 36 (Biodiversity and Geology)

Note

Since the publication of the Core Strategy and the SPG of Sustainable Design and Construction (see below) CfSH has been revoked by the government thus negating the requirements for CfSH set out within Core Strategy Policy CS1.



Reading Borough Council Revised Supplementary Planning Document on Sustainable Design and Construction – July 2011

This SPD sets out material considerations on which planning applications are decided and provide more detailed guidance on how the Council's policies can be met during the planning process in relation to Sustainable Design and Construction.

Key targets and requirements for sustainability set out in the SPD are as follows:

- Code for Sustainable Homes - 50% of new residential units in a large development to achieve Code Level 4 with the remainder having to achieve Code Level 3. Although the CfSH has now been revoked by Government, and therefore targets can no longer be measured against this standard
- BREEAM - 50% of new commercial units in a large development to achieve BREEAM Excellent
- Energy Efficiency – to conserve energy and maximise the use of energy efficiency techniques
- Renewable Energy – to implement the generation of energy from renewable sources wherever viable
- Water – to improve efficiency in the use of water, conserve water resources and minimise vulnerability to flooding
- Waste and Recycling – to minimise the production of waste and maximise, re-use and recycling
- Pollution – to minimise damage to the environment through air, ground, surface water, land, noise or light pollution
- Materials – to retain local character and promote the use of materials with a low environmental impact
- Biodiversity – to retain, protect and enhance wildlife habitats and natural features

The requirement to offset 20% of carbon emissions contained in Core Strategy Policy CS1 is considered 'superseded' by recent changes to the Building Regulations.



Reading Station Area Framework (December 2010)

The Reading Station Area Framework is a Supplementary Planning Document setting out principles and guidelines for how development around the station should take shape.

It details that the aim should be for developments to meet the highest standards of sustainable design and construction. The design of buildings and site layouts should use energy, water, minerals, materials and other natural resources appropriately, efficiently and with care and take account of the effects of climate change.

Both the Reading Borough Council Core Strategy and the Sustainable Design and Construction Supplementary Planning Document are referenced as being the starting point for the development of any proposal.

3.4 Pre-Application Consultation

The sustainability strategy for this development has been discussed with Thames Valley Energy (TVE), on behalf of Reading Borough Council, at a sustainability and energy strategy meeting. The discussions were based on an initial energy strategy note which was issued prior to the meeting. Following the meeting minutes were issued to all parties. The strategy laid out in the initial note was well received by TVE, with only a few recommendations for further investigation in the energy strategy, which have been addressed.

The scheme aims to provide exemplary environmental performance. On January 12th 2015 outline planning permission was granted for the Station Hill Development. It is now proposed to incorporate the neighbouring Telecom House Site (48-51 Friar Street & 4-20 Garrard Street) to enable the development to incorporate an additional 12,000 m2 GEA of residential floorspace (and associated back of house areas) in order to deliver up to 175 more homes than the 2015 outline planning permission. This updated energy strategy takes into account the enlarged scheme and builds on the discussions undertaken with the Planning Authorities and their consultants (Thames Valley Energy - TVE) previously. The proposed strategy remains broadly the same, though with updates due to changes in Building Regulations and planning guidance.

3.5 Stanhope's Corporate Sustainability Agenda



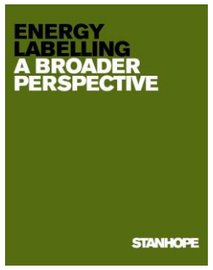
Stanhope Sustainability Policy, May 2011

Stanhope are determined to ensure their projects make sense in a lower carbon and resource constrained world, with the following priorities:

- Environment and natural resources:
  - Prevent pollution and comply with environmental legislation
  - Use resources efficiently and reduce waste, with targets for energy efficiency, carbon reduction, water reduction, recycling and sustainable materials.
- Regeneration and access:
  - Focus developments on realising the potential of urban brownfield sites that can introduce new uses and long lasting regeneration
  - Access to sustainable forms of transport as a key consideration
  - Community development: Create local opportunities to improve skills and employment, working with existing local initiatives
- Occupier satisfaction: post-occupancy research to ensure that the intended sustainability benefits are delivered, and learn for future projects
- Independent assessment: Apply credits from schemes such as BREEAM where meaningful

In addition, specific targets apply to operational energy and carbon:

- New office buildings: Energy Performance Certificate (EPC) of B or better
- 10% on site or near site low / zero carbon energy supply, OR the project enables / connects to local decentralised energy network equivalent to 10% of operational energy
- For major occupiers. provide an energy and occupancy audit of the fit out
- Enable all operators and occupiers to monitor and manage their energy use



Stanhope Energy Strategy

Stanhope's approach to energy consumption and carbon emissions is to focus on wider issues than the Energy Performance Certificate, in particular:

- Reduce the performance gap between design and operation by enabling the management of the building to monitor and control energy efficiency
- Take account of carbon associated with transport
- Take account of embodied carbon

4.0 Sustainability Statement

Sustainability targets

In order to assess the scheme design in terms of sustainability it has been decided to carry out BREEAM assessments for the applicable areas of the development.

BREEAM is a voluntary sustainability assessment scheme that aims to quantify and reward pro-active steps taken to reduce the environmental impact of commercial buildings. It promotes developments to go beyond minimum or compliance standards and recognises high levels of sustainable design. The scheme takes a holistic approach to sustainability, covering issues such as energy and carbon dioxide emissions, water consumption, waste, health and wellbeing, ecology and sustainable management

Commercial areas: The BRE's Environmental Assessment Method (BREEAM)

BREEAM is a benchmarking tool used in the design of non-residential developments and is a voluntary scheme. It aims to quantify and reduce the environmental impacts of non-residential buildings by rewarding those designs that take positive steps to minimise their environmental impacts. BREEAM awards credits in relation to various construction, design and procurement options which are summed to produce an overall rating. A BREEAM New Construction 2011 rating of 'Very Good' is targeted for the commercial areas of the Station Hill development, with a potential for uplift to BREEAM 'Excellent' for the offices, subject to tenant cooperation. Please refer to Appendices A and B for further details.

It should be noted here that BREEAM 'Excellent' can only be achieved under the current BREEAM methodology through extensive tenant cooperation on the performance of fit-out items. It has been investigated how an uplift to BREEAM 2011 'Excellent' could be achieved for the offices, and this strategy is also shown in the pre-assessment for the offices (Appendix A)

Residential areas

The Code for Sustainable Homes (CfSH) has been revoked by Government, and amendments to the Building Regulations will be made in the autumn of 2015 to incorporate some aspects of this, i.e. optimal standards on water and access. A new voluntary scheme called the 'Home Quality Mark' (HQM) is being developed by the Building Research Establishment but is not yet available.

The Applicant proposes to undertake a review of the assessment methodologies at the detailed design stage, once the HQM is available.

Energy targets

The development will demonstrate best practice performance for fabric and services, and there is a target for the development to meet or exceed Part L of the Building Regulations 2013 from passive design and energy efficiency alone, before the incorporation of Low and Zero Carbon technologies (LZCs) as follows:

- Offices: Targeting 5-15% improvement over Part L 2013 before incorporation of LZCs
- Residential units: Targeting to meet Part L 2013 before incorporation of LZCs
- Retail units: Targeting to meet Part L 2013 before incorporation of LZCs.

Each target against the part L 2013 baseline is assessed to be either approximately equivalent to, or more ambitious than the target set in the previous outline application against Part L 2010. Please refer to the Energy Strategy submitted as part of this updated Outline Planning submission for further details.

The proposed passive design and energy efficiency targets will be achieved through careful consideration of building design, high-performance façade, and high-efficiency services. Part L modelling will be carried out at the reserved matters application stage to inform the façade design and services selection. Initial principles have been set for guidance – please refer to the Energy Strategy for details.

In combination these measures are expected to result in site-wide regulated CO_2 emission savings of approximately 5-15% over Part L 2013 requirements before the implementation of LZCs.

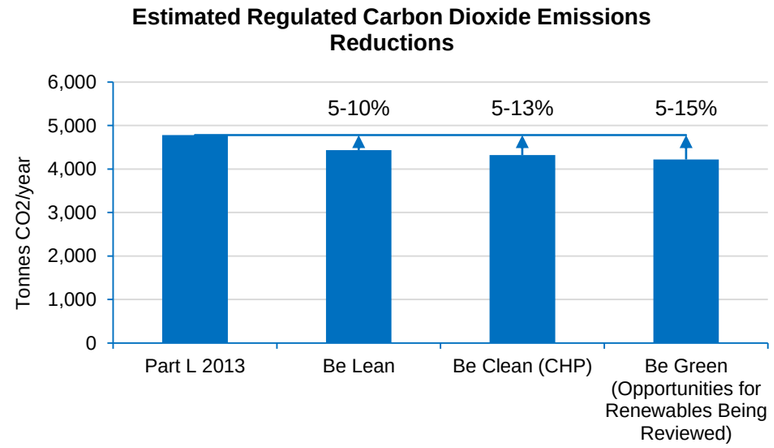


Figure 4.1: Site-wide carbon reduction strategy

Water Strategy

Water consumption in the development will be minimised by the specification of highly efficient water installations. This will limit water consumption in apartments to 105 litres per person per day. This is in line with the previous Code Level 4 requirement and equivalent to the forthcoming optional level to be set in Building Regulations Part G.

Materials and other Resources

Materials with low environmental impact will be implemented where feasible. Recycled, sustainably and locally sourced materials will be used where possible. A full review of the materials specified for the development will be undertaken during the detailed design development stages using the BRE's Green Guide to Specification.

Transport Strategy

The site benefits from excellent access to public transport, being located opposite Reading Station which is a main transport hub for the sub-region. A number of bus routes stop at the Reading Town Centre Old Bus Station which is located adjacent to the site and at Reading Station, including a direct bus service to Heathrow Airport. Public transport and cycling will be promoted to and from the development, and the site will include secure and sheltered bicycle parking spaces for residents as well as for the site's commercial uses.

Up to 1,000 parking spaces are to be provided within the new development. This represents a net reduction of at least 405 spaces if all 1000 spaces are provided. Please refer to the Design and Access Statement for further information.

Flood Risk

A Drainage Strategy has been carried out to determine the existing run-off rate and proposed drainage solutions. The peak run-off from the site to the watercourses will be no greater for the developed site than it was for the pre-development site. The site currently comprises predominantly hardstanding and therefore flows to local sewers with little attenuation. The redevelopment provides the opportunity to reduce surface water runoff from the site through Sustainable Drainage Systems. Attenuation tanks have been proposed, these will be further developed at detailed design stages, and other measures will be investigated include permeable paving, green/ brown roofs and areas of soft landscaping at ground level.

Biodiversity

An ecological assessment has been undertaken for the development. The site is predominantly of negligible or low ecological value, although it is of district to County value for Black Redstarts. Measures to increase the biodiversity value of the site would be incorporated as part of the proposed Development through provision of green/brown roofs and nest boxes for birds, including the Black Redstart. The development is targeting 6 credits under the 'Land use and Ecology' heading of BREEAM New Construction 2011. Green or brown roofs will cover a minimum of 25% of the total roof area of the development.

Further Measures

The main contractor will achieve a best practice score of 35 or higher under the Code of Considerate Practice (CCP) scheme. The contractor will furthermore monitor and set targets for energy usage, water usage and construction waste related to the site for the duration of the works.

The residential part of the proposed development will facilitate principles of Lifetime Homes and Secured by Design.

A building/home user guide will be produced on completion to give details of operation and energy performance to users of commercial and residential units.

Refuse and Recycling

A strategy to monitor, sort and recycle construction waste on site will be prepared by the contractor. Construction site waste will be minimised with a target of 30% reduction in construction waste (by volume) compared with industry rates, and waste will be diverted from landfill where feasible. A target of minimum 80% diversion of non-hazardous waste from landfill (by volume) has been set.

Central waste storage areas will include dedicated areas for recyclable waste in addition to what is provided for general waste. Further, a bin for recyclable waste will be incorporated in a dedicated space in each apartment.

Socio-Economic Characteristics

Currently the site is largely vacant with obsolete uses and is partially boarded up. Located between the train station and the main shopping area of the town centre, the site, in its current state is run down and gives a poor image of the town centre upon arriving at the station. The proposed development will improve connections between the station and the high street, creating commercial floorspace which will generate employment and introduce new homes. This mix of uses will create an active, dynamic environment which will substantially improve this area of the town centre. Further information is provided in the Design and Access Statement and in the Socio-Economics chapter of the Environmental Impact Assessment.









5.0 Response to Reading Borough Council Sustainable Design Checklist

As can be seen from Section 4.0, an extensive review of documents has influenced the Sustainability Strategy for the development. The requirements and guidance set out within the Reading Borough Council Core Strategy and the Supplementary Planning Document on Sustainable Design and Construction were used in summarising this strategy.

5.1 Reading Borough Council - BREEAM - Sustainable Design Checklist

This section responds to the Reading Borough Councils' BREEAM Sustainable Design Checklist and addresses the commercial units within the Station Hill development.

BREEAM - SUSTAINABLE DESIGN CHECKLIST	**STATION HILL PROPOSALS** **COMMERCIAL UNITS**
Management **Aim:** To recognise and encourage environmentally and socially considerate development.	
1 Will guidance for the non-technical building user be provided so they can understand and operate the building efficiently and understand how the design reduces the overall environmental impact of the building and raise environmental awareness?	The commercial units at Station Hill are to be delivered as shell-and-core. A simple building user guide will be provided for the landlord related items to include all relevant sections in accordance with the BREEAM 2011 Guidance, with each completed as far as possible given the services and fabric installed. For tenanted areas where fit-out items are not under project team control, completion of the user guides will be dependent on tenant cooperation. Tenants will be encouraged to carry this out through the use of a tenant fit-out guide. As the BREEAM methodology does not allow for this credit (Man 04) to be awarded using a tenant fit-out guide, it is currently not assumed that the credits will be available for this development. Please refer to the BREEAM pre-assessments (Appendices A and B) for a full overview of achievable credits.
2 What consideration has been given to resource use, energy consumption and pollution in terms of the construction site impacts?	As part of the tendering process the appointed contractor will be required to operate an Environmental Management System and will need to demonstrate the implementation of best practice pollution prevention policies and procedures on-site. The contractor will also be required to record and report on the energy and water consumption at the site as well as monitoring the transport impact as a result of material delivery and waste removal.
3 Will site investigation and appropriate remedial action be undertaken?	The Station Hill development is located on previously developed land comprising of vacant office and leisure buildings and the disused Friars Walk Shopping Centre, together with the NCP operated Friars Walk multi-storey car park, road infrastructure and hard standing. An intrusive site investigation has been undertaken in the accessible areas of the northern part of the site, north of Garrard Street and this did not identify widespread contamination of soils and groundwater within this area. However, the presence of additional contamination hotspots on other parts of the Site cannot be discounted Further site investigation will be undertaken post demolition and this will be used to determine the need for remediation.
4 Will the community and stakeholders be involved in the design process encouraging flexibly designed buildings which cater for shared use with the local community?	Consultation has commenced and will continue to be carried out with key local stakeholders and the feedback is considered in order to influence scheme design. The potential to share facilities at the development with members of the public, or local community group, will be considered as the design progresses. This is more likely to be achievable for retail units rather than for office spaces, as retail units will be at the lower floors of the development, and there may be issues regarding privacy and security for the offices which could potentially be overcome for the retail units.
5 How has the building been designed to reduce the opportunity for and the fear of crime?	The safety and security of the users and visitors to the development has been considered throughout the scheme design. The local Architect Liaison Officer with the Thames Valley police force will be consulted and their recommendations implemented where feasible.
6 What consideration has been given to the maintenance of the building?	It is proposed that a Life Cycle Cost (LCC) analysis would be carried out for the development, or as a minimum for a representative office building. This assessment would cover the service life estimations and maintenance implications for different design options, and be conducted in accordance with PD 156865:2008 using a study period of 60 years. The building materials specified will be suitably robust and hard wearing where possible in order to reduce maintenance requirements. The design of vulnerable areas will target to reduce potential damage throughout building operation; this includes the use of kick plates on service doors and external bollards where appropriate. The tenant fit-out guides for commercial units will include information on achieving good

	robustness levels for building materials and external areas. A full Operation and Maintenance (O&M) manual will be made available to the building management team on completion of the building which will set out the detailed requirements for the maintenance for the various elements of the development. It is proposed that an aftercare service would be provided which would help ensure that the management team fully understand the maintenance requirements and operation parameters.
Health and Well-being **Aim:** To ensure a good quality amenity level is afforded to occupants of buildings.	
7 How has the development been designed to ensure users have sufficient daylight, an external view, adequate and appropriate lighting, ventilation, air quality and drinking water?	The health and well-being of the building users has been considered although opportunities are currently limited at this early design stage. The façade design will be optimised in order to maximise natural day-light penetration and views out whilst also reducing summer solar gains, with consideration to the internal use of the space i.e. office or retail. Where installed, lighting will be fitted with daylight control and presence detection implemented where appropriate in order to make best use of natural daylight and reduce energy consumption. All areas of the development will be ventilated to the required standards. The potential for natural ventilation or mixed mode ventilation will be investigated, however where this is not appropriate, due to noise, pollution or other issues, energy efficient mechanical ventilation will be provided. The air intake and extract points for mechanical ventilation systems will be located to reduce risk of recirculation and at a sufficient distance from any sources of external pollution. The tenant fit-out guides for the development will include information on requirements for developing an indoor air quality plan in order to reduce the potential harmful emissions arising from decorative paints, varnishes, adhesives and finishes. The guides will also include information on demonstrating measurement of formaldehyde and VOC concentration in buildings post construction (but pre-occupancy).

Energy **Aim:** To conserve energy and maximise the use of energy efficiency techniques.	
8 How has the building been designed to minimise CO_2 emissions associated with their operational energy consumption?	The first step to reduce carbon dioxide emissions has been to incorporate passive design and energy efficiency measures. The measures being considered in order to reduce energy consumption include: • Building façade design which responds to the orientation and internal space use in order to make use of passive design • Building fabric U-values and air permeability rates will be equal to or improved over Part L 2013 minimum requirements • In offices: Energy efficient lighting design incorporating daylight control and presence detection where appropriate • A high efficiency heating, cooling and ventilation plant It is anticipated that the retail spaces would meet Part L 2013 requirements through passive design and energy efficient measures only) and additionally that the office spaces would achieve a 5-15% improvement over Part L 2013 before the inclusion of any low or zero carbon energy sources. In combination these measures are expected to result in **site-wide regulated CO_2 emission savings of approximately 5-15% over Part L 2013 requirements before the implementation of LZCs.** A CHP is considered to potentially serve residential areas. Two options are proposed: • Option 1: Each residential building to be served by its own plant room, with a CHP potentially serving Plot E • Option 2: An energy centre serving both residential plots (plots E&F), serving both of these plots. This is expected to result in **potential further site-wide regulated CO_2 emission savings of approximately 1.3-2.5%.** Please refer to the energy strategy submitted as part of this

		updated outline planning application for further details. Incorporation of renewable energy systems is currently not proposed on commercial roofs due to roof space availability (see response to point 11 below). For areas which will be constructed to shell and core, the future tenant will be encouraged to fit-out the space efficiently through a tenant fit-out guide.
9	How has the development been designed to optimise the use of the energy from the sun, natural daylighting and controlled natural ventilation?	The façade design will be optimised in order to maximise natural daylight penetration and views out whilst also reducing summer solar gains, with consideration to the internal use of the space e.g. office or retail. It is unlikely that natural ventilation would be suitable for the majority of the commercial areas of the development due to potential noise and air quality issues. This will be investigated further as the scheme design progresses.
10	How will the design of the building make efficient use of energy? (e.g. use of thermally massive materials, levels of insulation and use of green / brown roofs etc).	The buildings will incorporate passive design measures as a means to reduce energy consumption, and initial façade principles have been proposed. Exposed thermal mass within the office spaces as a means to reduce peak cooling loads will be considered as the design progresses. Please refer to the Energy Strategy submitted as part of this planning application for details. The building fabric U-values and air permeability rates achieved will be equal to or better than Part L 2013 minimum requirements. Green/brown roofs are proposed implemented on available roof areas (i.e. area which is not used for rooftop plant or amenity space). Green or brown roofs will cover a minimum of 25% of the total roof area of the development. Brown roofs are assessed by the ecologist to be good habitats for black redstarts, which have historically been found to be nesting on the NCP car park.
11	Have renewable energy sources or decentralised energy been considered for this development and if so, how would they be incorporated within the development?	A community heating scheme with gas-fired Combined Heat and Power (CHP) is being considered for the residential units in the Station Hill development. It has been investigated whether a site-wide district energy system could be implemented to serve commercial units as well as residential areas.

	The infrastructure proposals intend to allow for efficient operation and a commercially viable, flexible development programme; and they have been informed by the following: • The expected phasing of the scheme, whereby the commercial elements will be built in the first phases and the residential in the later phases. • The site's energy profile, which is commercial-led, dominated by electrical demand and with the domestic hot water load mostly required by the residential elements in the later phases. Based on these considerations, and given the minor impact such a strategy would have in terms of carbon savings, it is therefore proposed that commercial buildings be provided with building-by-building plant rooms hosting heating and cooling plant in order to be able to operate from day one. For the residential areas two options exist, subject to review at the detailed design stage: • Option 1: Each residential building to be served by its own plant room. This allows for flexibility for potential design changes within the detailed design stages. A CHP could potentially serve plot E in this scenario, though the building is estimated to be on the lower limit for size. Plot F would be estimated to be too small for CHP in this scenario. • Option 2: An energy centre serving both residential plots (plots E&F) could be implemented on completion of the Plot E elements, once a sufficient quantum of units and thermal load exists to allow the incorporation of Combined Heat and Power (usually 250-300 residential units are recommended to make CHP viable due to the base thermal load needed to operate the system efficiently). This energy centre could serve plot F as well. This strategy will be reviewed against the phasing strategy as well as technical and financial viability at the detailed design stage. Opportunities for further carbon reduction are being examined. The roofs in the development will have to accommodate roof top plant, brown roofs, and amenity space. When all this is considered only small areas are available for PV panels – a total of approx. 300m^2 divided between three locations on top of plots

	F and G. This would allow for a maximum of 150m^2 of PV panels to be incorporated on site when taking into account the necessary spacing requirements for access, eliminating overshading etc. The fact that the PV provision would be split between several areas would mean that an inverter would have to be installed for each separate plot, resulting in a decreased efficiency of the arrays. The PV provision would contribute only 0.2% carbon savings to the scheme. This very limited carbon saving is not thought to be a sufficient benefit to the scheme, and PV panels are therefore not recommended for this scheme at this stage. The development will however be future-proofed to allow the expansion of low carbon district energy: • The proposal for a potential energy centre with CHP and thermal stores could provide a certain level of future proofing in itself, with potential space and infrastructure to facilitate the implementation of other large scale low carbon technologies in the future, as they become available. • As part of the detailed design, locations for plate heat exchangers in the commercial blocks will be identified, as well as possible routes for connection to a central district energy scheme, should this be viable in the future. • As part of the detailed design, location for a plate heat exchanger in the potential residential energy centre would be identified (e.g. in place of a boiler), as well as possible routes for connection to a wider district energy scheme in the vicinity, should this exist in the future. For full details on the energy strategy proposals please refer to the Energy Strategy Report submitted as part of this planning application.
Transport **Aim:** To reduce the need to travel through appropriately located development	
12 How has the design and layout incorporated measures to reduce the need to travel, especially by car, and promote alternative and sustainable modes of transport such as walking, cycling and the use of public transport?	It is proposed that secure cycle storage will be provided for office and retail staff. It is proposed that approximately 1 cycle space per 20 staff expected on site, and a further 1 space per 40 public car parking spaces allocated to the retail units. A travel plan will be produced during the design of the development and will consider all types of travel relevant to the building type and users. The complete travel plan will be made available to the building users and with the aim to increase travel choices and reduce the reliance on single-occupancy car travel. Please refer to the Transport Assessment for further detail
13 How have public transport networks been considered in terms of the location of the development and proximity to local amenities?	The Station Hill development is sited immediately adjacent to Reading Station with the associated excellent links to public transport, national rail services and local amenities. Further, it is envisaged that the development will provide a number of local amenities and potentially leisure facilities (up to 2,000 m^2 GEA) to the area in the retail part of the development.
14 How have deliveries and the manoeuvring of delivery vehicles been considered?	In order to improve safety at the development the design will incorporate dedicated delivery access and drop off areas where feasible. It is aimed that the manoeuvring of delivery and collection vehicles would not cross any pedestrian or cyclist routes.
Water **Aim:** To improve efficiency in the use of water, conserve water resources and minimise vulnerability to flooding.	
15 How will the development incorporate the use of water saving devices to achieve a maximum consumption of 5.5 cubic metres per year per person for office developments? (Or the most appropriate benchmark for other types of development).	It is the aim that the commercial spaces would achieve a 25% reduction in potable water consumption compared to the baseline set using the BREEAM 2011 Wat 01 calculator tool. It is proposed this would be achieved through the specification of water efficient fixtures and fittings order to reduce potable water consumption. Water meters, linked to the building management system, will be installed, and mains water leak detection will be implemented.
16 Will the development and access to and from it such as roads and paths be located away from areas of potential flooding?	A site specific flood risk assessment has been carried out for the development and has concluded that it is located within an area designated as Zone 1, with a low annual probability of flooding.
17 How will the development incorporate harvesting and re-use of rainwater?	The use of rain water harvesting for irrigation and external uses will be considered as the design progresses. This would have the advantage of reducing potable water consumption and increasing rain water attenuation.

Materials **Aim:** To retain local character and promote the use of materials with a low environmental impact.		
18	How will the selected materials help retain local character, ensure long life and ensure a low environmental impact?	The materials used within the development will be sensitive to the local character of the area and resilient with long life and reduced maintenance requirements. A review of the materials specified for the development will be undertaken using the Green Guide to Specification with a view to specifying products with a low environmental impact. Additional preference will be given to materials which are locally and responsibly sourced. All timber used on site and in buildings will be sourced in accordance with the UK Government's Timber Procurement Policy. There is a target for 15% of materials specified to be sourced from reclaimed or recycled sources (by value).
19	What consideration has been given to reusing materials in-situ, responsibly sourcing materials and re-using existing structures?	The Station Hill development has set a target to achieve a 30% reduction in construction waste (by volume) compared with industry rates. Further, there is a target for at least 80% of all non-hazardous construction and demolition waste (by volume) to be diverted from landfill. The specification and procurement of materials will aim to minimise the environmental impact of the development. There is a target for 15% of materials specified to be sourced from reclaimed or recycled sources (by value). Most of the existing building structures are not suitable for the scale and aspiration of the new development. However, the re-use of materials arising from their demolition will be considered. Opportunities could include the use of recycled aggregated for use on-site. The existing Friars Walk multi-storey car park will be retained and refurbished as part of the scheme. Preference will be given to local and responsible sourced materials.

Waste **Aim:** To minimise the production of waste and maximise re-use and recycling.		
20	Has an audit of the materials present on the site been conducted with an assessment of the extent to which materials could be re-used?	A site waste management plan (SWMP) will be completed which will cover the demolition of the existing buildings and the construction of the proposed development. Opportunities will be sought to re-use materials within the construction of the new development where feasible.
21	How will the development make the maximum use of construction, demolition waste and recycled materials?	The Station Hill development has set a target for at least 70% of all non-hazardous construction waste and 80% of demolition waste (by volume) to be diverted from landfill. The SWMP will identify the likely waste which will arise throughout the demolition and construction process and these will be re-used on-site where feasible. It will be investigated whether recycled aggregate can be used for high grade uses. This would in that case be sourced from the demolition of the existing building where feasible. Where material cannot be used on-site, they will be sent for re-use off-site or reclaimed for recycling where possible.
22	How will provision be made for the storage and recycling of waste for all users of the site?	Minimisation of operational waste will be promoted at the Station Hill development. In order to facilitate recycling dedicated centralised waste stores will be provided for the commercial spaces which will have easy access for the building management and the waste collection authority. Information in relation to waste reduction and recycling at the Station Hill development will be made available within the building user guides provided to each tenant.
Land Use and Ecology **Aim:** To retain, protect and enhance wildlife habitats and natural features.		
23	How have the wildlife habitats and natural features on and adjacent to the site been considered and how will they be retained, protected and enhanced?	An ecologist has been employed to advise on measures to protect and enhance the ecological value of the site. An Ecological Management Plan will be produced covering at the first five years after development completion. The long-term management plan will be made available to the future building owner and tenants. The Site is not subject to any nature conservation designations. Extended Phase 1 Habitat surveys have been carried out in 2005, 2009, 2011 & 2014, which identified that the Site is

	typically urban in nature, with predominantly negligible ecological value with the exception of birds and Black redstarts which were considered of value within the Site and District to County value respectively. A bird survey undertaken during the summer of 2012 identified a pair of black redstart nesting in sub-optimal habitat the NCP car-park. During the same surveys, a pair of peregrine falcons was seen perching near the top of Western Tower. However, no nests were recorded. The redevelopment provides the opportunity to enhance the ecological value of the Site for these species. Brown roofs are proposed for this development as they are assessed by the ecologist to be good habitats for black redstarts. The contractor will be required to protect features of ecological value, and to minimise the long-term impact on biodiversity during construction in line with BREEAM 2011 requirements.
24 What consideration has been given to not using previously undeveloped land?	The proposed Station Hill development is entirely located on previously developed land.
25 What consideration has been given to the removal of contamination from the land?	The Station Hill development is located on previously developed land comprising of vacant office and leisure buildings and the disused Friars Walk Shopping Centre, together with the NCP operated Friars Walk multi-storey car park, road infrastructure and hard standing. An intrusive site investigation has been undertaken in the accessible areas of the northern part of the site, north of Garrard Street and this did not identify widespread contamination of soils and groundwater within this area. However, the presence of additional contamination hotspots on other parts of the Site cannot be discounted Further site investigation will be undertaken post demolition and this will be used to determine the need for remediation
Pollution **Aim:** To minimise damage to the environment through air, ground/surface water, land, noise or light pollution.	
26 What measures have been incorporated to ensure that noise and light pollution plus pollution transported through surface water runoff will be minimised throughout the development?	A noise and vibration assessment has been undertaken. This will enable any potential adverse impacts as a result of the development to be identified and mitigation measures to be put in place. For example this could include acoustic attenuation of mechanical plant. Also, due to the proximity of the scheme to the busy road network, the façade will be specifically designed to reduce the noise levels within the building where required. Mechanical ventilation with heat recovery will be implemented. Please refer to the Noise and Vibration chapter of the Environmental Impact Assessment for further details. The internal and external lighting strategy will be designed to minimise light pollution. In order to reduce the risk of pollution through on-site activities the contractor will be required to adopt and demonstrate best practice pollution prevention policies in respect to air (dust) and water (ground and surface) pollution. Measures will be implemented to minimise the risk of watercourse pollution at the development through implementing measures to capture any potential sources of pollution e.g. oil separators to be installed for heavy vehicle trafficked areas.
27 What measures have been incorporated to ensure that light pollution will be minimised throughout the development?	The internal and external lighting strategy will aim to limit the potential of light pollution. The use of up-lighting will be minimised and external lighting will have daylight and presence detection implemented where suitable.
28 What consideration has been given to reducing refrigerants and minimising nitrogen oxide emissions?	The use of refrigerants at the Development will be minimised where feasible. Preference will be given to refrigerants with reduced Direct Effect Life Cycle CO_2 equivalent emissions. It is proposed that the plant installed to heat the building would be gas-fired boilers and potentially gas-fired Combined Heat and Power for residential buildings. The units specified will be low NO_X emitting.
29 How has the development been sited to minimise the impact of flooding.	A Flood Risk Assessment has been carried out for the site. There are no surface water features on the Site. The closest watercourse to the Site is that of the River Thames (located approximately 420m north-east of the Site) and the River Kennet (located approximately 480m to the south-east of the Site). The EA's indicative floodplain map shows that the Site does not lie within an area at potential risk from river flooding, however, the fluvial floodplain borders the western boundary of the site.

30 How has the design considered the use of sustainable drainage systems (SUDS) and how will they be incorporated within the development?	The site currently comprises predominantly hardstanding and therefore flows to local sewers with little attenuation. The redevelopment provides the opportunity to reduce the rate of surface water runoff from the site through attenuation. It may be possible to specify some brown roofs with substantial depth to allow attenuation. This will be investigated further as design develops.
Innovation **Aim:** To recognise innovation in the field of sustainability.	
31 What consideration has been given to innovative sustainability measures in terms of a procurement strategy, design feature, management process or technological development?	Sustainability has been central to the Station Hill development from the outset and this is demonstrated though a target to achieve BREEAM 2011 Very Good rating for the commercial spaces, with an aspiration to achieve BREEAM 'Excellent', subject to tenant cooperation. The applicant has sustainability embedded at the core of its organisation and operations. As part of their sustainability strategy demanding targets are set in place covering areas such as site assessment, energy, water, materials, waste, worker skills and occupancy. Sackville Developments (Reading) Limited are committed to carrying out post-occupancy research on completed developments with the aim of ensuring that the intended sustainability benefits are delivered, and learning for future projects.

6.0 Conclusion

This report has described the Sustainability Strategy for the proposed Station Hill development in Reading. The scheme is being submitted as an outline application. The project has been developed with energy efficiency, environmental performance and the local context in mind. It should be noted that due to the outline nature of the scheme, a number of features cannot be confirmed at this stage and therefore this report has focused on overall principles, performance targets, and masterplan principles rather than detailed design considerations.

This sustainability statement responds specifically to:

- UK national sustainable development policy
- The Reading Borough Council Core Strategy and the Supplementary Planning Document on Sustainable Design and Construction

The proposals summarised within this report promote a design centred on a low energy and sustainable development with ambitious carbon performance and BREEAM targets.

Energy and CO_2 savings

The energy strategy has followed the principles of the energy hierarchy: Be Lean – Be Clean – Be Green.

The aim is to adopt a 'fabric and energy efficiency first' approach, followed by the implementation of a Low and Zero Carbon technology to achieve **minimum site-wide CO_2 emission reductions over Part L 2013 of 5-15%**. This target is currently proposed to be achieved entirely through passive design, energy efficiency and potentially with CHP, though opportunities for renewables can be reviewed further at detailed design stage.

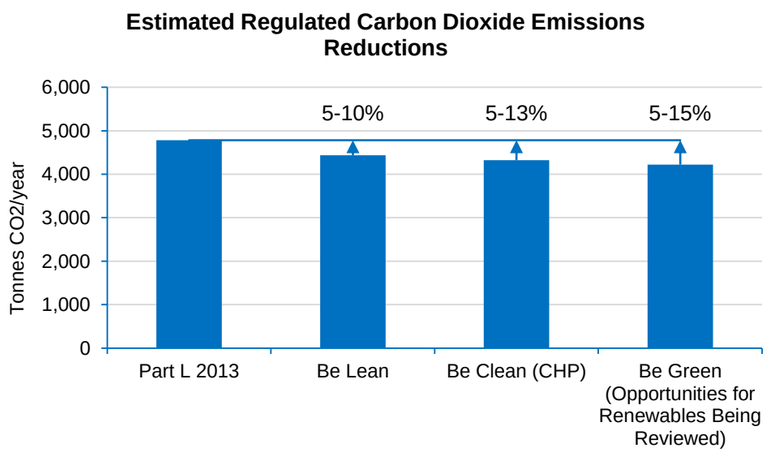


Figure 6.1: Overall carbon reduction strategy (regulated emissions)

A summary of the energy strategy is given in this sustainability statement. For full details regarding the energy proposal refer to the Energy Strategy Report submitted as part of this planning application.

Environmental assessment methods

In addition to the carbon reduction strategy, the applicant aims to achieve:

BREEAM New Construction 2011 'Very Good' for commercial areas, with a potential uplift to Excellent for the offices, subject to tenant cooperation (as the spaces will be provided as shell and core with heating and cooling provision only).

Summaries of these pre-assessments are given in this sustainability statement and the full Pre-assessments reports can be found in Appendices A and B.

The Code for Sustainable Homes (CfSH) has been revoked by Government, and amendments to the Building Regulations will be made in the autumn of 2015 to incorporate some aspects of this, i.e. optimal standards on water and access. A new voluntary scheme called the 'Home Quality Mark' (HQM) is being developed by the Building Research Establishment but is not yet available.

The Applicant proposes to undertake a review of the assessment methodologies at the detailed design stage, once the HQM is available.

Water Strategy

Water consumption in the development will be minimised by the specification of highly efficient water installations. This will limit water consumption in apartments to 105 litres per person per day. This is in line with the previous Code Level 4 requirement and equivalent to the forthcoming optional level to be set in Building Regulations Part G.

The Site currently comprises predominantly hardstanding and therefore flows to local sewers with little attenuation. The redevelopment provides the opportunity to reduce the rate of surface water runoff through attenuation. Rainwater harvesting will be incorporated for irrigation of external areas.

Materials and Other Resources

Materials with low environmental impact will be implemented where feasible. Recycled, sustainably and locally sourced materials will be used where possible. A full review of the materials specified for the development will be undertaken during the detailed design development stages using the BRE's Green Guide to Specification.

Waste Management

A strategy to monitor, sort and recycle construction waste on site will be prepared by the contractor in order to limit construction waste sent to landfill. A dedicated area for waste recycling will be provided in each dwelling, and centrally in waste stores. Collection currently envisaged to be by private management.

Transport Strategy

The site benefits from excellent access to public transport, being located within very short walking distance (~5 minutes) of Reading Station which is a main transport hub for the region. A number of bus routes stop at the Reading Town Centre Old Bus Station which is located on the site and at Reading Station, including a direct bus service to Heathrow Airport. Public transport and cycling will

be promoted to and from the development, and the site will include secure and sheltered bicycle parking spaces for residents as well as for the site's commercial uses.

Further Measures

A Building / Home User's Handbook will be produced on completion to give details of operation and energy performance. The main contractor will conform to the Code of Considerate Practice and achieve a best practice score of no less than 35. The project will adhere to the principles of Secured by Design and Lifetime Homes.

7.0 BREEAM New Construction 2011 Pre-assessment - Offices



Sackville Developments (Reading) Limited
Station Hill

BREEAM New Construction 2011 Pre-Assessment - Offices
Rev. B

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REVISION	DESCRIPTION	DATE	ISSUED BY	REVIEWED BY
A	Draft pre-assessment report for team comments	03.07.2015	L. Wille	J. Godefroy
B	Planning application update issue – no comments from team	23.07.2015	L. Wille	-

This report is provided for the stated purposes and for the sole use of the named Client. It will be confidential to the Client and the client's professional advisers. Hoare Lea accepts responsibility to the Client alone that the report has been prepared for with the skill, care and diligence of a competent engineer, but accepts no responsibility whatsoever to any parties other than the Client. Any such parties rely upon the report at their own risk. Neither the whole nor any part of the report nor reference to it may be included in any published document, circular or statement nor published in any way without Hoare Lea's written approval of the form and content in which it may appear.

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Sackville Developments (Reading) Limited
Station Hill

BREEAM New Construction 2011 Pre-Assessment - Offices
Rev. B

1.0 EXECUTIVE SUMMARY

BREEAM 2011 New Construction is a voluntary scheme that aims to quantify and reduce the environmental impact of buildings by rewarding those designs that take positive steps to minimise their environmental impacts.

The office areas of Station Hill have been registered under **BREEAM New Construction 2011.**

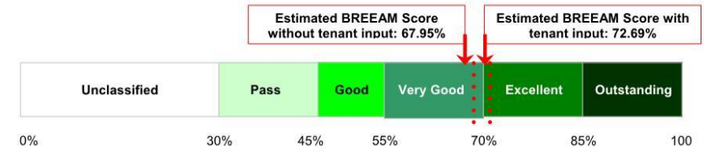
This report sets out a potential route to achieving a 'Very Good' rating with options for achieving 'Excellent' based on discussions with the team during the Reserved Matters Application.

It should be noted that **a number of credits require cooperation with the tenants**. At this stage it is expected that the target rating of BREEAM Very Good should be achievable with a fit-out guide providing non-contractual options to tenants, without the need for lease agreements on specific fit-out items. This should be reviewed as the design and procurement progresses.

For Excellent to be achieved, cooperation from tenants would be needed for a significant number of credits, either covered by a fit-out guide setting out non-contractual principles or, in a number of cases, a lease agreement.

These credits are highlighted in section 4.0 of this report.

It is recommended that at least 3% of additional credits are targeted over the minimum required score in order that the required rating can be achieved even if credits are lost during the design or construction phases.



Achieving BREEAM ratings under the 2011 version of the scheme is much more challenging than under BREEAM 2008. Some specific differences have been highlighted below:

- **Management:** There are now many credits associated with appointments and studies throughout the procurement process, from early feasibility to post-construction, e.g.
  - A fit-out guide for tenants will be critical to achieving Very Good – see further information in section 4.0 of this report. Some credit requirements will need to be included in a lease agreement in order to achieve BREEAM Excellent.
  - The stakeholder consultation needs to be formalised and documented in accordance with the BREEAM Guidance.
  - The appointment of a BREEAM AP (Accredited Professional) at Stage B/C (i.e. a BREEAM expert on top of the role of the BREEAM Assessor)
  - A thermographic survey to be undertaken once construction is complete, and any defects identified in post construction inspections rectified
  - A detailed life-cycle cost analysis used during the design stage to inform design development.
  - An indoor quality plan to be produced.
- **Energy Performance:** The mandatory requirement for BREEAM Excellent is to achieve a minimum 25% improvement over Part L2A 2010 and 6 credits using the BREEAM Ene 01 calculator, which rewards efforts in terms of passive design and energy efficiency.

The following credits require early action (i.e Stage B):

Man 01	Client, building occupier, design team and contractor (or project manager 'with sufficient experience') must be involved in contributing to the decision making process for the project and this should be documented (e.g. meeting minutes). A BREEAM Accredited Professional (BREEAM AP) must be appointed at Stage B.
Man 04	All relevant parties and relevant bodies must be identified and consulted with by the design team. The findings of the consultation must influence the design and therefore must be held before key and final design decisions are made. A consultation plan must be prepared.
Hea 05	A suitably qualified acoustician must be employed at stage B/C to undertake early design advice on external sources of noise impacting the chosen site, site layout and zoning of the building , acoustic requirements for users with special hearing needs and treatment of different zones and facades
Hea 06	Consultation with a Suitably Qualified Security Consultant must be undertaken at RIBA stage B or C.
Le 04	An ecologist must be appointed at Stage B to carry out surveys and provide early advice

2.0 BACKGROUND TO BREEAM 2011 NEW CONSTRUCTION

BREEAM 2011 New Construction is being used as a benchmarking tool in the design of new non residential buildings. The aim of the scheme is to estimate the sustainability of buildings and to promote a programme of design improvement.

BREEAM 2011 New Construction is published by the Building Research Establishment (BRE) and information is available at:
http://www.breeam.org/podpage.jsp?id=414

BREEAM 2011 New Construction is based upon several categories. Credits are awarded based upon construction, design and procurement criteria such as:

- MANAGEMENT — Sustainable Procurement, Responsible Construction Processes, Construction Site Impacts, Stakeholder Participation, Life Cycle Cost and Service Life Planning;
- HEALTH AND WELLBEING — Visual Comfort, Indoor Air Quality, Thermal Comfort, Water Quality, Acoustic Performance, Safety and Security;
- ENERGY — Reduction of CO_2 emissions, Energy Monitoring, External Lighting, Low and Zero carbon technologies, Energy Efficient Cold Storage, Energy efficient Transportation Systems, Energy Efficient Equipment, Drying Space;
- TRANSPORT — Public Transport Accessibility, Proximity to Amenities, Cyclist Facilities, Max. Car Parking Capacity, Travel Plan;
- WATER — Water Consumption, Water Monitoring, Water Leak Detection and Prevention, Water Efficient Equipment;
- MATERIALS — Life Cycle Impacts, Responsible Sourcing of Materials, Insulation, Designing for Robustness;
- WASTE — Construction Waste Management, Recycled Aggregates, Operational Waste, Speculative Floor / Ceiling Finishes;
- LAND USE & ECOLOGY — Site Selection, Ecological Value of the Site and Protection of Ecological Features, Mitigating Ecological Impacts, Enhancing Site Ecology, Long Term Impact of Biodiversity;
- POLLUTION — Impact of Refrigerants, NO_x emissions, Surface Water Run Off, Reduction of Light Pollution, Noise Attenuation

Mandatory standards apply to the following credits: sustainable procurement, responsible construction processes, stakeholder participation, visual comfort, water quality, reduction in CO_2 emissions, energy monitoring, low or zero carbon technologies, water consumption, water monitoring, responsible sourcing, construction waste management, operational waste and mitigating ecological impact.

Failure to meet the mandatory criteria may restrict a development to an UNCLASSIFIED rating, regardless of the overall number of credits achieved.

The mandatory requirements are outlined in Table 1.

Table 1: Minimum score and mandatory requirements for BREEAM 2011 New Construction 2011

BREEAM Rating		Pass	Good	Very Good	Excellent	Outstanding
Minimum Score Required		30%	45%	55%	70%	85%+
Section	Credit required					
MANAGEMENT	Man 1: Sustainable Procurement	One credit	One credit	One credit	One credit	Two credits
	Man 2: Responsible Construction Practices	-	-	-	One credit	Two credits
	Man 4: Stakeholder Participation	-	-	-	One credit (Building User Information)	One credit (Building User Information)
HEALTH & WELL-BEING	Hea 1: Visual Comfort	Criterion 1 Only	Criterion 1 Only	Criterion 1 Only	Criterion 1 Only	Criterion 1 Only
	Hea 4: Water Quality	Criterion 1 Only	Criterion 1 Only	Criterion 1 Only	Criterion 1 Only	Criterion 1 Only
ENERGY	Ene 1: Reduction in CO_2 Emissions	-	-	-	Six credits	Ten credits
	Ene 2: Energy Monitoring	-	-	One credit (first sub metering credit)	One credit (first sub metering credit)	One credit (first sub metering credit)
	Ene 4: Low or zero carbon technologies	-	-	-	One credit	One credit
WATER	Wat 1: Water Consumption	-	One credit	One credit	One credit	Two credits
	Wat 2: Water Metering	-	Criterion 1 Only	Criterion 1 Only	Criterion 1 Only	Criterion 1 Only
MATERIALS	Mat 3: Responsible Sourcing	Criterion 3 Only	Criterion 3 Only	Criterion 3 Only	Criterion 3 Only	Criterion 3 Only
WASTE	Was 1: Construction Waste Management	-	-	-	-	One credit
	Was 3: Operational Waste	-	-	-	One credit	One credit
LAND USE & ECOLOGY	LE 03: Mitigating Ecological Impact	-	-	One credit	One credit	One credit

3.0 DEVELOPMENT PROFILE ASSUMPTIONS

In BREEAM 2011 New Construction, the amount of credits to be assessed depends on the development's profile, i.e. whether specific types of spaces are included or not, specific services fitted out etc. This credit filtering process is an important part of the pre-assessment as it helps determine which credits (and therefore which design assumptions) need to be assessed.

This pre-assessment is based on the following assumptions regarding the profile of Station Hill offices.

Please note that, **should any of these characteristics change as the design progresses, then the credits applicable are likely to change as well.** In this case the assessor should be notified and the BREEAM 2011 New Construction rating should be reviewed to take into account the design changes.

It is the understanding that Stanhope will be responsible for central heating and cooling as well as water services, fittings, lighting and ventilation. If this changes the approach to affected credits should be revised.

Table 2: Development Profile Assumptions

Development profile	Assumptions for Station Hill, Reading
Project type	New Construction (Shell Only*)
Building Type- Main	Office
Building Type- Sub group	Office-General Building
Building Services- Heating System Type	Wet System
Building Services- Cooling System Type	Comfort Cooling
Building services – domestic hot water system type	Centralised supply and distribution
Building service - controls	Standard controls (time / temperature)
Commercial Refrigeration and Storage Systems	No
Internal or External Landscaping or Planting	Yes
Building User Transportation Systems (Lifts)	Yes
Laboratory	No
Fume Cupboards	No
Vehicle Wash System	No

*) The BREEAM methodology does not include an option for 'Cat A' so the 'shell and core' option has to be chosen in the credit calculator

4.0 CREDITS REQUIRING TENANT INVOLVEMENT

It is assumed that Station Hill offices will be assessed as shell and core developments fitted out by the shell-and-core developer to Category A. The tenants shall be responsible for the final fit-out of their office space.

The BREEAM shell and core assessment contains a number credits which are dependent on the tenant fit-out. These must be addressed in one of three ways for the shell and core assessment;

Option 1 – Lease Agreement: Full credits awarded
Option 2 – Tenant Fit-out Guide (non-contractual guide): Half credits awarded
Option 3 – Developer/Tenant Collaboration, e.g. joint specs: Full credits awarded

At present, it has been assumed that the requirements of the credits will be passed onto the tenants through a Tenant Fit-out Guide as preference; with credits covered by Lease Agreement only where needed for scoring purposes and to ensure mandatory requirements are met.

The summary table below illustrates the number of credits where tenant input is expected to be required to achieve a BREEAM Excellent rating.

Table 3: Credits requiring tenant involvement

Credit Ref	Credit Title	No of Credits Available	Tenant involvement currently assumed	Credits Currently Targeted for Very Good	Tenant Commitment for BREEAM Very Good (Lease / Fit-Out Guide)	Credits Currently Targeted for Excellent	Tenant Commitment for BREEAM Excellent (Lease / Fit-Out Guide)
Man 1	Sustainable Procurement	8	✓	5.5	Tenant Fit-out Guide	8	Lease Agreement
Man 4	Stakeholder Participation	4	✓	1	None	2	Lease Agreement
Hea 1	Visual Comfort	3	✓	1.5	Glare control: Tenant Fit-out Guide Lighting: Assumed installed as part of base build	2	Glare control: Lease Agreement Lighting: Assumed installed as part of base build
Hea 2	Indoor Air Quality	4	✓	1	Tenant Fit-out Guide	1.5	Lease Agreement (VOC specification) Tenant Fit-out Guide (VOC measurement)

Hea 3	Thermal Comfort	2		1	Assumed undertaken as part of base build	2	Assumed undertaken as part of base build
Hea 4	Water Quality	1		1	Assumed installed as part of base build	1	Assumed installed as part of base build
Ene 1	Reduction in CO_2 Emissions	15		6	Assumed installed as part of base build	6	Assumed installed as part of base build
Ene 2	Energy Monitoring	2		2	Assumed installed as part of base build	2	Assumed installed as part of base build
Ene 3	External Lighting	1		1	Assumed installed as part of base build	1	Assumed installed as part of base build
Ene 4	Low Zero Carbon Technology	1		1	Assumed installed as part of base build	1	Assumed installed as part of base build
Ene 6	Energy Efficient Transportation Systems	2		2	Assumed installed as part of base build	2	Assumed installed as part of base build
Ene 8	Energy Efficient Equipment (Process)	2	✓	1	Tenant Fit-out Guide	1	Tenant Fit-out Guide
Tra 3	Cyclist Facilities	2		2	Cycle storage spaces AND cyclist facilities (showers, changing space, lockers) assumed part of base build	2	Cycle storage spaces AND cyclist facilities (showers, changing space, lockers) assumed part of base build
Wat 1	Water Consumption	5		2	Assumed installed as part of base build	2	Assumed installed as part of base build
Wat 2	Water Monitoring	1		1	Assumed installed as part of base build	1	Assumed installed as part of base build
Wat 3	Water Leak Detection and Prevention	2		2	Assumed installed as part of base build	2	Assumed installed as part of base build
Mat 4	Insulation	2		2	Assumed most insulation is part of base build	2	Assumed most insulation is part of base build
Mat 5	Designing for Robustness	1	✓	0.5	Tenant Fit-out Guide	1	Lease Agreement
Pol 1	Impact of Refrigerants	3		1	Assumed installed as part of base build	1	Assumed installed as part of base build
Pol 2	NOx Emissions	3		3	Assumed all space heating installed as part of base build	3	Assumed all space heating installed as part of base build
Pol 4	Reduction in Night Time Light Pollution	1		1	Assumed installed as part of base build	1	Assumed installed as part of base build
Pol 5	Noise Attenuation	1		1	Assumed undertaken as part of base build	1	Assumed undertaken as part of base build

5.0 ASSUMED CREDITS RATING BREAKDOWN

The credits assumed in the pre-assessment score and associated weightings are shown in the score breakdown below. The schedule includes the baseline shell and core score of BREEAM Very Good as well as the potential for uplift to BREEAM excellent

Table 4: Credit Allocation – Current Pre-Assessment Score

Overall Credit Allocation	Mandatory elements achieved	Value of 1 credit	No. Credits Available	No. Credits Assumed VERY GOOD	Overall Weighted POINTS score VERY GOOD	No. Credits Assumed EXCELLENT	Overall Weighted POINTS score EXCELLENT
Management	✓	0.55%	22	15.5	8.45%	19	10.36%
Health and Wellbeing	✓	1.07%	14	9.5	9.64%	11	11.79%
Energy	✓	0.70%	27	13	10.18%	13	9.15%
Transport		0.89%	9	9	8.00%	9	8.00%
Water	✓	0.67%	9	6	4.00%	6	4.00%
Materials	✓	1.04%	12	7.5	7.81%	8	8.33%
Waste	✓	1.07%	7	6	6.43%	6	6.43%
Land Use and Ecology	✓	1.00%	10	8	8.00%	8	8.00%
Pollution		0.77%	13	9	6.92%	9	6.92%
Innovation		1.00%	10	0	0.00%	0	0.00%
Internal Hoare Lea ref: ..\..\..\004 CALCULATIONS & DESIGN ANALYSIS\BREEAM\CALC-2307472-04-LFW-20121213-BREEAM_Scoring_Tool_v2.80-Office-Rev C-Very Good - for rev E of pre-assm.xls				**Total BREEAM score**	**67.95%**		**72.69%**
				Rating targeted	**VERY GOOD**		**EXCELLENT**

6.0 CREDIT ASSESSMENTS

For each of the credits which have been assumed as achievable, responsibility has been given to the relevant design team members. The design team members, their role and their initials are highlighted below.

Table 5: Design Team members

Role	Design Team Member	Initials
Client	Stanhope	Stanhope
Quantity Surveyors	Faithful + Gould Davis Langdon	F+G DL
Architect	Allies and Morrison	A&M
Planning consultant	Quod	Quod
Landscape consultant	Townshend	Townshend
Structural Engineer	Waterman	Waterman
Transport Consultant	Peter Brett Associates	PBA
Drainage Engineer	Waterman + Hoare Lea	Waterman
Flood Risk Consultant	Waterman	Waterman
Ecologist	Waterman	Waterman
MEP Engineers and Acoustic Consultant	Hoare Lea	HL
Tenants	Unknown at this stage	Tenants

A 'traffic light' colour coding system for the status of each credit has been included in this report as follows:
Credits noted in the report as (+x) correspond to the uplift from Very Good to Excellent

- Green denotes credits targeted
- Amber denotes opportunities / easy wins
- Red denotes credits not targeted
- Hashed background denotes credit requiring tenant input.

CATEGORY 1.0 MANAGEMENT

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
Man 01 ⚠ *Mandatory: 1 credit for any rating 2 credits for Outstanding*	**Sustainable Procurement**	**1st Credit:** ✓ Where evidence provided demonstrates that from RIBA stage B (Design Brief) or equivalent the client, building occupier, design team and contractor are involved in contributing to the decision making process for the project. As a minimum this includes meeting to identify and define their roles, responsibilities and contributions during the following phases: • Design • Construction • Commissioning and handover • Occupation i.e. up to and including Stage L (Post practical completion). Evidence also needs to be provided which demonstrates that there is a schedule of training identified for relevant building occupiers/premises manager (based appropriately around handover and proposed occupation plans).	1	1	**Stanhope**
		2nd Credit: ✓ Where evidence provided demonstrates that a BREEAM Accredited Professional (AP) is appointed no later than the beginning of stage C to facilitate the setting of BREEAM related performance targets for the project, that defined BREEAM performance targets have been contractually agreed between the client and design/project team no later than RIBA Stage and these defined targets are achieved in the design stage assessment report.	1	1	**Stanhope** *(To appoint BREEAM AP)*
		3rd Credit: ✓ Where evidence provided demonstrates that the 2nd credit is achieved and the appointed AP is engaged to monitor and report progress against the BREEAM targets by attending key project/design team meetings during the feasibility and design stages (RIBA Stage B up to and including RIBA Stage E, or equivalent). The AP must prepare regular written reports for the client and project team detailing progress against the defined BREEAM performance targets (as a minimum for each full design team meeting).	1	1	**Stanhope** *(To appoint BREEAM AP)*
		4th Credit: ✓ Where evidence provided demonstrates that the previous two credits have been achieved and evidence demonstrates that the performance targets set with the AP are achieved in the Post Construction Assessment Report.	1	1	**Stanhope** *(To appoint BREEAM AP)*

CATEGORY 1.0 MANAGEMENT

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
		5th Credit: ✓ Where evidence provided demonstrates that the main contractor accounts for a thermographic survey within the project budget and programme of works, and that any defects which are detected are rectified.	1	1	**Contractor** *(F+G for ERs)*
		6th Credit: ✓ Where evidence provided demonstrates that a project team member(s) has been appointed to monitor and programme pre-commissioning, commissioning and, where necessary, re-commissioning on behalf of the client. All building services must be included within the commissioning schedule and commissioning is to be carried out in line with current Building Regulations, BSRIA and CIBSE guidelines. The main contractor must account for the commissioning programme, responsibilities and criteria within the main programme of works. In addition, a specialist commissioning manager is appointed during the design stage (by either client or contractor) for complex systems.	1	0.5 (+ 0.5)	**Stanhope + HL + Tenants** *(Guide or Lease)*
		7th Credit: ✓ Where evidence provided demonstrates that seasonal commissioning will be carried out over the first 12 months of occupation. For complex systems, a specialist commissioning manager must be employed. **Compliance via tenant fit-out guide is not an option for this credit. Credit can only be awarded if a lease agreement includes this requirement.**	1	0 (+1)	**(Contractor** *(F+G for ERs)* **+ Tenants** *(Lease)***)**
		8th Credit: ✓ Where evidence provided demonstrates that the seasonal commissioning credit has been achieved and there are mechanisms to collect the energy and water consumption data for at least 12 months after occupation, compare this with what was expected and analyse any discrepancies with a view of adjusting systems if they are not operating as expected/designed. There must also be a contract or commitment to provide aftercare support to all the building occupiers. **Compliance via tenant fit-out guide is not an option for this credit. Credit can only be awarded if a lease agreement includes this requirement.**	1	0 (+1)	**(Stanhope + Tenants** *(Lease)***)**

CATEGORY 1.0 MANAGEMENT					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
		Exemplary level (innovation) credit: ✗ Where evidence provided demonstrates that there is commitment or contract for the facilities manager or equivalent to undertake the following at quarterly intervals for the first 3 years after occupation: • Collect the occupant satisfaction, energy consumption and water consumption data • Utilise the data to check the building is performing as expected and make any necessary adjustments • Set targets for reducing water and energy consumption and monitor progress towards these • Feedback any 'lessons learned' to the design team and developer for use in future projects • Provision of the actual annual building energy, water consumption and occupant satisfaction data to BRE Global. **Compliance via tenant fit-out guide is not an option for this credit. Credit can only be awarded if a lease agreement includes this requirement.**	1	0	-
Man 02 *Mandatory: 1 credit for Excellent, 2 credits for Outstanding*	**Responsible Construction Practices**	Up to two credits can be awarded where evidence provided demonstrates that the principal contractor has used a 'compliant' organisational, local or national considerate construction scheme. **1st Credit:** ✓ Where evidence provided demonstrates the contractor achieves 'compliance' with the criteria of a compliant scheme e.g. registering the scheme under the Considerate Constructors Scheme and achieves a score of at least 25 points, with a minimum score of 5 points under each section.	1	1	**Contractor** *(F+G for ERs)*
		2nd Credit: ✓ Where evidence provided demonstrates the contractor significantly exceeds 'compliance' with the criteria of the scheme e.g. registering the scheme under the Considerate Constructors Scheme and achieves a score of at least 35 points, with a minimum score of 7 points under each section.	1	1	
		Exemplary Credit – 1 credit ✗ Where evidence provided demonstrates that the principal contractor's performance against the compliant scheme has been confirmed by independent assessment and verification and the contractor achieves compliance with the criteria of the compliant scheme to an exemplary level of practice e.g. registering the scheme under the Considerate Constructors Scheme and achieves a score of at least 40 points, with a minimum score of 7 points under each section.	1	0	

CATEGORY 1.0 MANAGEMENT					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Man 03	**Construction site impacts**	**1st Credit:** ✓ Where evidence provided demonstrates that energy consumption has been monitored and recorded from the use of construction plant (mobile and fixed) and site accommodation. The collected data must be then used to report the energy consumption (total kWh and kWh/£100k of project value) and carbon dioxide emissions (total $kgCO_2$ eq and $kgCO_2$ eq/£100k of project value) from the construction process.	1	1	**Contractor** *(F+G for ERs)*
		2nd Credit: ✓ Where evidence provided demonstrates that water consumption is monitored and recorded from the use of construction plant equipment (mobile and fixed) and site accommodation. The collected data must be then used to report the net water consumption for the site minus any recycled water use, from the construction process.	1	1	
		3rd Credit ✓ Where evidence provided demonstrates that the transport of the delivery of construction waste to the site and construction waste from the site is monitored and recorded. The collected data must then be used to report separately for materials and waste, the total fuel consumption (litres) and total carbon dioxide emissions ($kgCO_2eq$), plus total distance travelled (km).	1	1	
		4th Credit: ✓ Where evidence provided demonstrates that all site timber is sourced in accordance with the UK Government Timber Procurement Policy.	1	1	

CATEGORY 1.0 MANAGEMENT					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
		5th Credit: ✓ Where evidence provided demonstrates that the principal contractor for the project operates an Environmental Management System covering their main operations. The EMS must be either: • Third party certified, to ISO14001/EMAS or equivalent standard. OR • The structure of the EMS is in compliance with BS8555 2003. The Contractor must also implement best practice pollution prevention policies and procedures on site, demonstrated through compliance with the items in the Environmental Checklist section 2.2.5 Preventing Pollution in the England and Wales Environment Agency's 'Building a Better Environment.	1	1	
Man 04 ⚠ *Mandatory: 1 credit (building user guide) for Excellent and above*	**Stakeholder Participation**	**1st credit:** ✓ Where evidence provided demonstrates that all relevant parties and relevant bodies are identified and consulted with by the design team. The findings of the consultation must be used to influence the design and therefore must have been held before key and final design decisions were made. A consultation plan must be prepared must include a timescale and methods of consultation for all relevant parties/bodies and how the relevant parties will be kept informed about progress on the project. During the design stage, consultation feedback must be provided to all relevant parties regarding suggestions made, including how the results of the consultation process have influenced, or resulted in modifications to, the proposed design and building operation/use.	1	1	**Quod**
		2nd Credit: ✗ Where evidence provided demonstrates that the building is designed to be fit for purpose, appropriate and accessible by all potential users. An access statement is developed in line with the CABE publication Design & Access Statements, how to write, read and use them, based on the principles of inclusive design. Provision of facilities is made for future building occupants and users including, where relevant, facilities that can be shared and are accessible to members of the public/community without gaining uncontrolled access to other parts of the building.	1	0	**(A&M)**

Sackville Developments (Reading) Limited
Station Hill

BREEAM New Construction 2011 Pre-Assessment - Offices
Rev. B

CATEGORY 1.0 MANAGEMENT					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
		3rd Credit: ✗ Where evidence provided demonstrates that Building User Guides are provided and are appropriate to all users of the building (general users including staff and if applicable residents, as well as the non technical facilities management team/building manager). **Compliance via tenant fit-out guide is not an option for this credit. Credit can only be awarded if a lease agreement includes this requirement.**	1	**0 (+1)**	**(Contractor** *(F+G for prelims)* **+ Tenant** *(Lease)***)**
		4th Credit: ✗ Where evidence provided demonstrates that the client makes a commitment to carry out a Post Occupancy Evaluation (POE) one year after building occupation, to gain building performance feedback. The POE should be carried out by an independent third party. In addition, the client makes a commitment to carry out the appropriate dissemination of information on the building's post occupancy performance in order to share any good practice and lessons learned. **Compliance via tenant fit-out guide is not an option for this credit. Credit can only be awarded if a lease agreement includes this requirement.**	1	0	**(Stanhope + Tenants** *(Lease)***)**
Man 05	**Life cycle cost and service life planning**	**1st Credit:** ✓ Where evidence provided demonstrates that a Life Cycle Cost (LCC) analysis has been carried out based on the proposals developed during RIBA Work Stages C/D (concept design/design development) or equivalent. In addition, a critical appraisal has been completed at the feasibility stage of building procurement, covering the service life estimations and maintenance implications for different design options. This appraisal must comply with Service life planning in accordance with ISO 15686 Buildings and constructed assets - Service life planning Part 1.	1	1	**F+G + DL**

CATEGORY 1.0 MANAGEMENT					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
		2nd Credit: ✓ Where evidence provided demonstrates that the first credit is achieved, the LCC analysis 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: e.g. cladding, windows, and/or roofing • Services: e.g. heat source cooling source, and/or controls • Finishes: e.g. walls, floors and/or ceilings • External spaces The option(s) meet the performance criteria for the building (i.e. realistic options are used for the comparison) and the lowest discounted LCC over the period are preferred. The selected option is of critical value to the project	1	1	F+G + DL
		3rd Credit: ✗ Where evidence provided demonstrates that the first two credits have been achieved and the model outlined in the first LCC credit is updated during RIBA Work Stages D/E (design development/technical design) or equivalent. The results of the study have been implemented in the specification, design and final construction of the assessed building. In addition, a maintenance strategy has been developed, informed by the LCC analysis.	1	0	(F+G + DL)

CATEGORY 2.0 HEALTH AND WELL-BEING					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Hea 01 ⚠ *Mandatory: Pre-requisite to be achieved for any rating*	**Visual Comfort**	**Pre-Requisite** ✓ All fluorescent and compact fluorescent lamps are fitted with high frequency ballasts.	-	-	HL + Tenants
		1st Credit: ✗ Where evidence provided demonstrates that the relevant building areas meet good practice daylighting criteria: 2% daylight factor for 80% of areas	1	0	(A&M)
		2nd Credit: ✓ Glare Control: Where evidence provided demonstrates that the potential for disabling glare has been designed out of all relevant building areas either through building layout and/or building design. In additional, a glare control strategy should be developed in tandem with the lighting strategy to ensure that glare is minimised whilst avoiding potential conflict with the lighting control systems, therefore avoiding higher than expected energy consumption. View Out: Where evidence provided demonstrates that all positions within relevant building areas are within 7m of a wall which has a window or permanent opening that provides an adequate view out. The window/opening must be ≥20% of the surrounding 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 8206. **Where it is not possible to confirm which areas of the building will contain workstations or desks all areas of the building designed for workstations/desks must comply with the relevant View Out criteria.**	1	0.5 (+ 0.5)	A&M + Tenants *(Guide or Lease)*

CATEGORY 2.0 HEALTH AND WELL-BEING					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
		3rd Credit: ✓ Where evidence provided demonstrates that internal and external lighting is designed in accordance with the required standard. **Internal lighting** Illuminance (lux) levels in all internal relevant building areas are specified in accordance with the CIBSE Code for Lighting 2009 and any other relevant industry standard. For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 7 sections 3.3, 4.6, 4.7, 4.8 and 4.9. This gives recommendations highlighting: • Limits to the luminance of the luminaires, to avoid screen reflections. (Manufacturers data for the luminaires should be sought to confirm this). • For up-lighting, the recommendations refer to the luminance of the lit ceiling rather than the luminaire; a design team calculation is usually required to demonstrate this. • Recommendations for direct lighting, ceiling illuminance, and average wall illuminance. **External lighting** Illuminance levels for lighting in all external areas within the construction zone are specified in accordance with BS5489-1:2003 and A2:2008 *Lighting of roads and public amenity areas*.	1	1	**HL** *(Assumed installed as part of base build)*
		Exemplary Credit – 1 Credit ✗ Where a daylight factor of 3% is achieved for 80% of the building area.	1	0	-

CATEGORY 2.0 HEALTH AND WELL-BEING					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Hea 02	**Indoor Air Quality**	**1st Credit:** ✗ Where evidence provided demonstrates that an indoor air quality plan has been produced. For air-conditioned and mixed-mode buildings: the building's air intakes and exhausts are over 10m apart to minimise recirculation and intakes are over 20m from sources of external pollution. In addition, the building must be designed to provide fresh air and minimise internal pollutants (and ingress of external polluted air into the building) in accordance with the criteria of the relevant standard for ventilation. Areas of the building subject to large and unpredictable or variable occupancy patterns have CO_2 or air quality sensors specified and: • In mechanically ventilated spaces, the sensor(s) are linked to the mechanical ventilation system and provide demand-controlled ventilation to the space. • In naturally ventilated spaces, the sensors either have the ability to alert the building owner/manager when CO_2 levels exceed the recommended set point, or are linked to controls with the ability to adjust the quantity of fresh air, i.e. automatic opening windows/roof vents.	1	0	**(A&M + HL)**
		2nd Credit: ✓ Where evidence provided demonstrates that the indoor air quality plan has been developed and all decorative paints and varnishes meet the emission requirements with regards to VOCs.	1	0.5 (+ 0.5)	**A&M + Tenants** *(Guide or Lease)*

CATEGORY 2.0 HEALTH AND WELL-BEING					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
		3rd Credit: ✓ Where evidence provided demonstrates that the indoor air quality plan has been developed and that Formaldehyde concentration level is measured post construction (but pre-occupancy) and is found to be less than or equal to 100µg/m3. The total volatile organic compound (TVOC) concentration is measured post construction (but pre-occupancy) and found to be less than 300µg/m3 over 8 hours, in line with the Building Regulation requirements. Where levels are found to exceed these limits, the project team confirms the measures that have, or will be undertaken in accordance with the IAQ plan, to reduce the TVOC and formaldehyde levels to within the above limits.	1	0.5 (+ 0.5)	A&M + Tenants *(Guide or Lease)*
		4th Credit: ✗ Where evidence provided demonstrates that occupied spaces of the building are designed to be capable of providing fresh air entirely via a natural ventilation strategy, demonstrated via either of the following: • The openable window area in each occupied space is equivalent to 5% of the gross internal floor area of that room/floor plate. OR • The design demonstrates that the natural ventilation strategy provides adequate cross flow of air to maintain required thermal comfort conditions and ventilation rates. This is demonstrated using ventilation design tool types recommended by CIBSE AM10 For a strategy which does not rely on openable windows, or which has occupied spaces with a plan depth greater than 15m, the design must demonstrate that the ventilation strategy can provide adequate cross flow of air to maintain the required thermal comfort conditions and ventilation rates. The natural ventilation strategy must be capable of providing at least two levels of user-control on the supply of fresh air to the occupied space, as follows; • Higher level: higher rates of ventilation achievable to remove short-term odours and/or prevent summertime overheating. • Lower level: adequate levels of draught-free fresh air to meet the need for good indoor air quality throughout the year, sufficient for the occupancy load and the internal pollution loads of the space. Any opening mechanisms must be easily accessible and provide adequate user-control over air flow rates to avoid draughts.	1	0	(A&M + HL)

CATEGORY 2.0 HEALTH AND WELL-BEING					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Hea 03	**Thermal Comfort**	**1st Credit:** ✓ Where evidence provided demonstrates that Thermal modelling has been carried out using software in accordance with CIBSE AM11. The modelling demonstrates that the building design and services strategy can deliver thermal comfort levels in occupied spaces in accordance with the criteria set out in CIBSE Guide A Environmental Design. In addition, the building complies with any requirement, in terms of "time out of range" (TOR) metric, from the appropriate industry standard (as above) OR where there is no appropriate industry standard available or TOR recommendation made, the building services engineer confirms that the TOR is acceptable for the purpose and function of the building.	1	1	HL + A&M *(Assumed undertaken as part of base build)*
		2nd Credit: ✓ Where evidence provided demonstrates that the first credit has been achieved and the thermal modelling analysis (above) has informed the temperature control strategy for the building and its users. The strategy for the proposed heating and cooling should tackle the following issues: • Zones within the building and how the building services could efficiently and appropriately heat or cool these areas • The amount of occupant control required for these zones, based on discussions with the end user (or alternatively building type/use specific design guidance, case studies, feedback) • How the proposed systems will interact with each other (where there is more than one system) and how this may affect the building occupants thermal comfort. • The need or otherwise for an accessible building user actuated manual override for any automatic systems.	1	1	HL *(Assumed undertaken as part of base build)*
Hea 04 ⚠ *Mandatory: Legionella prevention for all ratings*	**Water Quality**	**1 Credit:** ✓ Where evidence provided demonstrates that all water systems in the building are designed in compliance with the measures outlined in the Health and Safety Executive's "Legionnaires' disease - The control of Legionella bacteria in water systems". Approved Code of Practice and Guidance, 2000. Where humidification is required, a failsafe humidification system is provided. In addition, a wholesome supply of accessible, clean and fresh drinking water must be supplied, as follows: Permanently staffed buildings/office areas: • Chilled, mains-fed point-of-use water supply or point-of-use water coolers. • Provision in each staff kitchenette, or in a suitable location on each floor level, and in a staff canteen (if provided).	1	1	HL *(Assumed installed as part of base build)*

CATEGORY 2.0 HEALTH AND WELL-BEING					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Hea 05	**Acoustic Performance**	**1st credit:** ✓ Where evidence provided demonstrates that a suitably qualified acoustician is appointed by the client at pre bid/briefing stage of the project to provide early design advice on: • External sources of noise impacting the chosen site • Site layout and zoning of the building for good acoustics • Acoustic requirements for users with special hearing and communication needs • Acoustic treatment of different zones and facades.	1	1	**Waterman**
		2nd credit: ✓ Where evidence provided demonstrates that the building meets the acoustic performance standards and testing requirements (i.e. Indoor ambient noise levels to comply with the "good practice" criteria levels of BS8233:1999, Tables 5 & 6 unless otherwise stated within this table).	1	1	**Waterman + A&M**

CATEGORY 2.0 HEALTH AND WELL-BEING					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Hea 06	**Safety and Security**	**1st Credit:** ✗ Where evidence provided demonstrates that where external site areas form part of the assessed development, dedicated cycle lanes are provided and have been designed and constructed in accordance with either: • Local Transport Note 2/08 Cycle Infrastructure Design, Department of Transport, 2008. • The National Cycle Network Guidelines and Practical Details – issue 2, Sustrans and the relevant parts of Appendix VI NCN Design and Construction Checklist The cycle lanes must provided direct access from the site entrance(s) to any cycle storage facilities, connects to off-site cycle paths. Footpaths, drop off areas and pedestrian crossing must be designed in accordance with best practice standards. For large developments with a high number of public users/visitors, pedestrian pathways must be signposted to other local amenities off site, including public transport nodes. The lighting for access roads, pedestrian areas, footpaths and cycle lanes is compliant with the external lighting criteria defined in BREEAM issue Hea 01, i.e. in accordance with BS5489-1:2003+A2:2008 Lighting of roads and public amenity areas. Where dedicated delivery access and drop-off areas form part of the assessed development the following apply: • Delivery areas are not directly accessed through general parking areas and • Do not cross or share pedestrian and cyclist routes and other outside amenity areas • There is a separate parking/waiting area for goods vehicles away from / adjacent to the manoeuvring area and staff/visitor car parking. • Parking and turning areas are designed for simple manoeuvring according to the type of delivery vehicle likely to access the site • There is a dedicated space for the storage of refuse skips and pallets away from the delivery vehicle manoeuvring area and staff/visitor car parking	1	0	-

CATEGORY 2.0 HEALTH AND WELL-BEING					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
		2nd Credit: ✓ Where evidence provided demonstrates that the design team have accounted for security considerations in the new building design and site layout through consultation with a suitably qualified security consultant prior to stage C. The final design recommendations bust be embodied within the design and conforms to either: • The principles and guidance of Secured by Design (SbD) and/or Safer Parking (SP)Scheme Or where SbD/SP is of less relevance to the building type/operation: A site specific security risk and threat assessment and subsequent security strategy and recommendations for security measures (as developed/recommended by the suitably qualified security consultant).	1	1	A&M

CATEGORY 3.0 ENERGY					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Ene 01 ⚠ *Mandatory: 6 credits for Excellent 10 credits for Outstanding*	**Reduction of CO_2 emissions**	**1 – 15 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 CO_2 emissions. The number of credits achieved is determined by comparing the Energy Performance Ratio for New Constructions. **Compliance via tenant fit-out guide is not an option for this credit. Max design specifications allowable under current regulations must be assumed for unknown fit-out items, or specifications must be given in a lease agreement.** BREEAM credits / EPR NC / Minimum requirements 1 / 0.05 / Requires a performance improvement progressively better than the Target Emission Rate (TER) required for Building Regulations approval. 2 / 0.15 3 / 0.25 4 / 0.35 5 / 0.45	15	**6 (+1)**	**A&M + HL** *(Assuming all mechanical and electrical services for regulated energy uses installed as part of base build) Score target based on preliminary Part L2A modelling*

CATEGORY 3.0 ENERGY					
REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
		6 0.55 BREEAM Excellent level (6 credits): Requires a CO_2 parameter for the EPR_{NC} calculation of 0.22. This is equivalent to a 25% improvement on the TER. 7 0.59 8 0.63 9 0.67 10 0.72 BREEAM Outstanding level (10 credits): Requires a CO_2 parameter for the EPR_{NC} calculation of 0.30. This is equivalent to a 40% improvement on the TER. 11 0.75 12 0.79 13 0.83 14 0.87 15 0.90 Requires a CO_2 parameter for the EPR_{NC} calculation of 0.38. This is equivalent to a 100% improvement on the TER i.e. zero net CO_2 emissions.			
		Exemplary Credits Available – 5 credits ✗ The building is 'carbon negative' in terms of its total modelled operational energy consumption	5	0	-
		Exemplary Credits Available- up to 4 credits ✗ The building achieves an EPR_{NC} ≥0.9 and zero net CO_2 emissions, and an equivalent percentage of the buildings modelled 'regulated' operational energy consumption, as stipulated in the table below, is generated by carbon neutral on-site, near-site or 'accredited external' sources and used to meet energy demand from 'unregulated' building systems or processes.	4	0	-

CATEGORY 3.0 ENERGY					
REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
		Innovation credits / Equivalent % criteria 4 80% 3 50% 2 20% 1 10%			
Ene 02 ⚠ *Mandatory: 1 credit for Very Good and above*	**Energy monitoring**	**1 Credit:** ✓ Where evidence provided demonstrates that the following major energy consuming systems (where present) are monitored using either a Building Energy Management System (BEMS) or separate accessible energy sub meters with a pulsed output to enable future connection to a BEMS: • Space Heating • Domestic Hot Water • Humidification • Cooling • Fans (major) • Lighting • Small Power (lighting and small power can be on the same sub-meter where supplies are taken at each floor/department). • Other major energy-consuming items where appropriate The end energy consuming use is identifiable to the building user through labelling or data outputs.	1	1	**HL** *(Assumed installed as part of base build)*
		1 Credit: ✓ Where an accessible BEMS or accessible sub-meters are provided covering the energy supply to all tenanted, or in the case of single occupancy buildings, relevant function areas or departments within the building or unit.	1	1	**HL** *(Assumed installed as part of base build)*

CATEGORY 3.0 ENERGY					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Ene 03	**External Lighting**	**1 Credit:** ✓ Where evidence provided demonstrates that the external lighting has been designed in accordance with the following • All external light fittings for the building, access ways and pathways have a luminous efficacy of at least 50 lamp lumens/circuit Watt when the lamp has a colour rendering index (Ra) greater than or equal to 60 OR 60 lamp Lumens / circuit Watt when the lamp has a colour rendering index (Ra) less than 60. • All external light fittings to car parking areas, associated roads and floodlighting has a luminous efficacy of at least 70 lamp lumens/circuit Watt when the lamp has a colour rendering index (Ra) greater than or equal to 60 OR 80 lamp Lumens / circuit Watts when the lamp has a colour rendering index (Ra) less than 60. • All external light fittings for signs and uplighting have a luminous efficacy of at least 60 lamp lumens/circuit Watt when the lamp wattage is greater than or equal to 25W OR 50 lamp lumens/circuit Watt when the lamp wattage is less than 25W. • External light fittings are controlled through a time switch, or daylight sensor, to prevent operation during daylight hours. Daylight sensor override on a manually switched lighting circuit is acceptable.	1	1	**HL** *(Assumed installed as part of base build)*
Ene 04 ⚠ *Mandatory: 1 credit for Excellent and above*	**Low and zero carbon technologies**	**1st Credit:** ✓ Where evidence provided demonstrates that a feasibility study has been carried out by an energy specialist to establish the most appropriate local (on-site or near-site) low or zero carbon (LZC) energy source for the building/development and the recommendations have been implemented. The feasibility study must be carried out at RIBA stage C. **OR** The organisation that occupies the building has in place a contract with an energy supplier to provide electricity for the assessed building/development from a 100% renewable energy source. This supply must be delivered by an accredited external renewable source. The contract must be valid for a minimum of 3 years from the date the assessed building becomes occupied.	1	1	**Stanhope** *(Assumed installed as part of base build)*

CATEGORY 3.0 ENERGY					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
		2nd, 3rd and 4th Credits: ✓ Where evidence provided demonstrates that the first credit has been achieved and a local LZC has been installed, in line with the recommendations of the report, which results in a % reduction in regulated CO_2 emissions as follows: **No of credits** / **% reduction in regulated CO_2 emissions** 2 — 10% 3 — 20% **Exemplary level** — 30% **OR**	4	0	-
		2nd, 3rd, 4th and 5th Credits: ✗ Where evidence provided demonstrates that where the feasibility study includes a Life Cycle Assessment of the carbon impact of the chosen LZC system(s), accounting for its embodied carbon emissions and operational carbon savings and emissions, and this method of supply results in a reduction in life cycle CO_2 emissions as follows: **No of credits** / **% reduction in life cycle CO_2 emissions** 2 — N/A (study only) 3 — 10% 4 — 20% **Exemplary level** — 30%			
		6th Credit: ✗ Where evidence provided demonstrates that regardless of the percentage reduction in the building's CO_2 emissions from LZC sources and number of BREEAM credits achieved above, the building utilises free cooling strategies and the first credit within the BREEAM issue Hea 03 Thermal comfort has been achieved:	1	0	-

CATEGORY 3.0 ENERGY					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Ene 06	**Energy efficient transportation systems**	**1st Credit:** ✓ Where evidence provided demonstrates that where lifts, escalators or moving walks are required: • An analysis of the transportation demand and usage patterns for the building has been carried out to determine the optimum number and size of lifts (including counter-balancing ratio), escalators and/or moving walks. • The energy consumption has been estimated for different types and the lift/escalator/moving walk system/strategy with the lowest energy consumption has been specified.	1	1	**HL** *(Assumed installed as part of base build)*
		2nd Credit: ✓ Where evidence provided demonstrates that the first credit has been achieved and for lifts, of the following energy-efficient features the three that offer the greatest potential energy savings are specified: • The lifts operate in a stand-by condition during off-peak periods. • The lift car uses energy-efficient lighting and display lighting • The lift uses a drive controller capable of variable-speed, variable-voltage, variable frequency (VVVF) control of the drive motor. • The lift has a regenerative drive unit so that any energy generated by a traction lift or by a hydraulic lift is returned back to the electricity utility supplier or used elsewhere in the building. For escalators and/or moving walks, each escalator and/or moving walk complies with EITHER of the following: • It is fitted with a load sensing device that synchronises motor output to passenger demand through a variable speed drive. OR • 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	1	**HL** *(Assumed installed as part of base build)*

CATEGORY 3.0 ENERGY					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Ene 08	**Energy Efficient Equipment**	**2 credits:** ✓ Where evidence provided demonstrates that the following criteria have been met (please note that Data Centres include server / comms. rooms)	2	1	**Stanhope + Tenants** *(Guide)*

Ref	*Function / Equipment*	*Criteria*	*Comment*
A	*Small power, plug in equipment*	*The following equipment EITHER qualifies for an Enhanced Capital Allowance Scheme1 claim (i.e. is on the Energy Technology Product List, ETPL) OR has been awarded an Energy Star2 rating OR has been procured in accordance with the Government Buying Standards3 OR are identified as products with at least a 'green tick' standard on the Buying Solutions4 website.* *1. Office equipment* *2. Domestic scale white goods and other small powered equipment* *3. Supplementary electric heating.*	*Included, Significant contributor*
B	*Swimming pool*		*N/A*
C	*Communal laundry facilities with commercial sized appliances*		*N/A*
D	*Data centre, incl. server / comms rooms*	*1. Design is in accordance with the 'Best practices for the EU Code of Conduct on Data Centres'5 principles with the data centre achieving at least the 'Expected minimum practice' level (as defined in the Code of Conduct).* *2. Temperature set points are not less than 24oC, as measured at the inlet of the equipment in the rack.*	*Included, Significant contributor*
E	*IT-intensive operating areas*	*1. Uses a natural ventilation and cooling strategy as standard, with forced ventilation only to be used when the internal temperature exceeds 20°C and active cooling only when the internal temperature exceeds 22°C.* *2. There is a mechanism to achieve automatic power-down of equipment when not in use, including overnight.*	*Included, Significant contributor*
F	*Residential areas*		*N/A*

CATEGORY 4.0 TRANSPORT

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
		G *Healthcare* — N/A H *Kitchen, catering* — *Where the project has incorporated at least one energy efficiency measure outlined in each of the following sections of CIBSE Guide TM508 :* *1. Section 8 (Drainage and kitchen waste removal)* *2. Section 9 (Energy controls - specifically controls relevant to equipment),* *3. Section 11 (Appliance specification, fabrication specification - not utensil specification),* *4. Section 12 (Refrigeration),* *5. Section 13 (Warewashing: dishwashers and glasswashers),* *6. Section 14 (Cooking appliance selection),* *7. Section 15 (Water temperatures, taps, faucets and water saving controls)*			

CATEGORY 4.0 TRANSPORT

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
Tra 01	Public transport accessibility	**1 – 5 Credits dependant on building type:** ✓ Where evidence provided demonstrates the accessibility to the public transport network. This is summarised in the table below.	3	3	PBA

Accessibility Index	2	4	8	10	12	18
Building Type	BREEAM credits available					
Business: Offices/Industrial, Multi-residential, Other building type 1	1	2	3	-	-	-
Pre-school, School, Sixth Form	1	2	3	-	-	-
Retail, Law Court, Further Education College, Higher Education type 1, Other building type 2	1	2	3	3	4	5
Higher Education type 2	1	2	3	4	5	-
Healthcare - Hospitals (Acute, Specialist, Teaching, Mental health)	1	2	3	3	4	5
Healthcare - GP surgery, Health centre, Community hospital	1	2	3	4	5	-
Rural location sensitive buildings (see 'Building type definition' Compliance note), Other building type 3	1	2	-	-	-	-
Prison site, MOD site	1	2	-	-	-	-
Transport hub	1	2	3	3	3	4

The accessibility index for each building type is calculated based upon the following information:
- The distance (m) from the main building entrance to each compliant public transport node
- The public transport type(s) serving the compliant node e.g. bus or rail
- The average number of services stopping per hour at each compliant node during the standard operating hours of the building for a typical day

CATEGORY 4.0 TRANSPORT					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Tra 02	**Proximity to amenities**	**1 Credit:** ✓ Where evidence provided demonstrates that the building is located within 500m of 2 local amenities from the following list: • Food outlet / grocery shop • Post Box • Cash Machine • Pharmacy • GP Surgery / Medical Centre	1	**1**	**A&M + PBA**
Tra 03	**Cyclist facilities**	**2 Credits:** ✓ Where evidence provided demonstrates that the number of compliant cycle storage spaces provided are in accordance with the following: • 1 cycle space per 10 staff • 1 compliant types of facilities per 10 staff (showers or changing facilities or lockers & clothes drying space) This can be adjusted by 50%, as the site is in a city centre location. Example: for an office NIA of 70,000m², 350 secure and sheltered cycle spaces should be provided. **It is currently assumed cycle spaces will be installed as part of the base build. The credit for cyclist facilities can only be awarded if these are installed as part of the base build or through developer/tenant collaboration. This credit is currently not assumed.**	2	**2**	**A&M + PBA**
Tra 04	**Maximum car parking capacity**	Where evidence provided demonstrates that the number of car parking spaces which have been provided for the scheme has been reduced to encourage building users to commute to work via other means. **1st Credit:** ✓ Less than 1 parking space available per 5 building users **2nd Credit:** ✓ Less than 1 parking space available per 6 building users **It is currently assumed cycle spaces will be installed as part of the base build.**	2	**2**	**A&M + PBA**

CATEGORY 4.0 TRANSPORT					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Tra 05	**Travel Plan**	**1 Credit:** ✓ Where evidence provided demonstrates that a travel plan has been developed as part of the feasibility and design stages which considers all types of travel relevant to the building type and users. The travel plan must be structured to the needs of the particular site and takes into consideration the findings of a site-specific transport survey. The travel plan must include 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 appropriate to the building type, size and intended operation, the travel plan includes measures tailored to minimise the impacts of operational-related transport e.g. deliveries of supplies, equipment and support services to and from the site. 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**	**PBA**

CATEGORY 5.0 WATER

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
Wat 01 ⚠ *Mandatory: 1 credit for Good and above 2 credits for Outstanding*	**Water consumption**	**1 – 5 Credits:** ✓ Where evidence provided demonstrates that water consumption has been reduced to the following levels compared against the baseline building model: % improvement / No. of BREEAM credits: 12.5% / 1; 25% / 2; 40% / 3; 50% / 4; 55% / 5; 65% / Exemplary performance **NOTE: for in order to target more than 2 credits, a greywater or rainwater recycling system for WC/urinal flushing must be implemented in the design.** **Compliance via tenant fit-out guide is not an option for this credit. Credit can only be awarded if a lease agreement includes this requirement, or if the fittings are part of the base build.** Assumption: The following system performances to be specified in order to meet credit requirements (further details and system performances for other systems given in the BREEAM technical guide): - WCs: max. effective flush of 4.5 litres - Wash Hand Basins: 7.5 litres/min - Showers: 8-14 litres/minute - Kitchen taps: 7.5 litres/min - Urinals (if specified): 1.5-3 litres/bowl/hour - Commercial sized dishwashers: 6 litres/rack - Commercial/industrial sized washing machines: 10 litres/kg - Kitchen pre-rinse nozzle: 8.3 litres/min	5	**2**	**A&M + HL** *(Assumed part of base build)*

CATEGORY 5.0 WATER

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
Wat 02 ⚠ *Mandatory: Criterion 1 only for Good and above*	**Water monitoring**	**1 Credit:** ✓ Where evidence provided demonstrates that a water meter with a pulsed output will be installed on the mains supply to each building/unit. Water-consuming plant or building areas, consuming 10% or more of the building's total water demand, need to be fitted with either sub meters or have water monitoring equipment integral to the plant or area. Each meter (main and sub) must have a pulsed output to enable connection to a Building Management System (BMS) for the monitoring of water consumption. If the site on which the building is located has an existing BMS, managed by the same occupier/owner (as the new building), the pulsed water meter(s) for the new building must be connected to the existing BMS.	1	**1**	**HL** *(Assumed part of base build)*
Wat 03	**Water leak detection and prevention**	**1st Credit:** ✓ Where evidence provided demonstrates that 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 is provided.	1	**1**	**HL**
		2nd Credit: ✓ Where evidence provided demonstrates that 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): • A time controller i.e. an automatic time switch device to switch off the water supply after a predetermined interval • A programmed time controller i.e. an automatic time switch device to switch water on and/or off at predetermined times. • A volume controller i.e. an automatic control device to turn off the water supply once the maximum preset volume is reached. • 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. A central control unit i.e. a dedicated computer-based control unit for an overall managed water control system, utilising some or all of the types of control elements listed above.	1	**1**	**HL** *(Assumed part of base build)*

CATEGORY 5.0 WATER					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Wat 04	**Water efficient equipment**	**1 Credit:** ✓ Where an irrigation method specified for internal or external planting and/or landscaping, it complies with ANY ONE of the following: • Drip feed subsurface irrigation that incorporates soil moisture sensors. The irrigation control should be zoned to permit variable irrigation to different planting assemblages. • Reclaimed water from a rainwater or grey water system. • External landscaping and planting that relies solely on precipitation, during all seasons of the year. • All planting specified is restricted to species that thrive in hot and dry conditions. • Where no dedicated, mains-supplied irrigation systems are specified	1	**1**	**A&M + HL**

CATEGORY 6.0 MATERIALS					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Mat 01	**Life cycle impacts**	**5 Credits :** ✓ Up to six credits are available, determined by the *Green Guide to Specification* and the environmental product declaration for the major building/finishing elements: • External Walls • Windows • Roof • Upper Floor Slabs • Internal Walls • Floor Finishes /Coverings.	5	**3**	**A&M**
Mat 02	**Hard landscaping and boundary protection**	**1 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**	**A&M**

CATEGORY 6.0 MATERIALS					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Mat 03 ⚠ *Mandatory: Criterion 3 sustainable timber sourcing for all ratings*	**Responsible sourcing of materials**	**1 – 3 Credits:** ✓ Where evidence provided demonstrates that 80% of the assessed materials in the following building elements are responsibly sourced: • Structural Frame • Ground floor • Upper floors (including separating floors) • Roof • External walls • Internal walls • Foundation/substructure • Fittings: includes stair case, windows (frame and glazing units), doors (internal and external), floor finishes and any other significant fitting or finish present • Hard landscaping Points are awarded based upon the level of responsible sourcing for each of the different building elements. **Tier level / Points** 1 – 4.0 2 – 3.5 3 – 3.0 4 – 2.5 5 – 2.0 6 – 1.5 7 – 1.0 8 – 0	3	**1**	**Contractor** *(F+G for ERs)*

CATEGORY 6.0 MATERIALS					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Mat 04	**Insulation**	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 **1st 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. **It is assumed that the majority of the insulation in the buildings (more than 80%) will be installed as part of the base build. Therefore the whole credit is assumed. If tenants are installing more than 20% of insulation, a fit-out guide can close this out, but only half the value of the credit would be awarded.**	1	**1**	**A&M + HL** *(Assumed majority of insulation part of base build)*
		2nd Credit: ✓ Where evidence provided demonstrates that all insulation materials used within the building are responsibly sourced, in accordance with the Mat 1 guidance. **As above: It is assumed that the majority of the insulation in the buildings (more than 80%) will be installed as part of the base build. Therefore the whole credit is assumed. If tenants are installing more than 20% of insulation, a fit-out guide can close this out, but only half the value of the credit would be awarded.**	1	**1**	**Contractor** *(F+G ERs - assumed majority of insulation part of base build)*
Mat 05	**Designing for Robustness**	**1 Credit:** ✓ Where evidence provided demonstrates that the areas of the building where vehicular and pedestrian movement will occur and the design incorporate suitable durability and protection measures or design features/solutions to prevent damage to the vulnerable parts of the building. This must include, but is not necessarily limited to: • Protection from the effects of high pedestrian traffic in main entrances, public areas and thoroughfares (corridors, lifts, stairs, doors etc). • Protection against any internal vehicular/trolley movement within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas. • Protection against, or prevention from, any potential vehicular collision where vehicular parking and manoeuvring occurs within 1m of the external building façade for all car parking areas and within 2m for all delivery areas.	1	**0.5 (+ 0.5)**	**A&M + Tenants** *(Guide or Lease)*

CATEGORY 7.0 WASTE

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
Wst 01 *Mandatory: 1 credit for Outstanding*	**Construction waste management**	**1-3 Credits: 2** ✓ Where evidence provided demonstrates that non-hazardous construction waste (excluding demolition and excavation waste) generated by the building's design and construction meets or exceeds the following resource efficiency benchmarks: **BREEAM credits** / **Amount of waste generated per 100m² (gross internal floor area)**: m^3 / tonnes One credit: 13.3 / 11.1 Two credits: 7.5 / 6.5 Three credits: 3.4 / 3.2 Exemplary Level: 1.6 / 1.9 **1 credit:** ✓ Where evidence provided demonstrates that the following percentages of non-hazardous construction and demolition waste (where applicable) generated by the project have been diverted from landfill: **BREEAM credits** / **Type of waste** / **Volume** / **Tonnage** One credit: Non demolition 70% 80%; Demolition 80% 90% Exemplary level: Non demolition 85% 90%; Demolition 85% 95% **Exemplary Credit Available – 1 credit** ✗ Where evidence provided demonstrated that the non-hazardous construction waste generated by the building's design and construction is no greater than the exemplary level resource efficiency benchmark (outlined in the above table).	4	**4**	**Contractor** *(F+G for ERs)*

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CATEGORY 7.0 WASTE

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
Wst 02	**Recycled aggregates**	**1 Credit:** ✗ Where evidence provided demonstrates the significant use (>25% by weight or volume) of recycled or secondary aggregates in 'high-grade' building aggregate uses. To contribute to the total amount, the percentage of high-grade aggregate specified per application (where present) that is recycled and/or secondary aggregate, must meet the following minimum levels (by weight or volume): **Application** / **Min. % One credit** / **Min. % Exemplary performance** Structural frame: 25% / 50% Floor slabs including ground floor slabs: 25% / 50% Bitumen or hydraulically bound base, binder, and surface courses for paved areas and roads: 50% / 75% Concrete road surfaces: 25% / 50% Pipe bedding: 50% / 100% Building foundations: 25% / 50% Granular fill and capping (see Compliance notes): 75% / 100% Gravel landscaping: 100% / 100%	1	**0**	**(Waterman)**

CATEGORY 7.0 WASTE					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Wst 03 ⚠ *Mandatory: 1 credit for Excellent and above*	**Operational waste**	**1 Credit:** ✓ Where evidence provided demonstrates that there is dedicated space(s) to cater for the segregation and storage of operational recyclable waste volumes generated by the assessed building/unit, its occupant(s) and activities. The dedicated space(s) must be: • Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams • Accessible to building occupants / facilities operators for the deposit of materials and collections by waste management contractors • Of a capacity appropriate to the building type, size, number of units (if relevant) and predicted volumes of waste that will arise from daily/weekly operational activities and occupancy rates. Where the consistent generation in volume of the appropriate operational waste streams is likely to exist, e.g. large amounts of packaging or compostable waste generated by the building's use and operation, the following facilities must be provided as part of its waste management strategy: • Static waste compactor(s) or baler(s); situated in a service area or dedicated waste management space. • Vessel(s) for composting suitable organic waste resulting from the building's daily operation and use OR adequate space(s) for storing segregated food waste and compostable organic material prior to collection and delivery to an alternative composting facility. • Where organic waste is to be stored/ composted on site, a water outlet is provided adjacent to or within the facility for cleaning and hygiene purposes. Space requirements: For each 1,000m^2 of NIA, 2m^2 of storage space for recyclables should be provided. If there is also catering in the building, this area should be doubled. If tenants are sharing waste storage space, there is a cap on size: maximum 10m^2 (20m^2 with catering waste) for buildings of 5,000 m^2 or larger. This waste storage provision should be made in addition to the provision made for storage of non-recyclable waste.	1	1	A&M
Wst 04	**Speculative Floor and Ceiling Finishes**	**1 Credit:** ✓ • For tenanted areas (where the future occupant is not known), prior to full fit-out works, carpets, other floor finishes and ceiling finishes have been installed in a show area only. • In a building developed for a specific occupant, that occupant has selected (or agreed to) the specified floor and ceiling finishes. **It is assumed floor finished will be installed in a show area only.**	1	1	Stanhope

CATEGORY 8.0 LAND USE AND ECOLOGY					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Le 01	**Site selection**	**1st Credit:** ✓ Where evidence is provided to demonstrate that at least 75% of the proposed development's footprint is on an area of land which has previously been developed for use by industrial, commercial or domestic purposes in the last 50 years.	1	1	A&M
		2nd Credit: ✗ Where evidence provided demonstrates that the site is significantly contaminated as confirmed by a contaminated land specialist's site investigation, risk assessment and appraisal. The client or principal contractor must confirm that remediation of the site will be carried out in accordance with the remediation strategy and its implementation plan.	1	0	-
Le 02	**Ecological value of the site and protection of ecological features**	**1 Credit:** ✗ Where evidence provided demonstrates that the site's construction zone is defined as land of low ecological value and all existing features of ecological value will be fully protected from damage during site preparation and construction works.	1	0	(Waterman)
Le 03 ⚠ *Mandatory: 1 credit for Very Good and above*	**Mitigating ecological impact**	**1st Credit:** ✓ Where evidence provided demonstrates that the change in the site's existing ecological value, as a result of development, is **minimal.**	1	1	Waterman
		2nd Credit: ✓ Where evidence provided demonstrates that there is **no negative change** in the site's existing ecological value as a result of development.	1	1	A&M + Waterman

CATEGORY 8.0 LAND USE AND ECOLOGY					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Le 04	**Enhancing site ecology**	**1st Credit:** ✓ Where the design team (or client) has appointed a suitably qualified ecologist at **stage B** to advise and report on enhancing and protecting the ecological value of the site; and implemented the professional's recommendations for general enhancement and protection of site ecology.	1	1	**Waterman**
		2nd Credit: ✓ Where there is a positive increase in the ecological value of the site of up to (but not including) 6 species.	1	1	**A&M + Waterman**
		3rd Credit: ✗ Where there is a positive increase in the ecological value of the site of 6 species or greater.	1	0	**(Waterman)**
Le 05	**Long term impact on biodiversity**	**1st Credit:** ✓ The client has committed to achieving the mandatory requirements and at least two of the additional requirements.	1	1	**Contractor** *(F+G for ERs)* **+ Waterman**
		2nd Credit: ✓ The client has committed to achieving the mandatory requirements and at least four of the additional requirements.	1	1	**Contractor** *(F+G for ERs)* **+ Waterman**

CATEGORY 9.0 POLLUTION					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Pol 01	**Impact of refrigerants**	**3 credits:** ✗ Where evidence provided demonstrates that the building does not require the use of refrigerant within its building services or plant. **OR**	3	1	**HL** *(Assumed installed as part of base build)*
		2 Credits: ✗ Where evidence provided demonstrates that the systems specified using refrigerants have Direct Effect Life Cycle CO_2 equivalent emissions (DELC CO_{2e}) of ≤100 $kgCO_{2e}$/kW cooling capacity. To calculate the DELC CO_{2e} the following information is sourced from the design team and entered into the BREEAM Pol 01calculator: • Global Warming Potential (GWP) of the specified system refrigerant(s) • Total refrigerant charge (kg) • Cooling capacity of the system(s) (kW) • Sectoral release factors: • Annual refrigerant leakage rate (% of refrigerant charge): • Annual purge release factor (% of refrigerant charge): • Annual service release factor (% of refrigerant charge): • Probability factor for catastrophic system failure (%) • Recovery efficiency (% of refrigerant charge): **OR** Where air-conditioning or refrigeration systems are installed the refrigerants used have a Global Warming Potential (GWP) ≤10.			
		1 credit: ✓ Where evidence provided demonstrates that the systems using refrigerants have Direct Effect Life Cycle CO_2 equivalent emissions of (DELC CO_{2e}) of ≤1000 $kgCO_{2e}$/kW cooling capacity.			

CATEGORY 9.0 POLLUTION					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
		1 credit: ✗ • 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 • The automatic shutdown and pump down of refrigerant occurs on the detection of refrigerant leakage/charge loss. • 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. • Use a robust and tested automated permanent refrigerant leak detection system.			
Pol 02	**NO_x emissions**	**3 credits:** ✗ Where evidence provided demonstrates where the plant specified to meet the building's delivered heating and cooling demand has, under normal operating conditions, a dry NOx emission level (measured at 0% excess O_2) as follows: **Building types and emission levels** / **Credits** Court, office, retail and other building types ≤ 100 mg/kWh (space heating) — 1 credit ≤ 70 mg/kWh (space heating) — 2 credits ≤ 40 mg/kWh (space heating) — 3 credits **It is currently assumed that all heating systems will be installed as part of the base build. Therefore the whole credit is assumed. If tenants are installing heating systems, a fit-out guide can close this out, but only half the value of the credit would be awarded.**	3	3	**HL** *(Assumed installed as part of base build)*
Pol 03	**Surface water run off**	**Two credits:** ✓ Where evidence provided demonstrates that the site is of low risk of flooding and a site specific flood risk assessment has been completed in line with PPS25.	2	2	**Waterman**

CATEGORY 9.0 POLLUTION					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
		OR 1 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.			
		In addition: **1 Credit:** ✓ Where evidence provided demonstrates that an appropriate consultant has been appointed and they have confirmed that the drainage measures specified ensure that the peak rate of run-off from the site to the watercourses (natural or municipal) is no greater for the developed site than it was for the pre-development site. This should comply at the 1 year and 100 year return period events, taking into account climate change.	1	1	**Waterman**
		1 credit: ✗ Where evidence provided demonstrates that an appropriate consultant has been appointed and they have confirmed that there is no risk of flooding in the event of a local drainage system failure, AND **EITHER** • The post development run-off volume, over the development lifetime, is no greater than it would have been prior to the assessed site's development. • Any additional predicted volume of run-off for the 100 year 6 hour event must be prevented from leaving the site by using infiltration or other SuDS techniques **OR** (only where the above criterion for this credit cannot be achieved) • Justification from the Appropriate Consultant indicating why the above criteria cannot be achieved i.e. where infiltration or other SuDS techniques are not technically viable options. • The post development peak rate of run-off is reduced to a limiting discharge.	1	0	**Waterman**

CATEGORY 9.0 POLLUTION					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
		1 credit: ✗ Where evidence provided demonstrates that the following water course pollution prevention measures are covered: • The appropriate consultant confirms there will be no discharge from the developed site for rainfall up to 5mm. • Specification of Sustainable Drainage Systems (SUDs) or source control systems such as permeable surfaces or infiltration trenches • Specification of oil/petrol separators (or equivalent system) in surface water drainage systems, where there is a high risk of contamination or spillage of substances • All water pollution prevention systems have been designed and detailed in accordance with the recommendations of Pollution Prevention Guideline 3 • A comprehensive and up-to-date drainage plan of the site will be made available for the building/site occupiers.	1	0	-
Pol 04	**Reduction in night time light pollution**	**1 Credit:** ✓ Where evidence provided demonstrates that the lighting system has been designed in accordance with the following requirements: • 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. • All external lighting (except for safety and security lighting) can be automatically switched off between 2300hrs and 0700hrs. This can be achieved by providing a timer for all external lighting set to the appropriate hours. • 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, for example by using an automatic switch to reduce the lighting levels at 2300 or earlier. • Illuminated advertisements, where specified, must be designed in compliance with ILE Technical Report 5 – The Brightness of Illuminated Advertisements.	1	1	**HL** *(Assumed installed as part of base build)*

CATEGORY 9.0 POLLUTION					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Pol 05	**Noise attenuation**	**1 Credit:** ✓ Where evidence provided demonstrates that there is **either** no noise-sensitive areas or buildings within 800m radius of the assessed development **OR** Where there are or will be noise-sensitive areas or buildings within 800m radius of the assessed development a noise impact assessment in compliance with BS 7445:1991 has been carried out and the following noise levels measured/determined: • Existing background noise levels at the nearest or most exposed noise-sensitive development to the proposed development or at a location where background condition can be argued to be similar. • The rating noise level resulting from the new noise-source	1	1	**HL** *(Assumed all noise-emitting plant installed as part of base build)*

BREEAM INNOVATION CREDITS

NOTE: MAXIMUM NUMBER OF INNOVATION CREDITS ACHIEVABLE - 10

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
Inno-vation	**Exemplary Credits**	Up to a maximum of 10 credits are available in aggregate from a combination of the following: **Exemplary level of performance in existing BREEAM issues** 1. Where the building demonstrates exemplary performance by meeting defined exemplary level performance criteria in one or more of the following BREEAM assessment issues: • Man 01 Sustainable procurement • Man 02 Responsible construction practices • Hea 01 Visual comfort • Ene 01 Reduction of CO_2 emissions • Ene 04 Low or zero carbon technologies • Wat 01 Water consumption • Mat 01 Life cycle impacts • Mat 03 Responsible sourcing of materials • Wst 01 Construction site waste management • Wst 02 Recycled Aggregates One innovation credit can be awarded for each individual BREEAM issue exemplary performance level complied with. **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.	10	**0**	**(All team members)**

8.0 BREEAM New Construction 2011 Pre-assessment - Retail



Sackville Developments (Reading) Limited
Station Hill

BREEAM New Construction 2011 Pre-Assessment - Retail
Rev. B

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Hoare Lea Sustainability
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London N1C 4AB

REVISION	DESCRIPTION	DATE	ISSUED BY	REVIEWED BY
A	Draft pre-assessment report for team comments	03.07.2015	L. Wille	J. Godefroy
B	Planning application update issue – no comments from team	23.07.2015	L. Wille	-

This report is provided for the stated purposes and for the sole use of the named Client. It will be confidential to the Client and the client's professional advisers. Hoare Lea accepts responsibility to the Client alone that the report has been prepared for with the skill, care and diligence of a competent engineer, but accepts no responsibility whatsoever to any parties other than the Client. Any such parties rely upon the report at their own risk. Neither the whole nor any part of the report nor reference to it may be included in any published document, circular or statement nor published in any way without Hoare Lea's written approval of the form and content in which it may appear.

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1.0 EXECUTIVE SUMMARY

BREEAM 2011 New Construction is a voluntary scheme that aims to quantify and reduce the environmental impact of buildings by rewarding those designs that take positive steps to minimise their environmental impacts.

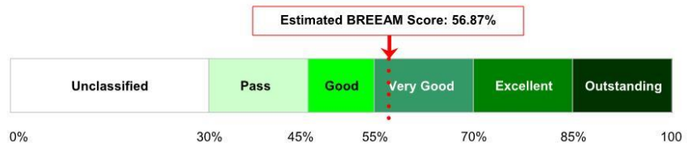
The retail areas of Station Hill have been registered under **BREEAM New Construction 2011.**

This report sets out a potential route to achieving a 'Very Good' rating based on discussions with the team regarding the outline planning proposal.

It should be noted that **a number of credits require cooperation with the tenants**. At this stage it is expected that the target rating of BREEAM Very Good should be achievable with a fit-out guide providing non-contractual options to tenants, without the need for lease agreements on specific fit-out items. This should be reviewed as the design and procurement progresses.

These credits are highlighted in section 4.0 of this report.

The current score includes a safety margin of approximately 2% over the minimum of 55%. It is recommended that this margin be retained in order that the required rating can be achieved even if credits are lost during the design or construction phases.



Achieving BREEAM Very Good under the 2011 version of the scheme is much more challenging than under BREEAM 2008. Beyond the fact that achieving the score of 55% is more difficult, there are some specific differences which have been highlighted below:

- **Management:** There are now many credits associated with additional appointments and studies, e.g.
  - A fit-out guide for tenants will be critical to achieving Very Good – see further information in section 4.0 of this report.
  - The stakeholder consultation needs to be formalised and documented in accordance with the BREEAM Guidance.
  - The appointment of a BREEAM AP (Accredited Professional) at Stage B/C (i.e. a BREEAM expert on top of the role of the BREEAM Assessor)
  - A thermographic survey.
  - A detailed life-cycle cost analysis used during the design stage to inform design development.
  - An indoor quality plan.

The following credits require early action, i.e RIBA Stage B:

Man 01	Client, building occupier, design team and contractor (or project manager 'with sufficient experience') must be involved in contributing to the decision making process for the project and this should be documented (e.g. meeting minutes).
Man 04	All relevant parties and relevant bodies must be identified and consulted with by the design team. The findings of the consultation must influence the design and therefore must be held before key and final design decisions are made. A consultation plan must be prepared.
Hea 05	A suitably qualified acoustician must be employed at stage B/C to undertake early design advice on external sources of noise impacting the chosen site, site layout and zoning of the building , acoustic requirements for users with special hearing needs and treatment of different zones and facades
Hea 06	Consultation with a Suitably Qualified Security Consultant must be undertaken at RIBA stage B or C.
Le 04	An ecologist must be appointed at RIBA Stage B to carry out surveys and provide advice

2.0 BACKGROUND TO BREEAM 2011 NEW CONSTRUCTION

BREEAM 2011 New Construction is being used as a benchmarking tool in the design of new non residential buildings. The aim of the scheme is to estimate the sustainability of buildings and to promote a programme of design improvement.

BREEAM 2011 New Construction is published by the Building Research Establishment (BRE) and information is available at:
http://www.breeam.org/podpage.jsp?id=414

BREEAM 2011 New Construction is based upon several categories. Credits are awarded based upon construction, design and procurement criteria such as:

- MANAGEMENT — Sustainable Procurement, Responsible Construction Processes, Construction Site Impacts, Stakeholder Participation, Life Cycle Cost and Service Life Planning;
- HEALTH AND WELLBEING — Visual Comfort, Indoor Air Quality, Thermal Comfort, Water Quality, Acoustic Performance, Safety and Security;
- ENERGY — Reduction of CO_2 emissions, Energy Monitoring, External Lighting, Low and Zero carbon technologies, Energy Efficient Cold Storage, Energy efficient Transportation Systems, Energy Efficient Equipment, Drying Space;
- TRANSPORT — Public Transport Accessibility, Proximity to Amenities, Cyclist Facilities, Max. Car Parking Capacity, Travel Plan;
- WATER — Water Consumption, Water Monitoring, Water Leak Detection and Prevention, Water Efficient Equipment;
- MATERIALS — Life Cycle Impacts, Responsible Sourcing of Materials, Insulation, Designing for Robustness;
- WASTE — Construction Waste Management, Recycled Aggregates, Operational Waste, Speculative Floor / Ceiling Finishes;
- LAND USE & ECOLOGY — Site Selection, Ecological Value of the Site and Protection of Ecological Features, Mitigating Ecological Impacts, Enhancing Site Ecology, Long Term Impact of Biodiversity;
- POLLUTION — Impact of Refrigerants, NO_x emissions, Surface Water Run Off, Reduction of Light Pollution, Noise Attenuation

Mandatory standards apply to the following credits: sustainable procurement, responsible construction processes, stakeholder participation, visual comfort, water quality, reduction in CO_2 emissions, energy monitoring, low or zero carbon technologies, water consumption, water monitoring, responsible sourcing, construction waste management, operational waste and mitigating ecological impact.

Failure to meet the mandatory criteria may restrict a development to an UNCLASSIFIED rating, regardless of the overall number of credits achieved.

The mandatory requirements are outlined in Table 1.

Table 1: Minimum score and mandatory requirements for BREEAM 2011 New Construction 2011

BREEAM Rating		Pass	Good	Very Good	Excellent	Outstanding
Minimum Score Required		30%	45%	55%	70%	85%+
Section	Credit required					
MANAGEMENT	Man 1: Sustainable Procurement	One credit	One credit	One credit	One credit	Two credits
	Man 2: Responsible Construction Practices	-	-	-	One credit	Two credits
	Man 4: Stakeholder Participation	-	-	-	One credit (Building User Information)	One credit (Building User Information)
HEALTH & WELL-BEING	Hea 1: Visual Comfort	Criterion 1 Only	Criterion 1 Only	Criterion 1 Only	Criterion 1 Only	Criterion 1 Only
	Hea 4: Water Quality	Criterion 1 Only	Criterion 1 Only	Criterion 1 Only	Criterion 1 Only	Criterion 1 Only
ENERGY	Ene 1: Reduction in CO_2 Emissions	-	-	-	Six credits	Ten credits
	Ene 2: Energy Monitoring	-	-	One credit (first sub metering credit)	One credit (first sub metering credit)	One credit (first sub metering credit)
	Ene 4: Low or zero carbon technologies	-	-	-	One credit	One credit
WATER	Wat 1: Water Consumption	-	One credit	One credit	One credit	Two credits
	Wat 2: Water Metering	-	Criterion 1 Only	Criterion 1 Only	Criterion 1 Only	Criterion 1 Only
MATERIALS	Mat 3: Responsible Sourcing	Criterion 3 Only	Criterion 3 Only	Criterion 3 Only	Criterion 3 Only	Criterion 3 Only
WASTE	Was 1: Construction Waste Management	-	-	-	-	One credit
	Was 3: Operational Waste	-	-	-	One credit	One credit
LAND USE & ECOLOGY	LE 03: Mitigating Ecological Impact	-	-	One credit	One credit	One credit

3.0 DEVELOPMENT PROFILE ASSUMPTIONS

In BREEAM 2011 New Construction, the amount of credits to be assessed depends on the development's profile, i.e. whether specific types of spaces are included or not, specific services fitted out etc. This credit filtering process is an important part of the pre-assessment as it helps determine which credits (and therefore which design assumptions) need to be assessed.

This pre-assessment is based on the below listed assumptions regarding the profile of Station Hill retail units.

Please note that, **should any of these characteristics change as the design progresses by the inclusion or removal of specific uses or spaces, then the credits applicable are likely to change as well.** In this case the assessor should be notified and the BREEAM 2011 New Construction rating should be reviewed to take into account the design changes.

It is the understanding that units will be installed with heating and cooling, and that lighting and ventilation will fall under the responsibility of each fit-out tenant. If this is changes the approach to affected credits should be revised.

Table 2: Development Profile Assumptions

Development profile	Assumptions for Station Hill, Reading
Project type	New Construction (shell only)
Building Type- Main	Retail
Building Type- Sub group	Retail-Shop
Building Services- Heating System Type	Wet System
Building Services- Cooling System Type	Comfort Cooling
Commercial Refrigeration and Storage Systems	No
Internal or External Landscaping or Planting	Yes
Building User Transportation Systems (Lifts)	Yes
Laboratory	No
Fume Cupboards	No
Vehicle Wash System	No

,

4.0 CREDITS REQUIRING TENANT INVOLVEMENT

It is assumed that the Station Hill retail units will be assessed as shell and core developments, where the tenants shall be responsible for the fit out of their areas.

The BREEAM shell and core assessment contains a number credits which are dependent on the tenant fit-out. According to BREEAM Guidance, these must be addressed in one of four ways for the shell and core assessment;

- **Option 1 – Lease Agreement (Contractual agreement): The full value of each credit is available**
- **Option 2 – Tenant Fit-out Guide (Non-contractual guidance for tenants on fit-out choices in accordance with BREEAM requirements): Each credit taken using this option will only be awarded at half value. Not all credits where tenant involvement is required allow for this option to be used.**
- **Option 3 – Developer/Tenant Collaboration**

At present, it has been assumed that the requirements of the credits will be passed onto the tenants through a Tenant Fit-out Guide where possible. This allows half the value of each of the relevant credits to be awarded. Should the decision be taken to express certain requirements through a Lease Agreement rather than a Tenant Fit-out Guide, the whole value of the relevant credits can be awarded.

The summary table below illustrates the number of credits where tenant input can be required.

Table 3: Credits requiring tenant involvement

Credit Ref	Credit Title	No of Credits Available	Tenant involvement currently assumed	Credits Currently Targeted	Tenant Commitment (Lease / Fit-Out Guide)
Man 1	Sustainable Procurement	8	✓	5.5	Tenant Fit-out Guide
Hea 2	Indoor Air Quality	4	✓	1	Tenant Fit-out Guide
Hea 3	Thermal Comfort	2	✓	1	Tenant Fit-out Guide
Hea 4	Water Quality	1	✓	0.5	Tenant Fit-out Guide

Ene 1	Reduction in CO_2 Emissions	15		3	None currently assumed
Ene 2	Energy Monitoring	2	✓	1.5	Tenant Fit-out Guide
Ene 3	External Lighting	1	✓	0.5	Tenant Fit-out Guide
Ene 6	Energy Efficient Transportation Systems	2	✓	1	Tenant Fit-out Guide
Ene 8	Energy Efficient Equipment (Process)	2	✓	1	Tenant Fit-out Guide
Tra 3	Cyclist Facilities	2		1	Cycle storage spaces assumed part of base build Cyclist facilities assumed not achieved
Wat 1	Water Consumption	5		2	Assumed installed as part of base build
Wat 2	Water Monitoring	1		1	Assumed installed as part of base build
Wat 3	Water Leak Detection and Prevention	2		2	Assumed installed as part of base build
Mat 4	Insulation	2		2	Assumed most insulation is part of base build
Mat 5	Designing for Robustness	1	✓	0.5	Tenant Fit-out Guide
Pol 2	NOx Emissions	3		3	Assumed all space heating installed as part of base build
Pol 4	Reduction in Night Time Light Pollution	1	✓	0.5	Tenant Fit-out Guide
Pol 5	Noise Attenuation	1	✓	0.5	Tenant Fit-out Guide

5.0 ASSUMED CREDITS RATING BREAKDOWN

The credits assumed in the pre-assessment score and associated weightings are shown in the score breakdown below.

Table 4: Credit Allocation – Current Pre-Assessment Target

Overall Credit Allocation	Mandatory elements achieved	Value of 1 credit	No. Credits Available	No. CREDITS Assumed	Percentage of Available Credits Assumed	Overall Weighted POINTS score
Management	✓	0.55%	22	15	68.18%	8.18%
Health and Wellbeing	✓	1.00%	15	6.5	43.33%	6.50%
Energy	✓	0.76%	27	8	29.63%	5.63%
Transport		0.89%	9	8	88.89%	7.11%
Water	✓	0.67%	9	6	66.67%	4.00%
Materials	✓	1.04%	12	7.5	62.50%	7.81%
Waste	✓	1.25%	6	4	83.33%	6.25%
Land Use and Ecology	✓	1.00%	10	8	80.00%	8.00%
Pollution		0.77%	13	7	53.85%	5.38%
Innovation		1.00%	10	0	0.00%	0.00%
					Total BREEAM score	**56.87%**
					Rating targeted	**VERY GOOD**

Internal Hoare Lea reference: CALC-2307472-04-LFW-20121213-BREEAM Scoring Tool v2.80-Retail-Rev%20B.xls

6.0 CREDIT ASSESSMENTS

For each of the credits which have been assumed as achievable, responsibility has been given to the relevant design team members. The design team members, their role and their initials are highlighted below.

Table 5: Design Team members

Role	Design Team Member	Initials
Client	Stanhope	Stanhope
Quantity Surveyors	Faithful + Gould Davis Langdon	F+G DL
Architect	Allies and Morrison	A&M
Planning consultant	Quod	Quod
Landscape consultant	Townshend	Townshend
Structural Engineer	Waterman	Waterman
Transport Consultant	Peter Brett Associates	PBA
Drainage Engineer	Waterman + Hoare Lea	Waterman
Flood Risk Consultant	Waterman	Waterman
Ecologist	Waterman	Waterman
MEP Engineers and Acoustic Consultant	Hoare Lea	HL
Tenants	Unknown at this stage	Tenants

A 'traffic light' colour coding system for the status of each credit has been included in this report as follows:

- Green denotes credits targeted
- Amber denotes opportunities / easy wins
- Red denotes credits not targeted
- Hashed background denotes credit requiring tenant input.

CATEGORY 1.0 MANAGEMENT					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Man 01 ⚠ *Mandatory: 1 credit for any rating 2 credits for Outstanding*	**Sustainable Procurement**	**1st Credit:** ✓ Where evidence provided demonstrates that from RIBA stage B (Design Brief) or equivalent the client, building occupier, design team and contractor (or someone with contractor experience, e.g. a project manager) are involved in contributing to the decision making process for the project. As a minimum this includes meeting to identify and define their roles, responsibilities and contributions during the following phases: • Design • Construction • Commissioning and handover • Occupation i.e. up to and including Stage L (Post practical completion). Evidence also needs to be provided which demonstrates that there is a schedule of training identified for relevant building occupiers/premises manager (based appropriately around handover and proposed occupation plans).	1	1	**Stanhope**
		2nd Credit: ✓ Where evidence provided demonstrates that a BREEAM Accredited Professional (AP) is appointed no later than the beginning of stage C to facilitate the setting of BREEAM related performance targets for the project, that defined BREEAM performance targets have been contractually agreed between the client and design/project team no later than RIBA Stage and these defined targets are achieved in the design stage assessment report.	1	1	**Stanhope** *(To appoint BREEAM AP)*
		3rd Credit: ✓ Where evidence provided demonstrates that the 2nd credit is achieved and the appointed AP is engaged to monitor and report progress against the BREEAM targets by attending key project/design team meetings during the feasibility and design stages (RIBA Stage B up to and including RIBA Stage E, or equivalent). The AP must prepare regular written reports for the client and project team detailing progress against the defined BREEAM performance targets (as a minimum for each full design team meeting).	1	1	**Stanhope** *(To appoint BREEAM AP)*
		4th Credit: ✓ Where Evidence provided demonstrates that the previous two credits have been achieved and evidence demonstrates that the performance targets set with the AP are achieved in the Post Construction Assessment Report.	1	1	**Stanhope** *(To appoint BREEAM AP)*

CATEGORY 1.0 MANAGEMENT					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
		5th Credit: ✓ Where evidence provided demonstrates that the main contractor accounts for a thermographic survey within the project budget and programme of works, and that any defects which are detected are rectified.	1	1	**Contractor** *(F+G for ERs)*
		6th Credit: ✓ Where evidence provided demonstrates that a project team member(s) has been appointed to monitor and programme pre-commissioning, commissioning and, where necessary, re-commissioning on behalf of the client. All building services must be included within the commissioning schedule and commissioning is to be carried out in line with current Building Regulations, BSRIA and CIBSE guidelines. The main contractor must account for the commissioning programme, responsibilities and criteria within the main programme of works. In addition, a specialist commissioning manager is appointed during the design stage (by either client or contractor) for complex systems.	1	0.5	**Stanhope + HL + Tenants** *(Guide)*
		7th Credit: ✓ Where evidence provided demonstrates that seasonal commissioning will be carried out over the first 12 months of occupation. For complex systems, a specialist commissioning manager must be employed. **Compliance via tenant fit-out guide is not an option for this credit. Credit can only be awarded if a lease agreement includes this requirement.**	1	0	-
		8th Credit: ✓ Where evidence provided demonstrates that the seasonal commissioning credit has been achieved and there are mechanisms to collect the energy and water consumption data for at least 12 months after occupation, compare this with what was expected and analyse any discrepancies with a view of adjusting systems if they are not operating as expected/designed. There must also be a contract or commitment to provide aftercare support to all the building occupiers. **Compliance via tenant fit-out guide is not an option for this credit. Credit can only be awarded if a lease agreement includes this requirement.**	1	0	-

CATEGORY 1.0 MANAGEMENT

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
		Exemplary level (innovation) credit: ✓ Where evidence provided demonstrates that there is commitment or contract for the facilities manager or equivalent to undertake the following at quarterly intervals for the first 3 years after occupation: • Collect the occupant satisfaction, energy consumption and water consumption data • Utilise the data to check the building is performing as expected and make any necessary adjustments • Set targets for reducing water and energy consumption and monitor progress towards these • Feedback any 'lessons learned' to the design team and developer for use in future projects • Provision of the actual annual building energy, water consumption and occupant satisfaction data to BRE Global. **Compliance via tenant fit-out guide is not an option for this credit. Credit can only be awarded if a lease agreement includes this requirement.**	1	**0 (+1)**	**(Stanhope + Tenants)**
Man 02 ⚠ *Mandatory: 1 credit for Excellent, 2 credits for Outstanding*	**Responsible Construction Practices**	Up to two credits can be awarded where evidence provided demonstrates that the principal contractor has used a 'compliant' organisational, local or national considerate construction scheme. **1st Credit:** ✓ Where evidence provided demonstrates the contractor achieves 'compliance' with the criteria of a compliant scheme e.g. registering the scheme under the Considerate Constructors Scheme and achieves a score of at least 25 points, with a minimum score of 5 points under each section.	1	1	**Contractor** *(F+G for ERs)*
		2nd Credit: ✓ Where evidence provided demonstrates the contractor significantly exceeds 'compliance' with the criteria of the scheme e.g. registering the scheme under the Considerate Constructors Scheme and achieves a score of at least 35 points, with a minimum score of 7 points under each section.	1	1	
		Exemplary Credit – 1 credit ✗ Where evidence provided demonstrates that the principal contractor's performance against the compliant scheme has been confirmed by independent assessment and verification and the contractor achieves compliance with the criteria of the compliant scheme to an exemplary level of practice e.g. registering the scheme under the Considerate Constructors Scheme and achieves a score of at least 40 points, with a minimum score of 7 points under each section.	1	0	

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CATEGORY 1.0 MANAGEMENT

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
Man 03	**Construction site impacts**	**1st Credit:** ✓ Where evidence provided demonstrates that energy consumption has been monitored and recorded from the use of construction plant (mobile and fixed) and site accommodation. The collected data must be then used to report the energy consumption (total kWh and kWh/£100k of project value) and carbon dioxide emissions (total $kgCO_2$ eq and $kgCO_2$ eq/£100k of project value) from the construction process.	1	1	**Contractor** *(F+G for ERs)*
		2nd Credit: ✓ Where evidence provided demonstrates that water consumption is monitored and recorded from the use of construction plant equipment (mobile and fixed) and site accommodation. The collected data must be then used to report the net water consumption for the site minus any recycled water use, from the construction process.	1	1	
		3rd Credit ✓ Where evidence provided demonstrates that the transport of the delivery of construction waste to the site and construction waste from the site is monitored and recorded. The collected data must then be used to report separately for materials and waste, the total fuel consumption (litres) and total carbon dioxide emissions ($kgCO_2eq$), plus total distance travelled (km).	1	1	
		4th Credit: ✓ Where evidence provided demonstrates that all site timber is sourced in accordance with the UK Government Timber Procurement Policy.	1	1	

CATEGORY 1.0 MANAGEMENT					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
		5th Credit: ✓ Where evidence provided demonstrates that the principal contractor for the project operates an Environmental Management System covering their main operations. The EMS must be either: • Third party certified, to ISO14001/EMAS or equivalent standard. OR • The structure of the EMS is in compliance with BS8555 2003. The Contractor must also implement best practice pollution prevention policies and procedures on site, demonstrated through compliance with the items in the Environmental Checklist section 2.2.5 Preventing Pollution in the England and Wales Environment Agency's 'Building a Better Environment.	1	1	
Man 04 ⚠ *Mandatory: 1 credit (building user guide) for Excellent and above*	**Stakeholder Participation**	**1st credit:** ✓ Where evidence provided demonstrates that all relevant parties and relevant bodies are identified and consulted with by the design team at RIBA Stage B. The findings of the consultation must be used to influence the design and therefore must have been held before key and final design decisions were made. A consultation plan has been prepared and includes a timescale and methods of consultation for all relevant parties/bodies and how the relevant parties will be kept informed about progress on the project. During the design stage, consultation feedback must be provided to all relevant parties regarding suggestions made, including how the results of the consultation process have influenced, or resulted in modifications to, the proposed design and building operation/use.	1	1	**Quod**
		2nd Credit: ✗ Where evidence provided demonstrates that the building is designed to be fit for purpose, appropriate and accessible by all potential users. An access statement is developed in line with the CABE publication Design & Access Statements, how to write, read and use them, based on the principles of inclusive design. Provision of facilities is made for future building occupants and users including, where relevant, facilities that can be shared and are accessible to members of the public/community without gaining uncontrolled access to other parts of the building.	1	0 (+1)	**(A&M)**

CATEGORY 1.0 MANAGEMENT					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
		3rd Credit: ✓ Where evidence provided demonstrates that Building User Guides are provided and are appropriate to all users of the building (general users including staff and if applicable residents, as well as the non technical facilities management team/building manager). **Compliance via tenant fit-out guide is not an option for this credit. Credit can only be awarded if a lease agreement includes this requirement.**	1	0	**(Contractor** *(F+G for prelims)***)**
		4th Credit: ✗ Where evidence provided demonstrates that the client makes a commitment to carry out a Post Occupancy Evaluation (POE) one year after building occupation, to gain building performance feedback. The POE should be carried out by an independent third party. In addition, the client makes a commitment to carry out the appropriate dissemination of information on the building's post occupancy performance in order to share any good practice and lessons learned. **Compliance via tenant fit-out guide is not an option for this credit. Credit can only be awarded if a lease agreement includes this requirement.**	1	0	**(Stanhope + Tenants)**
Man 05	**Life cycle cost and service life planning**	**1st Credit:** ✓ Where evidence provided demonstrates that a Life Cycle Cost (LCC) analysis has been carried out based on the proposals developed during RIBA Work Stages C/D (concept design/design development) or equivalent. In addition, a critical appraisal has been completed at the feasibility stage of building procurement, covering the service life estimations and maintenance implications for different design options. This appraisal must comply with Service life planning in accordance with ISO 15686 Buildings and constructed assets - Service life planning Part 1.	1	1	**F+G + DL**

CATEGORY 1.0 MANAGEMENT					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
		2nd Credit: ✓ Where evidence provided demonstrates that the first credit is achieved, the LCC analysis 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: e.g. cladding, windows, and/or roofing • Services: e.g. heat source cooling source, and/or controls • Finishes: e.g. walls, floors and/or ceilings • External spaces The option(s) meet the performance criteria for the building (i.e. realistic options are used for the comparison) and the lowest discounted LCC over the period are preferred. The selected option is of critical value to the project. For a shell only development is issue is still relevant but can exclude services and finishes where none are provided.	1	1	F+G + DL
		3rd Credit: ✗ Where evidence provided demonstrates that the first two credits have been achieved and the model outlined in the first LCC credit is updated during RIBA Work Stages D/E (design development/technical design) or equivalent. The results of the study have been implemented in the specification, design and final construction of the assessed building. In addition, a maintenance strategy has been developed, informed by the LCC analysis.	1	0 (+1)	(F+G + DL)

CATEGORY 2.0 HEALTH AND WELL-BEING					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Hea 01 ⚠ *Mandatory: Pre-requisite to be achieved for any rating*	**Visual Comfort**	**Pre-Requisite** ✓ All fluorescent and compact fluorescent lamps are fitted with high frequency ballasts.	-	-	HL + Tenants
		1st Credit: ✗ Where evidence provided demonstrates that the relevant building areas meet good practice daylighting criteria: 2% daylight factor for 80% of areas	1	0	(A&M)
		2nd Credit: ✓ Glare Control: Where evidence provided demonstrates that the potential for disabling glare has been designed out of all relevant building areas either through building layout and/or building design. In additional, a glare control strategy should be developed in tandem with the lighting strategy to ensure that glare is minimised whilst avoiding potential conflict with the lighting control systems, therefore avoiding higher than expected energy consumption. View Out: Where evidence provided demonstrates that all positions within relevant building areas are within 7m of a wall which has a window or permanent opening that provides an adequate view out. The window/opening must be ≥20% of the surrounding 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 8206. **Where it is not possible to confirm which areas of the building will contain workstations or desks all areas of the building designed for workstations/desks must comply with the relevant View Out criteria.**	1	0 (+ 0.5)	(A&M + Tenants *(Guide)*)

CATEGORY 2.0 HEALTH AND WELL-BEING					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
		3rd Credit: ✓ Where evidence provided demonstrates that internal and external lighting is designed in accordance with the required standard. **Internal lighting** Illuminance (lux) levels in all internal relevant building areas are specified in accordance with the CIBSE Code for Lighting 2009 and any other relevant industry standard. For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 7 sections 3.3, 4.6, 4.7, 4.8 and 4.9. This gives recommendations highlighting: • Limits to the luminance of the luminaires, to avoid screen reflections. (Manufacturers data for the luminaires should be sought to confirm this). • For up-lighting, the recommendations refer to the luminance of the lit ceiling rather than the luminaire; a design team calculation is usually required to demonstrate this. • Recommendations for direct lighting, ceiling illuminance, and average wall illuminance. **External lighting** Illuminance levels for lighting in all external areas within the construction zone are specified in accordance with BS5489-1:2003 and A2:2008 *Lighting of roads and public amenity areas*.	1	0.5	HL + Tenants *(Guide)*
		Exemplary Credit – 1 Credit ✗ Where a daylight factor of 3% is achieved for 80% of the building area.	1	0	-

CATEGORY 2.0 HEALTH AND WELL-BEING					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Hea 02	Indoor Air Quality	**1st Credit:** ✗ Where evidence provided demonstrates that an indoor air quality plan has been produced. For air-conditioned and mixed-mode buildings: the building's air intakes and exhausts are over 10m apart to minimise recirculation and intakes are over 20m from sources of external pollution. In addition, the building must be designed to provide fresh air and minimise internal pollutants (and ingress of external polluted air into the building) in accordance with the criteria of the relevant standard for ventilation. Areas of the building subject to large and unpredictable or variable occupancy patterns have CO_2 or air quality sensors specified and: • In mechanically ventilated spaces, the sensor(s) are linked to the mechanical ventilation system and provide demand-controlled ventilation to the space. • In naturally ventilated spaces, the sensors either have the ability to alert the building owner/manager when CO_2 levels exceed the recommended set point, or are linked to controls with the ability to adjust the quantity of fresh air, i.e. automatic opening windows/roof vents.	1	0 (+1)	(A&M + HL)
		2nd Credit: ✓ Where evidence provided demonstrates that the indoor air quality plan has been developed and all decorative paints and varnishes meet the emission requirements with regards to VOCs.	1	0.5	A&M + Tenants *(Guide)*

CATEGORY 2.0 HEALTH AND WELL-BEING

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
		3rd Credit: ✓ Where evidence provided demonstrates that the indoor air quality plan has been developed and that Formaldehyde concentration level is measured post construction (but pre-occupancy) and is found to be less than or equal to 100µg/m3. The total volatile organic compound (TVOC) concentration is measured post construction (but pre-occupancy) and found to be less than 300µg/m3 over 8 hours, in line with the Building Regulation requirements. Where levels are found to exceed these limits, the project team confirms the measures that have, or will be undertaken in accordance with the IAQ plan, to reduce the TVOC and formaldehyde levels to within the above limits.	1	0.5	A&M + Tenants *(Guide)*
		4th Credit: ✗ Where evidence provided demonstrates that occupied spaces of the building are designed to be capable of providing fresh air entirely via a natural ventilation strategy, demonstrated via either of the following: • The openable window area in each occupied space is equivalent to 5% of the gross internal floor area of that room/floor plate. OR • The design demonstrates that the natural ventilation strategy provides adequate cross flow of air to maintain required thermal comfort conditions and ventilation rates. This is demonstrated using ventilation design tool types recommended by CIBSE AM10 For a strategy which does not rely on openable windows, or which has occupied spaces with a plan depth greater than 15m, the design must demonstrate that the ventilation strategy can provide adequate cross flow of air to maintain the required thermal comfort conditions and ventilation rates. The natural ventilation strategy must be capable of providing at least two levels of user-control on the supply of fresh air to the occupied space, as follows; • Higher level: higher rates of ventilation achievable to remove short-term odours and/or prevent summertime overheating. • Lower level: adequate levels of draught-free fresh air to meet the need for good indoor air quality throughout the year, sufficient for the occupancy load and the internal pollution loads of the space. Any opening mechanisms must be easily accessible and provide adequate user-control over air flow rates to avoid draughts.	1	0 (+1)	(A&M + HL)

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CATEGORY 2.0 HEALTH AND WELL-BEING

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
Hea 03	Thermal Comfort	**1st Credit:** ✓ Where evidence provided demonstrates that Thermal modelling has been carried out using software in accordance with CIBSE AM11. The modelling demonstrates that the building design and services strategy can deliver thermal comfort levels in occupied spaces in accordance with the criteria set out in CIBSE Guide A Environmental Design. In addition, the building complies with any requirement, in terms of "time out of range" (TOR) metric, from the appropriate industry standard (as above) OR where there is no appropriate industry standard available or TOR recommendation made, the building services engineer confirms that the TOR is acceptable for the purpose and function of the building.	1	0.5	HL + A&M + Tenants *(Guide)*
		2nd Credit: ✓ Where evidence provided demonstrates that the first credit has been achieved and the thermal modelling analysis (above) has informed the temperature control strategy for the building and its users. The strategy for the proposed heating and cooling should tackle the following issues: • Zones within the building and how the building services could efficiently and appropriately heat or cool these areas • The amount of occupant control required for these zones, based on discussions with the end user (or alternatively building type/use specific design guidance, case studies, feedback) • How the proposed systems will interact with each other (where there is more than one system) and how this may affect the building occupants thermal comfort. • The need or otherwise for an accessible building user actuated manual override for any automatic systems.	1	0.5	HL + Tenants *(Guide)*
Hea 04 ⚠ *Mandatory: Legionella prevention for all ratings*	Water Quality	**1 Credit:** ✓ Where evidence provided demonstrates that all water systems in the building are designed in compliance with the measures outlined in the Health and Safety Executive's "Legionnaires' disease - The control of Legionella bacteria in water systems". Approved Code of Practice and Guidance, 2000. Where humidification is required, a failsafe humidification system is provided. In addition, a wholesome supply of accessible, clean and fresh drinking water must be supplied, as follows: Permanently staffed buildings/office areas: • Chilled, mains-fed point-of-use water supply or point-of-use water coolers. • Provision in each staff kitchenette, or in a suitable location on each floor level, and in a staff canteen (if provided).	1	0.5	HL + Tenants *(Guide)*

CATEGORY 2.0 HEALTH AND WELL-BEING					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Hea 05	**Acoustic Performance**	**1st credit:** ✓ Where evidence provided demonstrates that a suitably qualified acoustician is appointed by the client at pre bid/briefing stage of the project to provide early design advice on: • External sources of noise impacting the chosen site • Site layout and zoning of the building for good acoustics • Acoustic requirements for users with special hearing and communication needs • Acoustic treatment of different zones and facades.	1	1	**Waterman**
		2nd credit: ✓ Where evidence provided demonstrates that the building meets the acoustic performance standards and testing requirements (i.e. Indoor ambient noise levels to comply with the "good practice" criteria levels of BS8233:1999, Tables 5 & 6 unless otherwise stated within this table).	1	1	**Waterman + A&M**

CATEGORY 2.0 HEALTH AND WELL-BEING					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Hea 06	**Safety and Security**	**1st Credit:** ✗ Where evidence provided demonstrates that where external site areas form part of the assessed development, dedicated cycle lanes are provided and have been designed and constructed in accordance with either: • Local Transport Note 2/08 Cycle Infrastructure Design, Department of Transport, 2008. • The National Cycle Network Guidelines and Practical Details – issue 2, Sustrans and the relevant parts of Appendix VI NCN Design and Construction Checklist The cycle lanes must provided direct access from the site entrance(s) to any cycle storage facilities, connects to off-site cycle paths. Footpaths, drop off areas and pedestrian crossing must be designed in accordance with best practice standards. For large developments with a high number of public users/visitors, pedestrian pathways must be signposted to other local amenities off site, including public transport nodes. The lighting for access roads, pedestrian areas, footpaths and cycle lanes is compliant with the external lighting criteria defined in BREEAM issue Hea 01, i.e. in accordance with BS5489-1:2003+A2:2008 Lighting of roads and public amenity areas. Where dedicated delivery access and drop-off areas form part of the assessed development the following apply: • Delivery areas are not directly accessed through general parking areas and • Do not cross or share pedestrian and cyclist routes and other outside amenity areas • There is a separate parking/waiting area for goods vehicles away from / adjacent to the manoeuvring area and staff/visitor car parking. • Parking and turning areas are designed for simple manoeuvring according to the type of delivery vehicle likely to access the site • There is a dedicated space for the storage of refuse skips and pallets away from the delivery vehicle manoeuvring area and staff/visitor car parking	1	0	-

CATEGORY 2.0 HEALTH AND WELL-BEING					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
		2nd Credit: ✓ Where evidence provided demonstrates that the design team have accounted for security considerations in the new building design and site layout through consultation with a suitably qualified security consultant prior to stage C. The final design recommendations bust be embodied within the design and conforms to either: • The principles and guidance of Secured by Design (SbD) and/or Safer Parking (SP)Scheme Or where SbD/SP is of less relevance to the building type/operation: A site specific security risk and threat assessment and subsequent security strategy and recommendations for security measures (as developed/recommended by the suitably qualified security consultant).	1	1	A&M

CATEGORY 3.0 ENERGY					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Ene 01 ⚠ *Mandatory: 6 credits for Excellent 10 credits for Outstanding*	**Reduction of CO_2 emissions**	**1 – 15 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 CO_2 emissions. The number of credits achieved is determined by comparing the Energy Performance Ratio for New Constructions. **Compliance via tenant fit-out guide is not an option for this credit. Max design specifications allowable under current regulations must be assumed for unknown fit-out items, or specifications must be given in a lease agreement.**	15	3	A&M + HL

BREEAM credits	EPR NC	Minimum requirements
1	0.05	Requires a performance improvement progressively better than the Target Emission Rate (TER) required for Building Regulations approval.
2	0.15	
3	0.25	
4	0.35	
5	0.45	
6	0.55	BREEAM Excellent level (6 credits): Requires a CO_2 parameter for the EPR_{NC} calculation of 0.22. This is equivalent to a 25% improvement on the TER.
7	0.59	
8	0.63	
9	0.67	
10	0.72	BREEAM Outstanding level (10 credits): Requires a CO_2 parameter for the EPR_{NC} calculation of 0.30. This is equivalent to a 40% improvement on the TER.
11	0.75	
12	0.79	
13	0.83	
14	0.87	
15	0.90	Requires a CO_2 parameter for the EPR_{NC} calculation of 0.38. This is equivalent to a 100% improvement on the TER i.e. zero net CO_2 emissions.

CATEGORY 3.0 ENERGY

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
		Exemplary Credits Available – 5 credits ✗ The building is 'carbon negative' in terms of its total modelled operational energy consumption	5	0	-
		Exemplary Credits Available- up to 4 credits ✗ The building achieves an EPR_{NC} ≥0.9 and zero net CO_2 emissions, and an equivalent percentage of the buildings modelled 'regulated' operational energy consumption, as stipulated in the table below, is generated by carbon neutral on-site, near-site or 'accredited external' sources and used to meet energy demand from 'unregulated' building systems or processes. Innovation credits / Equivalent % criteria: 4 – 80%; 3 – 50%; 2 – 20%; 1 – 10%	4	0	-
Ene 02 *Mandatory: 1 credit for Very Good and above*	**Energy monitoring**	**1 Credit:** ✓ Where evidence provided demonstrates that the following major energy consuming systems (where present) are monitored using either a Building Energy Management System (BEMS) or separate accessible energy sub meters with a pulsed output to enable future connection to a BEMS: • Space Heating • Domestic Hot Water • Humidification • Cooling • Fans (major) • Lighting • Small Power (lighting and small power can be on the same sub-meter where supplies are taken at each floor/department). • Other major energy-consuming items where appropriate The end energy consuming use is identifiable to the building user through labelling or data outputs.	1	0.5	**HL + Tenants** *(Guide)*

CATEGORY 3.0 ENERGY

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
		1 Credit: ✓ Where an accessible BEMS or accessible sub-meters are provided covering the energy supply to all tenanted, or in the case of single occupancy buildings, relevant function areas or departments within the building or unit.	1	1	HL
Ene 03	**External Lighting**	**1 Credit:** ✓ Where evidence provided demonstrates that the external lighting has been designed in accordance with the following • All external light fittings for the building, access ways and pathways have a luminous efficacy of at least 50 lamp lumens/circuit Watt when the lamp has a colour rendering index (Ra) greater than or equal to 60 OR 60 lamp Lumens / circuit Watt when the lamp has a colour rendering index (Ra) less than 60. • All external light fittings to car parking areas, associated roads and floodlighting has a luminous efficacy of at least 70 lamp lumens/circuit Watt when the lamp has a colour rendering index (Ra) greater than or equal to 60 OR 80 lamp Lumens / circuit Watts when the lamp has a colour rendering index (Ra) less than 60. • All external light fittings for signs and uplighting have a luminous efficacy of at least 60 lamp lumens/circuit Watt when the lamp wattage is greater than or equal to 25W OR 50 lamp lumens/circuit Watt when the lamp wattage is less than 25W. • External light fittings are controlled through a time switch, or daylight sensor, to prevent operation during daylight hours. Daylight sensor override on a manually switched lighting circuit is acceptable. **If all external lighting will be installed as part of the base build the whole credit can be assumed.**	1	0.5	**HL + Tenants** *(Guide)*
Ene 04 *Mandatory: 1 credit for Excellent and above*	**Low and zero carbon technologies**	**1st Credit:** ✓ Where evidence provided demonstrates that a feasibility study has been carried out by an energy specialist to establish the most appropriate local (on-site or near-site) low or zero carbon (LZC) energy source for the building/development and the recommendations have been implemented. The feasibility study must be carried out at RIBA stage C. **OR** The organisation that occupies the building has in place a contract with an energy supplier to provide electricity for the assessed building/development from a 100% renewable energy source. This supply must be delivered by an accredited external renewable source. The contract must be valid for a minimum of 3 years from the date the assessed building becomes occupied.	1	0 (+1)	**(Stanhope** *+ Tenants for installation if relevant***)**

CATEGORY 3.0 ENERGY

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
		2nd, 3rd and 4th Credits: ✗ Where evidence provided demonstrates that the first credit has been achieved and a local LZC has been installed, in line with the recommendations of the report, which results in a % reduction in regulated CO_2 emissions as follows: **No of credits** / **% reduction in regulated CO_2 emissions** 2 / 10% 3 / 20% **Exemplary level** / 30% **OR**	4	0	-
		2nd, 3rd, 4th and 5th Credits: ✗ Where evidence provided demonstrates that where the feasibility study includes a Life Cycle Assessment of the carbon impact of the chosen LZC system(s), accounting for its embodied carbon emissions and operational carbon savings and emissions, and this method of supply results in a reduction in life cycle CO_2 emissions as follows: **No of credits** / **% reduction in life cycle CO_2 emissions** 2 / N/A (study only) 3 / 10% 4 / 20% **Exemplary level** / 30%			
		6th Credit: ✗ Where evidence provided demonstrates that regardless of the percentage reduction in the building's CO_2 emissions from LZC sources and number of BREEAM credits achieved above, the building utilises free cooling strategies and the first credit within the BREEAM issue Hea 03 Thermal comfort has been achieved:	1	0	-

CATEGORY 3.0 ENERGY

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
Ene 06	**Energy efficient transportation systems**	**1st Credit:** ✓ Where evidence provided demonstrates that Where either lifts, escalators or moving walks are required: • An analysis of the transportation demand and usage patterns for the building has been carried out to determine the optimum number and size of lifts (including counter-balancing ratio), escalators and/or moving walks. • The energy consumption has been estimated for different types and the lift/escalator/moving walk system/strategy with the lowest energy consumption has been specified.	1	0.5	HL + Tenants *(Guide)*
		2nd Credit: ✓ Where evidence provided demonstrates that the first credit has been achieved and for lifts, of the following energy-efficient features the three that offer the greatest potential energy savings are specified: • The lifts operate in a stand-by condition during off-peak periods. • The lift car uses energy-efficient lighting and display lighting • The lift uses a drive controller capable of variable-speed, variable-voltage, variable frequency (VVVF) control of the drive motor. • The lift has a regenerative drive unit so that any energy generated by a traction lift or by a hydraulic lift is returned back to the electricity utility supplier or used elsewhere in the building. For escalators and/or moving walks, each escalator and/or moving walk complies with EITHER of the following: • It is fitted with a load sensing device that synchronises motor output to passenger demand through a variable speed drive. OR • 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	0.5	HL + Tenants *(Guide)*

CATEGORY 3.0 ENERGY

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
Ene 08	Energy Efficient Equipment	**2 credits:** ✓ Where evidence provided demonstrates that the following criteria have been met (please note that Data Centres include server / comms rooms)	2	1	Stanhope + Tenants *(Guide)*

Ref	Function/ equipment	Criteria
A	Small power, plug in equipment	The following equipment EITHER qualifies for an Enhanced Capital Allowance Scheme[18] claim (i.e. is on the Energy Technology Product List, ETPL) OR has been awarded an Energy Star[19] rating OR has been procured in accordance with the Government Buying Standards[20] OR are identified as products with at least a 'green tick' standard on the Buying Solutions[21] website. 1. Office equipment 2. Domestic scale white goods and other small powered equipment 3. Supplementary electric heating.
D	Data Centre	1. Design is in accordance with the 'Best practices for the EU Code of Conduct on Data Centres'[22] principles with the data centre achieving at least the 'Expected minimum practice' level (as defined in the Code of Conduct). 2. Temperature set points are not less than 24°C, as measured at the inlet of the equipment in the rack.
H	Kitchen and catering facilities	Where the project team can demonstrate that the project has incorporated at least one energy efficiency measure outlined in each of the following sections of CIBSE Guide TM50[25]: 1. Section 8 (Drainage and kitchen waste removal) 2. Section 9 (Energy controls - specifically controls relevant to equipment), 3. Section 11 (Appliance specification, fabrication specification - not utensil specification), 4. Section 12 (Refrigeration), 5. Section 13 (Warewashing: dishwashers and glasswashers), 6. Section 14 (Cooking appliance selection), 7. Section 15 (Water temperatures, taps, faucets and water saving controls)

CATEGORY 4.0 TRANSPORT

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
Tra 01	Public transport accessibility	**1 – 5 Credits dependant on building type:** ✓ Where evidence provided demonstrates the accessibility to the public transport network. This is summarised in the table below.	5	5	PBA

Accessibility Index	2	4	8	10	12	18
Building Type	BREEAM credits available					
Business: Offices/Industrial, Multi-residential, Other building type 1	1	2	3	-	-	-
Pre-school, School, Sixth Form	1	2	3	-	-	-
Retail, Law Court, Further Education College, Higher Education type 1, Other building type 2	1	2	3	3	4	5
Higher Education type 2	1	2	3	4	5	-
Healthcare - Hospitals (Acute, Specialist, Teaching, Mental health)	1	2	3	3	4	5
Healthcare - GP surgery, Health centre, Community hospital	1	2	3	4	5	-
Rural location sensitive buildings (see 'Building type definition' Compliance note), Other building type 3	1	2	-	-	-	-
Prison site, MOD site	1	2	-	-	-	-
Transport hub	1	2	3	3	3	4

The accessibility index for each building type is calculated based upon the following information:
- The distance (m) from the main building entrance to each compliant public transport node
- The public transport type(s) serving the compliant node e.g. bus or rail
- The average number of services stopping per hour at each compliant node during the standard operating hours of the building for a typical day

CATEGORY 4.0 TRANSPORT					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Tra 02	**Proximity to amenities**	**1 Credit:** ✓ Where evidence provided demonstrates that the building is located within 500m of 2 local amenities from the following list: • Food outlet / grocery shop • Post Box • Cash Machine • Pharmacy • GP Surgery / Medical Centre	1	**1**	**A&M + PBA**
Tra 03	**Cyclist facilities**	**2 Credits:** ✓ Where evidence provided demonstrates that the number of compliant cycle storage spaces provided are in accordance with the following: • 1 cycle space per 10 staff • 1 compliant types of facilities per 10 staff (showers or changing facilities or lockers & clothes drying space) This can be adjusted by 50%, as the site is in a city centre location **It is currently assumed cycle spaces will be installed as part of the base build. The credit for cyclist facilities can only be awarded if these are installed as part of the base build or through developer/tenant collaboration. This credit is currently not assumed.**	2	**1**	**A&M + PBA**
Tra 05	**Travel Plan**	**1 Credit:** ✓ Where evidence provided demonstrates that a travel plan has been developed as part of the feasibility and design stages which considers all types of travel relevant to the building type and users. The travel plan must be structured to the needs of the particular site and takes into consideration the findings of a site-specific transport survey and must include 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 appropriate to the building type, size and intended operation, the travel plan includes measures tailored to minimise the impacts of operational-related transport e.g. deliveries of supplies, equipment and support services to and from the site. 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**	**PBA**

CATEGORY 5.0 WATER					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Wat 01 ⚠ *Mandatory: 1 credit for Good and above 2 credits for Outstanding*	**Water consumption**	**1 – 5 Credits:** ✓ Where evidence provided demonstrates that water consumption has been reduced to the following levels compared against the baseline building model: % improvement / No. of BREEAM credits: 12.5% / 1; 25% / 2; 40% / 3; 50% / 4; 55% / 5; 65% / Exemplary performance **NOTE: for a target of 3 credits of more a greywater or rainwater recycling system will be needed** **Compliance via tenant fit-out guide is not an option for this credit. Credit can only be awarded if a lease agreement includes this requirement, or if the fittings are part of the base build.** Assumption: The following system performances to be specified in order to meet credit requirements (further details and system performances for other systems given in the BREEAM technical guide): - WCs: max. effective flush of 4.5 litres - Wash Hand Basins: 7.5 litres/min - Showers: 8-14 litres/minute - Kitchen taps: 7.5 litres/min - Urinals (if specified): 1.5-3 litres/bowl/hour - Commercial sized dishwashers: 6 litres/rack - Commercial/industrial sized washing machines: 10 litres/kg - Kitchen pre-rinse nozzle: 8.3 litres/min	5	**2**	**A&M + HL** *(Assumed part of base build)*

CATEGORY 5.0 WATER					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Wat 02 *Mandatory: Criterion 1 only for Good and above*	**Water monitoring**	**1 Credit:** ✓ Where evidence provided demonstrates that a water meter with a pulsed output will be installed on the mains supply to each building/unit. Water-consuming plant or building areas, consuming 10% or more of the building's total water demand, need to be fitted with either sub meters or have water monitoring equipment integral to the plant or area. Each meter (main and sub) must have a pulsed output to enable connection to a Building Management System (BMS) for the monitoring of water consumption. If the site on which the building is located has an existing BMS, managed by the same occupier/owner (as the new building), the pulsed water meter(s) for the new building must be connected to the existing BMS.	1	1	**HL** *(Assumed part of base build)*
Wat 03	**Water leak detection and prevention**	**1st Credit:** ✓ Where evidence provided demonstrates that 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 is provided.	1	1	**HL**
		2nd Credit: ✓ Where evidence provided demonstrates that 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): • A time controller i.e. an automatic time switch device to switch off the water supply after a predetermined interval • A programmed time controller i.e. an automatic time switch device to switch water on and/or off at predetermined times. • A volume controller i.e. an automatic control device to turn off the water supply once the maximum preset volume is reached. • 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. A central control unit i.e. a dedicated computer-based control unit for an overall managed water control system, utilising some or all of the types of control elements listed above.	1	1	**HL** *(Assumed part of base build)*

CATEGORY 5.0 WATER					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Wat 04	**Water efficient equipment**	**1 Credit:** ✓ Where an irrigation method specified for internal or external planting and/or landscaping, it complies with ANY ONE of the following: • Drip feed subsurface irrigation that incorporates soil moisture sensors. The irrigation control should be zoned to permit variable irrigation to different planting assemblages. • Reclaimed water from a rainwater or grey water system. • External landscaping and planting that relies solely on precipitation, during all seasons of the year. • All planting specified is restricted to species that thrive in hot and dry conditions. • Where no dedicated, mains-supplied irrigation systems are specified	1	1	**A&M + HL**

CATEGORY 6.0 MATERIALS					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Mat 01	**Life cycle impacts**	**5 Credits :** ✓ Up to six credits are available, determined by the *Green Guide to Specification* and the environmental product declaration for the major building/finishing elements: • External Walls • Windows • Roof • Upper Floor Slabs • Internal Walls • Floor Finishes /Coverings.	5	**3**	**A&M**
Mat 02	**Hard landscaping and boundary protection**	**1 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**	**A&M**

CATEGORY 6.0 MATERIALS					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Mat 03 ⚠ *Mandatory: Criterion 3 sustainable timber sourcing for all ratings*	**Responsible sourcing of materials**	**1 – 3 Credits:** ✓ Where evidence provided demonstrates that 80% of the assessed materials in the following building elements are responsibly sourced: • Structural Frame • Ground floor • Upper floors (including separating floors) • Roof • External walls • Internal walls • Foundation/substructure • Fittings: includes stair case, windows (frame and glazing units), doors (internal and external), floor finishes and any other significant fitting or finish present • Hard landscaping Points are awarded based upon the level of responsible sourcing for each of the different building elements. Tier level / Points 1 – 4.0 2 – 3.5 3 – 3.0 4 – 2.5 5 – 2.0 6 – 1.5 7 – 1.0 8 – 0	3	**1**	**Contractor** *(F+G for ERs)*

CATEGORY 6.0 MATERIALS

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
Mat 04	Insulation	**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 **1st 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. **It is assumed that the majority of the insulation in the buildings (more than 80%) will be installed as part of the base build. Therefore the whole credit is assumed. If tenants are installing more than 20% of insulation, a fit-out guide can close this out, but only half the value of the credit would be awarded.**	1	1	**A&M + HL** *(Assumed majority of insulation part of base build)*
		2nd Credit: ✓ Where evidence provided demonstrates that all insulation materials used within the building are responsibly sourced, in accordance with the Mat 1 guidance. **It is assumed that the majority of the insulation in the buildings (more than 80%) will be installed as part of the base build. Therefore the whole credit is assumed. If tenants are installing more than 20% of insulation, a fit-out guide can close this out, but only half the value of the credit would be awarded.**	1	1	**Contractor** *(F+G for ERs - assumed majority of insulation part of base build)*
Mat 05	Designing for Robustness	**1 Credit:** ✓ Where evidence provided demonstrates that the areas of the building where vehicular and pedestrian movement will occur and the design incorporate suitable durability and protection measures or design features/solutions to prevent damage to the vulnerable parts of the building. This must include, but is not necessarily limited to: • Protection from the effects of high pedestrian traffic in main entrances, public areas and thoroughfares (corridors, lifts, stairs, doors etc). • Protection against any internal vehicular/trolley movement within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas. • Protection against, or prevention from, any potential vehicular collision where vehicular parking and manoeuvring occurs within 1m of the external building façade for all car parking areas and within 2m for all delivery areas.	1	0.5	**A&M + Tenants** *(Guide)*

CATEGORY 7.0 WASTE

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
Wst 01 ⚠ *Mandatory; 1 credit for Outstanding*	Construction waste management	**1-3 Credits: 2** ✓ Where evidence provided demonstrates that non-hazardous construction waste (excluding demolition and excavation waste) generated by the building's design and construction meets or exceeds the following resource efficiency benchmarks: BREEAM credits / Amount of waste generated per 100m² (gross internal floor area): m³ / tonnes One credit: 13.3 / 11.1 Two credits: 7.5 / 6.5 Three credits: 3.4 / 3.2 Exemplary Level: 1.6 / 1.9 **1 credit:** ✓ Where evidence provided demonstrates that the following percentages of non-hazardous construction and demolition waste (where applicable) generated by the project have been diverted from landfill: BREEAM credits / Type of waste / Volume / Tonnage One credit: Non demolition 70% 80%; Demolition 80% 90% Exemplary level: Non demolition 85% 90%; Demolition 85% 95% **Exemplary Credit Available – 1 credit** ✗ Where evidence provided demonstrated that the non-hazardous construction waste generated by the building's design and construction is no greater than the exemplary level resource efficiency benchmark (outlined in the above table).	4	4	**Contractor** *(F+G for ERs)*

CATEGORY 7.0 WASTE					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Wst 02	**Recycled aggregates**	**1 Credit:** ✗ Where evidence provided demonstrates the significant use (>25% by weight or volume) of recycled or secondary aggregates in 'high-grade' building aggregate uses. To contribute to the total amount, the percentage of high-grade aggregate specified per application (where present) that is recycled and/or secondary aggregate, must meet the following minimum levels (by weight or volume): **Application** / **Min. % One credit** / **Min. % Exemplary performance** Structural frame: 25% / 50% Floor slabs including ground floor slabs: 25% / 50% Bitumen or hydraulically bound base, binder, and surface courses for paved areas and roads: 50% / 75% Concrete road surfaces: 25% / 50% Pipe bedding: 50% / 100% Building foundations: 25% / 50% Granular fill and capping (see Compliance notes): 75% / 100% Gravel landscaping: 100% / 100%	1	0 (+1)	(Waterman)

CATEGORY 7.0 WASTE					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Wst 03 ⚠ *Mandatory: 1 credit for Excellent and above*	**Operational waste**	**1 Credit:** ✓ Where evidence provided demonstrates that there is dedicated space(s) to cater for the segregation and storage of operational recyclable waste volumes generated by the assessed building/unit, its occupant(s) and activities. The dedicated space(s) must be: • Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams • Accessible to building occupants / facilities operators for the deposit of materials and collections by waste management contractors • Of a capacity appropriate to the building type, size, number of units (if relevant) and predicted volumes of waste that will arise from daily/weekly operational activities and occupancy rates. Where the consistent generation in volume of the appropriate operational waste streams is likely to exist, e.g. large amounts of packaging or compostable waste generated by the building's use and operation, the following facilities must be provided as part of its waste management strategy: • Static waste compactor(s) or baler(s); situated in a service area or dedicated waste management space. • Vessel(s) for composting suitable organic waste resulting from the building's daily operation and use OR adequate space(s) for storing segregated food waste and compostable organic material prior to collection and delivery to an alternative composting facility. • Where organic waste is to be stored/ composted on site, a water outlet is provided adjacent to or within the facility for cleaning and hygiene purposes.	1	1	A&M

CATEGORY 8.0 LAND USE AND ECOLOGY

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
Le 01	Site selection	1st Credit: ✓ Where evidence is provided to demonstrate that at least 75% of the proposed development's footprint is on an area of land which has previously been developed for use by industrial, commercial or domestic purposes in the last 50 years.	1	1	A&M
		2nd Credit: ✗ Where evidence provided demonstrates that the site is significantly contaminated as confirmed by a contaminated land specialist's site investigation, risk assessment and appraisal. The client or principal contractor must confirm that remediation of the site will be carried out in accordance with the remediation strategy and its implementation plan.	1	0	-
Le 02	Ecological value of the site and protection of ecological features	1 Credit: ✗ Where evidence provided demonstrates that the site's construction zone is defined as land of low ecological value and all existing features of ecological value will be fully protected from damage during site preparation and construction works.	1	0	(Waterman)
Le 03 ⚠ *Mandatory: 1 credit for Very Good and above*	Mitigating ecological impact	1st Credit: ✓ Where evidence provided demonstrates that the change in the site's existing ecological value, as a result of development, is **minimal.**	1	1	Waterman
		2nd Credit: ✓ Where evidence provided demonstrates that there is **no negative change** in the site's existing ecological value as a result of development.	1	1	A&M + Waterman

CATEGORY 8.0 LAND USE AND ECOLOGY

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
Le 04	Enhancing site ecology	1st Credit: ✓ Where the design team (or client) has appointed a suitably qualified ecologist at **stage B** to advise and report on enhancing and protecting the ecological value of the site; and implemented the professional's recommendations for general enhancement and protection of site ecology.	1	1	Waterman
		2nd Credit: ✓ Where there is a positive increase in the ecological value of the site of up to (but not including) 6 species.	1	1	A&M + Waterman
		3rd Credit: ✗ Where there is a positive increase in the ecological value of the site of 6 species or greater.	1	0	(Waterman)
Le 05	Long term impact on biodiversity	1st Credit: ✓ The client has committed to achieving the mandatory requirements and at least two of the additional requirements.	1	1	Contractor *(F+G for ERs)* + Waterman
		2nd Credit: ✓ The client has committed to achieving the mandatory requirements and at least four of the additional requirements.	1	1	Contractor *(F+G for ERs)* + Waterman

CATEGORY 9.0 POLLUTION

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
Pol 01	**Impact of refrigerants**	**3 credits:** ✗ Where evidence provided demonstrates that the building does not require the use of refrigerant within its building services or plant. **OR** **2 Credits:** ✗ Where evidence provided demonstrates that the systems specified using refrigerants have Direct Effect Life Cycle CO_2 equivalent emissions (DELC CO_{2e}) of ≤100 $kgCO_{2e}$/kW cooling capacity. To calculate the DELC CO_{2e} the following information is sourced from the design team and entered into the BREEAM Pol 01calculator: • Global Warming Potential (GWP) of the specified system refrigerant(s) • Total refrigerant charge (kg) • Cooling capacity of the system(s) (kW) • Sectoral release factors: • Annual refrigerant leakage rate (% of refrigerant charge): • Annual purge release factor (% of refrigerant charge): • Annual service release factor (% of refrigerant charge): • Probability factor for catastrophic system failure (%) • Recovery efficiency (% of refrigerant charge): **OR** Where air-conditioning or refrigeration systems are installed the refrigerants used have a Global Warming Potential (GWP) ≤10. **1 credit:** ✗ Where evidence provided demonstrates that the systems using refrigerants have Direct Effect Life Cycle CO_2 equivalent emissions of (DELC CO_{2e}) of ≤1000 $kgCO_{2e}$/kW cooling capacity. **1 credit:** ✗ • 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 • The automatic shutdown and pump down of refrigerant occurs on the detection of refrigerant leakage/charge loss. • 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. • Use a robust and tested automated permanent refrigerant leak detection system.	3	**0 (+1-2)**	**(HL + Tenants** *(if separate cooling systems exist, e.g. in server rooms)***)**

CATEGORY 9.0 POLLUTION

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
Pol 02	**NO_x emissions**	**1-3 credits:** ✓ Where evidence provided demonstrates where the plant specified to meet the building's delivered heating and cooling demand has, under normal operating conditions, a dry NOx emission level (measured at 0% excess O_2) as follows: **Building types and emission levels** / **Credits** Court, office, retail and other building types ≤ 100 mg/kWh (space heating) — 1 credit ≤ 70 mg/kWh (space heating) — 2 credits ≤ 40 mg/kWh (space heating) — 3 credits **It is currently assumed that all heating systems will be installed as part of the base build. Therefore the whole credit is assumed. If tenants are installing heating systems, a fit-out guide can close this out, but only half the value of the credit would be awarded.**	3	**3**	**HL** *(Assumed installed as part of base build)*
Pol 03	**Surface water run off**	**Two credits:** ✓ Where evidence provided demonstrates that the site is of low risk of flooding and a site specific flood risk assessment has been completed in line with PPS25. **OR 1 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	**2**	**Waterman**

CATEGORY 9.0 POLLUTION					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
		In addition: **1 Credit:** ✓ Where evidence provided demonstrates that an appropriate consultant has been appointed and they have confirmed that the drainage measures specified ensure that the peak rate of run-off from the site to the watercourses (natural or municipal) is no greater for the developed site than it was for the pre-development site. This should comply at the 1 year and 100 year return period events, taking into account climate change.	1	1	**Waterman**
		1 credit: ✓ Where evidence provided demonstrates that an appropriate consultant has been appointed and they have confirmed that there is no risk of flooding in the event of a local drainage system failure, AND **EITHER** • The post development run-off volume, over the development lifetime, is no greater than it would have been prior to the assessed site's development. • Any additional predicted volume of run-off for the 100 year 6 hour event must be prevented from leaving the site by using infiltration or other SuDS techniques **OR** (only where the above criterion for this credit cannot be achieved) • Justification from the Appropriate Consultant indicating why the above criteria cannot be achieved i.e. where infiltration or other SuDS techniques are not technically viable options. • The post development peak rate of run-off is reduced to a limiting discharge.	1	0 (+1)	**Waterman**
		1 credit: ✗ Where evidence provided demonstrates that the following water course pollution prevention measures are covered: • The appropriate consultant confirms there will be no discharge from the developed site for rainfall up to 5mm. • Specification of Sustainable Drainage Systems (SUDs) or source control systems such as permeable surfaces or infiltration trenches • Specification of oil/petrol separators (or equivalent system) in surface water drainage systems, where there is a high risk of contamination or spillage of substances • All water pollution prevention systems have been designed and detailed in accordance with the recommendations of Pollution Prevention Guideline 3 • A comprehensive and up-to-date drainage plan of the site will be made available for the building/site occupiers.	1	0	-

Sackville Developments (Reading) Limited
Station Hill

BREEAM New Construction 2011 Pre-Assessment - Retail
Rev. B

CATEGORY 9.0 POLLUTION					
REF	**CREDIT**	**COMPLIANCE STATUS**	**CREDITS AVAILABLE**	**CREDITS TARGETED**	**RESPONSIBLE TEAM MEMBER**
Pol 04	**Reduction in night time light pollution**	**1 Credit:** ✓ Where evidence provided demonstrates that the lighting system has been designed in accordance with the following requirements: • 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. • All external lighting (except for safety and security lighting) can be automatically switched off between 2300hrs and 0700hrs. This can be achieved by providing a timer for all external lighting set to the appropriate hours. • 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, for example by using an automatic switch to reduce the lighting levels at 2300 or earlier. • Illuminated advertisements, where specified, must be designed in compliance with ILE Technical Report 5 – The Brightness of Illuminated Advertisements. **If ALL external lighting will be installed as part of the base build the whole credit can be assumed.**	1	0.5	**HL + Tenants** *(Guide)*
Pol 05	**Noise attenuation**	**1 Credit:** ✓ Where evidence provided demonstrates that there is **either** no noise-sensitive areas or buildings within 800m radius of the assessed development **OR** Where there are or will be noise-sensitive areas or buildings within 800m radius of the assessed development a noise impact assessment in compliance with BS 7445:1991 has been carried out and the following noise levels measured/determined: • Existing background noise levels at the nearest or most exposed noise-sensitive development to the proposed development or at a location where background condition can be argued to be similar. • The rating noise level resulting from the new noise-source	1	0.5	**HL + Tenants** *(Guide)*

BREEAM INNOVATION CREDITS

NOTE: MAXIMUM NUMBER OF INNOVATION CREDITS ACHIEVABLE - 10

REF	CREDIT	COMPLIANCE STATUS	CREDITS AVAILABLE	CREDITS TARGETED	RESPONSIBLE TEAM MEMBER
Inno-vation	**Exemplary Credits**	Up to a maximum of 10 credits are available in aggregate from a combination of the following: **Exemplary level of performance in existing BREEAM issues** 1. Where the building demonstrates exemplary performance by meeting defined exemplary level performance criteria in one or more of the following BREEAM assessment issues: • Man 01 Sustainable procurement • Man 02 Responsible construction practices • Hea 01 Visual comfort • Ene 01 Reduction of CO_2 emissions • Ene 04 Low or zero carbon technologies • Wat 01 Water consumption • Mat 01 Life cycle impacts • Mat 03 Responsible sourcing of materials • Wst 01 Construction site waste management • Wst 02 Recycled Aggregates One innovation credit can be awarded for each individual BREEAM issue exemplary performance level complied with. **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.	10	**0**	**(All team members)**

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