

The Hop Exchange

Sustainability Statement and
BREEAM Pre-Assessment

Issue 02

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1.0 EXECUTIVE SUMMARY

This Sustainability and BREEAM Statement supports the planning application for the proposed redevelopment of the Hop Exchange.

This document describes the proposed approach for the delivery of a sustainable development that fulfils the requirements and objectives of all stakeholders from central government to its future users.

This report addresses the following:

- Review of relevant planning policy
- Summary of key sustainability strategies
- BREEAM pre-assessment and scoresheet

This statement should be reviewed alongside the other planning documents that have been submitted for this application.

1.1 Project Introduction

The Hop Exchange is a Grade II listed building in Southwark, Central London.

The project comprises a rear infill extension of 6 storeys connecting to a 2-storey roof extension on the western section of the building; a new atrium roof on the eastern section; roof terrace, landscaping and public realm works and general works of enhancement to the listed building in connection with the continued use of the building within Class E. The boundary of the BREEAM assessment excludes the new atrium roof on the eastern section.

1.2 Sustainability Statement

The following key sustainability themes have been embedded into the design of the Hop Exchange, ensuring the development meets the planning requirements relating to sustainability:

- Energy
- Water
- Climate Change Adaptation
- Air Quality
- Biodiversity
- Material and Waste
- Transport

1.3 BREEAM Pre-Assessment

The Hop Exchange development is required to achieve a BREEAM 'Excellent' rating as per the Southwark local planning requirements. A bespoke assessment is being undertaken based on the BREEAM UK Refurbishment and Fit-Out 2014 v1.1 manual

A BREEAM strategy for the Hop Exchange has been developed and achieves a targeted score of 73.8%. This equates to an 'Excellent' rating, with a buffer of 3.8%. The minimum requirements needed to achieve a BREEAM Excellent rating are all on track to be achieved.

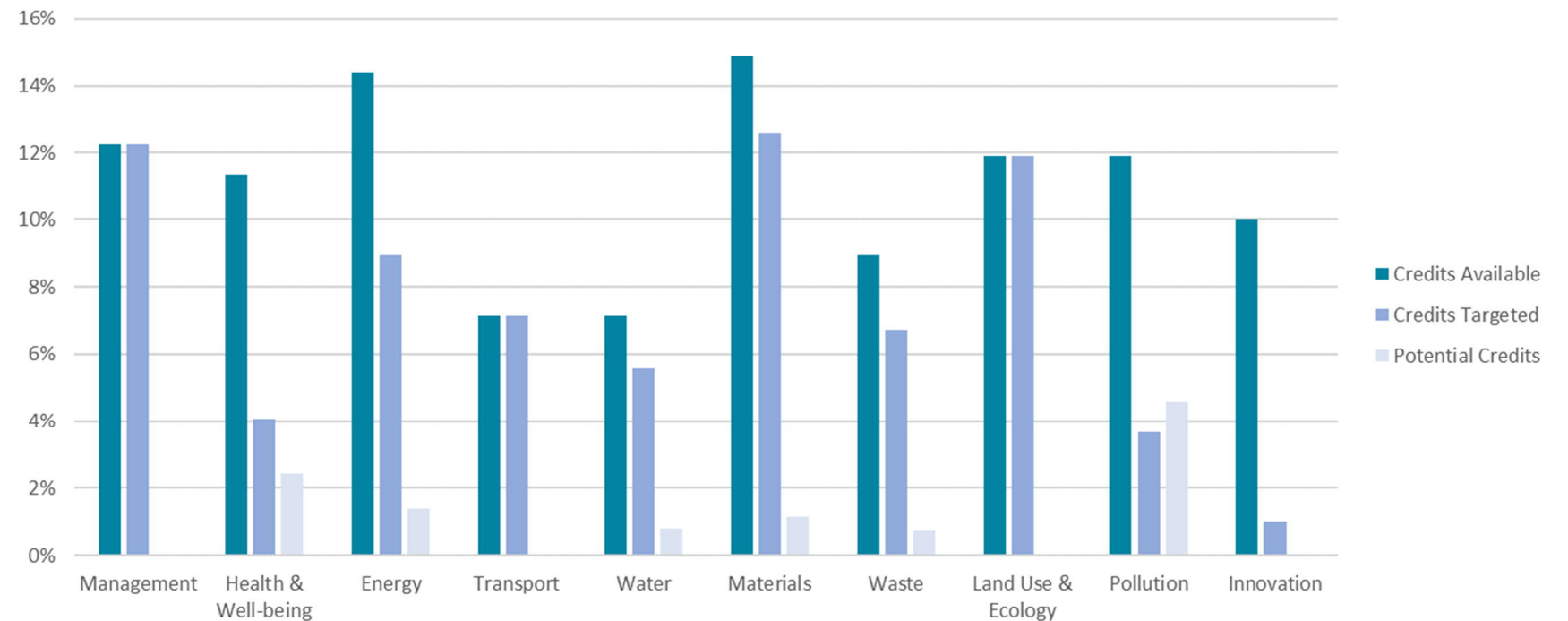


Figure 1: Targeted and potential score per category against percentage available

2.0 PROJECT INTRODUCTION

Peer Group are seeking planning permission for the redevelopment of the Grade II listed Hop Exchange building, in Southwark, Central London.

The project comprises a rear infill extension of 6 storeys connecting to a 2-storey roof extension on the western section of the building; a new atrium roof on the eastern section; roof terrace, landscaping and public realm works and general works of enhancement to the listed building in connection with the continued use of the building within Class E. The boundary of the BREEAM assessment excludes the new atrium roof on the eastern section.

2.1 Sustainability Aspirations

The overall sustainability aspirations for the project are:

- to provide high quality, lettable, flexible units that respond to climate issues and provide a healthy indoor environment;
- improve the energy performance of the building, in a sensitive manner appropriate to its Grade II-listing, and reducing the dependency on fossil fuel based heating; and,
- to enrich the usable external space through enhancing biodiversity and improving links to the public realm and wider proposed developments.



Figure 2: The Hop Exchange



Figure 4: Hop Exchange building showing boundary of development; refurbishment (orange) and new lightwell infill (green), roof extension footprint (pink dashed line)

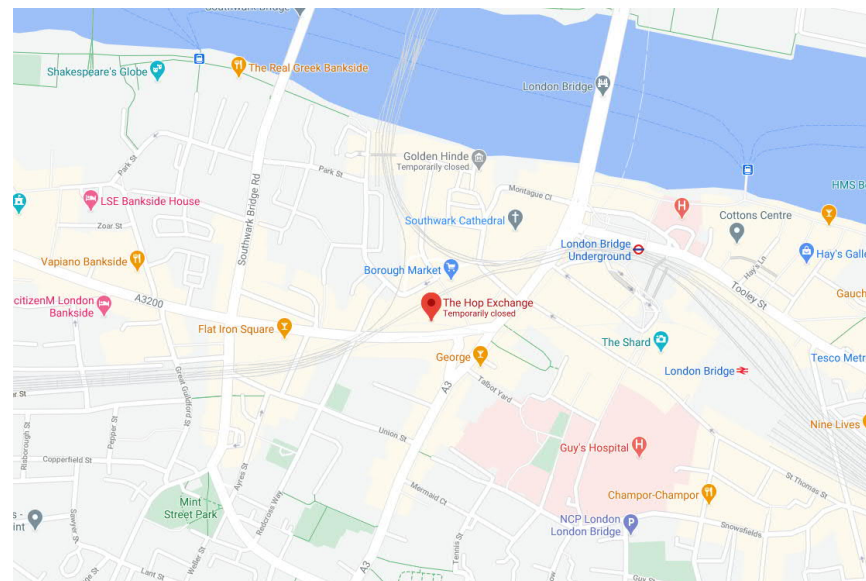


Figure 3: Location of the Hop Exchange

3.0 POLICY AND LEGISLATION

The Hop Exchange sits within the London Borough of Southwark, in the Central Activity Zone (CAZ) of London. As such, the policies of the GLA London Plan, and Southwark Planning Policy are applicable.

This Sustainability Statement and BREEAM Pre-assessment has been prepared in line with the requirements of the 'Publication Version London Plan 2020' and the January 2020 'New Southwark Plan'.

3.1 Publication Version (PV) London Plan 2020

In December 2017 the GLA released the draft London Plan 2017. Consultation on the plan has closed and the examination in public has taken place. The Intend to Publish London Plan was published in December 2019. Having been through consultation and public examination, the London Plan has now had Secretary of State approval to be formally adopted. It is expected that the Publication Version (PV) London Plan will be adopted by the time the planning application for the Hop Exchange is determined. It is therefore expected that these requirements will supersede those of the current London Plan.

Key policies relating to sustainability are:

Policy SI1 'Improving Air Quality'

- All major developments need to demonstrate that they will be at least air quality neutral.
- All energy proposals should have emissions lower than those generated by ultra-low NOx emission gas boilers.
- Developments in Air Quality Focus Areas (AQFA) will be under particular scrutiny. (The Hop Exchange falls within the AQFA covering Borough High Street just south of London Bridge)
- For major developments an Air Quality Assessment (AQA) must be submitted with the planning application.

Policy SI2 'Minimising Greenhouse Gas Emissions'

The existing requirements have been strengthened, and some aspirations of the previous plan have been clarified:

- Major developments to be net-zero carbon overall, although this can be achieved through off-site or offsetting payments.
- As with current London Plan at least a 35% reduction on building regulations must be achieved on site.
- For residential developments 10% of the reductions must be achieved through energy efficiency.
- For non-domestic 15% of reductions must be achieved through energy efficiency.
- Major development proposals should calculate and minimise carbon emissions of unregulated emissions.
- Development proposals referable to the Mayor should calculate whole lifecycle carbon emissions through a nationally recognised whole life-cycle carbon assessment and demonstrate actions taken to reduce life-cycle carbon emissions.

- Proposals to future proof the development to achieve net-zero carbon on-site by 2050.
- All major developments to monitor and report on their energy use for 5 years after completion by displaying a DEC and reporting via an online portal.
- The Mayor recognises that Building Regulations use outdated carbon emission factors and that this will continue to cause uncertainty until they are updated by Government. The Mayor's Energy Planning Guidance provides interim guidance on appropriate emissions factors to use.
- Demand-side response, specifically through installation of smart meters, minimising peak energy demand and promoting short-term energy storage, as well as consideration of smart grids and local micro grids where feasible, required.

Policy SI3 'Energy Infrastructure'

Major development proposals within Heat Network Priority Areas should have a communal low-temperature heating system.

Requirement for an energy masterplan for large-scale developments (town centres and areas of multiple development) which should consider:

- 1) major heat loads (including anchor heat loads, with particular reference to sites such as universities, hospitals and social housing)
- 2) heat loads from existing buildings that can be connected to future phases of a heat network
- 3) major heat supply plant including possible opportunities to utilise heat from energy from waste plants
- 4) secondary heat sources, e.g. environmental and waste heat
- 5) opportunities for low and ambient temperature heat networks
- 6) possible land for energy centres and/or energy storage
- 7) possible heating and cooling network routes
- 8) opportunities for futureproofing utility infrastructure networks to minimise the impact from road works
- 9) infrastructure and land requirements for electricity and gas supplies
- 10) implementation options for delivering projects, considering issues of procurement, funding and risk, and the role of the public sector.
- 11) opportunities to maximise renewable electricity generation and incorporate demand-side response measures

The heat source for the communal heating system should be selected in accordance with the following heating hierarchy:

- a) connect to local existing or planned heat networks
- b) use available zero-emission or local secondary heat sources (in conjunction with heat pump, if required)
- c) use low-emission combined heat and power (CHP) (only where there is a case for CHP to enable the delivery of an area-wide heat network)
- d) use ultra-low NOx gas boilers

CHP and ultra-low NOx gas boiler heating systems to meet the requirements of PV London plan Policy SI1 (Improving Air Quality).

Developments should be designed to allow for cost-effective future connection to planned heat networks, where none currently exist.

While heat networks are still considered to be an effective and low-carbon means of supplying heat, the carbon savings from gas-engine CHP, around which many of these networks have grown, are now declining due to grid decarbonisation. Low-emission CHP will still be considered on a case-by-case basis, but it is not expected that gas-engine CHP will fall into this category.

Policy SI5 'Water Infrastructure'

Development proposals should:

- 2) achieve at least the BREEAM excellent standard for the 'Wat 01' water category or equivalent (commercial development) (Achieve at least a 12.5% improvement over defined baseline performance standard)

Policy SI7 'Reducing Waste and Supporting the Circular Economy'

Resource conservation, waste reduction, increases in material re-use and recycling, and reductions in waste going for disposal will be achieved by the Mayor, waste planning authorities and industry working in collaboration to:

- 1) promote a more circular economy that improves resource efficiency and innovation to keep products and materials at their highest use for as long as possible
- 2) encourage waste minimisation and waste prevention through the reuse of materials and using fewer resources in the production and distribution of products
- 3) ensure that there is zero biodegradable or recyclable waste to landfill by 2026
- 4) meet or exceed the municipal waste recycling target of 65 per cent by 2030
- 5) meet or exceed the targets for each of the following waste and material streams:
 - a. construction and demolition – 95 per cent reuse/recycling/recovery
 - b. excavation – 95 per cent beneficial use
- 6) design developments with adequate, flexible, and easily accessible storage space and collection systems that support, as a minimum, the separate collection of dry recyclables (at least card, paper, mixed plastics, metals, glass) and food.

3.2 New Southwark Plan

Having been through several stages of consultation, the Examination in Public is due to take place in February 2021, and it is anticipated that it will be adopted by the time the planning application for The Hop Exchange is determined. The New Southwark Plan (NSP) sets out the Council's vision, objectives and key policies for the development of Southwark.

This document largely reinforces and mirrors the policies of the PV London Plan. Key policies relating to sustainability are:

P64 Improving Air Quality

As per PV London Plan Policy SI1 – all developments to achieve at least ‘air quality neutral’ standards and be designed to minimise occupant exposure to poor air quality. Any shortfall in air quality standards to be mitigated by offsite measures or by a financial contribution.

P65 Reducing Noise Pollution and Enhancing Soundscapes

Developments must be designed to avoid, mitigate and manage any significant adverse impacts on health and quality of life caused by noise.

Major developments should be designed to enhance and protect positive aspects of acoustic environment through a public soundscape assessment. They will be required to demonstrate how noise pollution impacts during the construction phase will be reduced, mitigated and managed.

P68 Sustainability Standards

BREEAM Excellent ratings must be achieved for all non-domestic developments or refurbishments >500m².

Risk of overheating must be reduced, taking into account climate change predictions over the lifetime of the building, in accordance with the following ‘cooling hierarchy’:

- 1) Minimise internal heat generation through energy efficient design; then
- 2) Reduce the amount of heat entering a building through the orientation, shading, albedo, fenestration, insulation and green roofs and walls; then
- 3) Manage the heat within the building through exposed internal thermal mass and high ceilings; then
- 4) Passive ventilation; then
- 5) Mechanical ventilation; then
- 6) Active cooling systems (ensuring they are the lowest carbon options).

P69 Energy

Largely mirrors elements of PV London Plan Policies SI2 and SI3, except requires 40% on-site reduction of carbon emissions for major non-residential developments.

4.0 SUSTAINABILITY STATEMENT

The statement summarises the development’s approach to sustainability.

4.1 Energy Strategy

The energy strategy will seek to minimise the use of valuable energy resources. This approach aims to minimise energy consumption from the outset through the use of low energy, passive measures and efficient systems before the deployment of low carbon and renewable energy technologies. Through the adoption of this approach, the Hop Exchange has been demonstrated to meet the Southwark’s requirements for a 40% reduction over Part L 2013 for non-residential developments and achieves high levels of BREEAM RFO 2014 ENE 01 compliance. Please refer to the Energy Strategy for further information.

4.2 Water Consumption

Water consumption will be reduced over baseline consumption through the specification of low flow sanitaryware and appliances. As a minimum, the scheme aims to achieve the minimum water consumption requirements for BREEAM ‘Excellent’ in line with PV London Plan Policy S15, which corresponds to a reduction of 12.5% over baseline consumption (1 BREEAM credit). The BREEAM pre-assessment is currently targeting 3 credits for this issue which corresponds to a 40% reduction.

4.3 Climate Change Adaptation

The cooling hierarchy will be followed to manage the risk of overheating within the building. Refer to the Energy Strategy for further information.

Green roofs are included in the design, which will contribute towards mitigating the effects of climate change by aiding surface water attenuation, improving biodiversity and hence contributing towards improving local air quality.

A climate change adaptation study was conducted as part of the early stage BREEAM requirements. This resulted in the following recommendations for incorporation into the design:

- Include green roofs to provide cooling effect through evapotranspiration
- Limit glazing ratio to less than 50%
- Include deep window reveals to provide solar shading
- Consider designing the structure to take account of the extra loadings required for the future installation of solar shading
- Produce a SuDS Maintenance Schedule
- Consider green and blue roofs to reduce run-off rates

- Targeting 3 BREEAM credits in the Wat 01 Water Consumption issue, which should result in a 40% decrease in potable water use over a baseline case, through the installation of low flow fittings
- Establish a water efficient planting strategy including no automatic irrigation system

4.4 Air Quality

The proposal to move to a non-fossil based heating system, ASHPs, will ensure no adverse effect on local air quality. Refer to the Air Quality Assessment for further information.

4.5 Biodiversity

An ecologist has been appointed to help to achieve a net gain in biodiversity, through soft landscaping, and to ensure protection of any local species during construction.

An initial assessment has been undertaken to determine the biodiversity of the current site, and to make recommendations where improvements can be made and identify any measures required to mitigate damage to current biodiversity throughout construction. The current design achieves an urban greening factor of 0.1 and includes bird, bat and invertebrate boxes.

4.6 Materials and Waste

Material selection has been influenced by embodied carbon analysis, circular economy principles and responsible sourcing guidance. Low VOC materials shall be specified, which will assist in providing a healthy internal environment.

An LCA analysis was completed that met the requirements to achieve the BREEAM credit but also compared various options for external wall build up, external cladding and upper floor construction to guide low carbon material selection. There is ongoing consideration of embodied and whole life carbon as the design develops and material specifications are being finalised.

A circular economy workshop was undertaken with the design team to explore how circular economy principles could be utilised to guide the material efficiency, durability and adaptability of the building to reduce the whole life carbon impact of the building and ensure longevity.

A sustainable procurement plan to be produced by the contractor shall be used to guide the specification and responsible sourcing of construction products throughout a project.

Operational and construction waste shall be managed according to the waste management hierarchy and to meet the targets set out in PV London Plan

Policy S17. A hierarchical waste management strategy of “Prevent, Reduce, Reuse, and Recycle” will be employed during the design, construction and operation of the building.



Figure 5: Waste hierarchy

Construction Waste

During construction, a Site Waste Management Plan will be produced to ensure a thorough approach to waste control is complied with and that the targets for construction, demolition and excavation waste set out in PV London Plan Policy S17 Reducing waste and supporting the circular economy are met:

Meet or exceed the targets for each of the following waste and material streams:

- construction and demolition – 95 per cent reuse/recycling/recovery
- excavation – 95 per cent beneficial use

In addition, as part of the BREEAM assessment, the project aspires to achieve 2 credits for waste resource efficiency, which corresponds to generating $6m^3$ waste per 100m².

Operational Waste

The development will provide appropriate levels of internal and external recyclable and non-recyclable waste storage facilities to allow the development to meet the municipal waste recycling target of 65% by 2030 set out in PV London Plan Policy S17 Reducing waste and supporting the circular economy.

4.7 Transport

Owing to its location, the site has very good public transport accessibility, achieving a PTAL rating of 6b. Train and underground stations, and numerous bus stops are within close proximity of the proposed development.

Staff and visitors will be encouraged to access the site via sustainable modes of transport. Ample cycle storage and associated shower and changing facilities will be provided for staff and visitors, meeting the requirements set out by the PV London Plan, and the site has excellent access to public transport. Refer to Transport Statement for further details.

5.0 BREEAM ASSESSMENT PROCESS

The Hop Exchange project comprises a mix of refurbishment and new build elements providing a mix of Office and Retail categories. The offices will be finished to Shell and Core and the restaurant areas will be to Shell Only. Due to the complexity of the project it is being assessed under a Bespoke assessment based on the requirements of the BREEAM UK Refurbishment and Fit-Out 2014 v1.1 manual (BREEAM RFO 2014). The bespoke criteria is set out in Appendix I.

A pre-assessment has been undertaken to determine which credits are targeted to achieve the required "Excellent" score.

The project has been registered with the Building Research Establishment (BRE). The registration number is: BREEAM-0084-0454.

5.1 Overview

The Building Research Establishment Environmental Assessment Method helps Clients and Local Authorities to set environmental targets and demonstrate environmental performance for new non-domestic buildings. To date over 200,000 buildings have been certified under BREEAM worldwide since it was first launched in 1990. Figure 6 below illustrates countries in which BREEAM assessments have taken or are currently taking place.



Figure 6: Countries in which BREEAM is present

- Countries with BREEAM Certified Buildings
- Countries that have developed their own BREEAM Scheme

BREEAM incorporates the following categories:

- Management
- Health and Wellbeing

- Energy
- Transport
- Water
- Materials
- Waste
- Land use and Ecology
- Pollution

There is also an Innovation category, where additional credits can be awarded for exemplary performance and any innovative features of the building project that are not assessed as standard and that the design team feel are worth a credit. An application for these additional credits has to be made to the BRE for approval.

5.2 Scoring Process

Credits are allocated under each category and a weighting is applied to determine an overall building score. The building will be allocated a rating of Unclassified, Pass, Good, Very Good, Excellent, or Outstanding as follows:

Table 1: BREEAM ratings and required score

BREEAM Rating	% Score
Outstanding	85
Excellent	70
Very Good	55
Good	45
Pass	30
Unclassified	<30

5.3 Assessment Stages

As part of the assessment scheme, two formal assessments are required.

Design Stage Certification

The first assessment is to take place during design stages (Interim or Design Stage Certification). Design-based evidence such as specifications, drawings and commitments from the team are required as evidence at this stage.

Post Construction Certification

The final assessment will take place following Practical Completion (Post Construction Certification). A second batch of as-built information will be required that will confirm that the design stage information is valid. This will

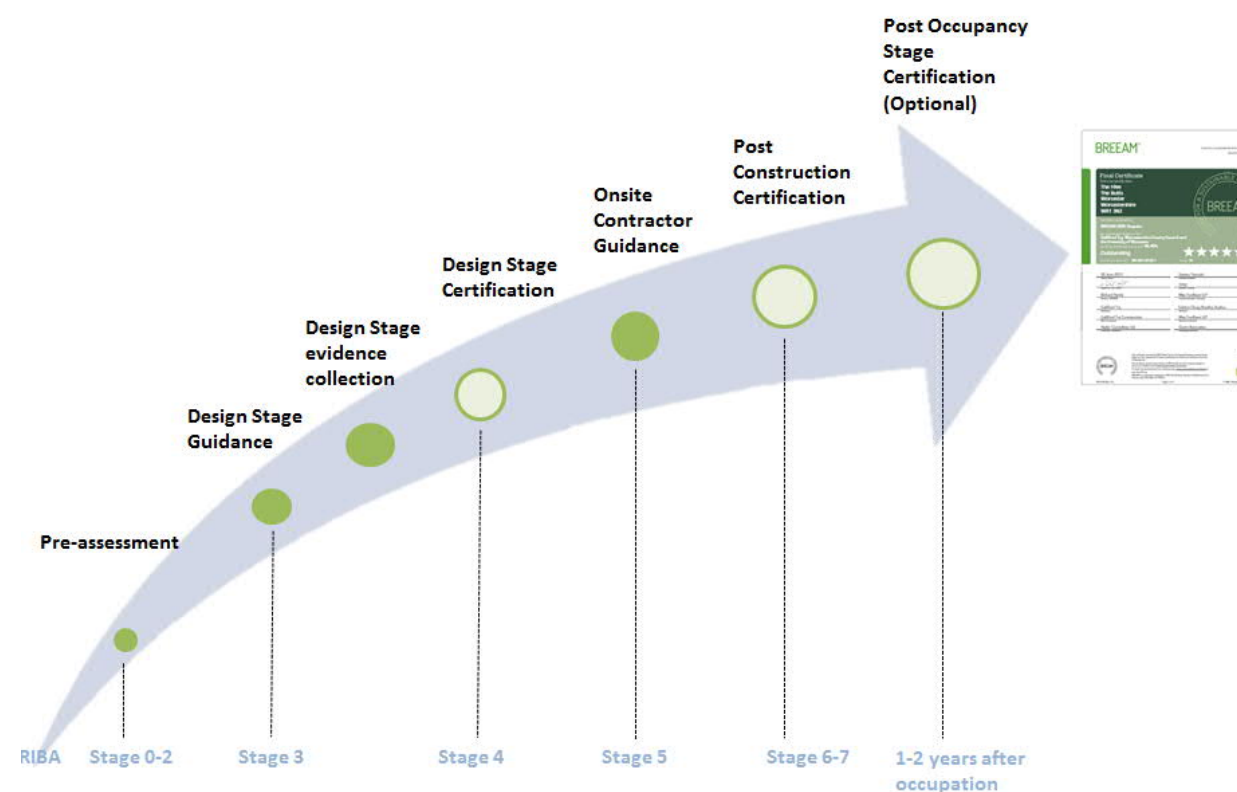


Figure 7: BREEAM Assessment stages

be carried out by a combination of on-site assessor auditing and additional as-built drawings / records. The general BREEAM process is outlined in Figure 7.

5.4 BREEAM Programme

An initial BREEAM programme will be developed in subsequent stages and can be adapted as the project progresses. It will generally follow the design and construction programme, with a goal to submit the evidence for the Interim Design Stage Certification towards the start of construction, and for the Post Construction Certification directly upon project completion.

5.5 Scope of BREEAM RFO 2014

The BREEAM RFO 2014 scheme provides a modular set of criteria that are applied depending upon the scope of works for a particular project type including:

- Part 1: Fabric and Structure
- Part 2: Core Services
- Part 3: Local Services
- Part 4: Interior Design

The scheme is split into these assessment parts to allow the scheme to reflect the aspects of a building that are tenant or landlord responsibilities, as well as the varied life cycle stages that each component or element is upgraded.

The Hop Exchange project is being fitted out to Shell and Core and therefore only parts 1 to 3 are applicable to this assessment. This means that some of the criteria requirements are not applicable to this assessment, these are detailed in the compliance notes in the BREEAM RFO 2014 manual.

5.6 Section Weighting

The table below outlines the weightings for each of the ten environmental sections for the Bespoke framework produced for The Hop Exchange. Note these differ slightly to those for a traditional New Construction or Refurbishment and Fit-Out assessments, these have been specifically developed for the bespoke assessment by the BRE.

Table 2: BREEAM Section Weightings

BREEAM Section	Weighting
Management	12.09%
Health & Wellbeing	11.22%
Energy	15.57%
Transport	7.05%
Water	7.05%
Materials	14.69%
Waste	8.82%
Land Use & Ecology	11.75%
Pollution	11.75%
Innovation	10%

5.7 BREEAM AP

Max Fordham LLP has been appointed as a BREEAM Accredited Professional on the project starting from RIBA Stage 1. The role is to facilitate the setting and achievement of BREEAM performance target for the project and to monitor progress against the agreed BREEAM performance target during the early design stages.

The target rating of 'Excellent' has now been agreed between all parties and will be a contractual requirement under planning.

5.8 Achieving an 'Excellent' Rating and Project Risks

Achieving an 'Excellent' rating is attainable but challenging. Accumulating the targeted number of credits means that the design and project team are required to undertake activities and specify items that would not have necessarily been included if the project wasn't targeting BREEAM Excellent.

The BREEAM process requires engagement and commitment from all members of the design and client team. It is the responsibility of each individual discipline to ensure they understand the requirements of the credits to which they've been assigned as the owner. There is always a risk that team members do not fully understand the requirements but do not raise concerns early enough for them to be addressed. Equally, there are risks that the design could change without the BREEAM assessor's knowledge, hence hindering the assessor's ability to provide advice on credit impacts.

Equally there are risks that the design changes and the assessor is not made aware of the changes to advice on credit impacts and problems are only discovered when it is too late.

The assessor and AP are available to answer any queries or concerns but rely on team members to let us know if there are problems or to flag design changes or credit compliance issues.

5.9 Mandatory Credits and Requirements

Table 3 lists the mandatory credits and requirements for BREEAM Excellent, i.e. the minimum number of credits required in specified sections. The BREEAM assessor will monitor these credits to ensure they accounted for in the design.

Table 3: Minimum BREEAM RFO 2014 Requirements - Excellent

Credit	Requirement
Man 03: Responsible construction practices	One credit (Considerate construction)
Man 04: Commissioning and handover	Building User Guide (Criterion 9)
Man 5: Aftercare	N/A to Bespoke assessment
Ene 01: Reduction of energy use and carbon emissions	Six credits
Ene 02: Energy monitoring	One credit (First sub-metering credit)
Wat 01: Water consumption	One credit (Applicable to Office areas only)
Wat 02: Water monitoring	Criterion 1 only
Mat 03: Responsible sourcing of materials	Criterion 1 only
Wst 03: Operational waste	One credit

6.0 EARLY STAGE CREDITS

A number of early stage credits are required to be completed in RIBA stages 1 and 2. While there is a choice over which credits the project pursues, it is likely that the majority of the early stage credits must be achieved in order to secure an Excellent rating.

This section lists a number of actions that need to be undertaken in RIBA Stage 1 and 2 to achieve various BREEAM credits. The credits that require fulfilling and/or documentation by early stages are as follows.

Status as per end of Stage 2

Key	
	Undertaken
	In progress
	To be actioned

Table 4: Early stage BREEAM credit requirements

Credit	RIBA Stage	Evidence Required	Action	Owner
LE 02, 04, 05 Ecology Credits	Stage 1	Appointment of ecologist Phase I habitat survey report	An ecologist should be appointed to conduct a Phase I habitat survey and advise on minimising ecological impact and maximising ecological enhancement and providing input into a habitat management plan. It is important the ecologists' scope covers all requirements to gain full credits.	Client
Man 01 #1 Project Delivery Planning	Stage 2	Roles and responsibilities of the design team defined.	Schedule of roles and responsibilities to be completed	Client / Architect
Man 01 #1 Project Delivery Planning	Stage 2	Sustainability brief	Sustainability brief to be produced and provided to design team	Client
Man 01 #2 Stakeholder Consultation	Stage 2	Log of stakeholder consultation including meeting minutes	Stakeholder consultation to be undertaken and minutes to be provided.	Client / Architect
Man 01 #3 BREEAM AP	Stage 2	Appoint a BREEAM AP	Max Fordham appointed as BREEAM AP. AP to attend key DTMs to monitor progress. AP to issue regular score updates to team.	Client
Man 02 Life Cycle Costing	Stage 2	LCC report	Appoint QS. LCC analysis to be undertaken	QS
Hea 06 #2 Security of Site and Building	Stage 2	Security needs assessment minutes of meeting with recommendations for design Evidence that it was undertaken by a Suitably Qualified Security Specialist	Security Needs Assessment undertaken by Suitably Qualified Security Specialist. This is usually a meeting with the local Architectural Liaison Officer or Designing Out Crime Officer at the local police station. MFLP can provide a meeting minutes template.	Architect
Ene 04 #1 Passive Design Analysis	Stage 2	Passive Design Analysis report	Passive design analysis to be undertaken and report to be produced.	M&E
Ene 04 #3 Low and Zero Carbon Technologies	Stage 2	LZCT feasibility study report	Low and zero carbon technologies feasibility study to be undertaken and report to be produced.	M&E
Mat 01 Lifecycle Carbon Analysis	Stage	LCA report	Max Fordham appointed to run workshop and complete analysis	
Mat 06 #1 Material Efficiency	Stages 1, 2, 3 and 4	Material efficiency study report	Max Fordham appointed to run workshop	Architect, Structures, M&E
Wst 01 #1 Pre-refurbishment audit	Stage 2	Pre-refurbishment audit report	Audit to be undertaken	Client / Architect
Wst 05 Adaptation to Climate Change	Stage 2	Adaptation to climate change study report	Max Fordham appointed to run workshop	Architect, Structures, M&E
Wst 06 Functional Adaptability	Stage 2	Functional adaptability study report	Max Fordham appointed to run workshop	Architect, Structures, M&E

7.0 BREEAM PRE-ASSESSMENT

7.1 Pre-Assessment Score

The current targeted score is 73.84%. This equates to an “Excellent” rating. A fully annotated BREEAM scoresheet can be found in Appendix II.

An initial BREEAM pre-assessment meeting took place on 01/06/2020 in early Stage 2; the meeting’s focus was on the overall BREEAM strategy, the early stage credits and a review of the assessor’s pre-assessment. Credits that were either not targeted, or those that were considered ‘potential’ credits, were also reviewed.

7.2 Progress to Date

The project is on track to achieve the minimum credits required to attain a rating of BREEAM Excellent, as per Table 3.

The remainder of this situation summarises the activities completed, and evidence produced at the early stages that contribute towards the BREEAM assessment:

Man 01 – Management Credits

A sustainability brief has been produced and provided to the team for implementation in the design. The roles and responsibilities matrix has been completed and accepted by the design team.

Third party stakeholder consultation is underway and ongoing. Collection of evidence including a schedule of consultation and meeting minutes is underway.

Man 02 – Elemental Life Cycle Cost (LCC)

The elemental LCC has been undertaken.

Hea 01 – Visual Comfort

Initial daylighting analysis was completed to determine if any credits could be achieved. Due to the deep plan floor plates it extremely unlikely that these credits will be achievable therefore this has been removed as a potential credit. Analysis can be found in the M&E Stage 2 Report.

Hea 05/ Pol 05 – Acoustics

Max Fordham Acoustics have been appointed to provide services to meet the BREEAM requirements as well as for planning.

Hea 06 – Secure by Design

The secure by design meeting took place between Forge Architects and Alan Denyer, DOCO for London Metropolitan Police. The outcomes of the meeting were recorded, and the recommendations are being included in the design going forward.

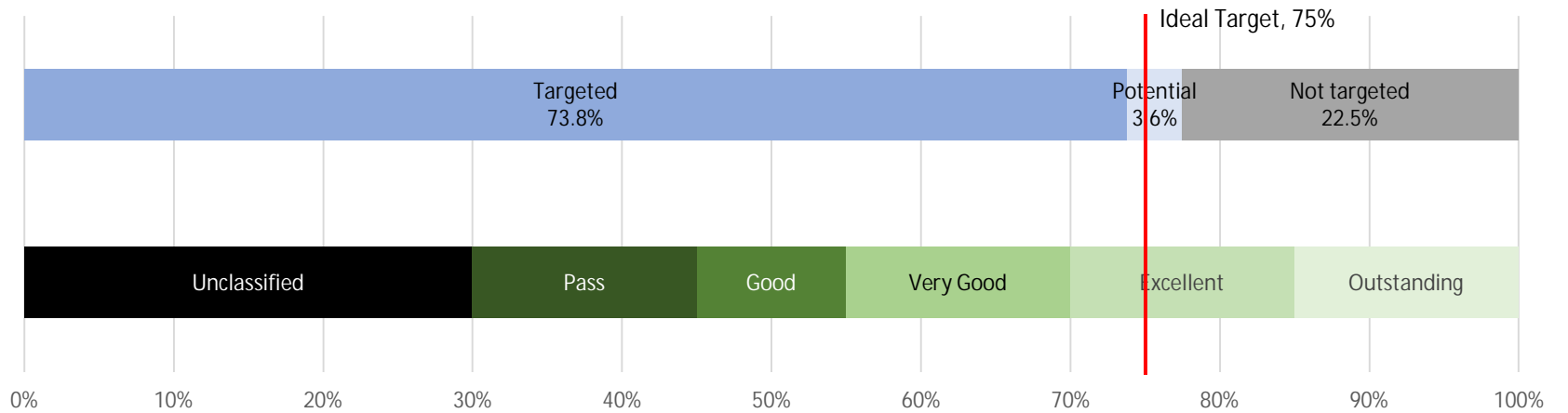


Figure 8: The Hop Exchange - BREEAM Score Overview

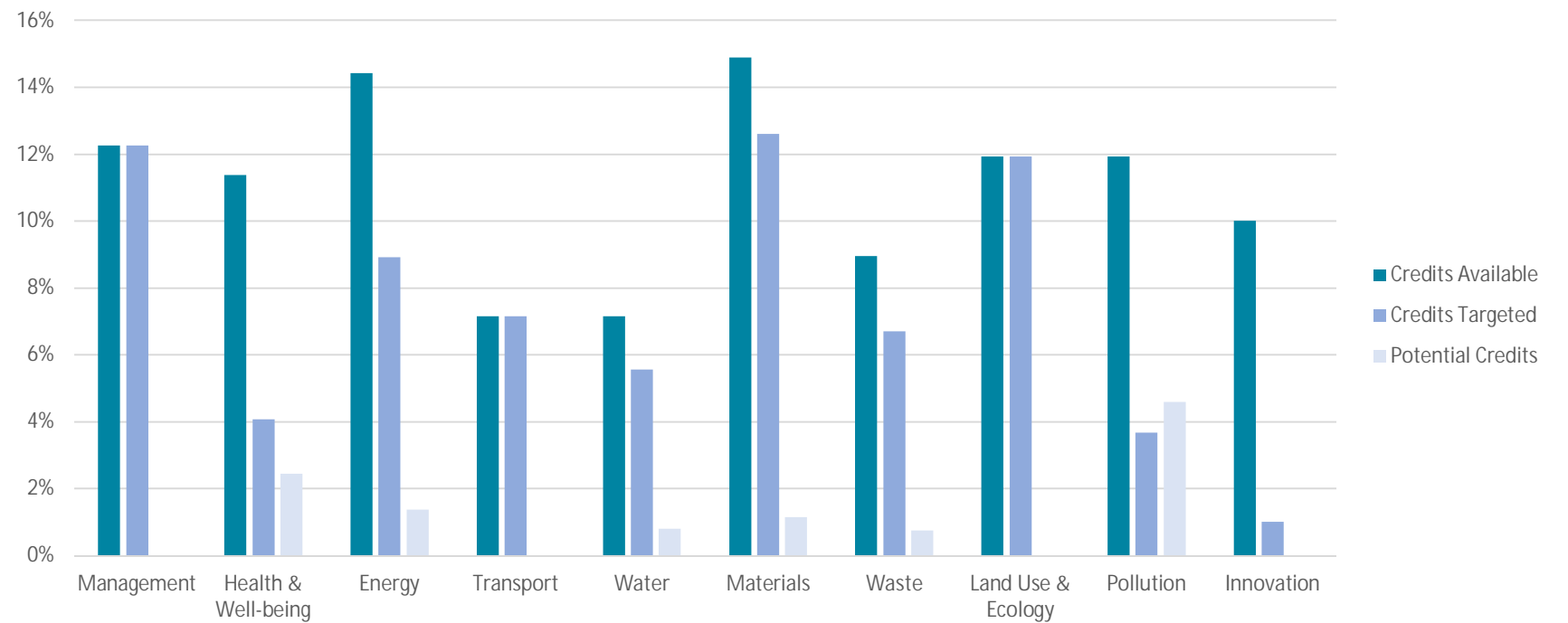


Figure 9: Targeted and potential score per category against percentage available

Ene 01 – Reduction of energy use and carbon emissions

The stage 2 design has been checked against the relevant criteria to understand if the design provisionally meets the minimum requirements for a rating of Excellent, which is 5 credits. The bespoke criteria stipulates that the new build and refurbished areas should be checked separately against the relevant criteria, NC 2018 and RFO 2014, respectively. The bespoke tool is then used to perform an area weighting to determine the number of credits achieved for the project (see Appendix I).

The design has been checked at Stage 2 and the overall the development easily achieves the minimum 5 credits required for an Excellent rating.

Ene 04 – Low Carbon Design

Passive Design and Low and Zero Carbon Technology studies were undertaken and issued to the design team. Outcomes will be incorporated into the design going forward.

Tra 01-03 – Transport

The PTAL (Public Transport Accessibility Level) report indicates that the Accessibility Index for the site is AI=109.27, which corresponds to achieving five (out of five) credits in Tra 01.

Documentation has been produced to confirm there are at least 2 different relevant amenity types within 500m of the site, which corresponds to achieving one (out of one) credit in Tra 02.

A calculation has been produced to demonstrate the cycle spaces and facilities that are being provided meet the BREEAM requirements to achieve two (out of two) credits in Tra 03.

Tra 05 – Travel Assessment and Travel Plan

A draft travel assessment and travel plan has been produced.

Mat 01 – Lifecycle Carbon Analysis (LCA)

An LCA has been completed for the stage 2 design, to meet the requirements of RFO 2014 criteria. Options relating to external wall build up, façade, stairs and external landscaping were also analysed to guide material choices.

Mat 06/ Wst 06 – Circular Economy Workshop

A circular economy (CE) workshop was held with the design team to understand how CE principles can be or are already being incorporated into the design strategy. The workshop covered the stage 2 requirements for the material efficiency and functional adaptability credits.

Wst 01 – Pre-refurbishment Audit

A pre-refurbishment audit has been completed.

Wst 05 – Adaptation to Climate Change

An adaptation to climate change study was undertaken during Stage 2 and a report has been produced. The recommendations that resulted from the study shall be considered for incorporation into the design going forward.

LE – Ecology Credits

An initial ecology assessment has been completed indicating that 4 credits can be targeted. The remaining credit requirements will be completed, once the landscape design is more finalised.

7.3 Next Steps

Based on the current design, and the opportunities that are still available, the project is deemed able to secure BREEAM Excellent. It is recommended that the client and design team retain the design elements that enable the project to achieve a score above 70% and should continue to consider whether additional credits can be achieved to boost the score upwards of 75%, ideally maintaining high 'Excellent' scores.

Should the design change the design team must review the impact of such changes against the BREEAM scorecard and ensure that the buffer score is maintained to manage risk.

In the following stages the design team shall:

- Continue to embed the BREEAM requirements into the design.
- Provide the required evidence to achieve the targeted credits for the design stage certification.
- Ensure the project embeds the sustainability prelims and specifications into the following stages of the project to ensure the project is tendered to meet the BREEAM requirements targeted.
- The contractor will be required to meet site specific BREEAM specification requirements. These will be developed in later stages.

It is imperative that the design team continue to review the BREEAM targeted credits to ensure the score remains within the range to achieve BREEAM Excellent.

APPENDIX I – HOP EXCHANGE BESPOKE BREEAM CRITERIA

Table-61: Area-weighted waste resource efficiency benchmarks

BREEAM credits	Waste generated per 100m2	
	m ³	tonnes
1	12.3	7.3
2	6	3.85
3	2.75	1.8
Exemplary level	1.5	1.1

Table-63: Area-weighted diversion from landfill benchmarks

BREEAM credits	Type of waste	Volume	Tonnage
One credit	Non demolition	77.00%	85.00%
	Demolition	85.00%	92.00%
	Excavation	N/A	N/A
Exemplary level	Non demolition	90.00%	93.00%
	Demolition	90.00%	96.00%
	Excavation	95.00%	95.00%

Project Details



This document is a Bespoke project criteria appendix to the BREEAM UK Refurbishment and Fit Out 2014 manual, and, where referenced, the BREEAM UK New Construction 2014 manual. This document and the bespoke scoring and reporting tool determine, for specific BREEAM issues, which assessment criteria are applicable to the project.

Project Details

Project Name	The Hop Exchange
Building Name (if multiple buildings in project)	
Proposal Number	P100005-1194
BRE reference number	BREEAM-0084-0454

Criteria

Criteria Revision	0
Date Issued	20/09/2020

Issue Code	Issue Name	Credit or Reference	Criteria
MANAGEMENT			
Man 01	Project brief and design	Stakeholder consultation (third party)	Assessment criterion 8 is not applicable to this assessment. Please refer to assessment criteria 5 – 7 for the Stakeholder Consultation (third party) credit.
Man 05	Aftercare	Aftercare Support	Issue N/A
HEALTH AND WELLBEING			
Hea 01	Visual comfort	Glare control	Credit N/A
Hea 01	Visual comfort	Daylighting	Please refer to the Tables tab for requirements.
Hea 01	Visual comfort	View out	Please refer to the Tables tab for requirements.
Hea 01	Visual comfort	Internal and external lighting	Only assessment criterion 13 needs to be achieved for new external lighting to award the Internal and External lighting credit. Assessment criteria 10-12 and 14-16 are not applicable.
Hea 02	Indoor air quality	Potential for natural ventilation	This credit is applicable to the assessment, as it applies to shell only /shell and core assessments and to those including Parts 1 and 2. Please refer to CN6.1 for further guidance on how it can be achieved.
Hea 05	Acoustic performance	-	One credit is available for Indoor ambient noise levels. Please follow assessment criteria 4 and 5 (Table 25) or criterion 6. The criteria apply to both refurbished and new build areas.
ENERGY			
Ene 01	Reduction of energy use and carbon emissions	-	For this Issue two options are available. 1) The refurbished area shall be assessed under the RFO criteria, and the new construction areas shall be assessed under the NC criteria. In order to determine the correct number of RFO credits the RFO Scoring tool is used to determine the number of credits scored for the RFO part of the building. The bespoke tool will perform an area weighting to determine the number of credits achieved for the project. 2) If the design team would prefer, both areas can be included in the same energy models and follow CN6 'Extensions to existing buildings and newly constructed thermal elements.'
TRANSPORT			
Tra 01	Sustainable transport accessibility	Accessibility index	For these credits the building type is defined as Retail. This ensures that the building is encouraged and recognised for being well connected for the A3/A4 restaurant/bar uses.
Tra 02	Proximity to amenities	-	For this Issue the building type is defined as: Type 1
Tra 03	Cyclist facilities	Cycle storage	For the assessment of compliant cycle storage spaces, the Offices and Large retail criteria should be used and both uses should meet the respective criteria to award the credit(s).
Tra 04	Maximum car parking capacity	Car parking capacity	Issue N/A as not a change of use project.
WATER			
Wat 01	Water consumption	-	Issue N/A for the A3/A4 areas
Wat 01	Water consumption	-	Assess this Issue using the standard Wat 01 calculator for the B1 areas
MATERIALS			
Mat 01	Life cycle impacts	-	The BREEAM RFO manual should be used for the refurbishment area and the BREEAM NC manual should be used for the new build. The tool will perform an area weighting to determine the number of credits achieved for the project. ALTERNATIVELY The whole project can be assessed under the BREEAM RFO criteria. Only Option 1: Project Lifecycle Assessment Study is available.
Mat 04	Insulation	Embodied impact	All new insulating products being specified or installed by the developer must be accounted for in the assessment of this Issue.
WASTE			
Wst 01	Construction waste management	Pre-refurbishment audit	These credits are applicable to refurbishment areas only.
		Reuse and direct recycling of materials	
		Resource efficiency	
		Diversion of resources from landfill	These credits apply to the whole building. Please see area weighted tables 61 and 63 within the Bespoke Assessment Scoring and Reporting tool in place of those in the manual.
Wst 03	Operational waste	-	Criteria 1-2 apply to this project.
Wst 04	Speculative finishes	-	Issue N/A for the A3/A4 areas
Wst 05	Adaptation to climate change	Responding to adaptation to climate change	This exemplary level credit is not applicable for the A3/A4 areas
LAND USE AND ECOLOGY			
LE	All	All	This category shall be assessed on the basis of LE Issues in the RFO manual. The following LE Issues are applicable: LE 02, LE 04, LE 05.
POLLUTION			
Pol 05	Reduction of noise pollution	-	The existing background noise level should not include existing plant associated with the assessed building (criterion 2.a.i). Both existing and newly specified externally mounted plant should be considered within the noise impact assessment as part of the 'rating noise level' (criterion 2.a.ii).

Visual Comfort

Notes:

Criteria for all function areas (and if relevant, new-build and existing areas) must be achieved to award the relevant credit(s). All requirements for preceding credits must be achieved in order to consider the next credit.

Legend

	NC requirements
	RFO requirements
	Combined

Daylight factor Criteria

Classification	Function	Average Daylight Factor	Area of building to comply and credits scored			Uniformity requirement
			1st	2nd	3rd	
Retail	Sales areas	no average (see additional requirements)	17.5%	25%	35%	Point daylight factors of 2% or more
			35%	35%	35%	
	Other occupied areas	2%	40%	60%	80%	a OR b+c
			80%	80%	80%	
Office	All occupied spaces	2%	40%	60%	80%	a OR b+c
			80%	80%	80%	

Exemplary Daylight factor Criteria

Classification	Function	Average Daylight Factor	Area of building to comply	Uniformity requirement
Retail	Retail sales areas	no average (see additional requirements)	50%	Point daylight factors of 2% or more
Office	All occupied spaces (multi-storey building)	3%	80%	Minimum point daylight factor of 1.2% OR 2.1% for spaces with glazed roofs

Illuminance Criteria

Classification	Function	Average lux	Min lux	Hours per year	Area of building to comply and credits scored		
					1st	2nd	3rd
Retail	Sales areas	no average	200	2650	17.5%	25%	35%
					35%	35%	35%
	Other occupied areas	200	60	2650	40%	60%	80%
					80%	80%	80%
Office	All occupied spaces	300	90	2000	40%	60%	80%
		300	90	2000	80%	80%	80%

Exemplary Illuminance Criteria

Building Type	Space	Average lux	Min lux	Hours per year	Area of building to comply
Office	Multi storey building	300	90	2650	80%
Retail	Retail sales areas only (for all other occupied areas refer to single/multi storey criteria)	no average	300	2000	80%

View Out Criteria

% floor area in each relevant building area compliant with view out criteria	% area compliant		Standard exclusions
	1st credit	2nd credit (if applicable)	
All RFO building types	80%	95%	Check relevant notes in manuals
All NC building types	95%		

APPENDIX II – HOP EXCHANGE BREEAM SCORESHEET

BREEAM Bespoke Assessment (Refurbishment & Fitout 2014)

The Hop Exchange

Project Stage	RIBA Stage 2 / Planning
Assessor Name	Max Fordham LLP
Desired Rating	Excellent
Desired Score	75.00%

Target Score	73.84%	Excellent
Potential Score	77.49%	Excellent

Category	BREEAM Issue	Credit Number	General Requirements	Stage Requirements	Minimum Requirements	Available		Targeted			Potential	Risk	Design Stage Credit Owner	
						Credits	Percent	Credit	Percent	Minimum Req's	Credit			
Management	Man 01 - Project Brief and Design	#1 - Stakeholder Consultation (project delivery)	Prior to completion of the Concept Design, a clear sustainability brief is set out and roles and responsibilities must be specifically outlined.	Must occur no later than RIBA Stage 2		1	0.68%	1	0.68%			L	Project Manager	
		#2 - Stakeholder Consultation (third party)	During design brief preparation, all relevant parties and bodies are identified and consulted with by the design team - evidence must be gathered that these consultations were incorporated into the design. Consultation plan must be prepared that includes timescale and method of consultation.	Must occur no later than RIBA Stage 2		1	0.68%	1	0.68%			M	Architect	
		#3 - Sustainability Champion (design)	No later than early RIBA Stage 1, Sustainability Champion is appointed to facilitate setting of BREEAM performance targets. BREEAM target must be contractually agreed between client and project team no later than RIBA Stage 2. Project must undergo Design Stage Certification assessment.	Must occur no later than RIBA Stage 1		1	0.68%	1	0.68%			L	Sustainability Champion	
		#4 - Sustainability Champion (monitoring progress)	Credit #3 has been achieved. Sustainability Champion is appointed to monitor progress against the agreed BREEAM performance targets throughout the design process and formally report progress to the client and design team. Sustainability Champion must attend key design team meetings and prepare regular written reports.	Must occur no later than RIBA Stage 2		1	0.68%	1	0.68%			M	Sustainability Champion	
	Man 02 - Life Cycle Cost and Service Life Planning	#1 - Elemental Life Cycle Cost (LCC)	An elemental life cycle cost (LCC) analysis has been carried out, at RIBA Stage 2. The LCC analysis shows an outline plan based on the building's basic structure and envelope, appraising a range of options and based on multiple cash flow scenario's e.g.. 20, 30, 50+ years and the fabric and servicing strategy for the project outlining services component and fit-out options (if-applicable) over a 15-year period, in the form of an 'elemental LCC Plan'.	Must occur no later than RIBA Stage 2		2	1.36%	2	1.36%				H	Quantity Surveyor
		#2 - Component Level LCC Plan	A component level LCC plan has been developed by the end of RIBA Stage 4 and includes the following component types in line with PD 156865:2008 (where present): envelope, services, finishes, external spaces. Demonstrate how the component level LCC plan has been used to influence building and systems design/specification to minimise life cycle costs and maximise critical value.	Must occur no later than RIBA Stage 4		1	0.68%	1	0.68%				H	Quantity Surveyor
		#3 - Capital Cost Reporting	Report the capital cost for the building in pounds per square metre (£/m ²), via the BREEAM Assessment Scoring and Reporting tool, Assessment Issue Scoring tab, Management section.			1	0.68%	1	0.68%				L	Quantity Surveyor

Category	BREEAM Issue	Credit Number	General Requirements	Stage Requirements	Minimum Requirements	Available		Targeted			Potential	Risk	Design Stage Credit Owner	
						Credits	Percent	Credit	Percent	Minimum Req's	Credit			
Management	Man 03 - Responsible Construction Practices	Pre-requisite - Timber Procurement	All timber and timber-based products used on the project are 'legally harvested and traded timber' (see Relevant definitions)			-	-	-	-			L	Contractor	
		#1 - Environmental Management	Principle contractor operates a compliant Environmental Management System concerning their main operations and implement best practice pollution prevention policies and procedures on site in accordance with Pollution Prevention Guidelines.			1	0.68%	1	0.68%			L	Contractor	
		#2 - Sustainability Champion (construction)	Sustainability Champion is appointed to monitor the project to ensure ongoing compliance with the relevant sustainability performance/process criteria and BREEAM targets throughout the Construction, Handover and Close out stages and formally report progress to the client and design team. Sustainability Champion must attend key design team meetings and submit a final post construction stage assessment report.			1	0.68%	1	0.68%			M	Contractor	
		#3 - Considerate Construction	The principal contractor has used a 'compliant' organisational, local or national considerate constructors scheme and their performance against the scheme has been confirmed by independent assessment and verification. Under CCS scheme one credit can be awarded for a score between 25 and 34 with at least 5 in each section, and two credits for a score between 35 and 39 with at least 7 in each section.		1	2	1.36%	2	1.36%	Yes		L	Contractor	
		★ Exemplar Performance - Considerate Construction	Exemplary Level of Practice achieving a score of 40 or above			1	1.00%	1	1.00%			M	Contractor	
		#4 - Monitoring of construction-site impacts	Responsibility has been assigned to an individual(s) for monitoring, recording and reporting energy use and water consumption resulting from all on-site construction processes (and dedicated off-site monitoring) throughout the build programme.			1	0.68%	1	0.68%			L	Contractor	
		#5 - Transport of Construction Materials and Waste	Responsibility has been assigned to an individual for monitoring, recording, and reporting data on transport movements and impacts resulting from delivery of the majority of construction materials to site and construction waste from site.			1	0.68%	1	0.68%			M	Contractor	
	Man 04 - Commissioning and Handover	#1 - Commissioning and Testing Schedule and Responsibilities	Project team member appointed to monitor and programme pre-commissioning, commissioning, and where necessary, re-commissioning. Main contractor accounts for commissioning programme, responsibilities, and criteria within main programme of works.	Must occur no later than RIBA Stage 4			1	0.68%	1	0.68%			L	M&E
		#2 - Commissioning Building Services	Specialist Commissioning Manager must be appointed during design stage (by either client or contractor) for complex systems in order to give design input.				1	0.68%	1	0.68%			L	Contractor
		#3 - Testing and Inspecting Building Fabric	Credit #1 has been achieved. The integrity of the building fabric is quality assured through completion of post construction testing and inspection. Dependent on building type this can be demonstrated through the completion of a thermographic survey as well as airtightness test and inspection by a qualified professional. Any defects must be rectified prior to building handover/close out.				1	0.68%	1	0.68%			M	
		#4 - Handover	Building User Guide is developed for distribution to the building occupiers and premises managers. A training schedule is prepared for building occupiers/premises managers containing the building's design intent, aftercare provision, introduction/demonstration of installed systems and key features, introduction to the Building User Guide, maintenance requirements.		#10 - Building User Guide		1	0.68%	1	0.68%	Yes		L	Contractor
	Totals - Base						18	12.26%	18	12.26%		0		
	Total - Innovation						1	1.00%	1	1.00%		0		

Category	BREEAM Issue	Credit Number	General Requirements	Stage Requirements	Minimum Requirements	Available		Targeted			Potential	Risk	Design Stage Credit Owner	
						Credits	Percent	Credit	Percent	Minimum Req's	Credit			
Health and Well-being	Hea 01 - Visual Comfort	#4 - Internal and External Lighting Levels, Zoning and Control	Internal and External lighting provides luminance levels in accordance with the SLL Code for Lighting 2012. For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 72 sections 3.3, 4.6, 4.7, 4.8 and 4.9. External lighting provided is specified in accordance with BS 5489-1:2013 Lighting of roads and public amenity areas.			1	0.81%	1	0.81%			L	M&E	
	Hea 02 - Indoor Air Quality	#1 - Indoor Air Quality (IAQ) Plan	Indoor air quality Plan (IAQ) produced.			1	0.81%	1	0.81%			L	Contractor	
	Hea 04 - Thermal Comfort	#1 - Thermal Modelling	Thermal modelling has been carried out and ensures design achieves criteria as set out in CIBSE Guide A Environmental Design			1	0.81%	1	0.81%			L	M&E	
		#3 - Thermal Zoning and Controls	Credit #1 has been achieved and thermal modelling has informed the temperature control strategy in terms of zoning, amount of occupant control, how the systems will interact with each other, and need for accessible building user attenuated manual override for any automatic systems.			1	0.81%		0.00%		1		M&E	
	Hea 05 - Acoustic Performance	#2 - Internal Indoor Ambient Noise Levels	Ensure that the building's internal indoor ambient noise levels meet the appropriate standards for its purpose			1	0.81%	1	0.81%			H	Acoustician	
	Hea 06 - Safety and Security	#1 - Security of Site and Building	Consultation with a Suitably Qualified Security Consultant no later than RIBA Stage 2. Final design must incorporate suggestions from SQSS and must confirm to either Secured by Design and/or Safer Parking Scheme (actual certification not required)	Consultation must occur no later than RIBA Stage 2			1	0.81%	1	0.81%			L	Architect
	Totals - Base						14	11.37%	5	4.06%		1		
Total - Innovation						1	1.00%	0	0.00%		0			

Category	BREEAM Issue	Credit Number	General Requirements	Stage Requirements	Minimum Requirements	Available		Targeted			Potential	Risk	Design Stage Credit Owner
						Credits	Percent	Credit	Percent	Minimum Req's	Credit		
Energy	Ene 01 - Reduction of Energy Use and Carbon Emissions	#1 - Energy Performance	Whole building energy model (up to 15 credits available)	Must occur no later than RIBA Stage 2	5	12	8.23%	5	3.43%	Yes	2	M	M&E
			Elemental level energy model (up to 12 credits available)										
			Historic Buildings Only: Specialist study undertaken by a Suitably Qualified Heritage Conservation Specialist to investigate implications of improving building fabric and services performance, while minimising negative impacts of historic character, the condition of the building fabric, and indoor air quality. As a minimum, the following must be analysed: roof, external walls, ground and upper floors, windows and external doors.										
	Ene 02 - Energy Monitoring	#1 - Sub-metering of Major Energy Consuming Systems	Energy metering systems are installed that enable at least 90% of the estimated annual energy consumption of each fuel to be assigned at various end-use categories of energy consuming systems. The energy consuming systems in buildings with a total useful floor area greater than 1,000m2 are metered using an appropriate energy monitoring and management system		1	0.69%	1	0.69%	Yes		M	M&E	
			#2 - Sub-metering of High Energy Load and Tenancy Areas	An accessible energy monitoring and management system or separate accessible energy sub-meters with pulsed or other open protocol communication outputs to enable future connection to an energy monitoring and management system are provided, covering a significant majority of the energy supply to tenanted areas or, in the case of single occupancy buildings, relevant function areas or departments within the building/unit		1	0.69%	1	0.69%			M	M&E
	Ene 03 - External Lighting	#1 - External Lighting	Energy efficient external light fittings are specified for external areas of the development and are only on when required.			1	0.69%	1	0.69%			L	M&E
	Ene 04 - Low Carbon Design	#1 - Passive Design Analysis	The first Hea 04 Thermal Comfort credit has been achieved and the design team has carried out analysis of the proposed building design/development to influence decisions made during Concept Design stage and identify opportunities for the implementation of passive design solutions. The building uses passive design measures to reduce total energy demand of the building.	Must occur no later than RIBA Stage 2		1	0.69%	1	0.69%			M	M&E
			#3 - Low and Zero Carbon Technologies	LZC feasibility study carried out no later than RIBA Stage 2 with a local LZC technology/technologies specified in line with the recommendations of the feasibility study. The LZC technology/technologies accounts for at least 5% of overall building energy demand and/or CO2 emissions,	Must occur no later than RIBA Stage 2		1	0.69%	1	0.69%			M
	Ene 06 - Energy Efficient Transportation Systems	#1 - Energy Consumption	Analysis for transportation demand and energy consumption for lifts, escalators, and/or moving walkways takes place. Strategy with lowest energy consumption is to be specified.			1	0.69%	1	0.69%			L	M&E
			#2 - Energy Efficient Features	Credit #1 has been achieved and compliant energy efficient features are specified			2	1.37%	2	1.37%			L
	Totals - Base						21	14.41%	13	8.92%		2	
	Total - Innovation						5	5.00%	0	0.00%		0	

Category	BREEAM Issue	Credit Number	General Requirements	Stage Requirements	Minimum Requirements	Available		Targeted			Potential	Risk	Design Stage Credit Owner
						Credits	Percent	Credit	Percent	Minimum Req's	Credit		
Transport	Tra 01 - Sustainable Transport Solutions	#1 - Accessibility Index	<p>Up to 5 credits can be awarded in combination from one or both of the following options:</p> <p>Option 1: Credits awarded on a sliding scale based on the proximity of the buildings' accessibility to the public transport network. An Accessibility Index (AI) is determined by the Tra 01 Calculator Tool.</p> <p>Option 2: Where alternative transport measures in BREEAM</p>			5	3.97%	5	3.97%			L	Assessor
	Tra 02 - Proximity to Amenities	#1 - Proximity to Amenities	Building located in close proximity to building-type-specific local amenities which are likely to be frequently required and used by building occupants.			1	0.79%	1	0.79%			L	Assessor
	Tra 03 - Cyclist Facilities	#1 - Cycle Storage	Compliant cycle storage spaces that meet the minimum levels set out in Table 32 of the BREEAM manual.			1	0.79%	1	0.79%			M	Architect
		#2 - Cycle Facilities	<p>#1 is achieved. Provide two of the four options: 1) showers, 2) changing facilities, 3) lockers, 4) drying space for clothes.</p> <p>Showers: 1 for every 10 cycle storage spaces, subject to a minimum provision of one shower.</p> <p>Changing facilities: appropriately sized for the number of users, must be able to hang or store clothes (e.g. benches or hooks). Toilet cubicles do not comply.</p> <p>Lockers: at least equal to the number of cycle spaces required. A</p>			1	0.79%	1	0.79%			M	Architect
	Tra 05 - Travel Plan	#1 - Travel Plan	A travel plan is developed specifically for the site as part of the feasibility and design stages which considers all types of travel relevant to the building type and users. 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			1	0.79%	1	0.79%				L
Totals - Base						9	7.15%	9.00	7.15%		0		

Category	BREEAM Issue	Credit Number	General Requirements	Stage Requirements	Minimum Requirements	Available		Targeted			Potential	Risk	Design Stage Credit Owner	
						Credits	Percent	Credit	Percent	Minimum Req's	Credit			
Water	Wat 01 - Water Consumption	#1 - Water Consumption	Credits awarded on a sliding scale based on the percentage improvement in water usage over a baseline notional building. Must use the Wat 01 calculator to determine final number of credits awarded. Minimum for one credit is 12.5% improvement, 5 credits awarded for 55% improvement or better. The following domestic scale water consuming components are included: WCs, urinals, taps, showers, baths, dishwashers, washing machines. Grey water and rainwater collection systems are taken into account in the calculator tool.		1	5	3.97%	3	2.38%	Yes	1	L	Architect	
	Wat 02 - Water Monitoring	#1 - Water Monitoring	Where a water meter with a pulsed output will be installed on the mains supply to each building/unit. Water-consuming plant or building areas that consume 10% or more of the building's total water demand must be fitted with sub meters or have water monitoring equipment with pulsed output enabling it to connect to a BMS system. If the site has an existing BMS belonging to the same owner as the new development, the meters must be connected to this system.		Criterion 1 only	1	0.79%	1	0.79%	Yes		L	M&E	
	Wat 03 - Water Leak Detection	#1 - Leak Detection System	Leak detection system capable of detecting a major water leak on the mains water supply within the building and between the building and the utilities water meter.			1	0.79%	1	0.79%				L	M&E
		#2 - Flow Control Devices	One of the following types of flow control devices is fitted to each WC area/facility to ensure water only supplied when needed: time controller, programmed time controller, volume controller, presence detector, or central control unit. Criteria does not apply to single WC - in these instances, shut-off could be provided via the same switch that controls the lighting.			1	0.79%	1	0.79%				M	M&E
	Wat 04 - Water Efficient Equipment	#1 - Water Efficient Equipment	Design team has identified all unregulated water demands that could be realistically mitigated or reduced. Systems or processes have been identified to reduce the unregulated water demand, and demonstrate, through either good practice design or specification, a meaningful reduction in the total water demand of the building.			1	0.79%	1	0.79%				M	Architect
Totals - Base						9	7.15%	7	5.56%		1			

Category	BREEAM Issue	Credit Number	General Requirements	Stage Requirements	Minimum Requirements	Available		Targeted			Potential	Risk	Design Stage Credit Owner
						Credits	Percent	Credit	Percent	Minimum Req's	Credit		
Materials	Mat 01 - Life Cycle Impacts	#1 - Life Cycle Impacts	Project Lifecycle Assessment Study (up to 6 credits) <i>OR</i>			6	6.87%	6	6.87%			M	Design Team
	Mat 03 - Responsible Sourcing of Materials	Pre-requisite - Legally Sourced Timber	All timber and timber based products used on the project is 'Legally harvested and traded timber'.		#1 - Timber Procurement	-	-	-	-	Yes		L	Architect
		#1 - Sustainable Procurement Plan	The principal contractor sources materials for the project in accordance with a sustainable procurement plan.			1	1.15%	1	1.15%			M	Contractor
		#2 - Responsible Sourcing of Materials (RSM)	Up to 3 credits can be awarded where the applicable building materials (refer to Table - 44 of BREEAM 2014 Manual) are responsibly sourced in accordance with the BREEAM 2014 methodology.			3	3.44%	1	1.15%			M	Contractor
	Mat 04 - Insulation	#1 - Embodied Impact	All new insulation specified for external walls, ground floor, roof, and building services must be assessed. The Insulation Index for the building insulation is > 2.5, as determined by the Mat 04 Calculator Tool.			1	1.15%	1	1.15%			L	Architect
	Mat 05 - Designing for Durability and Resilience	#1 - Protecting Vulnerable Parts of the Building from Damage and Degradation	Areas of the building identified, both internal and external, where vehicular, trolley, and pedestrian movement occur. Design must incorporate suitable durability and protection measures to prevent damage to vulnerable parts of the building.			1	1.15%	1	1.15%			L	Architect
	Mat 06 - Material Efficiency	#1 - Material Efficiency	Design/Construction team must identify, investigate and implement measures to optimise material use at all stages of the project.	Must be undertaken at RIBA Stages 1, 2, 3, and 4		1	1.15%	1	1.15%			M	Design Team
Totals - Base						13	14.89%	11	12.60%		0		
Total - Innovation						1	1.00%	0	0		0		

Category	BREEAM Issue	Credit Number	General Requirements	Stage Requirements	Minimum Requirements	Available		Targeted			Potential	Risk	Design Stage Credit Owner
						Credits	Percent	Credit	Percent	Minimum Req's	Credit		
Waste	Wst 01 - Project Waste Management	#1 - Pre-refurbishment audit	There is a compliant Resource Management Plan. Where demolition must occur, a compliant pre-demolition audit must take place. Non-hazardous construction waste (excluding demolition and excavation waste) generated by the building's design and construction meets or exceeds resource efficiency benchmarks as set out in the BREEAM 4014 Manual. The less waste generated by area or weight earns more credits	Must be undertaken During Concept Stage	0	1	0.75%	1	0.75%			L	Contractor
		#2 - Reuse and Direct Recycling of Materials	The percentage of high grade aggregate that is recycled or secondary aggregate, specified in each application (present) must meet minimum % levels (by weight or volume) to contribute to the total amount of recycled or secondary aggregate.			2	1.49%	1	0.75%			L	Contractor
		#3 - Resource Efficiency	Develop and implement a compliant Resource Management Plan to minimising waste, and record and report accurate data on waste arisings. Meet or exceed the resource efficiency benchmarks in Table 61 (found at the end of this document - note this differs from Table 61 in RFO 2014 manual)			3		2	1.49%			M	Contractor
		#4 - Diversion of Resources from Landfill	The percentage of non-hazardous construction and demolition waste generated have been diverted from landfill as per Table 63 (found at the end of this document - note this differs from Table 63 in RFO 2014 manual)			1		1	0.75%			L	Contractor
	Wst 02 - Recycled Aggregates	#1 - Recycled Aggregates	The percentage of high grade aggregate that is recycled or secondary aggregate, specified in each application (present) must meet minimum % levels (by weight or volume) to contribute to significant use of (25% or more) secondary or recycled aggregates in high-grade building aggregate uses. Aggregates must be <i>either</i> construction waste obtained on or off-site, <i>or</i> obtained from a non-construction post-consumer industrial by-product source.			1	0.75%		0.00%		1		Structural Engineer
	Wst 03 - Operational Waste	#1 - Operational Waste	Where dedicated, accessible, and properly sized storage space is provided for recycling. Where consistent generation in large volumes of waste or compostable materials are generated, compactors, balers, and/or composting vessels or facilities with water outlet must be provided.		1	1	0.75%	1	0.75%	Yes		M	Architect
	Wst 04 - Speculative Floor and Ceiling Finishes	#1 - Speculative Floor and Ceiling Finishes	Office building types only 1. 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. 2. In a building developed for a specific occupant, that occupant has selected (or agreed to) the specified floor and ceiling finishes			1	0.75%	1	0.75%			H	Architect
	Wst 05 - Adaptation to Climate Change	#1 - Structural and Fabric Resilience	Conduct a climate change adaptation to climate change strategy appraisal for structural and fabric resilience by the end of Concept Design by carrying out a systematic risk assessment to identify and evaluate the impact on the building over its projected life cycle from expected extreme weather conditions arising from climate change.	Must occur no later than RIBA Stage 2		1	0.75%	1	0.75%			L	Structural Engineer
	Wst 06 - Functional Adaptability	#1 - Functional Adaptability	Client and design team to undertake a building-specific functional adaptation strategy study by Concept Design which includes recommendations for measures in to be incorporated to facilitate future adaptation.	Must occur no later than RIBA Stage 2		1	0.75%	1	0.75%			M	Architect
	Totals - Base						12	8.94%	9	6.71%		1	
Total - Innovation						2	2.00%	0	0.00%		0		

Category	BREEAM Issue	Credit Number	General Requirements	Stage Requirements	Minimum Requirements	Available		Targeted			Potential	Risk	Design Stage Credit Owner
						Credits	Percent	Credit	Percent	Minimum Req's	Credit		
Land Use & Ecology	LE 02 - Protection of Ecological Features	#1 - Protection of Ecological Features	All existing features of ecological value will be retained and protected during construction.			1	2.98%	1	2.98%			M	Ecologist
	LE 04 - Enhancing Site Ecology	#1 - Ecologist's Report and Recommendations	Suitable Qualified Ecologist (SQE) is appointed no later than RIBA Stage 1 to report on enhancing and protecting the ecology of the site. SQE must provide an Ecology Report based on a site visit. General recommendations made by SQE must be implemented.	SQE must be appointed no later than RIBA Stage 1		1	2.98%	1	2.98%			L	Ecologist
	LE 05 - Long Term Impact on Biodiversity	#1 - Long Term Impact on Biodiversity	Suitable Qualified Ecologist (SQE) is appointed prior to commencement of activities on site. SQE confirms compliance with all UK/EU legislation relating to protection and enhancement of ecology, and a 5year landscape/management plan is produced and the Client and the Contractor carry out a number of actions to minimise the longer term impact of the site. Number of applicable actions (from the list of potential actions in the BREEAM Technical Guide p. 346) determines the number of credits achievable in this issue.			2	5.96%	2	5.96%			M	Ecologist
	Totals - Base						4	11.92%	4	11.92%		0	

Pollution	Pol 01 - Impact of Refrigerants	Pre-requisite - Guidelines Compliance	All systems (with electric compressors) must comply with the requirements of BS EN 378:2008 and have a Direct Effect Life Cycle CO ₂ of ≤ 100kgCO ₂ e/kW (2 credits) or ≤ 1000kgCO ₂ e/kW cooling capacity (1 credit).			2	1.83%	1	0.92%			H	M&E
		#2 - Impact of Refrigerant											
		#3 - Leak Detection		Permanent automated refrigerant leak detection system or an in-built automated diagnostic procedure for detecting leakage has been installed.			1	0.92%		0.00%		1	
	Pol 03 - Flood Risk Management	#2 - Surface Water Run-Off	<p><u>One credit - neutral impact of surface water:</u></p> <p>1) No increase in impermeable surfaces as a result of the refurbishment works (on-site footpaths are excluded in this calculation). <u>OR</u></p> <p>2) If there is an increase in impermeable surfaces:</p> <p>-For hardscaped areas: permeable surfaces and/or SuDS must be incorporated so that there is a neutral effect from the run-off from the site (as compared to the run-off volumes of the original site).</p> <p>-For building extensions: where there is an increase in building footprint that extends onto any previous permeable surfaces, additional run-off must be managed on site using SuDS for rainfall depths up to 5mm.</p> <p><u>Two credits - reducing run-off:</u></p> <p>1) An appropriate consultant is used to design a drainage strategy.</p> <p>2) Either of the following criteria are met:</p> <p>-Decrease in impermeable area by at least 50% from pre-existing impermeable hard surfaces, <u>OR</u></p> <p>-Where run-off is managed on site, peak run-off for 1 in 100yr event is reduced by 50%, total volume of run-off for 1 in 100yr event of 6hr duration is reduced by 50%, and allowance is made for climate change in calculations.</p>			2	1.83%	1	0.92%			M	

Category	BREEAM Issue	Credit Number	General Requirements	Stage Requirements	Minimum Requirements	Available		Targeted			Potential	Risk	Design Stage Credit Owner
						Credits	Percent	Credit	Percent	Minimum Req's	Credit		
Pollution	Pol 04 - Reduction of Night Time Light Pollution	#1 - Reduction of Night Time Light Pollution	Where the external lighting design is compliant with ILE guidance for the reduction of night time pollution and is automatically switched off between 2300 and 0700.			1	0.92%	1	0.92%			L	M&E
	Pol 05 - Reduction of Noise Pollution	#1 - Reduction of Noise Pollution	Noise sources from development do not exceed ambient noise levels. Noise impact assessment to be BS 4142 compliant. Credit achieved by default where there are no noise sensitive areas or buildings within 800m radius of development.			1	0.92%	1	0.92%			L	Acoustician
	Totals - Base						13	11.92%	4	3.67%		1	

Bespoke requirements:

BREEAM credits	Waste generated per 100m2	
	m ³	tonnes
1	12.3	7.3
2	6	3.85
3	2.75	1.8
Exemplary level	1.5	1.1

BREEAM credits	Type of waste	Volume	Tonnage
One credit	Non demolition	77.00%	85.00%
	Demolition	85.00%	92.00%
	Excavation	N/A	N/A
Exemplary level	Non demolition	90.00%	93.00%
	Demolition	90.00%	96.00%
	Excavation	95.00%	95.00%