

Project: Mallord Street Health and Fitness Club
Address: 19 Mallord Street, London SW3 6AP
Client: Third Space

BREEAM pre-assessment report

Prepared by E.Bell
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1 Executive Summary

CD International was appointed by Third Space and to undertake a BREEAM Refurbishment and Fit Out Pre-Assessment for the Proposed Development of a Third Space Health and Fitness Club at the existing building which was a telephone exchange, located at 19 Mallord St, Chelsea SW3 6AP (the Site).

The proposed development is a change of use of basement, ground and three upper storeys from a former telephone exchange (Sui Generis) to a new health and fitness club (Use Class D2); creation of a small single-storey rear extension at basement level; excavation for a swimming pool at basement level; minor alterations to the existing entrances and external paving; and other minor works and improvements to the building.

This report forms the basis of a strategy for the Proposed Development at the Site to achieve a minimum 'Very Good' BREEAM rating under BREEAM Refurbishment and Fit-Out 2014 SD216 V1.1 scheme. The targeted rating has been set by the client in line with the Planning Policies of Royal Borough of Kensington and Chelsea (RBKC).

The Assessor has received details of the development from the design team via emails to collect data required in to undertake the BREEAM Pre-Assessment.

This is a design stage pre-assessment report is aimed at providing an indication to the design team and future tenants of the likely BREEAM score the development may achieve.

Current preliminary score showing that the development is likely to achieve BREEAM rating VERY GOOD (55.54%), subject to provision of all evidential support documentation.

It is the design team's responsibility to ensure that the evidence is provided for all relevant BREEAM credits to meet the BRE's credit criteria, in the format, they require for the assessor to submit for quality assurance (QA) prior to issue of certification.

BREEAM AUDIT

BRE REGISTRATION NUMBER	TBC
LICENSED ASSESSOR	Elizaveta Bell (Licensed with Carbon Conscious)
ASSESSOR SUPPORT	CD International
BREEAM SCHEME	BREEAM UK RFO 2014
TECHNICAL MANUAL VERSION	SD216 V1.1
ASSESSMENT STAGE	Pre-assessment

TARGETED SCORE TABLE

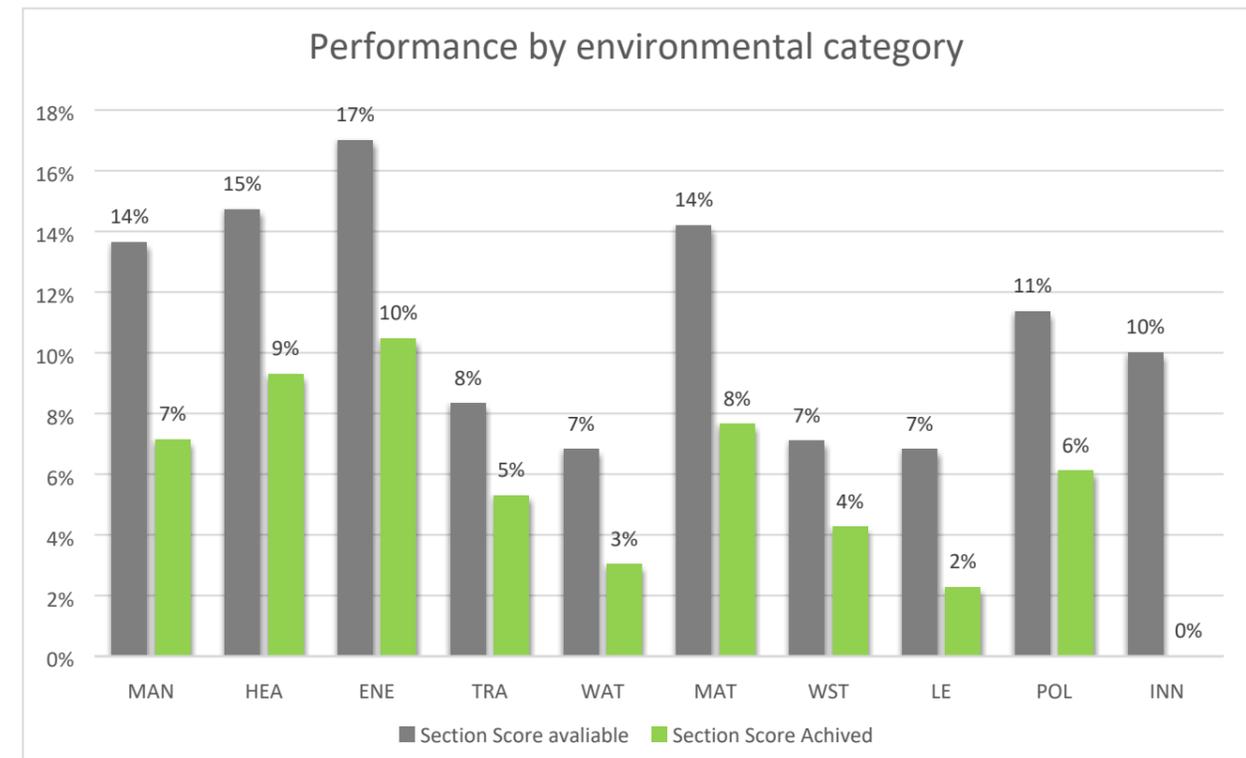


Figure 1 -BREEAM summary graph showing targeted score for each section of the BREEAM assessment.

Table 1 – BREEAM summary graph of each section showing predicted/targeted score

Environmental Section	No. credits available	No. credits achieved	% credits achieved	Section weighting	Section Score
Management	21	11	52.38%	13.64%	7.14%
Health & Wellbeing	19	12	63.16%	14.72%	9.30%
Energy	26	16	61.54%	17.01%	10.47%
Transport	11	7	63.64%	8.33%	5.30%
Water	9	4	44.44%	6.82%	3.03%
Materials	13	7	53.85%	14.20%	7.65%
Waste	10	6	60.00%	7.10%	4.26%
Land Use & Ecology	3	1	33.33%	6.82%	2.27%
Pollution	13	7	53.85%	11.36%	6.12%
Innovation	10	0	0.00%	10.00%	0.00%
					55.54%

2 BREEAM Methodology

BREEAM (Building Research Establishment's Environmental Assessment Method) was the world's first sustainability rating scheme for the built environment and has contributed much to the strong focus in the UK on sustainability in building design, construction and use. Through its application and use, BREEAM helps clients measure and reduce the environmental impacts of their buildings and in doing so create higher value, lower-risk assets.

The BREEAM UK Refurbishment and Fit-out scheme is a performance-based assessment method and certification scheme for existing building refurbishment and fit-out projects.

The primary aim of BREEAM UK Refurbishment and Fit-out is to promote the delivery of sustainable refurbishment and fit-out, to mitigate the life cycle impacts of existing buildings on the environment in a robust and cost-effective manner. This is achieved through integration and use of the scheme by clients and their project teams at key stages in the design and refurbishment/fit-out works process.

The scheme provides a modular framework split up into four separate parts, that are assessed according to the scope of work of the project, with each part defining a set of individual measures and associated criteria that each project is assessed against. This allows projects to be assessed against the parts that are within the scope of influence of the project, while also ensuring that similar project types are assessed against a comparable set of criteria.

The scheme is split into the following 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.

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

Within the assessment, there are nine categories of sustainable design, within which are a number of sub-categories. Credits are awarded where evidence can be provided to demonstrate compliance with the criteria in the sub-categories. There are also additional credits available for innovation where the building goes beyond best practice in terms of a particular aspect of sustainability.

The credits are then converted into a points total and this determines the level of BREEAM rating achieved.

MANAGEMENT	HEALTH & WELLBEING
Project brief and design Life cycle cost and service life planning Responsible construction practices Commissioning and handover Aftercare	Visual comfort Indoor air quality Thermal comfort Acoustic performance Safety and security
ENERGY	TRANSPORT
Reduction of energy use and carbon emissions Energy monitoring External lighting Low carbon design Energy efficient cold storage Energy efficient transportation systems Energy efficient equipment	Public transport accessibility Proximity to amenities Cyclist Facilities Maximum car parking capacity Travel Plan
WATER	MATERIALS
Water Consumption Water monitoring Water leak detection and prevention Water efficient equipment	Life cycle impacts Hard Landscaping & boundary protection Responsible sourcing of materials Insulation Designing for durability and resilience Material efficiency
WASTE	LAND USE & ECOLOGY
Project waste management Recycled Aggregates Operational waste Adaptation to climate change Functional adaptability	Site selection Ecological value of site and protection of Ecological features Mitigating ecological impact Enhancing site ecology Long Term Impact on Biodiversity
POLLUTION	
Impact of refrigerants NOx emissions Surface water runoff Reduction of nighttime light pollution Noise attenuation	

2.1 Pre-Assessment

The Pre-Assessment Estimator report prepared for the proposed building is provided in Section 7 BREEAM Detailed report below.

This pre-assessment Report has been completed to allow for a quick evaluation of the BREEAM rating this building is likely to achieve under the Design Stage assessment. The results can be used to influence and guide the design process to ensure that the targeted score is achieved. It should be noted that, as the pre-assessment report is a simplified version of the full method, it only provides an estimate of the BREEAM rating. As a consequence, the final rating may vary following a Design Stage assessment or Post Construction Review stage

The pre-assessment has considered the existing nature of the development site, along with the current development proposals and proposed building layout and demonstrated that the development being able to potentially achieve the minimum standards of the targeted 'Very Good' rating, required by the planning condition set by Royal Borough of Kensington and Chelsea.

This BREEAM pre-assessment is based on the information supplied by the design team, including planning application package documents, email and verbal correspondence. Due to the provisional nature of some of the supporting documents, all credits were classified into two groups, namely:

- Targeted Credits
- Credits potentially achieved, subject to provision of all necessary documentation to support the credits.

2.2 Design Stage (DC) Assessment

Information supplied by the project team is considered as part of the assessment process and a Pre-Assessment Report for the scheme is produced. The Pre-assessment Report details the current status of the assessment, the current BREEAM score and rating achieved. The report also details actions required to improve the BREEAM score for those credits not achieved as yet.

The DS Assessment rating confirms the building's performance at the design stage of the life cycle. Should the Client or Planning Authorities request certification at the Design Stage, certified BREEAM rating at this stage will be labelled as 'Interim' because it does not represent the building's final BREEAM performance.

2.3 Post Construction Stage (PCS) Review and Final Certification

The PCS assessment and BREEAM rating confirms the final post BREEAM rating of the building. A final PCS assessment is completed and certified after practical completion of the construction works.

There are two approaches to assessment at the post construction stage:

1. A post construction review of an interim design stage assessment
2. A full post construction assessment.

A post-construction review of an interim design-stage assessment is carried out to confirm the interim BREEAM rating achieved at the design stage in accordance with the reporting and evidential criteria of the technical guidance. This report will recommend certification to the shown rating. BRE will quality assure the report and issue the BREEAM final certificate detailing the rating achieved. As above, the BREEAM Office at BRE reserve the right to seek clarification of credits as part of the rigorous quality assurance procedures and this may result in the need for further information from the design team.

3 DISCLAIMER

This report has been prepared by BREEAM certified assessor using all reasonable skill, care and diligence on behalf of the client. The study to which this report relates has been carried out in accordance with the strict quality requirements prescribed by the Building Research Establishment (BRE).

In order to prepare this report, Assessor has made use of evidence supplied by the design team. This has been both physical (e.g. documentation such as reports, drawings, plans, correspondence etc) and anecdotal (i.e. verbally reported information from meetings, telephone calls etc). Assessor's professional liability is strictly limited to the provision of pre-assessment services against criteria set out by the Building Research Establishment (BRE). The consultant accepts no responsibility for misinformation or inaccurate information supplied by any third party as part of this assessment.

Current score is indicative only and subject to provision of all necessary documentation and evidence supporting and confirming the project compliance with BREEAM credit requirements. Assessments for both parts of the development will be Post Construction Assessments, with pre-assessment during the design stage.

If the reader disagrees with any statement, or finds any information contained within this report to be inaccurate, Assessor requests that the writer is informed immediately.

4 COPYRIGHT

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5 Initial details of the project and pre- assessment

5.1 Project description

Proposed Development of a Third Space Health and Fitness Club at the existing building comprising of a former telephone exchange, located at 19 Mallord St, Chelsea SW3 6AP (the Site).

Project is a change of use of basement, ground and three upper storeys from a former telephone exchange (Sui Generis) to a new health and fitness club; creation of a small single-storey rear extension at basement level; excavation for a swimming pool at basement level; minor alterations to the existing entrances and external paving; and other minor works and improvements to the building.

The building is a five-storey building situated in the heart of Chelsea. The building once housed the BT telephone exchange, however, as times change, telephone exchanges no longer require large spaces and as such, the building has remained vacant since the premises were vacated in September 2018.

Potential tenant, Third Space is London's high-end health and fitness club, founded in 2001 with its first club on the Crown Estate in Soho, the business has grown to six prestigious locations in central London.

5.2 Filtering

Table 2 – BREEAM Pre-assessment filtering options

Building type and sub-group	Assembly and Leisure: Indoor / outdoor fitness and recreation centre
Building floor area	2956
Building services (heating)	Gas-fired boiler and CHP
Building services (cooling)	Comfort cooling
Building services (DHW system)	Gas-fired boiler and CHP
Building services (controls)	Time and temperature programming
Commercial cold storage systems	TBC
Transportation systems	Yes
Fume cupboards / containment devices	N/A
Unregulated water uses	Yes
Sanitary fittings within scope of the refurbishment or fit-out zone	Yes
Landscaping areas within developer control	TBC
Any local heating or hot water present	No
Any local cooling present	No
Any externally mounted plant present or specified	Yes
External lighting within scope of works?	Yes
Wat01 within the scope of the assessment	Yes

6 BREEAM Credits overview

Table 3 - BREEAM summary graph of each section showing predicted/targeted score

Environmental Section	No. credits available	No. credits achieved	% credits achieved	Section weighting	Section Score
Management	21	11	52.38%	13.64%	7.14%
Health & Wellbeing	19	12	63.16%	14.72%	9.30%
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Water	9	4	44.44%	6.82%	3.03%
Materials	13	7	53.85%	14.20%	7.65%
Waste	10	6	60.00%	7.10%	4.26%
Land Use & Ecology	3	1	33.33%	6.82%	2.27%
Pollution	13	7	53.85%	11.36%	6.12%
Innovation	10	0	0.00%	10.00%	0.00%
					55.54%

6.1 Minimum standards for “Very Good”

Table 4 - BREEAM minimum standards by rating level

BREEAM issue	Pass	Good	Very Good	Excellent	Outstanding
Man 03: Responsible construction practices				One credit (Considerate construction)	Two credits (Considerate construction)
Man 04: Commissioning and handover	None	None	None	Criterion 9 (Building User Guide)	Criterion 9 (Building User Guide)
Man 5: Aftercare	None	None	None	Parts 2 and 3 only: One credit (Seasonal commissioning)	Parts 2 and 3 only: One credit (Seasonal commissioning)
Ene 01: Reduction of energy use and carbon emissions	None	None	None	Parts 1, 2, 3 and 4 (full assessments): Six credits, varies for other assessment types	Parts 1, 2, 3 and 4 (full assessments): Ten credits, varies for other assessment types
Ene 02: Energy monitoring	None	None	Parts 2, 3 and 4: One credit (First sub-metering credit)	Parts 2, 3 and 4: One credit (First sub-metering credit)	Parts 2, 3 and 4: One credit (First sub-metering credit)
Wat 01: Water consumption	None	One credit (where applicable)	One credit (where applicable)	One credit (where applicable)	Two credits (where applicable)
Wat 02: Water monitoring	None	Part 2: Criterion 1 only	Part 2: Criterion 1 only	Part 2: Criterion 1 only	Part 2: Criterion 1 only
Mat 03: Responsible sourcing of materials	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only
Wst 01: Project waste management	None	None	None	None	One credit
Wst 03: Operational waste	None	None	None	One credit	One credit

6.2 Actions required at early stages

Table 5 - BREEAM RIBA Stage 1 actions

Credit Issues	RIBA Sage 1 actions	Responsible Party
Man 01: Project Brief and Design	1st Credit: Stakeholder consultation: By the end of Stage 1 – definition and engagement of key stakeholders (incl. team member with significant construction experience) and their roles and responsibilities.	Project Manager
Mat 06 Material Efficiency	Consult with relevant design team members to identify and implement measures for efficient use of materials throughout all key stages. Suggested actions include: <ul style="list-style-type: none"> – Provide details outlining activities relating to material efficiency – Provide drawings or building integrated model (BIM), calculations showing reduction of material use through design 	Architect
LE 04: Enhancing Site Ecology	The ecologist must be appointed by RIBA Stage 1 to carry out initial surveys, and subsequently provide recommendations in a report at RIBA Stage 2.	Ecologist
LE 05: Long Term Impact on Biodiversity		

Table 6 - BREEAM RIBA Stage 2 actions

Credit Issues	RIBA Stages 2 Actions	Responsible party
Man 01: Project Brief and Design	2nd Credit: Stakeholder consultation by completion of Concept Design 4th Credit Sustainability Champion: BREEAM performance targets to be formally agreed between the client and design/project team no later than Concept Design stage (RIBA Stage 2)	Planning Consultant
Man 02: Life Cycle Costing and Service Life Planning	An elemental level Life Cycle Cost (LCC) analysis has been carried out based on the proposals developed during RIBA Work Stage 2	PM/QS
Hea 06: Safety and Security	Appoint security specialist to conduct a Security Needs Assessment (SNA) and/or consult with an Architectural Liaison Officer (ALO)	Architect
Ene 04: Low Carbon Design	Carry out a low zero carbon technologies feasibility study	MEP + Client
Wst 05 Adaptation to Climate Change	Conduct a climate change adaption strategy appraisal for structural and fabric resistance	Architect + Structural Engineer
Wst 06 Functional Adaptability	Undertake a Building-specific functional adaptation strategy study. Subsequently incorporate adaption measures into the design where practical and cost effective at RIBA Stage 4	Architect
LE 04: Enhancing Site Ecology	The Ecology report must be available at Stage 2 (following the appointment of an ecologist at Stage 1)	Ecologist
LE 05: Long Term Impact on Biodiversity		

7 BREEAM Detailed report

Table 7 - BREEAM Pre-assessment report

Credit	Available	Targeted	Potential	Requirements / Comments	
MAN01 Project brief and design	ONE CREDIT – STAKEHOLDER CONSULTATION (PROJECT DELIVERY) 1. Prior to completion of the Concept Design (RIBA Stage 2 or equivalent), the project delivery stakeholders (see Relevant definitions) have met to identify and define their roles, responsibilities and contributions for each of the key phases of project delivery. 2. In defining the roles and responsibilities for each key phase of the project, the following must be considered: a. End user requirements b. Aims of the design and design strategy c. Particular installation and construction requirements/limitations d. Occupiers' budget and technical expertise in maintaining any proposed systems e. Maintainability and adaptability of the proposals f. Requirements for the production of project and end user documentation g. Requirements for commissioning, training and aftercare support. 3. The project team demonstrate how the project delivery stakeholder contributions and the outcomes of the consultation process have influenced or changed the Initial Project Brief, including if appropriate, the Project Execution Plan, Communication Strategy, and the Concept Design.	1	1	0	Design team to confirm that this credit is likely to be achieved without significant additional effort.
	ONE CREDIT - STAKEHOLDER CONSULTATION (THIRD PARTY) 4. Prior to completion of the Concept Design stage, all relevant third party stakeholders have been consulted by the design team and this covers the minimum consultation content 5. The project must demonstrate how the stakeholder contributions and outcomes of the consultation exercise have influenced or changed the Initial Project Brief and Concept Design. 6. Prior to completion of the detailed design (RIBA Stage 4, Technical Design or equivalent), consultation feedback has been given to, and received by, all relevant parties.	1	1	0	Design team confirmed that planning consultation took place. The outcomes of the consultation were taken on board and incorporated into the design. Sloane Stanley held a virtual public consultation on https://19mallordstreet.com/virtual-exhibition/
	ONE CREDIT - SUSTAINABILITY CHAMPION (DESIGN) 8. A Sustainability Champion has been appointed to facilitate the setting and achievement of BREEAM performance targets for the project. The design stage Sustainability Champion is appointed to perform this role during the feasibility stage (Stage 1, Preparation and Brief stage, as defined by the RIBA Plan of Work 2013 or equivalent). 9. The defined BREEAM performance target(s) has been formally agreed (see Relevant definitions) between the client and design/project team no later than the Concept Design stage (RIBA Stage 2 or equivalent). 10. To achieve this credit at the interim design stage assessment, the agreed BREEAM performance target(s) must be demonstrably achieved by the project design. This must be demonstrated via the BREEAM assessor's design stage assessment report.	1	0	1	Not targeted.
	ONE CREDIT - SUSTAINABILITY CHAMPION (MONITORING PROGRESS) 11. The Sustainability Champion criteria 8, 9 and 10 have been achieved. 12. A Sustainability Champion is appointed to monitor progress against the agreed BREEAM performance target(s) throughout the design process and formally report progress to the client and design team. To do this the Sustainability Champion must attend key project/design team meetings during the Concept Design, Developed Design and Technical Design stages, as defined by the RIBA Plan of Work 2013, reporting during, and prior to, completion of each stage, as a minimum.	1	0	1	Not targeted.
MAN02 Life cycle cost and service life planning	TWO CREDITS - ELEMENTAL LIFE CYCLE COST (LCC) 1. An outline, entire asset elemental life cycle cost (LCC) plan has been carried out at Process Stage 2 (equivalent to Concept Design - RIBA Stage 2) in line with 'Standardised method of life cycle costing for construction procurement' PD 156865:20081. 2. The elemental LCC plan: a. Provides an indication of future replacement costs over a period of analysis as required by the client (e.g. 20, 30, 50 or 60 years); b. Includes service life, maintenance and operation cost estimates. 3. Demonstrate, using appropriate examples provided by the design team, how the elemental LCC plan has been used to influence building and systems design/specification to minimise life cycle costs and maximise critical value.	2	0	0	This credit will not be targeted.
	ONE CREDIT - COMPONENT LEVEL LCC OPTION APPRAISAL	1	0	1	Design Team need to confirm that LCC options appraisal will be provided to obtain a potential credit

	A component level LCC option appraisal has been developed by the end of Process Stage 4 (equivalent to Technical Design – RIBA Stage 4) in line with PD 156865:2008 and includes the following component types (where present): Part 1: Envelope, e.g. cladding, windows, and/or roofing Part 2&3: Newly specified local and/or core service equipment, e.g. boiler, air-conditioning, air handling unit, and/or controls etc.				
	ONE CREDIT - CAPITAL COST REPORTING 6. Report the capital cost for the building in pounds per square metre (£k/m ²), via the BREEAM Assessment Scoring and Reporting tool, Assessment Issue Scoring tab, Management section.	1	1	0	Targeted credit Anonymised Capital Cost will need to be provided via BREEAM project tool.
MAN03 Responsible construction practices	PRE-REQUISITE 1. All timber and timber-based products used on the project is 'Legally harvested and traded timber' (see Relevant definitions).				Contractor to provide certificates
	ONE CREDIT – ENVIRONMENTAL MANAGEMENT 2. The principal contractor operates an environmental management system (EMS) covering their main operations. The EMS must be either: a. Third party certified, to ISO 14001/EMAS or equivalent standard; or b. Have a structure that is in compliance with BS 8555:2003 and has reached phase four of the implementation stage, 'implementation and operation of the environmental management system', and has completed phase audits one to four, as defined in BS 8555:2003. 3. The principal contractor implements best practice pollution prevention policies and procedures on-site in accordance with Pollution Prevention Guidelines, Working at construction and demolition-sites: PPG61.	1	1	0	Targeted credit
	ONE CREDIT – SUSTAINABILITY CHAMPION (CONSTRUCTION) 3. A Sustainability Champion is appointed to monitor the project to ensure ongoing compliance with the relevant sustainability performance/process criteria, and therefore BREEAM target(s), during the Construction, Handover and Close Out stages (as defined by the RIBA Plan of Works 2013, Stages 5 and 6).	1	0	1	Credit will not be targeted
	UP TO TWO CREDITS - CONSIDERATE CONSTRUCTION 1 credit for Excellent, 2 credits for Outstanding rating 7. Where the principal contractor has used a 'compliant' organisational, local or national considerate construction scheme and their performance against the scheme has been confirmed by independent assessment and verification. The BREEAM credits can be awarded as follows: a. One credit where the contractor achieves 'compliance' with the criteria of a compliant scheme.	2	1	1	One credit where the contractor achieves 'compliance' with the criteria of a compliant scheme will be targeted. Main Contractor to provide a CCS Construction audit report.
	UP TO TWO CREDITS - MONITORING OF CONSTRUCTION-SITE IMPACTS 8. Responsibility has been assigned to an individual(s) for monitoring, recording and reporting energy use, water consumption and transport data (where measured) resulting from all on-site construction processes (and dedicated off-site monitoring) throughout the build programme. To ensure the robust collection of information, this individual(s) must have the appropriate authority and responsibility to request and access the data required. Where appointed, the Sustainability Champion could perform this role. FIRST MONITORING CREDIT - UTILITY CONSUMPTION Energy consumption 9. Criterion 8 is achieved. 10. Monitor and record data on principal constructor's and subcontractors' energy consumption in kWh (and where relevant, litres of fuel used) as a result of the use of construction plant, equipment (mobile and fixed) and site accommodation. 11. Report the total carbon dioxide emissions (total kgCO ₂ /project value) from the construction process via the BREEAM Assessment Scoring and Reporting tool. WATER CONSUMPTION 12. Criterion 8 is achieved. 13. Monitor and record data on principal constructor's and subcontractors' potable water consumption (m ³) arising from the use of construction plant, equipment (mobile and fixed) and site accommodation. 14. Using the collated data report the total net water consumption (m ³), i.e. consumption minus any recycled water use from the construction process via the BREEAM Assessment Scoring and Reporting tool. SECOND MONITORING CREDIT - TRANSPORT OF CONSTRUCTION MATERIALS AND WASTE 15. Criterion 8 is achieved. 16. Monitor and record data on transport movements and impacts resulting from delivery of the majority of construction materials to site and construction waste from site. 17. Using the collated data, report separately for materials and waste, the total fuel consumption (litres) and total carbon dioxide emissions (kgCO ₂ eq), plus total distance travelled (km) via the BREEAM Assessment Scoring and Reporting tool.	2	1	0	Energy and Water consumption monitoring credit will be targeted
EXEMPLARY LEVEL CRITERIA Not targeted	1	0	0	These credits are unlikely to be achieved.	

MAN04 Commissioning and handover	<p>ONE CREDIT - COMMISSIONING AND TESTING SCHEDULE AND RESPONSIBILITIES</p> <p>1. A schedule of commissioning and testing that identifies and includes a suitable timescale for commissioning and re-commissioning of all complex and non-complex building services and control systems and testing and inspecting building fabric.</p> <p>2. The schedule will identify the appropriate standards that all commissioning activities will be conducted in accordance with, such as current Building Regulations, BSRIA1 and CIBSE2 guidelines and/or other appropriate standards, where applicable. Where a building management system (BMS) is specified, refer to compliance note CN3.2 on BMS commissioning procedures.</p> <p>3. An appropriate project team member(s) is appointed to monitor and programme pre-commissioning, commissioning, testing and, where necessary, re-commissioning activities on behalf of the client.</p> <p>4. The principal contractor accounts for the commissioning and testing programme, responsibilities and criteria within their budget and main programme of works, allowing for the required time to complete all commissioning and testing activities prior to handover.</p>	1	1	0	The design team has confirmed that commissioning is to be carried out in line with BREEAM requirements.
	<p>ONE CREDIT - COMMISSIONING BUILDING SERVICES</p> <p>5. The commissioning and testing schedule and responsibilities credit is achieved.</p> <p>6. For buildings with complex building services and systems, a specialist commissioning manager is appointed during the design stage (by either the client or the principal contractor) with responsibility for:</p> <p>a. Undertaking design reviews and giving advice on suitability for ease of commissioning.</p> <p>b. Providing commissioning management input to construction programming and during installation stages.</p> <p>c. Management of commissioning, performance testing and handover/post-handover stages. Where there are simple building services, this role can be carried out by an appropriate project team member (see criterion 3), provided they are not involved in the general installation works for the building services system(s).</p>	1	1	0	The design team has confirmed that commissioning is to be carried out in line with BREEAM requirements.
	<p>ONE CREDIT - TESTING AND INSPECTING BUILDING FABRIC</p> <p>7. Projects where the fabric of the building is being upgraded, the integrity of the building fabric, including continuity of insulation, avoidance of thermal bridging and air leakage paths is quality assured through completion of a thermographic survey as well as airtightness testing and visual inspection at appropriate times during the refurbishment.</p> <p>8. Any defects identified in the site inspection, thermographic survey and the airtightness testing reports are rectified prior to building handover and close out. Any remedial work must meet the required performance characteristics for the building/element.</p>	1	0	1	
	<p>ONE CREDIT – HANDOVER</p> <p>Criterion 10 (Building User Guide) minimum standard for Excellent and Outstanding</p> <p>9. A Building User Guide (BUG) is developed prior to handover, for distribution to the building occupiers and premises managers (see Relevant definitions).</p> <p>10. A training schedule is prepared for building occupiers/premises managers, timed appropriately around handover and proposed occupation plans, which includes the following content as a minimum:</p> <p>a. The building's design intent</p> <p>b. The available aftercare provision and aftercare team main contact(s), including any scheduled seasonal commissioning and post occupancy evaluation</p> <p>c. Introduction to, and demonstration of, installed systems and key features, particularly building management systems, controls and their interfaces</p> <p>d. Introduction to the Building User Guide and other relevant building documentation, e.g. design data, technical guides, maintenance strategy, operations and maintenance (O&M) manual, commissioning records, log book etc.</p> <p>e. Maintenance requirements, including any maintenance contracts and regimes in place.</p>	1	1	0	Client to provide information on development of Building User Guide for distribution to the building occupiers and premises managers
MAN05 Aftercare	<p>ONE CREDIT - AFTERCARE SUPPORT</p> <p>1. There is (or will be) operational infrastructure and resources in place to provide aftercare support to the building occupier(s), which includes the following as a minimum:</p> <p>a. A meeting programmed to occur between the aftercare team/individual and the building occupier/management (prior to initial occupation, or as soon as possible thereafter) to:</p> <p>i. Introduce the aftercare team or individual to the aftercare support available, including the Building User Guide (where existing) and training schedule/content.</p> <p>ii. Present key information about the building including the design intent and how to use the building to ensure it operates as efficiently and effectively as possible.</p> <p>b. On-site facilities management training, to include a walkabout of the building and introduction to and familiarization with the building systems, their controls and how to operate them in accordance with the design intent and operational demands.</p> <p>c. Initial aftercare support provision for at least the first month of building occupation, e.g. on-site attendance on a weekly basis to support building users and management (this could be more or less frequent depending on the complexity of the building and building operations).</p> <p>d. Longer term aftercare support provision for occupants for at least the first 12 months from occupation, e.g. a helpline, nominated individual or other appropriate system to support building users/management.</p> <p>2. There is (or will be) operational infrastructure and resources in place to coordinate the collection and monitoring of energy and water consumption data for a minimum of 12 months, once the building is occupied. This is done to facilitate analysis of discrepancies between actual and predicted performance, with a view to adjusting systems and/or user behaviors accordingly.</p>	1	0	1	Subject to confirmation from the Client.

<p>ONE CREDIT - SEASONAL COMMISSIONING Mandatory for Excellent and Outstanding Rating 3. The following seasonal commissioning activities will be completed over a minimum 12-month period, once the building becomes substantially occupied: a. Complex systems - Specialist Commissioning Manager: i. Testing of all building services under full load conditions, i.e. heating equipment in mid-winter, cooling/ventilation equipment in mid-summer, and under part load conditions (spring/autumn). ii. Where applicable, testing should also be carried out during periods of extreme (high or low) occupancy. iii. Interviews with building occupants (where they are affected by the complex services) to identify problems or concerns regarding the effectiveness of the systems. iv. Re-commissioning of systems (following any work needed to serve revised loads), and incorporating any revisions in operating procedures into the operations and maintenance (O&M) manuals. b. Simple systems (naturally ventilated) - external consultant/aftercare team/facilities manager: i. Review thermal comfort, ventilation, and lighting, at three, six and nine month intervals after initial occupation, either by measurement or occupant feedback. ii. Take all reasonable steps to re-commission systems following the review to take account of deficiencies identified and incorporate any relevant revisions in operating procedures into the O&M manuals.</p>	1	1	0	Targeted credit
<p>ONE CREDIT - POST OCCUPANCY EVALUATION 4. The client or building occupier makes a commitment to carry out a post occupancy evaluation (POE) exercise one year after initial building occupation. This is done to gain in-use performance feedback from building users to inform operational processes, including re-commissioning activities, and maintain or improve productivity, health, safety and comfort. The POE is carried out by an independent third party and needs to cover: a. A review of the design intent and construction process (review of design, procurement, construction and handover processes). b. Feedback from a wide range of building users including Facilities Management on the design and environmental conditions of the building covering: i. Internal environmental conditions (light, noise, temperature, air quality) ii. Control, operation and maintenance iii. Facilities and amenities iv. Access and layout v. Other relevant issues vi. Sustainability performance (energy/water consumption, performance of any sustainable features or technologies e.g. materials, renewable energy, rainwater harvesting etc.). 5. The client or building occupier makes a commitment to carry out the appropriate dissemination of information on the building's post occupancy performance. This is done to share good practice and lessons learned and inform changes in user behaviour, building operational processes and procedures, and system controls.</p>	1	0	1	
<p>EXEMPLARY LEVEL CRITERIA Not targeted</p>	1	0	0	

Health and Wellbeing

Credit	Available	Targeted	Potential	Requirements / Comments																			
HEA01 Visual comfort	ONE CREDIT - GLARE CONTROL																						
	1	1	0	The design team has to confirm that glare control and view out credit will be targeted and addressed within the building-specific green building guide.																			
	<p>1. The potential for disabling glare has been designed out of all relevant building areas using a glare control strategy, either through building form and layout and/or building design measures (see compliance note CN7).</p> <p>2. The glare control strategy avoids increasing lighting energy consumption, by ensuring that:</p> <p>a. The glare control system is designed to maximise daylight levels under all conditions while avoiding disabling glare in the workplace or other sensitive areas. The system should not inhibit daylight from entering the space under cloudy conditions, or when sunlight is not on the façade:</p> <p>AND</p> <p>b. The use or location of shading does not conflict with the operation of lighting control systems.</p>																						
	3	0	1	Subject to the daylighting assessment																			
UP TO THREE CREDITS - DAYLIGHTING																							
3. Up to three credits are awarded on a sliding scale depending on the percentage of relevant building areas that comply with one of the following daylighting criteria:																							
<table border="1"> <thead> <tr> <th rowspan="2">Area type</th> <th colspan="3">Minimum area to comply</th> <th rowspan="2">Average daylight illuminance (averaged over entire space)</th> <th rowspan="2">Minimum daylight illuminance at worst lit point</th> </tr> <tr> <th>1 credit</th> <th>2 credits</th> <th>3 credits</th> </tr> </thead> <tbody> <tr> <td>Sales areas</td> <td>17.5%</td> <td>25%</td> <td>35%</td> <td rowspan="2">At least 200 lux point daylight illuminances for 2650 hours per year or more</td> <td rowspan="2">At least 60 lux for 2650 hours per year or more</td> </tr> <tr> <td>Other occupied areas</td> <td>40%</td> <td>60%</td> <td>80%</td> </tr> </tbody> </table>					Area type	Minimum area to comply			Average daylight illuminance (averaged over entire space)	Minimum daylight illuminance at worst lit point	1 credit	2 credits	3 credits	Sales areas	17.5%	25%	35%	At least 200 lux point daylight illuminances for 2650 hours per year or more	At least 60 lux for 2650 hours per year or more	Other occupied areas	40%	60%	80%
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...																							
UP TO TWO CREDITS - VIEW OUT																							
1	0	1	Subject to internal layout, however due to the depth of the building, it may not be possible to achieve this credit																				
<p>6. Two credits where 95% of the floor area in relevant building areas is within 7m of a wall which has a window or permanent opening that provides an adequate view out.</p> <p>7. One credit where 80% of the floor area space in relevant building areas is within 7m of a wall which has a window or permanent opening that provides an adequate view out and criterion 8 is met.</p> <p>8. The window/opening must be ≥ 20% of the surrounding wall area. Where the room depth is greater than 7m, 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 1.</p> <p>9. ...</p>																							
ONE CREDIT - INTERNAL AND EXTERNAL LIGHTING LEVELS, ZONING AND CONTROL																							
1	1	0	This credit will be targeted.																				
Internal lighting External lighting Zoning and occupant control																							
EXEMPLARY LEVEL CRITERIA																							
1	0	0	Credit will not be targeted																				
<p>The following outlines the exemplary level criteria to achieve an innovation credit for daylighting:</p> <p>14. Daylighting criteria have been met using either of the following options:</p> <ul style="list-style-type: none"> - 50% of sales areas has at least 300 lux point daylight illuminances for 2000 hours per year or more and - 80% of other occupied areas have Average daylight illuminance at least 300 lux for 2650 hours per year or more and minimum daylight illuminance at worst lit point At least 90 lux for 2650 hours per year or more 																							
HEA02 Indoor air quality	MINIMISING SOURCES OF AIR POLLUTION																						
	1	1	0	This credit will be targeted.																			
ONE CREDIT - INDOOR AIR QUALITY (IAQ) PLAN																							
One credit - Indoor air quality (IAQ) plan																							
<p>1. An indoor air quality plan has been produced and implemented, with the objective of facilitating a process that leads to design, specification and installation decisions and actions that minimise indoor air pollution during the design, construction and occupation of the building. The indoor air quality plan must consider the following:</p> <ol style="list-style-type: none"> Removal of contaminant sources Dilution and control of contaminant sources Procedures for pre-occupancy flush out Protection of Heating Ventilation and Air Conditioning (HVAC) systems from sources of pollution during refurbishment/fit-out works e.g. dust Procedures for protecting the indoor air quality of areas outside of the refurbishment or fit-out zone that may be affected by the refurbishment/fit-out works Procedures for identifying and implementing third party testing and analysis required to ascertain that the contaminant sources have been removed effectively before occupancy <p>Commitments for maintaining indoor air quality in-use, e.g. maintenance and cleaning of the HVAC system, ductwork and filters.</p>																							

	<p>ONE CREDIT- VENTILATION Refurbishment and fit-out works include measures to minimise the concentration and recirculation of pollutants in the building as follows:</p> <ol style="list-style-type: none"> 2. Provide fresh air into the building in accordance with the criteria of the relevant standard for ventilation. 3. Design ventilation pathways to minimise the build-up of air pollutants in the building, as follows: <ol style="list-style-type: none"> a. In air conditioned and mixed mode buildings/spaces: <ol style="list-style-type: none"> i. The building's air intakes and exhausts are over 10m apart and intakes are over 20m from sources of external pollution; OR ii. The location of the building's air intakes and exhausts, in relation to each other and external sources of pollution, is designed in accordance with BS EN 13779:2007 Annex A2. 4. Where present, HVAC systems must incorporate suitable filtration to minimise external air pollution, as defined in BS EN 13779:2007 Annex A3. 5. Areas of the building subject to large and unpredictable or variable occupancy patterns have carbon dioxide (CO2) or air quality sensors specified and: In mechanical ventilated buildings/spaces: sensor(s) are linked to the mechanical ventilation system and provide demand-controlled ventilation to the space. 	1	1	0	This credit will be targeted.
	ONE CREDIT - VOLATILE ORGANIC COMPOUND (VOC) EMISSION LEVELS (PRODUCTS)	1	1	0	
	ONE CREDIT - VOLATILE ORGANIC COMPOUND (VOC) EMISSION LEVELS (POST CONSTRUCTION)	1	0	1	
	<p>ADAPTABILITY - POTENTIAL FOR NATURAL VENTILATION ONE CREDIT</p> <ol style="list-style-type: none"> 13. The building ventilation strategy is designed to be flexible and adaptable to potential building occupant needs and climatic scenarios. This can be demonstrated as follows: <ol style="list-style-type: none"> a. Occupied spaces of the building are designed to be capable of providing fresh air entirely via a natural ventilation strategy. The following are methods deemed to satisfy this criterion dependent upon the complexity of the proposed system: <ol style="list-style-type: none"> i. Room depths are designed in accordance with CIBSE AM10 (section 2.4) to ensure effectiveness of any natural ventilation system. The openable window area in each occupied space is equivalent to 5% of the gross internal floor area of that room/floor plate; OR ii. The design demonstrates that the natural ventilation strategy provides adequate cross flow of air to maintain the required thermal comfort conditions and ventilation rates. This is demonstrated using ventilation design tool types that meet the requirements of CIBSE AM107 (or for education buildings by using the ClassVent tool). 14. The natural ventilation strategy is capable of providing at least two levels of user-control on the supply of fresh air to the occupied space (see compliance note CN6.3 for further details). <p>Note: Any opening mechanisms must be easily accessible and provide adequate user-control over air flow rates to avoid draughts. Relevant industry standards for ventilation can be used to define 'adequate levels of fresh air' sufficient for occupancy and internal air pollution loads relevant to the building type.</p>	1	0	0	
	EXEMPLARY LEVEL CRITERIA				
Hea 04 Thermal comfort	<p>ONE CREDIT - THERMAL MODELLING</p> <ol style="list-style-type: none"> 1. Thermal modelling has been carried out using software in accordance with CIBSE AM111 Building Energy and Environmental Modelling. 2. The software used to carry out the simulation at the detailed design stage provides full dynamic thermal analysis. For smaller and more basic building designs with less complex heating or cooling systems, an alternative less complex means of analysis may be appropriate (such methodologies must still be in accordance with CIBSE AM11). 3. The modelling demonstrates that: <ol style="list-style-type: none"> a. For air conditioned buildings, summer and winter operative temperature ranges in occupied spaces are in accordance with the criteria set out in CIBSE Guide A Environmental design2, Table 1.5; 5. For air conditioned buildings, the PMV (predicted mean vote) and PPD (predicted percentage of dissatisfied) indices based on the above modelling are reported via the BREEAM assessment scoring and reporting tool. 	1	1	0	Credit will be targeted. The thermal model has been produced and parameters of the building analysed.
	<p>ONE CREDIT - ADAPTABILITY - FOR A PROJECTED CLIMATE CHANGE SCENARIO</p> <ol style="list-style-type: none"> 6. Criteria 1 to 4 are achieved. 7. The thermal modelling demonstrates that the relevant requirements set out in criterion 3 are achieved for a projected climate change environment (see Relevant definitions). 8. Where thermal comfort criteria are not met for the projected climate change environment, the project team demonstrates how the building has been adapted, or designed to be easily adapted in future using passive design solutions in order to subsequently meet the requirements under criterion 6. 9. For air conditioned buildings, the PMV and PPD indices based on the above modelling are reported via the BREEAM assessment scoring and reporting tool. 	1	1	0	Credit will be targeted. The thermal model has been produced and parameters of the building analysed. Design team to produce a section in the concept design report on the adaptability of the building.

	<p>ONE CREDIT - THERMAL ZONING AND CONTROLS</p> <p>10. Criteria 1 to 4 are achieved.</p> <p>11. The thermal modelling analysis (undertaken for compliance with criteria 1 to 4) has informed the temperature control strategy for the building and its users.</p> <p>12. The strategy for proposed heating/cooling system(s) demonstrates that it has addressed the following:</p> <p>a. Zones within the building and how the building services could efficiently and appropriately heat or cool these areas. For example consider the different requirements for the central core of a building compared with the external perimeter adjacent to the windows.</p> <p>b. Where specified, any new local cooling or heating services (or changes to existing services) are designed to ensure they do not conflict with core services (e.g. conflicts between two separate cooling systems, conflicts between core heating and locally provided cooling systems).</p> <p>c. The degree of occupant control required for these zones, based on discussions with the end user (or alternatively building type or use specific design guidance, case studies, feedback) considers:</p> <p>i. User knowledge of building services</p> <p>ii. Occupancy type, patterns and room functions (and therefore appropriate level of control required)</p> <p>iii. How the user is likely to operate or interact with the system(s), e.g. are they likely to open windows, access thermostatic radiator valves (TRV) on radiators, change air-conditioning settings etc.</p> <p>iv. The user expectations (this may differ in the summer and winter) and degree of individual control (i.e. obtaining the balance between occupant preferences, for example some occupants like fresh air and others dislike draughts).</p> <p>d. How the proposed systems will interact with each other (where there is more than one system) and how this may affect the thermal comfort of the building occupants.</p> <p>e. The need or otherwise for an accessible building user actuated manual override for any automatic systems.</p>	1	1	0	<p>Credit will be targeted.</p> <p>Thermal model has been produced and parameters of the building analysed.</p> <p>Design team to produce a section in the concept design report on adaptability of the building.</p>
Hea 05 Acoustic performance	<p>UP TO THREE CREDITS ARE AVAILABLE FOR OTHER BUILDING TYPES</p> <p>UP TO THREE CREDITS</p> <p>3. Where a suitably qualified acoustician (see relevant definitions) is appointed to define a bespoke set of performance requirements for all function areas in the building using the three acoustic principles defined in criterion 1, setting out the performance requirements for each and the testing regime required.</p> <p>Where a building type does not have areas 'used for speech', it does not need to comply with the relevant 'reverberation times' criteria. In these instances, the credit available for reverberation can be awarded by default where the building complies with the indoor ambient noise level and sound insulation criteria.</p>	3	3	0	<p>Design team will need to confirm whether suitably qualified acoustician has been appointed to carry an assessment and develop a set of requirements</p>
HEA06 Safety and security	<p>ONE CREDIT - SECURITY OF SITE AND BUILDING</p> <p>11. A Suitably Qualified Security Specialist (SQSS) conducts an evidence based Security Needs Assessment (SNA) during or prior to Concept Design (RIBA Stage 2 or equivalent).</p> <p>12. The SQSS develops a set of recommendations or solutions during or prior to Concept Design (RIBA Stage 2 or equivalent). These recommendations or solutions aim to ensure that the design of buildings, public and private car parks and public or amenity space are planned, designed and specified to address the issues identified in the preceding SNA.</p> <p>13. The recommendations or solutions proposed by the SQSS are implemented (see CN3.6. Any deviation from those recommendations or solutions will need to be justified, documented and agreed in advance with a suitably qualified security specialist.</p>	1	1	0	<p>Credit can be potentially achieved, subject to appointment of Qualified Security Specialist.</p>

Energy					
Credit		Available	Targeted	Potential	Requirements / Comments
ENE01 Reduction of energy use and carbon emissions	OPTION 1: WHOLE BUILDING ENERGY MODEL Calculate an Energy Performance Ratio for New Constructions (EPR NC). Compare the EPR NC achieved with the benchmarks in Table - 25 and award the corresponding number of BREEAM credits.	12	8	4	Design team confirmed that maximum available number of credits will be targeted. Design team to provide a copy of the BREEAM Refurbishment and Fit-out energy model to reflect the actual and proposed building performance and scope of the assessment as relevant to the applicable assessment parts.
ENE02 Energy monitoring	ONE CREDIT - SUB-METERING OF MAJOR ENERGY CONSUMING SYSTEMS 1. Energy metering systems are installed that enable at least 90% of the estimated annual energy consumption of each fuel to be assigned to the various end-use categories of energy consuming systems. 2. 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. 3. The systems in smaller buildings are metered either with an energy monitoring and management system or with separate accessible energy sub-meters with pulsed or other open protocol communication outputs, to enable future connection to an energy monitoring and management system. 4. The end energy consuming uses are identifiable to the building users, for example through labelling or data outputs.	1	1	0	Design team has confirmed that the credit will be targeted and achieved
	ONE CREDIT - SUB-METERING OF HIGH ENERGY LOAD AND TENANCY AREAS 5. 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	1	0	Design team has confirmed that the credit will be targeted and achieved
ENE03 External lighting	ONE CREDIT 2. The average initial luminous efficacy of the external light fittings within the construction zone is not less than 60 luminaire lumens per circuit Watt. 3. All external light fittings are automatically controlled for prevention of operation during daylight hours and presence detection in areas of intermittent pedestrian traffic.	1	1	0	The credit will be targeted and achieved
ENE04 Low carbon design	PASSIVE DESIGN ONE CREDIT - PASSIVE DESIGN ANALYSIS 1. The first credit within issue <u>Hea 04 Thermal comfort</u> has been achieved to demonstrate the building design can deliver appropriate thermal comfort levels in occupied spaces. 2. The project team carries out an analysis of the proposed building design/development to influence decisions made during Concept Design stage (RIBA Stage 2 or equivalent) and identify opportunities for the implementation of passive design solutions that reduce demands for energy consuming building services. 3. The building uses passive design measures to reduce the total heating, cooling, mechanical ventilation and lighting loads and energy consumption in line with the findings of the passive design analysis and the analysis demonstrates a meaningful reduction in the total energy demand as a result.	1	0	0	The Design team has confirmed that analysis will be performed, however, due to site constraints, it may be difficult to achieve and will not be targeted.
	ONE CREDIT - FREE COOLING 4. The passive design analysis credit is achieved. 5. The passive design analysis carried out under criterion 2 includes an analysis of free cooling and identifies opportunities for the implementation of free cooling solutions. 6. The building uses ANY of the free cooling strategies listed in compliance note CN3.1 to reduce the cooling energy demand, i.e. it does not use active cooling.	1	0	0	The design team has confirmed that the credit will be difficult to achieve and will not be targeted.
	LOW AND ZERO CARBON TECHNOLOGIES ONE CREDIT - LOW ZERO CARBON FEASIBILITY STUDY 7. A feasibility study has been carried out by the completion of the Concept Design stage (RIBA Stage 2 or equivalent) by an energy specialist to establish the most appropriate recognised local (on-site or near-site) low or zero carbon (LZC) energy source(s) for the building/development. 8. A local LZC technology/technologies has/have been specified for the building/development in line with the recommendations of this feasibility study and this method of supply results in a meaningful reduction in regulated carbon dioxide (CO2) emissions.	1	1	0	The design team has confirmed that the credit will be targeted and achieved. MEP engineer to provide Low Zero Carbon Feasibility Study
ENE05 Energy efficient cold	ONE CREDIT - REFRIGERATION ENERGY CONSUMPTION	NA	NA	NA	No industrial size cold storage

storage	ONE CREDIT - INDIRECT GREENHOUSE GAS EMISSIONS	NA	NA	NA	
ENE06 Energy efficient transportation systems	ONE CREDIT - ENERGY CONSUMPTION Where new lifts, escalators and/or moving walks (transportation types) are specified within refurbishment works: 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, escalators and/or moving walks. The energy consumption has been estimated in accordance with BS EN ISO 25745 Energy performance of lifts, escalators and moving walks, Part 2: Energy calculation and classification for lifts (elevators) and/or Part 3 - Energy calculation and classification for escalators and moving walks, for one of the following: <ul style="list-style-type: none"> – At least two types of system (for each transportation type required); OR – An arrangement of systems (e.g. for lifts, hydraulic, traction, machine room-less lift (MRL)); OR – A system strategy which is 'fit for purpose'. – The use of regenerative drives should be considered, subject to the requirements in CN6 – The transportation system with the lowest energy consumption is specified. 	1	1	0	Design Team to confirm the specification of new lifts and escalators
	TWO CREDITS - ENERGY EFFICIENT FEATURES Where only one of the transportation systems is present, the two credits can be awarded where the one system is compliant with the relevant criteria Lifts 3. For each lift, the following three energy efficient features are specified: a. The lifts operate in a standby condition during off-peak periods. For example the power side of the lift controller and other operating equipment such as lift car lighting, user displays and ventilation fans switch off when the lift has been idle for a prescribed length of time. b. The lift car lighting and display lighting provides an average lamp efficacy, (across all fittings in the car) of > 55 lamp lumens/circuit Watt. c. The lift uses a drive controller capable of variable speed, variable-voltage, and variable-frequency (VVVF) control of the drive motor. 4. Where the use of regenerative drives is demonstrated to save energy, they are specified.	2	2	0	Design Team to confirm the specification of new lifts and escalators
ENE08 Energy efficient equipment	TWO CREDITS ENERGY EFFICIENT EQUIPMENT Identify the building's unregulated energy consuming loads and estimate their contribution to the total annual unregulated energy consumption of the building, assuming a typical/standard specification. Identify the systems and/or processes that use a significant proportion of the total annual unregulated energy consumption of the development and its operation. Demonstrate a meaningful reduction in the total annual unregulated energy consumption of the building.	2	2	0	Small power, Swimming pool. Kitchen and Catering, Sports equipment- need clarification from BRE

Transport					
Credit		Available	Targeted	Potential	Requirements / Comments
TRA01 Sustainable transport solutions	Up to 5 credits - Accessibility Index 1. The public transport Accessibility Index (AI) for the assessed building is calculated and BREEAM credits awarded according to the building type. Building Type: Assembly and Leisure	5	3	0	Four credits will be achieved. PTAL Index 5 + 2 of Alternative transport measures required
TRA02 Proximity to amenities	ONE CREDIT 1. Where the building is located within close proximity of, and accessible to, local amenities which are likely to be frequently required and used by building occupants, Where a building type is indicated to have core amenities at least two of these must be provided as a part of the total number required. The remaining number of amenities required can be met using any other applicable amenities (including any remaining core amenities).	1	1	0	
TRA03 Cyclist facilities	ONE CREDIT - CYCLE STORAGE 1. Compliant cycle storage spaces that meet the minimum levels set out in Table 38 are installed. Compliant cyclist facilities are intended for staff only i.e. it is not a requirement of compliance to provide facilities for customers. Cycles can be secured within spaces in rack(s). They are covered overhead and the cycle racks are set in or fixed to a permanent structure (building or hardstanding). Alternatively the cycle storage may be located in a locked structure fixed to, or part of, a permanent structure with appropriate surveillance. ONE CREDIT - CYCLIST FACILITIES 2. Criterion 1 has been achieved. 3. At least two of the following types of compliant cyclist facilities have been provided for all building users: a. Showers b. Changing facilities c. Lockers d. Drying spaces	2	2	0	Building defined as Other Building Type 2, required 1 for 10 staff and 1 for 10 visitors of compliant cyclists storage spaces. Client need to confirm occupancy figures Planning proposal indicated 27 short-term cycling spaces + 2 long-term and Brompton storage box
TRA04 Maximum car parking capacity	UP TO TWO CREDITS - CAR PARKING CAPACITY	2	2	0	The building has no car parking spaces and where there are no parking spaces accessible to building users within the site boundary. Knowledge Base answer
TRA05 Travel plan	ONE CREDIT One credit 1. A travel plan has been developed as part of the feasibility and design stages. 2. A site specific travel assessment/statement has been undertaken to ensure the travel plan is structured to meet the needs of the particular site and covers the following (as a minimum): a. Where relevant, existing travel patterns and opinions of existing building or site users towards cycling and walking so that constraints and opportunities can be identified. b. Travel patterns and transport impact of future building users. c. Current local environment for walkers and cyclists (accounting for visitors who may be accompanied by young children). d. Disabled access (accounting for varying levels of disability and visual impairment). e. Public transport links serving the site. f. Current facilities for cyclists. 3. The travel plan includes a package of measures to encourage the use of sustainable modes of transport and movement of people and goods during the building's operation and use. 4. If the occupier is known, they must be involved in the development of the travel plan and they must confirm that the travel plan will be implemented post refurbishment or fit-out and be supported by the building's management in operation.	1	1	0	Credit will be targeted, subject to provision of Information required

Water					
Credit		Available	Targeted	Potential	Requirements / Comments
WAT01 Water consumption	<p>UP TO FIVE CREDITS</p> <p>1. An assessment of the efficiency of the building's domestic water-consuming components is undertaken using the BREEAM Wat 01 calculator.</p>	5	1	0	One credit will be targeted.
WAT02 Water monitoring	<p>ONE CREDIT</p> <p>1. The specification of a water meter on the mains water supply to each building; this includes instances where water is supplied via a borehole or other private source.</p> <p>2. Water-consuming plant or building areas, consuming 10% or more of the building's total water demand, are either fitted with easily accessible sub-meters or have water monitoring equipment integral to the plant or area.</p> <p>3. Each meter (main and sub) has a pulsed or other open protocol communication output to enable connection to an appropriate utility monitoring and management system, e.g. a building management system (BMS), for the monitoring of water consumption</p> <p>4. If the refurbishment zone is within a site that has an existing BMS, managed by the same occupier/owner (as the space undergoing refurbishment or fit-out), the pulsed/digital water meter(s) for the refurbishment or fit-out zone must be connected to the existing BMS</p> <p>5. If the refurbishment or fit-out zone is within a building that is leasehold, the pulsed/digital water meter(s) for the refurbishment or fit-out zone must be connected to the incoming water supply for water using equipment in tenanted areas.</p>	1	1	0	The design team has confirmed that water metering will be installed.
WAT03 Water leak detection	<p>ONE CREDIT - LEAK DETECTION SYSTEM</p> <p>1. A leak detection system which is capable of detecting a major water leak on the mains water supply within the building and between the building and the utilities water meter is installed. The leak detection system must be:</p> <ol style="list-style-type: none"> A permanent automated water leak detection system that alerts the building occupants to the leak OR an inbuilt automated diagnostic procedure for detecting leaks is installed. Activated when the flow of water passing through the water meter/data logger is at a flow rate above a pre-set maximum for a pre-set period of time. Able to identify different flow and therefore leakage rates, e.g. continuous, high and/or low level, over set time periods. Programmable to suit the owner/occupiers' water consumption criteria. Where applicable, designed to avoid false alarms caused by normal operation of large water-consuming plant such as chillers. <p>ONE CREDIT - FLOW CONTROL DEVICES</p> <p>2. Flow control devices that regulate the supply of water to each WC area/facility according to demand are installed (and therefore minimise water leaks and wastage from sanitary fittings).</p>	2	2	0	<p>The design team has confirmed that a water leak detection system will be installed.</p> <p>The criteria are applicable to the cold water supply only and include cold taps, WCs and urinals.</p> <p>Any solution implemented to achieve compliance with this Issue should effectively mitigate the risk of hot-water scalding in showers, in the event that the cold water supply is shut off.</p>
WAT04 Water efficient equipment	<p>ONE CREDIT</p> <p>1. The design team has identified all unregulated water demands that could be realistically mitigated or reduced.</p> <p>2. System(s) 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.</p>	1	0	1	Water use dedicated to swimming pools is considered an unregulated water use and should be included in the assessment of this issue.

Materials					
Credit		Available	Targeted	Potential	Requirements / Comments
MAT01 Environmental impact of materials	<p>UP TO FOUR CREDITS: ELEMENTAL ASSESSMENT OF ENVIRONMENTAL PERFORMANCE INFORMATION</p> <p>The following are required to demonstrate compliance:</p> <p>8. Robust environmental performance information has been collected for newly specified materials or where materials are retained in situ, for elements listed in CN7.</p> <p>9. The total number of points achieved as set out in the Methodology section are calculated using Part B of the BREEAM Mat 01 calculator. The number of points scored is based on the percentage of each element that has been:</p> <ol style="list-style-type: none"> reused in situ reused in situ with minor repairs specified with robust environmental performance information. <p>10. Credits are awarded based upon the percentage of available points achieved</p>	6	2	0	Design team need to provide material specifications for the main building elements and areas covered by each material later at the design stage.
MAT02 Hard landscaping	Not applicable (included in MAT 01)	-	-	-	
MAT03 Responsible sourcing of materials	<p>PRE-REQUISITE</p> <p>1. All timber and timber-based products used on the project is Legally harvested and traded timber.</p> <p>Note:</p> <ol style="list-style-type: none"> It is a minimum requirement for achieving a BREEAM rating (for any rating level) that compliance with criterion 1 is confirmed. For other materials there are no pre-requisite requirements at this stage. <p>ONE CREDIT - SUSTAINABLE PROCUREMENT PLAN</p> <p>2. The principal contractor sources materials for the project in accordance with a documented sustainable procurement plan</p> <p>UP TO 3 CREDITS - RESPONSIBLE SOURCING OF MATERIALS (RSM)</p> <p>3. One credit can be awarded where at least three of the material types listed in Table 53 'Material categories' has been responsibly sourced from one of the responsible sourcing schemes recognised by BREEAM as detailed in Guidance Note 18</p> <p>4. Up to three of the available RSM credits (refer to Table 51) can be awarded where the applicable building materials (refer to Table 53) are responsibly sourced in accordance with the BREEAM methodology, as defined in steps 1 to 2 in the Mat 03 Responsible sourcing of materials.</p>	4	2	2	<p>Include the requirements for Legally harvested and traded timber into the specification</p> <p>Design team to provide a material specification (see MAT 01)</p> <p>For design stage assessments where the principal contractor has not yet been appointed, a specification or a letter of intent from the party responsible for appointing the principal contractor must be provided confirming a requirement for the principal contractor to have in place a sustainable procurement plan.</p> <p>Main Contractor to provide a sustainable procurement plan for potential credits.</p>
MAT04 Insulation	<p>ONE CREDIT - INSULATION</p> <p>1. Any new insulation specified for use within the following building elements must be assessed:</p> <ol style="list-style-type: none"> External walls Ground floor Roof Building services. <p>2. The Insulation Index for the building fabric and services insulation is the same as or greater than 2.5.</p>	1	1	0	Architect to provide specification on insulation materials.
MAT05 Designing for durability and resilience	<p>ONE CREDIT</p> <p>PROTECTING VULNERABLE PARTS OF THE BUILDING FROM DAMAGE</p> <p>1. The building incorporates suitable durability and protection measures or designed features/solutions to prevent damage to vulnerable parts of the internal and external building and landscaping elements. This must include, but is not necessarily limited to:</p> <ol style="list-style-type: none"> 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. <p>PROTECTING EXPOSED PARTS OF THE BUILDING FROM MATERIAL DEGRADATION</p> <p>2. Environmental factors have been identified that are relevant to the site location</p> <p>3. Existing applicable building elements that are exposed to any relevant environmental factors have been identified</p> <p>4. Existing applicable building elements have been surveyed have been assessed to identify impacts of material degradation effects including an assessment to grade the severity of any degradation effects. Design and specification measures have been developed to repair and protect existing elements according to the severity of any degradation affects, to limit degradation. Where it is not feasible to implement measures to limit material degradation for existing elements, justification should be provided.</p>	1	1	0	<p>Credit can be potentially achieved, subject to provision of the requested information:</p> <p>For listed buildings and buildings in a conservation area, measures to protect vulnerable parts of the building from damage (criterion 1) and to limit material degradation (criteria 2 and 3) should be based on the measures that are feasible within the scope of any heritage requirements that may be explicitly required by the relevant conservation authority (e.g. the local authority heritage office).</p> <p>This should consider the range of options that may be feasible in order to demonstrate compliance with justification provided, including reference to documentary evidence to verify any restrictions that are in place that prevent compliance with any durability measures.</p>

	<p>5. Newly specified materials or newly constructed elements (e.g. a new external wall) within the scope of refurbishment or fit-out works incorporate appropriate design and specification measures to limit material degradation due to environmental factors .</p>				
<p>MAT06 Material efficiency</p>	<p>ONE CREDIT 1. Opportunities have been identified, and appropriate measures investigated and implemented within the scope of refurbishment or fit-out works, to optimise the use of materials through building design, procurement, refurbishment, maintenance and end of life 2. The above is carried out by the design/construction team in consultation with the relevant parties at each of the following RIBA stages: a. Preparation and Brief b. Concept Design c. Developed Design d. Technical Design e. Construction. All parties (as relevant to the project stage) involved in the design, specification and/or construction of the building should be consulted.</p>	<p>1</p>	<p>1</p>	<p>0</p>	<p>Credit can be easy achieved, The evidence required to demonstrate compliance will vary according to RIBA stage. A few examples have been provided below:</p> <ul style="list-style-type: none"> - Reports (at Preparation and Brief stage) outlining the activity relating to material efficiency (ideas discussed, analysis and decisions taken) - Drawings or building information model (BIM), calculations showing reduction of material use through design (Concept Design/Developed Design stages) - Meeting notes, construction program, responsibilities schedule (indicating parties consulted).

Waste																				
Credit		Available	Targeted	Potential	Requirements / Comments															
WST01 Project waste management	<p>ONE CREDIT - PRE-REFURBISHMENT AUDIT</p> <p>1. The client shall ensure that a pre-refurbishment audit of all existing buildings, structures or hard surfaces within the scope of the refurbishment or fit-out zone is completed.</p> <p>The requirements for carrying out an appropriate pre-refurbishment audit are</p> <ol style="list-style-type: none"> The audit should be carried out at the Concept Design Stage (equivalent to RIBA stage 2) prior to strip-out or demolition works in order to use the audit results to guide the design, consideration of materials that can be reused, and to set targets for waste management and ensure all contractors are engaged in the process of maximising high grade reuse and recycling opportunities. The audit should be carried out by a competent person who is independent of the project, has appropriate knowledge of buildings, waste and options for the reuse and recycling of different waste streams Actual waste arisings and waste management routes used should be compared with those forecast from the audit and barriers to achieving targets should be investigated. The audit must be referenced in the resource management plan and cover: Identification and quantification of the key materials where present on the project Potential applications and any related issues for the reuse and recycling of the key materials in accordance with the waste hierarchy. Identification of local reprocessors or recyclers for recycling of materials Identification of overall recycling rate for all key materials Identification of reuse targets where appropriate. Identification of overall landfill diversion rate for all key materials. <p>UP TO TWO CREDITS - REUSE AND DIRECT RECYCLING OF MATERIALS</p> <p>2. Where waste material types detailed in Table 64 (Attached) are either directly re-used on-site or off-site or are sent back to the manufacturer for closed loop recycling</p> <p>3. One credit is achieved where 50% of the total available points for the waste material types detailed in Table 64 (Attached), that are present on the project have been achieved.</p> <p>4. Two credits are achieved where 75% of the total available points for the waste material types detailed in Table 64 (Attached), that are present on the project have been achieved</p>	3	1	0	Developer to provide pre-refurbishment audit															
	<p>UP TO THREE CREDITS - RESOURCE EFFICIENCY</p> <p>5. Develop and implement a compliant resource management plan covering the waste arising from the refurbishment or fit-out project with the aim of minimising waste, recording and reporting accurate data on waste arising.</p> <p>6. The non-hazardous waste relating to on-site refurbishment or fit-out, and dedicated off-site manufacture or fabrication processes generated by the building's design and construction meets, or exceeds, the resource efficiency benchmarks set out in Table below:</p> <table border="1"> <thead> <tr> <th>BREEAM credits</th> <th colspan="2">Amount of construction waste generated per 100m² (gross internal floor area)</th> </tr> <tr> <td></td> <th>m³</th> <th>tonnes</th> </tr> </thead> <tbody> <tr> <td>One</td> <td>≤11.3</td> <td>≤3.5</td> </tr> <tr> <td>Two</td> <td>≤4.5</td> <td>≤1.2</td> </tr> <tr> <td>Three</td> <td>≤2.1</td> <td>≤0.4</td> </tr> </tbody> </table>	BREEAM credits	Amount of construction waste generated per 100m ² (gross internal floor area)			m ³	tonnes	One	≤11.3	≤3.5	Two	≤4.5	≤1.2	Three	≤2.1	≤0.4	3	1	1	Developer to provide pre-refurbishment audit and record documents for non-hazardous waste disposal. One credit will be targeted, with potential to achieve more.
BREEAM credits	Amount of construction waste generated per 100m ² (gross internal floor area)																			
	m ³	tonnes																		
One	≤11.3	≤3.5																		
Two	≤4.5	≤1.2																		
Three	≤2.1	≤0.4																		
	<p>ONE CREDIT - DIVERSION OF RESOURCES FROM LANDFILL</p> <p>7. The following percentages of non-hazardous construction and demolition waste generated have been diverted from landfill:</p> <table border="1"> <thead> <tr> <th>Source of waste</th> <th>Volume</th> <th>Tonnage</th> </tr> </thead> <tbody> <tr> <td>Refurbishment/fit-out</td> <td>85%</td> <td>90%</td> </tr> <tr> <td>Demolition</td> <td>90%</td> <td>95%</td> </tr> </tbody> </table>	Source of waste	Volume	Tonnage	Refurbishment/fit-out	85%	90%	Demolition	90%	95%	1	1	0	Developer to provide pre-refurbishment audit and record documents for non-hazardous waste disposal. One credit will be targeted						
Source of waste	Volume	Tonnage																		
Refurbishment/fit-out	85%	90%																		
Demolition	90%	95%																		
WST 02 Recycled aggregates	ONE CREDIT - RECYCLED AGGREGATES	NA	NA	NA	No recycled or secondary aggregate to be used.															
WST03 Operational waste	<p>ONE CREDIT - OPERATIONAL WASTE</p> <p>1. Dedicated space(s) is provided for the segregation and storage of operational recyclable waste volumes generated by the assessed building/unit, its occupant(s) and activities. This space must be:</p> <ol style="list-style-type: none"> Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams Accessible to building occupants or 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. 	1	1	0	The design team needs to demonstrate that the provision of waste management facilities for the assessed building is adequate given the building type, occupier (if known), operational function and likely waste streams and volumes to be generated. At least 2m ² per 1000m ² of net floor area for buildings < 5000m ²															

	<p>2. 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 are provided:</p> <ul style="list-style-type: none"> a. Static waste compactor(s) or baler(s); situated in a service area or dedicated waste management space. b. 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. c. 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. 				
<p>WST05 Adaptation to climate change</p>	<p>ONE CREDIT - STRUCTURAL AND FABRIC RESILIENCE</p> <p>1. Conduct a climate change adaptation strategy appraisal for structural and fabric resilience by the end of Concept Design (RIBA Stage 2 or equivalent), in accordance with the following approach:</p> <ul style="list-style-type: none"> a. Carry out a systematic (structural and fabric resilience specific) 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 and, where feasible, mitigate against these impacts. The assessment should cover the following stages: <ul style="list-style-type: none"> i. Hazard identification ii. Hazard assessment iii. Risk estimation iv. Risk evaluation v. Risk management. 	1	1	0	Architect/ Structural to provide a climate change adaptation strategy appraisal for structural and fabric resilience
<p>WST06 Functional adaptability</p>	<p>ONE CREDIT - FUNCTIONAL ADAPTABILITY</p> <p>1. A building-specific functional adaptation strategy study has been undertaken by the client and design team by Concept Design (RIBA Stage 2 or equivalent), which includes recommendations for measures to be incorporated to facilitate future adaptation.</p> <p>2. Functional adaptation measures have been adopted in the design by Technical Design stage (RIBA Stage 4 or equivalent) in accordance with the functional adaptation strategy recommendations, where practical and cost effective. Omissions have been justified in writing to the assessor.</p> <p>Architect / Client / CDI should consider:</p> <ul style="list-style-type: none"> 1. The potential for major refurbishment, including replacing the façade. 2. Design aspects that facilitate the replacement of all major plant within the life of the building, e.g. panels in floors/walls that can be removed without affecting the structure, providing lifting beams and hoists. 3. The degree of adaptability of the internal environment to accommodate changes in working practices. 4. The degree of adaptability of the internal physical space and external shell to accommodate change in-use. 5. The extent of accessibility to local services, such as local power, data infrastructure etc. 	1	1	0	Architect / Client will provide functional adaptation strategy as part of the design statement or a separate document.

Land Use and Ecology					
Credit		Available	Targeted	Potential	Requirements / Comments
LE01 Site selection	NA				
LE02 Protection of ecological features	<p>ONE CREDIT - PROTECTION OF ECOLOGICAL FEATURES</p> <p>1. All existing features of ecological value within and surrounding the refurbishment or fit-out Zone and site boundary area are adequately protected from damage during clearance, site preparation and refurbishment or fit-out activities in line with BS42020: 2013</p> <p>2. In all cases, the principal contractor is required to construct ecological protection recommended by the Suitably Qualified Ecologist (SQE), prior to any preliminary site refurbishment or fit-out or preparation works (e.g. erection of temporary site facilities).</p>	1	1	0	Credit will be awarded by default as there are no features of ecological value within landscaped areas.
LE03 Minimising impact on existing site ecology	NA				
LE04 Enhancing site ecology	<p>ONE CREDIT - ECOLOGIST'S REPORT AND RECOMMENDATIONS</p> <p>1. A suitably qualified ecologist (SQE) has been appointed by the client or their project representative by the end of the Preparation and Brief stage (RIBA Stage 1 or equivalent) to advise on enhancing the ecology of the site at an early stage.</p> <p>2. The SQE has provided an Ecology Report with appropriate recommendations for the enhancement of the site's ecology at Concept Design stage (RIBA Stage 2 or equivalent). The report is based on a site visit/survey by the SQE.</p> <p>3. The early stage advice and recommendations of the Ecology Report for the enhancement of site ecology have been, or will be, implemented in the refurbishment or fit-out.</p> <p>This takes account of the fact that this Issue is not just limited to areas of soft landscaping. It is possible to include measures listed under Relevant definitions such as bird/bat boxes, insect boxes, sedum roofs, tubs of plants, etc.</p>	NA	NA	NA	
LE05 Long term impact on biodiversity	<p>UP TO TWO CREDITS</p> <p>This issue is only applicable where works to external soft landscaping are within the scope of the refurbishment or fit-out zone, or where the occupier of the refurbishment or fit-out zone will have responsibility for ongoing management of soft landscaped areas.</p>	2	0	2	Potential credit, subject to works completed on external soft landscaping within the scope of the refurbishment

Pollution											
Credit		Available	Targeted	Potential	Requirements / Comments						
POL01 Impact of refrigerants	<p>PRE-REQUISITE</p> <p>2. All systems (with electric compressors) must comply with the requirements of BS EN 378:2008 (parts 2 and 3) and where refrigeration systems containing ammonia are installed, the Institute of Refrigeration Ammonia Refrigeration Systems Code of Practice</p> <p>TWO CREDITS - IMPACT OF REFRIGERANT</p> <p>3. Where the systems using refrigerants have Direct Effect Life Cycle CO2 equivalent emissions (DELC CO2e) of ≤ 100 kgCO2e /kW cooling/heating capacity. To calculate the DELC CO2e please refer to the Relevant definitions in the Additional information section and the Methodology section.</p> <p>OR</p> <p>4. Where air-conditioning or refrigeration systems are installed the refrigerants used have a Global Warming Potential (GWP) ≤ 10.</p> <p>OR</p> <p>ONE CREDIT - IMPACT OF REFRIGERANT</p> <p>5. Where the systems using refrigerants have Direct Effect Life Cycle CO2 equivalent emissions (DELC CO2e) of ≤ 1000 kgCO2e /kW cooling/heating capacity.</p> <p>ONE CREDIT - LEAK DETECTION</p> <p>6. Where systems using refrigerants have a permanent automated refrigerant leak detection system installed; OR where an inbuilt automated diagnostic procedure for detecting leakage is installed. In all instances a robust and tested refrigerant leak detection system must be installed and must be capable of continuously monitoring for leaks.</p> <p>7. The system must be capable of automatically isolating and containing the remaining refrigerant(s) charge in response to a leak detection incident</p>	3	1	1	One credit for leak detection Potential credit - Provided that the HVAC installations are in the scope of works and the refrigeration systems are specified, MEP Engineer to provide system specification and other details for the assessor to calculate Direct Effect Life Cycle CO2 equivalent emissions via POL 01 Calculator.						
POL02 NOx emissions	<p>Up to three credits</p> <p>1. Where the plant installed to meet the building's delivered heating and hot water demand has, under normal operating conditions, a NOx emission level (measured on a dry basis at 0% excess O2) as follows:</p> <p><u>NO x Emission levels for heating and hot water (mg/kWh) Credits</u></p> <table border="0"> <tr> <td>≤ 100 mg/kWh</td> <td>1 credit</td> </tr> <tr> <td>≤ 70 mg/kWh</td> <td>2 credits</td> </tr> <tr> <td>≤ 40 mg/kWh</td> <td>3 credits</td> </tr> </table>	≤ 100 mg/kWh	1 credit	≤ 70 mg/kWh	2 credits	≤ 40 mg/kWh	3 credits	3	1	2	Client to confirm that targeted NOX emission will be include in Contractor' specification.
≤ 100 mg/kWh	1 credit										
≤ 70 mg/kWh	2 credits										
≤ 40 mg/kWh	3 credits										
POL03 Flood risk management and reducing surface water run-off	<p>TWO CREDITS - FLOOD RISK MANAGEMENT</p> <p>MEDIUM/HIGH FLOOD RISK</p> <p>1. Low flood risk Where flood maps from the appropriate statutory body (see Relevant definitions) confirm the refurbishment or fit-out is situated in a flood zone that is defined as having a low annual probability of flooding; OR The project meets the requirements for avoidance of flooding in accordance with Checklist 1, (see Checklists and tables), e.g. where the refurbishment or fit-out zone is of a floor level that is 0.3m higher than the obtained/estimated flood level and safe access/escape routes are available/present</p> <p>ONE CREDIT - NEUTRAL IMPACT ON SURFACE WATER</p> <p>7. There is no increase in the impermeable surfaces as a result of the refurbishment works;</p> <p>ONE CREDIT - MINIMISING WATERCOURSE POLLUTION</p> <p>11. There is no discharge from the developed site (includes new and existing hard landscaping and buildings) for rainfall up to 5mm (confirmed by the Appropriate Consultant).</p> <p>12. Where suitable pollution prevention measures are put in place (or already exist) for the different sources of pollution present on the assessed site.</p> <p>13. A comprehensive and up to date drainage plan of the site will be made available for the building/site occupiers.</p> <p>14. Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS must be in place.</p> <p>If all run-off is discharged directly from the site to either the sea, the foreshore, estuaries covered by a shoreline management plan or designated wildlife/SSSI areas (as part of habitat management), then three credits can be awarded without the need to specify additional attenuation measures.</p> <p>The site must discharge run-off directly into the tidal estuary or the sea, if the credits are to be awarded. Typically, this would mean that drainage pipes would only carry run-off from the site and that they would not need to cross privately owned land outside the boundary of the site before reaching the sea.</p>	2	2	0	Credit will be targeted.						
	<p>ONE CREDIT - NEUTRAL IMPACT ON SURFACE WATER</p> <p>7. There is no increase in the impermeable surfaces as a result of the refurbishment works;</p>	1	1	0	Credit will be easy to achieve						
	<p>ONE CREDIT - MINIMISING WATERCOURSE POLLUTION</p> <p>11. There is no discharge from the developed site (includes new and existing hard landscaping and buildings) for rainfall up to 5mm (confirmed by the Appropriate Consultant).</p> <p>12. Where suitable pollution prevention measures are put in place (or already exist) for the different sources of pollution present on the assessed site.</p> <p>13. A comprehensive and up to date drainage plan of the site will be made available for the building/site occupiers.</p> <p>14. Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS must be in place.</p> <p>If all run-off is discharged directly from the site to either the sea, the foreshore, estuaries covered by a shoreline management plan or designated wildlife/SSSI areas (as part of habitat management), then three credits can be awarded without the need to specify additional attenuation measures.</p> <p>The site must discharge run-off directly into the tidal estuary or the sea, if the credits are to be awarded. Typically, this would mean that drainage pipes would only carry run-off from the site and that they would not need to cross privately owned land outside the boundary of the site before reaching the sea.</p>	1	0	1	Calculation of the 5mm rainfall event from the relevant areas. Calculation results for the pre and post refurbishment peak rate of run-off. Calculation results for the pre and post refurbishment volume of run-off.						

POL05 Reduction of night time light pollution	<p>ONE CREDIT</p> <p>2. The external lighting strategy has been designed in compliance with Table 2 (and its accompanying notes) of the ILP Guidance notes for the reduction of obtrusive light, 2011 . This can be demonstrated via completion of the checklists in Annexes B and C of the guidance note by a relevant member of the design team.</p> <p>3. All external lighting (except for safety and security lighting) can be automatically switched off between 23:00 and 07:00.</p> <p>4. If safety or security lighting is provided and will be used between 23:00 and 07:00, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 2 of the ILP's Guidance notes.</p> <p>5. Illuminated advertisements, where specified, must be designed in compliance with IL P PLG 05 The Brightness of Illuminated Advertisements</p>	1	1	0	Targeted credit
POL05 Reduction of noise pollution	<p>ONE CREDIT</p> <p>2. where the building does have noise-sensitive areas or buildings within 800m radius of the site, one credit can be awarded as follows:</p> <p>a. Where a noise impact assessment in compliance with BS 7445 has been carried out and the following noise levels measured/determined:</p> <p>i. Existing background noise levels at the nearest or most exposed noise-sensitive development to the proposed development or at a location where background conditions can be argued to be similar.</p> <p>ii. The rating noise level resulting from the new noise source</p> <p>3. The noise impact assessment must be carried out by a suitably qualified acoustic consultant holding a recognised acoustic qualification and membership of an appropriate professional body</p> <p>4. The noise level from the proposed site/building, as measured in the locality of the nearest or most exposed noise-sensitive development, is a difference no greater than +5dB during the day (07:00 to 23:00) and +3dB at night (23:00 to 07:00) compared to the background noise level.</p> <p>5. Where the noise source(s) from the proposed site/building is greater than the levels described in criterion 4, measures have been installed to attenuate the noise at its source to a level where it will comply with criterion 4.</p>	1	1	0	In order for credit to be awarded, the noise impact assessment to be provided by qualified acoustic consultant

8 Summary

This report forms the basis of a strategy for the Proposed Development at the Site to achieve a minimum 'Very Good' BREEAM rating under BREEAM Refurbishment and Fit-Out 2014 SD216 V1.1 scheme. The targeted rating has been set by the client in line with the Planning Policies of Royal Borough of Kensington and Chelsea (RBKC).

The Assessor has received details of the development from the design team via emails to collect data required in to undertake the BREEAM Pre-Assessment. This is a design stage pre-assessment report is aimed at providing an indication to the design team and future tenants of the likely BREEAM score the development may achieve.

Base on the BREEAM Pre-Assessment (Table 7) the current preliminary score shows that the development is likely to achieve a BREEAM VERY GOOD rating (55.54%), subject to provision of all evidential support documentation.