



# 24 Endell Street

For Patrizia UK Limited  
BREEAM Pre-Assessment

October 2021

Verte Ltd

Impact Hub Islington, Dingley Place, EC1V 8BR, London

Phone: 0207 427 6080

Email: [admin@verteltd.com](mailto:admin@verteltd.com) – Website: [www.verteltd.com](http://www.verteltd.com)

**Verte**

NOTICE

This document and its contents have been prepared and are intended solely for Patrizia UK Limited’s information and use in relation to the refurbishment of 24 Endell Street, London.

Verte Ltd assume no responsibility to any other party in respect of or arising out of or about this document and/or its contents.

Document History

Job Number: v276		Doc Ref: v276 Endell St RFO BREEAM Pre-Assessment RevC 20211015		
Revision	Purpose description	Originated	Authorised	Date
A	Pre-assessment	JRC	AD	July 2021
B	For Issue	AD	RM	August 2021
C	Issue for Planning	AD	RM	October 2021

Client Sign-off

Client	Patrizia
Project	24 Endell Street
Document Title	BREEAM Pre-assessment
Job No	V276
Revision	C
Doc Reference	v276 Endell St RFO BREEAM Pre-Assessment RevC 20211015

**BREEAM Assessor Information**

<b>BRE Registration Number</b>	TBC
<b>Licensed Assessor</b>	A Diprose
<b>BREEAM AP</b>	A Diprose
<b>Assessor Support</b>	J Rolison-Choudhury
<b>BREEAM Scheme</b>	BREEAM Refurbishment and Fit-Out (2014)
<b>BREEAM Scheme Version</b>	2014 (SD216)
<b>Assessment Stage</b>	Pre-Assessment

**BREEAM Assessment Information**

<b>Building Type and Sub-Group</b>	Office – Refurbishment
<b>Building Floor Area</b>	3704m <sup>2</sup>
<b>Building Services (Heating)</b>	VRF
<b>Building Services (Cooling)</b>	VRF
<b>Building Services (DHW System)</b>	Point of Use
<b>Building Services (Controls)</b>	Standard Controls
<b>Commercial Cold Storage Systems</b>	No
<b>Transportation Systems</b>	Yes, newly specified transportation systems
<b>Laboratory (Type, Area and Size)</b>	N/A
<b>Laboratory Containment level</b>	N/A
<b>Fume Cupboards/Containment Devices</b>	N/A
<b>Unregulated Water Uses</b>	Yes

**Contents**

1. Executive Summary .....	1
2. Introduction.....	2
2.1 BREEAM Refurbishment and Fit-Out 2014 .....	2
3. BREEAM Status Summary .....	3
3.1 Summary Score Sheet .....	3
3.2 Scoring Scenario.....	3
4. Project Team Members.....	4
5. Immediate Actions .....	5
6. Pre-assessment Scoring.....	6

## 1.Executive Summary

This report illustrates the BREEAM 2014 Refurbishment and Fit Out (RFO) rating that the current design proposals for the 24 Endell Street refurbishment can achieve under the scheme.

The development comprises the change of use of building from members club (sui generis) to use as offices (Class E), reuse, retention & refurbishment of recording studios (Class E), enlargement of existing cycle & shower facilities, replacement and reconfiguration of rooftop plant, to accommodate additional office space (Class E).

Assessment Scope		Assessed?
Part 1	<b>Fabric and Structure:</b> Building façade, roof, and windows. Where 50% of the individual element is upgraded/refurbished OR where this makes up over 25% of total building envelope.	Yes
Part 2	<b>Core Services:</b> Heating, ventilation and air-conditioning (HVAC), building management system, water services and low/zero carbon (LZC) technologies. Where at least two systems are installed/upgraded and require compliance with Building Regulations.	Yes
Part 3	<b>Local Services:</b> Lighting (fittings, systems and controls), local ventilation, heating and cooling; point of use water heaters. Where at least two fixed local services are installed/upgraded.	Yes
Part 4	<b>Interior Design:</b> Wall, floor and ceiling coverings; partitions, raised floor systems; furniture and fittings. Where alterations are made to at least 50% by area of two or more of these AND at least one of the following: Sanitary fittings, equipment and local electrical installations.	Yes

Table 1: BREEAM RFO Assessment Scope.

Following an initial pre-assessment workshop, the following scores and ratings have been established. To note these scores are based on a Part 1, 2,3 & 4 assessment.

The predicted baseline score based on the current design is **74.66%**, a rating of **EXCELLENT**, in compliance with Policy CC2 Adapting to climate change of the Camden Local Plan.

A score of **70%** is required to achieve a rating of **EXCELLENT**, although the recommendation is to aim slightly higher to provide a safe buffer.

Section 3.1 sets out the proposed credit scoring strategy to achieve a score of 74.66%. In section 6, a fully detailed table of BREEAM criteria for the project.

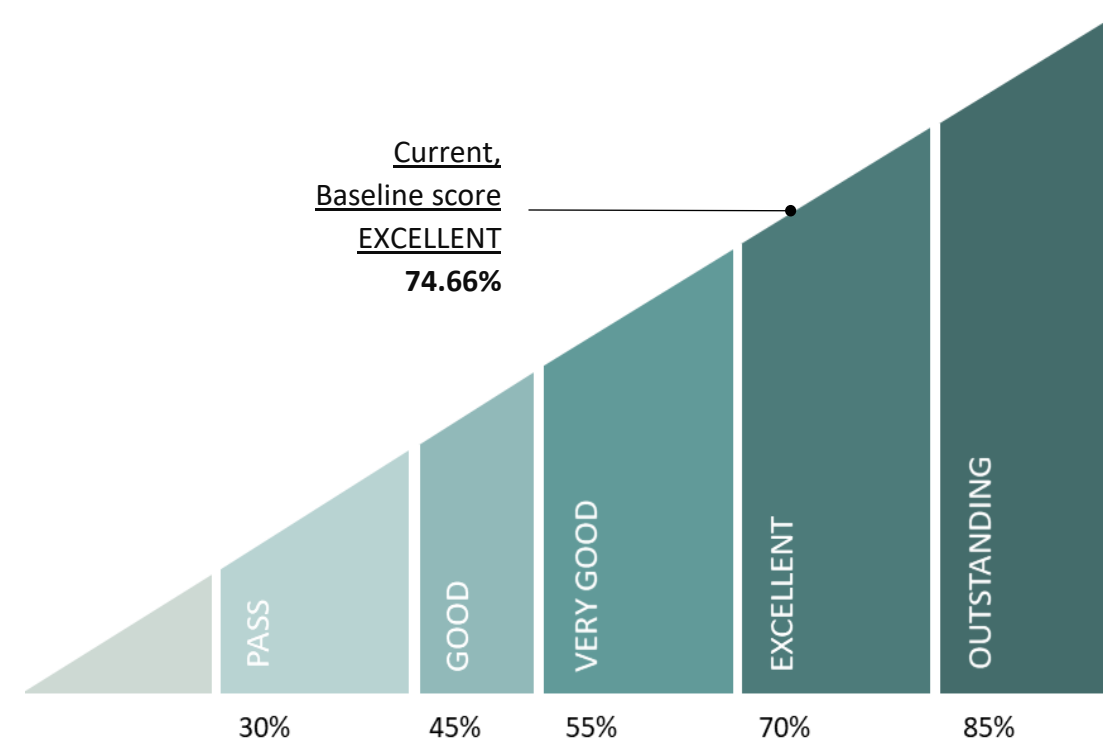


Figure 1: BREEAM performance chart with all scores represented.

## 2. Introduction

Verte Ltd have been requested by Patrizia UK Limited to carry out a BREEAM assessment of the proposed refurbishment of 24 Endell Street.

The development comprises the change of use of building from members club (sui generis) to use as offices (Class E), reuse, retention & refurbishment of recording studios (Class E), enlargement of existing cycle & shower facilities, replacement and reconfiguration of rooftop plant, to accommodate additional office space (Class E).

The following sections detail the proposed development's performance against the BREEAM criteria.

### 2.1 BREEAM Refurbishment and Fit-Out 2014

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.

This enables the client, through the BREEAM assessor and the BRE Global certification process, to measure, evaluate and reflect the performance of their refurbishment or fit-out project against best practice in an independent and robust manner.

As illustrated in Figure 3, 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.

This approach provides the scheme's users with a flexible means of measuring the environmental performance of their building and comparing it with other buildings across the property market, backed with the assurance that independent third-party certification of the assessment process provides.



Figure 1: BREEAM RFO 2014 Assessment Parts.

The performance of a BREEAM-assessed project is quantified by several individual measures and associated criteria stretching across a range of environmental issues, which highlights the full set of assessment issues that may be applied to a project. The performance of the project is then ultimately expressed as a single certified BREEAM rating, i.e., the label (Section 3 describes how a BREEAM rating is calculated).



### 3. BREEAM Status Summary

This section is intended as a summary of the BREEAM assessment status for 24 Endell Street based on a Parts 1, 2,3 and 4 assessment.

#### 3.1 Summary Score Sheet

Ref No.	Description	Credits	
		Available	Baseline
Management			
Man 01	Project Brief and Design	4	3
Man 02	Life cycle cost and service life planning	4	4
Man 03	Responsible construction practices	6 +1e	6 +1e
Man 04	Commissioning and Handover	4	3
Health and Wellbeing			
Hea 01	Visual Comfort	7 +1e	1
Hea 02	Indoor Air Quality	5 +2e	4
Hea 04	Thermal Comfort	3	3
Hea 05	Acoustic Performance	3	2
Hea 06	Safety and Security	1	0
Energy			
Ene 01	Reduction of CO <sub>2</sub> emissions	15 + 5e	11
Ene 02	Energy Monitoring	2	2
Ene 03	External Lighting	1	1
Ene 04	Low Carbon Design	3	1
Ene 06	Energy Efficient Transportation Systems	3	3
Transport			
Tra 01	Public Transport Accessibility	3	3
Tra 02	Proximity to amenities	1	1
Tra 03	Cyclist facilities	2	2
Tra 05	Travel Plan	1	1
Water			
Wat 01	Water Consumption	5 + 1e	4
Wat 02	Water Monitoring	1	1
Wat 03	Leak Detection	2	2
Wat 04	Water Efficient Equipment	1	1
Materials			
Mat 01	Life Cycle Impacts	6 + 1e	6 + 1e
Mat 03	Responsible Sourcing of Materials	4 + 1e	2
Mat 04	Insulation	1	1
Mat 05	Designing for Durability and Resilience	1	1
Mat 06	Material Efficiency	1	0
Waste			

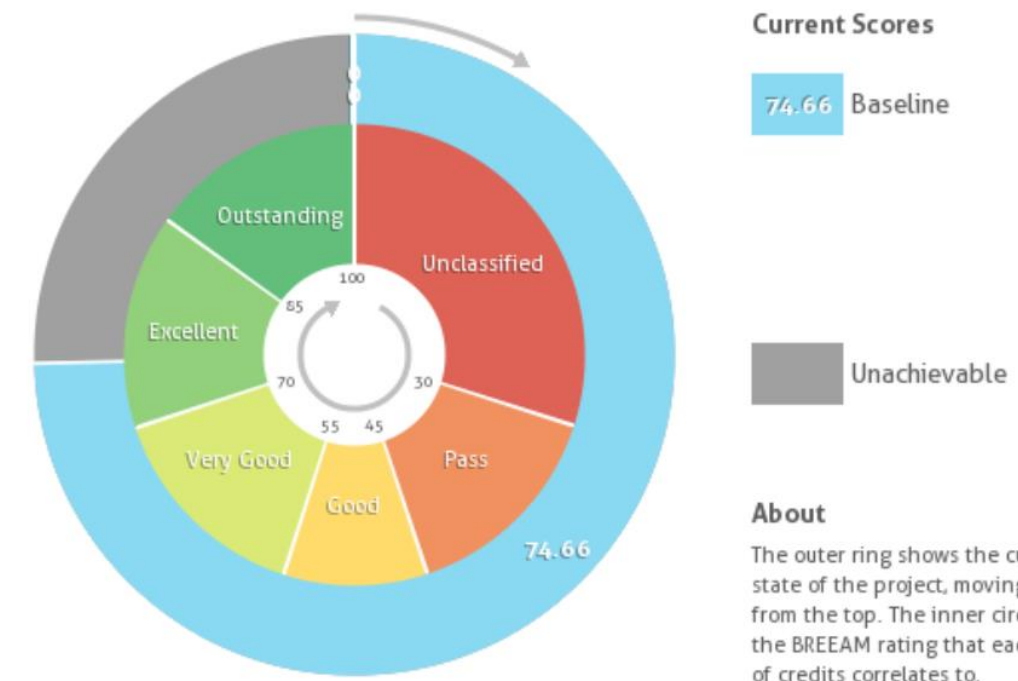
Wst 01	Construction Waste Management	7 + 1e	3
Wst 03	Operational Waste	1	1
Wst 04	Speculative Floor and Ceiling Finishes	1	1
Wst 05	Adaptation to climate change	1	1
Wst 06	Functional Adaptability	1	1
<b>Land Use &amp; Ecology</b>			
LE 05	Long Term Impact on Biodiversity	2	2
<b>Pollution</b>			
Pol 01	Impacts of Refrigeration	3	1
Pol 02	NOx Emissions	3	0
Pol 03	Surface Water Run Off	5+1	3
Pol 04	Reduction of Night-time Light Pollution	1	1
Pol 05	Noise Attenuation	1	1
<b>Innovation</b>			
ALL	Approved Innovation and Exemplary Level Credits	1	0

RFO 2014 Office Assessment	
Baseline Score	74.66% (Excellent)

#### 3.2 Scoring Scenario

It has been established that the development currently has the potential to achieve a score of **74.66%** which provides an Excellent rating with a **4.66%** margin of contingency over the minimum 70% required for BREEAM Excellent.

BREEAM Score Chart



## 4. Project Team Members

---

The following professionals are members of the design team responsible for the delivery of the proposed development.

Discipline	Organisation
Client / Developer	Patrizia
Project Manager	Paragon
Cost Consultant	Exigere
Services Engineer	GDM Partnership
Architect	Buckley Gray Yeoman
Structural	Heyne Tillett Steel
Sustainability	Verte Ltd
Daylight	TBC
Heritage	TBC
Acoustics	Sandy Brown
Transport	TBC
Ecology	TBC
Contractor	TBC
Security	TBC
Planning Consultant	Motagu Evans

## 5.Immediate Actions

BREEAM criteria include time critical elements which cannot be awarded if they are not dealt with in the prescribed timeframe as well as consultant appointments as detailed below.

BREEAM RFO 2014 Credit	Reports/ Actions Required	RIBA Stage Requirement	Responsibility
<b>Man 01 Project Brief and Design – Project Delivery and Planning</b>	Project Execution Plan and Design Team Responsibility Matrix required. Meeting minutes over the course of the design phases to be collated ongoingly.	To be completed by the end of <b>Stage 2</b> .	Project Manager
<b>Man 01 Project Brief and Design – Stakeholder Consultation</b>	Stakeholder consultation to be undertaken, ideally to be evidenced through a Statement of Community Involvement.	To be completed by the end of <b>Stage 2</b> .	Project Manager
<b>Man 01 Project Brief and Design – BREEAM AP</b>	BREEAM Accredited Professional to be appointed to monitor and advise on performance targets.	To be appointed within <b>Stage 2</b> .	BREEAM AP
<b>Man 02 Life Cycle Cost and Service Life Planning – Elemental LCC</b>	An Elemental Life Cycle Cost analysis to be undertaken, with recommendations showing how material choices can provide cost savings.	To be completed within <b>Stage 2</b> .	LCC Consultant
<b>Hea 05 Acoustic Performance</b>	A Suitably Qualified Acoustician should be appointed to provide design advice as to how BREEAM criteria can be met.	BREEAM does not set a specific RIBA Stage for this action to be completed, though it is advised that an appointment is made by the end of <b>Stage 2</b> .	Acoustician
<b>Ene 04 Low Carbon Design</b>	A Passive Design Analysis and Low Carbon Feasibility Study should be undertaken to determine the viable measures that can be implemented into the building design, as well as detailing the carbon reductions achievable. Typically, this would all be covered within an Energy Statement encompassing all Ene 04 criteria.	To be completed by the end of <b>Stage 2</b> .	Energy Assessor / Services Engineer
<b>Tra 05 Travel Plan</b>	A Travel Plan should be developed which is informed by recommendations from a site-specific Transport Assessment.	To be completed by the end of <b>Stage 2</b> .	Transport Consultant
<b>Land Use and Ecology</b>	A site-specific Ecology Assessment should be undertaken for the site, with the Ecologist providing suitable recommendations for protection and enhancement of ecology, where appropriate.	To be completed by the end of <b>Stage 1</b> .	Ecologist



## 6.Pre-assessment Scoring

Ref. No.	Description	Criteria	Credits Available	Target	Action/Evidence Required	Actionee	Comments
Man 01.1	Project Brief & Design - Stakeholder Consultation (Project Delivery)	<p><b>One credit where</b></p> <p>1.A clear sustainability brief is developed prior to Concept Design which sets out:</p> <ul style="list-style-type: none"> <li>a. Client requirements e.g. internal environmental conditions required</li> <li>b. Sustainability objectives and targets including target BREEAM rating, business objectives etc.</li> <li>c. Timescales and budget</li> <li>d. List of consultees and professional appointments that may be required e.g. Suitably Qualified Acoustician etc.</li> <li>e. Constraints for the project e.g. technical, legal, physical, environmental.</li> </ul> <p>2.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.</p> <p>3.In defining the roles and responsibilities for each key phase of the project, the following must be considered:</p> <ul style="list-style-type: none"> <li>a. End user requirements</li> <li>b. Aims of the design and design strategy</li> <li>c. Particular installation and construction requirements/limitations</li> <li>d. Design and construction risk assessments e.g. CDM, legionella risk assessment</li> <li>e. Legislative requirements e.g. building control notification, heritage requirements</li> <li>f. Procurement and supply chain</li> <li>g. Identifying and measuring project success in line with project brief objectives</li> <li>h. Occupiers' budget and technical expertise in maintaining any proposed systems</li> <li>i. Maintainability and adaptability of the proposals</li> <li>j. Requirements for the production of project and end user documentation</li> <li>k. Requirements for commissioning, training and aftercare support.</li> </ul> <p>4.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.</p> <p>PLEASE VIEW: GN Man 01.1</p>	1	1	<p>Provide:</p> <ul style="list-style-type: none"> <li>1) The project brief highlighting how items 1-a to 1-e are covered.</li> <li>2) The project responsibility matrix illustrating key stakeholder responsibilities at key stages.</li> <li>3) The Project Execution Plan, illustrating how items 3-a to 3-k are considered.</li> <li>4) Meeting minutes confirming the required stakeholders have been involved from RIBA STAGE 2 and that the required topics have been covered and roles and responsibilities have been allocated.</li> <li>5) Examples of how this process has impacted on the Initial Project Brief, including if appropriate, the Project Execution Plan, Communication Strategy, and the Concept Design. This can be meeting minutes / marked up drawings.</li> </ul>	Project Manager	

Man 01.3	Project Brief & Design - Sustainability Champion (Design)	<b>One credit where</b> 9.A Sustainability Champion has been appointed to facilitate the setting and achievement of BREEAM performance target(s) 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). 10.The defined BREEAM performance target(s) has been formally agreed between the client and design/project team no later than the Concept Design stage (RIBA Stage 2 or equivalent). 11. 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	1	Provide: 1) Letter confirming BREEAM AP appointment at RIBA Stage 1. 2) Contract / Planning requirements confirming the BREEAM Rating required, RIBA Stage 2. 3) Meeting minutes confirming the attendance of the BREEAM AP and that sustainability is included in all design team meeting agendas.	Verte	
Man 01.4	Project Brief & Design - Sustainability Champion (monitoring progress)	<b>One credit where</b> 12. The Sustainability Champion criteria 8, 9 and 10 have been achieved. 13. 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	1	Provide: 1) SAME AS ABOVE	Verte	
Man 02.1	Life cycle cost and service life planning - Elemental life cycle cost (LCC)	<b>Two credits where</b> 1.An elemental life cycle cost (LCC) analysis has been carried out at Process Stage 2 (equivalent to Concept Design - RIBA Stage 2) together with any design option appraisals in line with 'Standardised method of life cycle costing for construction procurement' PD 156865:20081. 2.The LCC analysis shows: a. An outline LCC plan has been undertaken for the project based on the building's basic structure and envelope, appraising a range of options and based on the life expectancy of the refurbished building, e.g., 20, 30, 50+ years. b. The servicing strategy for the project outlining services component over a 15 -year period, in the form of an 'elemental LCC Plan'. c. A fit-out strategy is developed outlining fit-out options over a 10-year period.	2	2	Provide: 1) Elemental LCC.	TBC	
Man 02.2	Life cycle cost and service life planning - Component life cycle cost (LCC)	<b>One credit where</b> 3.A component level LCC plan 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 assessments, including components within scope of works. Envelope, e.g. cladding, windows, and/or roofing Part 2 & 3 assessments including newly specified local and core services. Newly specified local and/or core service equipment, e.g. boiler, air-conditioning, air handling unit, and/or controls etc.	1	1	Provide: 1) Component level LCC. 2) Marked up drawings/specification confirming how the component level LCC has influenced the design.	TBC	

		<p>Parts 1 – 4, where finishes are within scope of works. Finishes, e.g. walls, partitions, floors and/or ceilings etc.</p> <p>Where external spaces are within scope of works. External spaces, e.g. alternative hard landscaping, boundary protection.</p> <p>4.Demonstrate, using appropriate examples provided by the design team, how the component level LCC plan has been used to influence building and systems design/specification to minimise life cycle costs and maximise critical value</p>					
Man 02.3	Life cycle cost and service life planning - Capital cost reporting	<p><b>One credit where:</b></p> <p>5. Report the capital cost for the building in pounds per square metre (£k/m2), via the BREEAM Assessment Scoring and Reporting tool, Assessment Issue Scoring tab, Management section.</p>	1	1	Provide: 1) Data cost in £ per square meter.	Cost Consultant	
Man03.1	Pre-requisite & Environmental Management	<p><b>Pre-requisite</b></p> <p>1. All timber and timber-based products used on the project is ' Legally harvested and traded timber'</p> <p>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 1 to 4, as defined in BS 8555:2003. See compliance note CN5For Healthcare NHS buildings, see the pre-requisite for this issue in compliance note CN8</p> <p>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.</p>	1	1	Provide: 1) Copy of the prelims including the requirements.	Contractor/ Prelims	
Man 03.2	Responsible Construction Practices - BREEAM AP Construction Stage	<p><b>One credit where:</b></p> <p>4. A BREEAM AP or Site Sustainability Manager (SSM) is appointed to monitor the project to ensure ongoing compliance with the relevant sustainability/BREEAM criteria, during the Construction, Handover and Close Out stages 5 and 6). To do this the Sustainability Champion will ideally be site based or will visit the site regularly to carry out spot checks, with the relevant authority to do so and require action to be taken to address shortcomings in compliance. The Sustainability Champion will monitor site activities with sufficient frequency to ensure that risks of non-compliance are minimised.</p> <p>5. The defined BREEAM performance target forms a requirement of the principal contractor's contract.</p> <p>6. To achieve this credit at the final post construction stage of assessment, the BREEAM-related performance target for the project must be demonstrably achieved by the project</p>	1	1	Provide: 1) Contract Prelims requirements confirming the BREEAM Rating required, on the Main Contractor.  2) BREEAM AP/SSM reports during construction.	Contractor/ Prelims	

Man 03.3	Responsible Construction Practices - CCS  Mandatory: Excellent: 1 credit Outstanding: 2 credits	<b>Up to two credits:</b>  7. Where the principal contractor achieves: a. One credit where the contractor achieves 'compliance' with the criteria of a compliant scheme (a CCS score between 25 and 34) - A score of at least 5 in each of the five sections must be achieved b. Two credits where the contractor significantly exceeds 'compliance' with the criteria of the scheme (a CCS score between 35 and 39) - A score of at least 7 in each of the five sections must be achieved  Innovation: As CCS Score of more than 40.	2 + 1 Innov	2	Provide: 1) Copy of the prelims including the requirements.	Contractor/ Prelims	
Man 03.4	Responsible Construction Practices - Monitoring of Construction Site Impacts	<b>Up to two credits</b>  1) 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.  2) First monitoring credit - Utility consumption Energy consumption & Water consumption  3) Second monitoring credit - Transport of construction materials and waste  <b>Exemplary level criteria</b> The following outlines the exemplary level criteria to achieve one innovation credit for this BREEAM issue: With reference to the considerate construction criterion 7, in addition to meeting the criteria for two credits, the contractor achieves compliance with the criteria of the compliant scheme to an exemplary level of practice.	2 +1e	2 +1e	Provide: 1) Copy of the prelims including the requirements.	Contractor/ Prelims	
Man 04.1	Commissioning and handover - Commissioning and testing schedule and responsibilities	<b>One credit where</b>  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. 2. All commissioning activities are carried out in accordance with current Building Regulations, BSRIA1 and CIBSE2 guidelines and/or other appropriate standards, where applicable and complaint commissioning of the BMS (if applicable). 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. 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.	1	1	Provide: 1) Copy of the prelims including the requirements.	MEP	

Man 04.2	Commissioning and handover-Commissioning building services	<p><b>One credit where</b></p> <p>5.The commissioning and testing schedule and responsibilities credit is achieved.</p> <p>6.For projects where work is being undertaken to upgrade, renovate or install new building services and systems.</p> <p>a. For complex building services and systems, a specialist commissioning manager is appointed during the design stage (by either client or contractor) with responsibility for:</p> <p>i. Undertaking design reviews and giving advice on suitability for ease of commissioning</p> <p>ii. Providing commissioning management input to construction programming and during installation stages</p> <p>iii. Management of commissioning, performance testing and handover/post-handover stages.</p> <p>b. For 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	Provide: 1) Copy of the prelims including the requirements.	MEP	
Man 04.4	Commissioning and handover - Handover  Mandatory Requirement: Excellent: BUG	<p><b>One credit where:</b></p> <p>9. A Building User Guide (BUG) is developed prior to handover for distribution to the building occupiers and premises managers .</p> <p>The guide includes, as far as possible, all relevant sections regarding the services and fabric installed. On completion of works the building owner/agent/user hands it over to the fit-out contractor, who can then complete the relevant sections based on the fit-out strategy.</p> <p>Criteria applicable only for fully fitted out buildings:</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&amp;M) manual, commissioning records, log book etc.</p> <p>e. Maintenance requirements, including any maintenance contracts and regimes in place.</p>	1	1	Provide: 1) Copy of the prelims including the requirements.	Contractor/ Prelims	

Hea 01.4	Visual Comfort - Internal & External Lighting Levels & Controls	<p><b>One credit where:</b></p> <p>7. All fluorescent and compact fluorescent lamps are fitted with high frequency ballasts.</p> <p>8. Internal lighting in all relevant areas of the building is designed to provide an illuminance (lux) level in accordance with the SLL Code for Lighting 2012 and any other relevant industry standard.</p> <p>9. For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 72 sections 3.3, 4.6, 4.7, 4.8 and 4.9.</p> <p>10. All external lighting located is specified in accordance with BS 5489-1:2013 Lighting of roads and public amenity areas<sup>3</sup> and BS EN 12464-2:2014 Light and lighting - Lighting of workplaces - Part 2: Outdoor workplaces.</p> <p>11. Internal lighting is zoned to allow for occupant control (Light switches or controls for a particular area/zone of the building that can be accessed and operated by the individual(s) occupying that area or zone. Such controls will be located within, or within the vicinity of, the zone or area they control) in accordance with the criteria below for relevant areas present within the building:</p> <ul style="list-style-type: none"> <li>a. In office areas, zones of no more than four workplaces</li> <li>b. Workstations adjacent to windows/atria and other building areas separately zoned and controlled</li> <li>c. Seminar and lecture rooms: zoned for presentation and audience areas</li> <li>d. Library spaces: separate zoning of stacks, reading and counter areas</li> <li>e. Teaching space or demonstration area</li> <li>f. Whiteboard or display screen</li> <li>g. Auditoria: zoning of seating areas, circulation space and lectern area</li> <li>h. Dining, restaurant, café areas: separate zoning of servery and seating/dining areas</li> <li>i. Retail: separate zoning of display and counter areas</li> <li>j. Bar areas: separate zoning of bar and seating areas</li> <li>k. Wards or bedded areas: zoned lighting control for individual bed spaces and control for staff over groups of bed spaces</li> <li>l. Treatment areas, dayrooms, waiting areas: zoning of seating and activity areas and circulation space with controls accessible to staff.</li> </ul> <p>15. Areas used for teaching, seminar or lecture purposes have lighting controls provided in accordance with CIBSE Lighting Guide 5. Manual lighting controls are easily accessible for the teacher while teaching and on entering/leaving the teaching space.</p>	1	1	<p>Provide:</p> <p>1) Specification documentation confirming HFB and required internal and external lighting levels shall be achieved.</p> <p>2) Drawings/Specification confirming the required controls shall be included in the design.</p>	MEP	
----------	---	--	---	---	---	-----	--



Hea02.1	Indoor Air Quality Plan (IAQ)	<p><b>One credit where</b></p> <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> <ul style="list-style-type: none"> <li>a. Removal of contaminant sources</li> <li>b. Dilution and control of contaminant sources</li> <li>c. Procedures for pre-occupancy flush out</li> <li>d. Protection of Heating Ventilation and Air Conditioning (HVAC) systems from sources of pollution during refurbishment/fit-out works e.g. dust</li> <li>e. 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</li> <li>f. Procedures for identifying and implementing third party testing and analysis required to ascertain that the contaminant sources have been removed effectively before occupancy</li> <li>g. Commitments for maintaining indoor air quality in-use, e.g. maintenance and cleaning of the HVAC system, ductwork and filters.</li> </ul>	1	1	<p>Provide:</p> <p>1) A compliant Indoor Air Quality Plan (IAQP), (see manual page 92, SD216)</p> <p>OR</p> <p>2) At design stage, a contractual obligation to produce a compliant IAQP.</p>	TBC	
Hea 02.2	Indoor Air Quality - Ventilation	<p><b>One credit where</b></p> <p>The building has been designed to minimise the concentration and recirculation of pollutants in the building as follows:</p> <p>2. Provide fresh air into the building in accordance with the criteria of the relevant standard for ventilation.</p> <p>3. Design ventilation pathways to minimise the build-up of air pollutants in the building, as follows:</p> <ul style="list-style-type: none"> <li>a. In air conditioned and mixed mode buildings/spaces: i. The building's air intakes and exhausts are over 10m apart and intakes are over 20m from sources of external pollution. OR</li> <li>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 13779:20071 Annex A2.</li> <li>b. In naturally ventilated buildings/spaces: openable windows/ventilators are over 10m from sources of external pollution.</li> </ul> <p>For Shell &amp; Core buildings: Where ventilation systems are not within the remit of the shell and core developer, compliance can be demonstrated through the building servicing strategy where this is predetermined by the built form or core services provision as appropriate to the shell and core option being followed.</p> <p>4. Where present, HVAC systems must incorporate suitable filtration to minimise external air pollution, as defined in BS EN 13779:2007 Annex A3.</p> <p>5. Areas of the building subject to large and unpredictable or variable occupancy patterns have carbon dioxide (CO2) or air quality sensors specified and:</p> <ul style="list-style-type: none"> <li>a. In mechanically ventilated buildings/spaces: sensor(s) are linked to the mechanical ventilation system and provide demand-controlled ventilation to the space.</li> <li>b. In naturally ventilated buildings/spaces: sensors either have the ability to alert the building owner or manager when CO2 levels exceed the</li> </ul>	1	1	<p>Provide:</p> <p>1) Relevant section/clauses of the building specification or contract</p> <p>2) Formal letter from the design team with details of the ventilation strategy and calculations/results from appropriate software modelling tool(s)</p> <p>3) Manufacturers'/suppliers' literature</p>	TBC	Mechanically Ventilated building- space in between intakes and exhausts at least 6m and looking to increase distance.

		recommended set point or are linked to controls with the ability to adjust the quantity of fresh air, i.e., automatic opening windows/roof vents.					
Hea 02.3	Indoor Air Quality - Volatile organic compound (VOC) emission levels (products)	<p><b>One credit where</b> VOC levels compliant for products.</p> <p>6. All decorative paints and varnishes specified meet the criteria in Table - 20 7. At least five of the seven remaining product categories listed in Table - 20 meet the testing requirements and emission levels criteria for volatile organic compound (VOC) emissions (listed in the table).</p> <p>The criteria under this credit would require that material finishes that contain adhesives, are carefully selected, to demonstrate compliance to VOC and Formaldehyde testing requirements. The elements that need to be reviewed are:</p> <ul style="list-style-type: none"> <li>- Paints and Varnishes</li> <li>- Wood panels (including particle board, fibreboard including MDF, OSB, cement bonded particle board, plywood, solid wood panel and acoustic board)</li> <li>- Timber structures (e.g. glue laminated timber)</li> <li>- Wood flooring (e.g. parquet)</li> <li>- Resilient textile and laminated floor coverings (e.g. vinyl, linoleum, cork, rubber, carpet, laminated wood flooring)</li> <li>- Suspended ceiling tiles</li> <li>- Flooring adhesives</li> <li>- Wall coverings</li> </ul>	1	1	<p>Provide:</p> <p>1) A materials schedule listing all relevant VOC containing finishes.</p> <p>2) Compliant certification &amp; data sheets to demonstrate compliance with BREEAM VOC criteria.</p> <p>OR</p> <p>1) At Design Stage, contractual obligation for the contractor to achieve the stated objectives.</p>	Architect	
Hea02.4	Volatile Organic Compounds - TESTING	<p><b>One credit where</b> VOC levels measured at post completion.</p> <p>8.The formaldehyde concentration level is measured post construction (but pre-occupancy) and is found to be less than or equal to 100µg/averaged over 30 minutes (WHO guidelines for indoor air quality: Selected pollutants, 20102).</p> <p>9.The total volatile organic compound (TVOC) concentration level is measured post construction (but pre-occupancy) and found to be less than 300µg/over 8 hours, in line with the Building Regulation requirements.</p> <p>10.Where VOC and formaldehyde levels are found to exceed the limits defined in criteria 8 and 9, the project team confirms the measures that have, or will be taken, in accordance with the IAQ plan, to reduce the levels to within these limits, including re-measurement.</p> <p>11.The testing and measurement of the above pollutants are in accordance with the following standards where relevant:</p> <ul style="list-style-type: none"> <li>a. BS ISO 16000-4: 2011 Diffusive sampling of formaldehyde in air<sup>3</sup></li> <li>b.BS ISO 16000-6: 2011 VOCs in air by active sampling<sup>4</sup></li> <li>c.BS EN ISO 16017-2: 2003 VOCs - Indoor, ambient and workplace air by diffusive sampling<sup>5</sup></li> <li>d.BS ISO 16000-3: 20116 Formaldehyde and other carbonyls in air by active sampling.</li> </ul> <p>12.The measured concentration levels of formaldehyde (µg/m<sup>3</sup>) and TVOC (µg/m<sup>3</sup>) are reported, via the BREEAM Assessment Scoring and Reporting Tool.</p>	1	1	<p>Provide:</p> <p>1) A compliant Indoor Air Quality Plan (IAQP), (see manual page 92, SD216)</p> <p>OR</p> <p>2) At design stage, a contractual obligation to produce a compliant IAQP.</p> <p>3) Commitment to carry out necessary testing post-construction</p>	Contractor/ Prelims	

Hea 02.5	Indoor Air Quality - Potential for Natural Ventilation	<p>1 credit where</p> <p>The building ventilation strategy is designed to be flexible and adaptable to potential building occupant needs and climatic scenarios.</p> <p>The indoor air quality plan must consider the following:</p> <ul style="list-style-type: none"> <li>a. Removal of contaminant sources</li> <li>b. Dilution and control of contaminant sources</li> <li>c. Procedures for pre-occupancy flush out</li> <li>d. Protection of Heating Ventilation and Air Conditioning (HVAC) systems from sources of pollution during refurbishment/fit-out works e.g. dust</li> <li>e. 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</li> <li>f. Procedures for identifying and implementing third party testing and analysis required to ascertain that the contaminant sources have been removed effectively before occupancy</li> <li>g. Commitments for maintaining indoor air quality in-use, e.g. maintenance and cleaning of the HVAC system, ductwork and filters.</li> </ul>	1	0	<p>Provide:</p> <ul style="list-style-type: none"> <li>1) Relevant section/clauses of the building specification or contract</li> <li>2) Formal letter from the design team with details of the ventilation strategy and calculations/results from appropriate software modelling tool(s)</li> <li>3) Manufacturers'/suppliers' literature</li> </ul>	Architect/MEP	Ventilation strategy requires review as part of this credit. Only some windows may currently be openable.
Hea 04.1	Thermal Comfort - Thermal Modelling	<p><b>One credit where:</b></p> <ul style="list-style-type: none"> <li>1. Thermal modelling has been carried out using software in accordance with CIBSE AM11 1 Building Energy and Environmental Modelling.</li> <li>2. The software used to carry out the simulation at the detailed design stage provides full dynamic thermal analysis.</li> <li>3. The modelling demonstrates that: <b>PLEASE VIEW GN Hea 4.1</b></li> <li>4. 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.</li> </ul>	1	1	<p>Provide:</p> <ul style="list-style-type: none"> <li>1) A copy of the thermal comfort study in line with the BREEAM criteria</li> </ul>	MEP	GDM to undertake thermal comfort report.
Hea 04.2	Thermal Comfort - Adaptability	<p><b>One credit where:</b></p> <ul style="list-style-type: none"> <li>5. Criteria 1 to 4 are achieved.</li> <li>6. The thermal modelling demonstrates that the relevant requirements set out in criteria 3 are achieved for a projected climate change environment (see Relevant definitions).</li> <li>7. 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 to subsequently meet the requirements under criterion 6.</li> <li>8. For air-conditioned buildings, the PMV and PPD indices based on the above modelling are reported via the BREEAM assessment scoring and reporting tool.</li> </ul>	1	1	<p>Provide:</p> <ul style="list-style-type: none"> <li>1) A copy of the thermal comfort study in line with the BREEAM criteria</li> </ul>	MEP	

Hea 04.3	Thermal Comfort - Thermal Zoning and Controls	<b>One credit where:</b> 10.Criteria 1 to 4 are achieved. 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. 12.The strategy for proposed heating/cooling system(s) demonstrates that it has addressed the following: 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. 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). 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: i. User knowledge of building services ii. Occupancy type, patterns, and room functions (and therefore appropriate level of control required) 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. 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 drafts). 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. e. The need or otherwise for an accessible building user actuated manual override for any automatic systems.	1	1	Provide: 1) A copy of the thermal comfort study in line with the BREEAM criteria 2) Temperature control strategy based on the above analysis	MEP	Building designed to be split tenancy, therefore there will be 2 controls per floor.
Hea 05	Acoustic performance	<b>One credit where:</b> 1. The building meets the appropriate acoustic performance standards and testing requirements defined in the checklists and tables section which defines criteria for the acoustic principles of: a. Sound insulation b. Indoor ambient noise level c. Reverberation times.	3	2	Provide: 1) An acoustic specification report of the design strategy detailing elements regarding Internal Noise, Sound Insulation and Reverberation times. 2) A programme of acoustic testing and remedial works schedule OR a contractual requirement to undertake these at construction stage (Prelims)	Acoustician	No acoustician appointed as of yet. Verte to provide report requirements.

Ene 01	Reduction in CO2 Emissions  Mandatory Req: Excellent: 5 Credits Outstanding: 8 Credits	<b>Up to 15 credits</b> can be awarded for buildings designed to minimise operational energy demand, primary energy consumption and CO2 emission. Credits are awarded based on the Energy Performance Ratio for New Construction (EPRNC) using BREEAM Ene 01 calculator. The calculation is determined using performance data from the approved building energy calculation software.	15 + 5 Innov	11	Provide:  1) Option 1 - A copy of the Building Regulations Output Document from the approved software for both the existing building and proposed building. The output documents must be based on the design stage of analysis.  OR  2) Option 2 - 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.	TBC	9 credits targeted for now, to be amended once outputs from modelling are available.
Ene 02.1	Energy Monitoring - Monitoring Major Energy Uses  Mandatory Req: VG, Excel & Outstanding - 1 credit	<b>One credit where:</b>  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 (see Methodology). 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 (see Relevant definitions). 4. The end energy consuming uses are identifiable to the building users, for example through labelling or data outputs.	1	1	Provide:  1) Calculations demonstrating estimated total energy use.  2) Energy strategy document detailing metering strategy of at least 90% of energy consumption estimated above.  This could include amongst other documents, Services Specification, Metering Schematics, Points Schedule.  3) Confirmation that each meter is labelled/identifiable for its end use.	MEP	
Ene 02.2	Energy Monitoring - tenancy areas	<b>One credit where:</b>  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	Provide:  1) Calculations demonstrating estimated total energy use.  2) Energy strategy document detailing metering strategy of at least 90% of energy consumption estimated above.  This could include amongst other documents, Services Specification, Metering Schematics, Points Schedule.  3) Confirmation that each meter is labelled/identifiable for its end use.	MEP	

Ene 03	External Lighting	<p><b>One credit where:</b></p> <p>1. The building has been designed to operate without the need for external lighting (which includes on the building, signs and at entrances). OR alternatively, where the building does have external lighting, one credit can be awarded as follows:</p> <p>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.</p>	1	1	<p>Provide:</p> <p>1) Relevant section/clauses of the building specification or contract</p> <p>2) Design drawings</p> <p>3) Manufacturers' product details</p>	MEP	
Ene 04.1	Low Carbon Design - Passive Design Analysis	<p>One credit where:</p> <p>1. The first credit within issue Hea 04 Thermal comfort has been achieved to demonstrate the building design can deliver appropriate thermal comfort levels in occupied spaces.</p> <p>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. This reduction should 5% of overall building energy demand and/or CO2 emissions.</p> <p>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.</p> <p>PLEASE VIEW GN Ene 04.1</p>	1	0	<p>Provide:</p> <p>1) The results from a dynamic simulation model demonstrating the opportunities for the implementation of passive design solutions that reduce the demand for energy consuming building services</p> <p>2) Evidence that the passive design measures implemented will reduce total building energy demand by at least 5%</p>	TBC	
Ene 04.2	Low Carbon Design - Free Cooling	<p>One credit where:</p> <p>4. The passive design analysis credit is achieved.</p> <p>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.</p> <p>6. The building uses ANY of the free cooling strategies listed below to reduce the cooling energy demand, i.e. it does not use active cooling:</p> <ol style="list-style-type: none"> <li>1. Night time cooling (which could include the use of a high exposed thermal mass)</li> <li>2. Ground coupled air cooling</li> <li>3. Displacement ventilation (not linked to any active cooling system)</li> <li>4. Ground water cooling</li> <li>5. Surface water cooling</li> <li>6. Evaporative cooling, direct or indirect</li> <li>7. Desiccant dehumidification and evaporative cooling, using waste heat</li> <li>8. Absorption cooling, using waste heat</li> <li>9. The building does not require any significant form of active cooling or mechanical ventilation (i.e. naturally ventilated).</li> </ol> <p>Shell only building: Only free cooling options 1 to 3 listed above are applicable.</p>	1	0	<p>Provide:</p> <p>1) Correspondence from the building services engineer summarising the 'purpose designed' free cooling strategy</p> <p>2) The results from a dynamic simulation model demonstrating the feasibility of the free cooling strategy</p>		



Ene 04.3	Low Carbon Design - LZO	<p><b>One credit where:</b></p> <p>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 (see Relevant definitions) to establish the most appropriate recognised local (on-site or near-site) low or zero carbon (LZO) energy source(s) for the building/development.</p> <p>8. A local LZO technology 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 (CO<sub>2</sub>) emissions: The amount of energy or CO<sub>2</sub> emissions reduction is not specified in the criteria in this issue. However, it should not be a trivial amount. As a guide, the installation should contribute at least 5% of overall building energy demand and/or CO<sub>2</sub> emissions</p>	1	1	<p>Provide:</p> <p>1) LZO study in line with BREEAM criteria</p> <p>2) Design drawings or relevant sections of the building specification or contract</p> <p>3) Report, calculations/outputs from the manufacturer, supplier, engineer or approved modelling software confirming carbon savings as a result of the installed LZO technology.</p>	TBC	Ene 04 to be reviewed when energy modelling has been completed. Heat pump system used within building to be reviewed for LZO carbon reductions.
Ene 06.1	Energy Efficient Transportation Systems - Energy Consumption	<p>One credit where</p> <p>1. Where lifts, escalators and/or moving walks (transportation types) are specified:</p> <p>a. 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.</p> <p>b. The energy consumption has been calculated 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:</p> <p>i. At least two types of system (for each transportation type required); OR</p> <p>ii. An arrangement of systems (e.g., for lifts, hydraulic, traction, machine room-less lift (MRL)); OR</p> <p>iii. A system strategy which is 'fit for purpose'.</p> <p>c. The use of regenerative drives should be considered, subject to the requirements in CN6.</p> <p>d. The transportation system with the lowest energy consumption is specified.</p>	1	1	<p>Provide:</p> <p>1) A lift transport analysis study</p> <p>2) An energy consumption analysis</p> <p>3) Lift specification demonstrating systems specified in line with the analyses above.</p>	Main Contractor	One lift being removed and new lifts provided.
Ene 06.2	Energy Efficient Transportation Systems - Energy Efficient Features	<p><b>Two credits where</b></p> <p>2. Criterion 1 is achieved.</p> <p>3. For each lift, the following three energy efficient features are specified:</p> <p>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.</p> <p>b. The lift car lighting and display lighting provides an average lamp efficacy, (across all fittings in the car) of &gt; 55 lamp lumens/circuit Watt.</p> <p>c. The lift uses a drive controller capable of variable speed, variable-voltage, and variable-frequency (VVVF) control of the drive motor.</p> <p>4. Where the use of regenerative drives is demonstrated to save energy, they are specified.</p> <p>Escalators and/or moving walks - If present additional detail shall be provided.</p>	1	1	<p>Provide:</p> <p>1) Lift specification demonstrating features specified in line with the BREEAM criteria</p>	Main Contractor	

Tra 01	Public Transport Accessibility	<p><b>Up to three credits where</b></p> <ol style="list-style-type: none"> <li>1. The public transport Accessibility Index (AI) for the assessed building is calculated and BREEAM credits awarded in accordance with the BREEAM tables.</li> <li>2. The Accessibility Index is determined by entering the following information in to the BREEAM Tra 01 calculator: <ol style="list-style-type: none"> <li>a. The distance (m) from the main building entrance to each compliant public transport node</li> <li>b. The public transport type(s) serving the compliant node e.g., bus or rail</li> <li>c. The average number of services stopping per hour at each compliant node during the operating hours of the building for a typical day.</li> </ol> </li> </ol> <p>One credit - Dedicated bus service</p> <ol style="list-style-type: none"> <li>3. For buildings with a fixed shift pattern, i.e. where building users will predominantly arrive/depart at set times, one credit can be awarded where the building occupier provides, or commits to providing a dedicated bus service to and from the building at the beginning and end of each shift/day. This credit is only available in cases where a development is unable to achieve any of the available credits using the Accessibility Index criteria (i.e. its location has a low public transport Accessibility Index).</li> </ol>	3	3	<p>Provide:</p> <ol style="list-style-type: none"> <li>1) PTAL Calculation for the site</li> <li>2) Completed copy of Tra01 calculator</li> </ol>	Verte	
Tra 02	Proximity to Amenities	<p><b>One credit where:</b></p> <p>The building is located within close proximity of the following amenities:</p> <p>within 500m of two of these: Food outlet; access to cash, recreation/leisure facility for fitness;</p> <p>within 500m of one of these: Access to outdoor space, community facility, pharmacy, GP/medical surgery, childcare facility/school.</p>	1	1	<p>Provide:</p> <ol style="list-style-type: none"> <li>1) Completed map, clearly illustrating location of amenities, distance, and pedestrian access.</li> </ol>	Verte	
Tra 03	Cyclist Facilities	<p><b>One credit where</b></p> <ol style="list-style-type: none"> <li>1. Compliant cycle storage spaces are provided: 1 cycle space per 10 expected building occupants. There is a sliding scale for buildings with more than 200 expected occupants.</li> </ol> <p>One credit where:</p> <ol style="list-style-type: none"> <li>2. Criterion 1 has been achieved.</li> <li>3. At least two of the following types of compliant cyclist facilities have been provided for all staff: <ol style="list-style-type: none"> <li>a. Showers (1 per 10 cycle spaces. 8 showers are the maximum number required).</li> <li>b. Changing facilities</li> <li>c. Lockers - 1 locker per cycle space</li> <li>d. Drying spaces.</li> </ol> </li> </ol> <p>The requirements of this credit can be reduced by 50% if 2 credits are achieved under Tra 01.</p>	2	2	<p>Provide:</p> <ol style="list-style-type: none"> <li>1) Drawings and specification illustrating location, type and number of cycle parking facilities.</li> <li>2) Drawings and specifications illustrating location, type and number of cyclist facilities, namely lockers and shower/changing areas.</li> </ol>	Architect	<p>BCO compliance for cycle storage likely.</p> <p>Verte to advise on minimum cycle spaces required.</p>

Tra 05	Travel Plan	<b>One credit where:</b> <ol style="list-style-type: none"> <li>1. A travel plan has been developed as part of the feasibility and design stages.</li> <li>2. A site-specific travel assessment/statement has been undertaken to ensure the travel plan is structured to meet the needs of the site and covers the required topics listed in the BREEAM Guidance.</li> <li>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.</li> <li>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 construction and be supported by the building's management in operation.</li> </ol>	1	1	Please provide: <ol style="list-style-type: none"> <li>1) A copy of the site-specific Travel Plan</li> <li>2) A copy of any site-specific transport assessment details</li> <li>3) A commitment from the client/occupier that the travel plan measures will be implemented (letter)</li> </ol>	TBC	Transport consultant appointment will be made.
Wat 01	Water Consumption  Mandatory Req: Good, VG & Excel: 1 Credit  Outstanding: 2 Credits	<b>Up to five credits where:</b> <ol style="list-style-type: none"> <li>1. An assessment of the efficiency of the building's domestic water-consuming components is undertaken using the BREEAM Wat 01 calculator.</li> <li>2. The water consumption (L/person/day) for the assessed building is compared against a baseline performance and BREEAM credits awarded based upon Table - 35.</li> <li>3. The efficiency of the following 'domestic scale' water-consuming components must be included in the assessment (where specified): <ol style="list-style-type: none"> <li>a. WCs, b. Urinals, c. Taps (wash hand basins and where specified kitchen taps and waste disposal unit), d. Showers, e. Baths, f. Dishwashers (domestic and commercial sized) and g. Washing machines (domestic and commercial or industrial sized).</li> </ol> </li> </ol> <p>If any greywater / rainwater recycling is available additional guidance shall be provided.</p>	5 + 1 Innov	4	Provide: <ol style="list-style-type: none"> <li>1) A copy of the sanitary ware schedule identifying water consuming properties of each fitting.</li> <li>2) Drawings indicating locations of each fitting</li> <li>3) Completed copy of the Wat01 calculator</li> </ol>	Architect	4 credits can be achieved through installing flow restrictors. Low flow rates should not impact on any selections for design look and feel.
Wat 02	Water Monitoring  Mandatory Req: Good, VG, Excel, Outstan: Criterion 1	<b>One credit where:</b> <ol style="list-style-type: none"> <li>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.</li> <li>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 (see Compliance notes).</li> <li>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 (see Relevant definitions).</li> <li>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</li> <li>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 (see compliance note)</li> </ol>	1	1	Provide: <ol style="list-style-type: none"> <li>1) A copy of the PH services schematic illustrating location and number of water meters.</li> <li>2) A copy of the water meter specification/data sheet, confirming pulsed output.</li> <li>3) Calculations demonstrating that no areas or major plant consume more than 10% of total water demand.</li> <li>4) If the above is the case, evidence as per 1 &amp; 2 demonstrating this is adequately sub-metered.</li> </ol>	MEP	

Wat 03.1	Water Leak Detection & Prevention - Detection	<b>One credit where:</b> 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: a. A permanent automated water leak detection system that alerts the building occupants to the leak OR an in-built automated diagnostic procedure for detecting leaks is installed. b. Activated when the flow of water passing through the water meter/data logger is at a flow rate above a pre-set maximum for a pre-set period of time. c. Able to identify different flow and therefore leakage rates, e.g. continuous, high and/or low level, over set time periods. d. Programmable to suit the owner/occupiers' water consumption criteria. e. Where applicable, designed to avoid false alarms caused by normal operation of large water-consuming plant such as chillers.	1	1	1) Details of the major water leak detection system to be installed. 2) Drawing indicating location of system 3) BMS details	MEP	Leak detection system to be installed. PIR's to be installed.
Wat 03.2	Water Leak Detection & Prevention - Prevention	<b>One credit where:</b> 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).	1	1	Provide: 1) A copy of the PH services schematic illustrating location of solenoid valves 2) A copy of Services schematics/drawings illustrating valves connected to PIRs	MEP	
Wat 04	Water Efficient Equipment	<b>One credit where:</b> 1. The design team has identified all unregulated water demands that could be realistically mitigated or reduced. 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.  Shell only or Shell & Core buildings: Where the only unregulated water demand comes from an irrigation system specified/installed by the developer, then this system must be used for the purpose of assessing compliance. Where no irrigation systems are specified, and therefore there are no unregulated water demands for the building, this issue can be awarded by default.	1	1	Provide: 1. Evidence of external landscaping and watering strategy.	Architect	Architect advised landscaping will need irrigation, therefore drip fed system should be included within specification.

Mat 01	Life cycle impacts	<p><b>Up to six credits (option 2): Elemental assessment of environmental performance information</b>  <b>The following are required to demonstrate compliance:</b></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> <ul style="list-style-type: none"> <li>a. reused in situ</li> <li>b. reused in situ with minor repairs</li> <li>c. specified with robust environmental performance information.</li> </ul> <p>10. Credits are awarded based upon the percentage of available points achieved as set out in Table - 47</p> <p><b>PLEASE VIEW/COMPLETE Mat 01 Table</b></p>	6 +1	6 +1	<p>Provide:</p> <p>1) Completed Mat01 Schedule indicating:          -%materials re-used in situ          -%materials with robust environmental information (EPD)</p> <p>2) Copies of drawings, specification, product data sheets demonstrating type of proposed materials</p> <p>3) Copies of Environmental Product Declarations (EPD), Recycled Content declarations, Re-use declarations for the relevant materials</p>	Architect	Option 2 detailed LCA using OneClick software targeted within enhanced credits.
Mat 03.1	Responsible sourcing of materials - Sustainable Procurement Plan  Mandatory Req: Any Rating: Criterion 1	<p><b>Pre-requisite</b>          1. All timber and timber-based products used on the project is ' Legally harvested and traded timber'</p> <p><b>One credit - Sustainable procurement plan</b>          2. The principal contractor sources materials for the project in accordance with a documented sustainable procurement plan</p> <p><b>PLEASE VIEW GN Mat 03.1</b></p>	1	1	<p>Provide:</p> <p>1) Copy of the prelims including the requirements.</p>	Contractor/ Prelims	
Mat 03.2	Responsible sourcing of materials - Sourcing of Materials	<p><b>Up to 3 credits</b> - Responsible sourcing of materials (RSM) are responsibly sourced in accordance with the BREEAM methodology.          18% RSM points achieved - 1 credit, 36% RSM points achieved - 2 credits, 54% RSM points achieved - 3 credits</p> <p>Location use categories:          1. Ceiling (including ceiling finishes), 2. Door/window, 3. Floor (including floor finishes), 4. Insulation          5. Internal partition/internal walls (including finishes), 6. Roof (including roof finishes), 7. Structure, primary and secondary, 8. External wall ( e.g. cladding, lining, render, including finishes )          9. Building service, 10. Hard landscaping, 11. Other</p> <p><b>PLEASE VIEW GN Mat 03.2</b></p> <p><b>PLEASE VIEW/COMPLETE Mat 03 Table</b></p>	3 +1 Innov	1	<p>Provide:</p> <p>1) Completed Mat03 Schedule indicating:          -relevant materials with</p> <p>2) Copies of drawings, specification, product data sheets demonstrating type of proposed materials</p> <p>3) Copies of Environmental Product Declarations (EPD), Recycled Content declarations, Re-use declarations for the relevant materials</p>	Contractor/ Prelims	

Mat 04	Insulation	<p><b>One credit where:</b></p> <p>1. Any new insulation specified for use within the following building elements must be assessed: a. External walls, b. Ground floor, c. Roof, d. Building services. Insulation should have an A/A+ Green Guide rating.</p> <p>2. The Insulation Index for the building fabric and services insulation is the same as or greater than 2.5.</p>	1	1	<p>Provide:</p> <p>1) Completed Mat 4 schedule indicating: - relevant insulation with area sizes indicated in m2 and thickness in m for envelope insulation, and estimated m3 for services insulation, plus thermal conductivity</p> <p>2) Manufacturers details confirming thickness and thermal conductivity for all insulation assessed</p> <p>3) Copies of drawings, specification, product data sheets demonstrating type of proposed insulation</p> <p>4) Copies of Environmental Management Systems certification (e.g. ISO 14001, BES 6001), Environmental Product Declarations (EPD), Recycled Content declarations, Re-use declarations for the relevant insulation products. Page 53 of the WPP specification confirms that services insulation specified will be compliant with BREEAM requirements.</p>	Architect + MEP	
Mat 05	Designing for durability and resilience	<p><b>Protecting vulnerable parts of the building from damage.</b></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: a. Protection from the effects of high pedestrian traffic in main entrances, public areas and thoroughfares (corridors, lifts, stairs, doors etc.). b. Protection against any internal vehicular/trolley movement within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas. c. 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> <p><b>Protecting exposed parts of the building from material degradation</b></p> <p>2. The relevant building elements incorporate appropriate design and specification measures to limit material degradation due to environmental factors.</p> <p><b>PLEASE VIEW GN Mat 05</b></p>	1	1	<p>Provide:</p> <p>1) Highlighted drawings identifying high traffic/vulnerable areas and measures installed</p> <p>2) Copies of drawings, specification, product data sheets demonstrating type of proposed materials</p>	Architect	



Mat 06	Material Efficiency	<p>One credit where:</p> <ol style="list-style-type: none"> <li>1. Opportunities have been identified, and appropriate measures investigated and implemented, to optimise the use of materials in building design, procurement, construction, maintenance, and end of life</li> <li>2. The above is carried out by the design/construction team in consultation with the relevant parties at each of the following RIBA stages: <ol style="list-style-type: none"> <li>a. Preparation and Brief, b. Concept Design, c. Developed Design, d. Technical Design, e. Construction.</li> </ol> </li> </ol> <p>All parties (as relevant to the project stage) involved in the design, specification and/or construction of the building should be consulted. This includes but is not limited to the following:</p> <ol style="list-style-type: none"> <li>1. Client/developer, 2. Cost consultant, 3. Architect, 4. Structural/civil engineers, 5. Building services engineers - mechanical, electrical, 6. Principal contractor, 7. Demolition/strip-out contractor, 8. Environmental consultant, 9. Project management consultant, 10. Materials/component manufacturers/suppliers.</li> </ol> <p>PLEASE VIEW GN Mat 06</p>	1	0	<p>Provide:</p> <ol style="list-style-type: none"> <li>1) Reports (at Preparation and Brief stage) outlining the activity relating to material efficiency (ideas discussed, analysis and decisions taken)</li> <li>2) Drawings or building information model (BIM), calculations showing reduction of material use through design (Concept Design/Developed Design stages)</li> <li>3) Meeting notes, construction program, responsibilities schedule (indicating parties consulted).</li> </ol>	Architect/MEP	Verte to issue credit template for review.
Wst 01 .1	Pre-refurbishment audit	<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"> <li>a. The audit should be carried out at the Concept Design Stage (<b>equivalent to RIBA stage 2</b>) 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.</li> <li>b. The audit should be carried out by a competent person (see Relevant Definitions) who is independent of the project, has appropriate knowledge of buildings, waste and options for the reuse and recycling of different waste streams</li> <li>c. 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.</li> </ol> <p>The audit must be referenced in the resource management plan and cover:</p> <ol style="list-style-type: none"> <li>d. Identification and quantification of the key materials where present on the project (see Table - 66)</li> <li>e. Potential applications and any related issues for the reuse and recycling of the key materials in accordance with the waste hierarchy.</li> <li>f. Identification of local re-processors or recyclers for recycling of materials</li> <li>g. Identification of overall recycling rate for all key materials</li> <li>h. Identification of reuse targets where appropriate.</li> <li>i. Identification of overall landfill diversion rate for all key materials.</li> </ol>	1	1	<p>Provide:</p> <ol style="list-style-type: none"> <li>1) A copy of the pre-refurbishment audit carried out at <b>Stage 2</b></li> </ol>	TBC	Verte to get quote for report.

Wst 01 .2	Re-use and direct recycling of materials	<p>Where waste material types detailed in Table - 64 are either directly re-used on-site or off-site or are sent back to the manufacturer for closed loop recycling</p> <p>One credit is achieved where 50% of the total available points for the waste material types detailed in Table - 64, that are present on the project have been achieved (using the Was 01 calculator tool, see Table - 65 in the Methodology Section)</p> <p>Two credits are achieved where 75% of the total available points for the waste material types detailed in Table - 64 , that are present on the project have been achieved (using the Was 01 calculator tool, see Table - 65 in the Methodology section)</p>	2	0	Provide: 1) Copy of the prelims including the requirements.		
Wst 01 .3	Resource Efficiency	<p><b>Construction resource efficiency (excluding simple buildings)</b></p> <p>5.Develop and implement a compliant resource management plan covering the waste arisings from the refurbishment or fit-out project with the aim of minimising waste (see Relevant definitions), recording and reporting accurate data on waste arisings.</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 <b>Table - 61</b> and <b>Table - 62</b> as relevant to the project type.</p>	3	1	Provide: 1) Copy of the prelims including the requirements.	Contractor/ Prelims	
Wst 01 .4	Diversion of Resources from Landfill	<p>Diversion of resources from landfill</p> <p><b>One credit where:</b></p> <p>7. The following percentages of non-hazardous construction (on-site and off-site manufacture/fabrication in a dedicated facility), demolition and excavation waste (where applicable) generated by the project have been diverted from landfill:</p> <p>8.Non-hazardous construction waste generated by the building's design and refurbishment or fit-out is no greater than the exemplary level resource efficiency benchmark (outlined in <b>Table - 62</b> and <b>Table - 61</b>).</p> <p>9.The percentage of non-hazardous construction and demolition (if relevant) waste diverted from landfill meets or exceeds the exemplary level percentage benchmark (outlined in <b>Table - 63</b>).</p> <p>10.Waste materials will be sorted into separate key waste groups (according to the waste streams generated by the scope of the works; the List of Wastes/European Waste Catalogue code should be referenced) either on-site or off-site through a licensed contractor for recovery.</p> <p>11.75% of difficult to manage wastes have been reused on or off-site rather than recycled, in accordance with <b>Table - 64</b>.</p>	1 + 1 Innov	1	Provide: 1) Copy of the prelims including the requirements.	Contractor/ Prelims	

Wst 03	Operational Waste  Mandatory Req: Excel & Outstanding: 1 Credit	<b>One credit where:</b>  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: a. Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams b. Accessible to building occupants or facilities operators for the deposit of materials and collections by waste management contractors c. 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	Provide: 1) Drawings highlighting recyclable waste collection area compliant to points a, b, c of the criteria	Architect	Bin store is provided.
Wst 04	Speculative Floor and Ceiling Finishes	<b>One credit where:</b>  1. For tenanted areas (where the future occupant is not known), prior to full fit-out works, carpets, other floor finishes and ceiling finishes have been installed in a show area only. A show area could be either a floor plate or an individual office. However, to award this credit it must be less than 25% of the net lettable floor area. 2. In a building developed for a specific occupant, that occupant has selected (or agreed to) the specified floor and ceiling finishes.	1	1	Provide: 1) Finish drawings highlighting show area	Architect	Cat A- finish, raised access floors and exposed ceiling designed to minimise waste.
Wst 05	Adaptation to Climate Change	<b>One credit where:</b>  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: 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: i. Hazard identification, ii. Hazard assessment, iii. Risk estimation, iv. Risk evaluation, v. Risk management - See detailed guidance on each topics.  PLEASE VIEW GN Wst 05	1	1	Provide: 1) Appraisal of climate change strategy for structural and fabric resilience in line with BREEAM requirements  2) results of risk assessments in line with BREEAM requirements	Architect/ Structural	Verte to issue templates and standards for Wst 05.
Wst 06	Functional Adaptability	<b>One credit where:</b>  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. 2. Functional adaptation measures have been implemented (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.  PLEASE VIEW GN Wst 06	1	1	Provide: 1) A copy of the functional adaptability strategy study  2) Evidence such as drawings and specification demonstrating outcomes of strategy have been implemented.	Architect + MEP	

Lue 05	Long Term Impact on Biodiversity	<p><b>Up to two credits</b></p> <p>1. Where a Suitably Qualified Ecologist (SQE) is appointed prior to commencement of activities on-site and they confirm that all relevant UK and EU legislation relating to the protection and enhancement of ecology has been complied with during the design and construction process.</p> <p>2. Where a landscape and habitat management plan, appropriate to the site, is produced covering at least the first five years after project completion in accordance with BS 42020:2013 Section 11.1. This is to be handed over to the building owner/occupants for use by the ground's maintenance staff</p> <p>3. Where additional measures to improve the assessed site's, long-term biodiversity are adopted.</p>	2	2	<p>Provide:</p> <p>1) Ecologist's report highlighting information required</p> <p>2) Evidence that enhancement measures will be implemented in accordance with SQE recommendations</p>	Ecologist	Verte to issue credit requirements.
Pol 01	Impact of refrigerants	<p><b>Up to 3 credits</b> are available for the reduction of the level of greenhouse gas emissions arising from the leakage of refrigerants from building systems.</p> <p>3 credits where the building does not require the use of refrigerant within its installed plant/systems</p> <p>Leak detection - One credit where:</p> <p>6. Where systems using refrigerants have a permanent automated refrigerant leak detection system installed; OR where an in-built 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> <p>Shell and core buildings: If the building is designed in such a way that it avoids the need for refrigerant containing building services, and therefore no 'refrigerant-using' building services or systems will be specified for the fit-out, then the available credits can be awarded by default</p>	3	1	<p>Provide:</p> <p>1) <u>Credit targeted for leak detection:</u> A copy of the specification clause or letter from the M&amp;E engineer/system manufacturer confirming relevant refrigeration type and system information</p> <p>For further credits:</p> <p>1) Documentary evidence confirming the absence of refrigerant in the development</p> <p>2) A copy of the specification clause or letter from the M&amp;E engineer/system manufacturer confirming relevant refrigeration type and system information</p>	MEP	
Pol 02	NOx emissions	<p>Up to 3 credits</p> <p>Where the plant installed to meet the building's delivered heating and hot water demand has, under normal operating conditions, a NO x emission level (measured on a dry basis at 0% excess O2) as follows:</p> <p><b>1 credit</b> where maximum dry NOx ≤100 mg/kWh (at 0% excess O2). <b>2 credits</b> where maximum dry NOx ≤70 mg/kWh (at 0% excess O2). <b>3 credits</b> where maximum dry NOx ≤40 mg/kWh (at 0% excess O2).</p> <p>2. Report via the BREEAM scoring and reporting tool the direct and indirect NO x emissions in mg/kWh and energy consumption in kWh/m<sup>2</sup>/yr arising from systems installed to meet the building's space heating, cooling and hot water demands.</p> <p>No credits may be awarded for open flue heating or hot water systems. Where the water heating can be demonstrated to be less than 10% of the building's total energy consumption, these credits can be awarded based solely on the NO x emissions from space heating.</p>	3	0	<p>Provide:</p> <p>1) Relevant section/clauses of the building specification or contract.</p> <p>2) Manufacturer's product details.</p> <p>3) Calculations from the project team</p>		

Pol 03.1	Surface water run off - Flood Risk	<p><b>Two credits - Low flood risk</b></p> <p>1. Where a site-specific flood risk assessment (FRA) confirms the development is situated in a flood zone that is defined as having a low annual probability of flooding (in accordance with current best practice national planning guidance). The FRA must take all current and future sources of flooding into consideration.</p> <p>One credit - Medium/high flood risk</p> <p>2. Where a site-specific FRA confirms the development is situated in a flood zone that is defined as having a medium or high annual probability of flooding and is not in a functional floodplain (in accordance with current best practice national planning guidance). The FRA must take all current and future sources of flooding into consideration.</p> <p>3. To increase the resilience and resistance of the development to flooding, one of the following must be achieved:</p> <p>a. The ground level of the building and access to both the building and the site, are designed (or zoned) so they are at least 600mm above the design flood level of the flood zone in which the assessed development is located.</p> <p>OR</p> <p>c. The final design of the building and the wider site reflects the recommendations made by an appropriate consultant in accordance with the hierarchy approach outlined in section 5 of BS 8533:2011.</p>	2	2	<p>Provide:</p> <p>1) Copy of EA Flood Maps indicating flood risk</p> <p>for NC an FRA report is required.</p> <p>2) If Medium/High, sub-sequence evidence as detailed in Cr2-3 of the guidance i.e., a flood resilience strategy is implemented.</p>	Verte	Confirmation required as to if FRA/ SUDs strategy required for planning.
Pol 03.2	Surface water run off	<p>4. An Appropriate Consultant is appointed to carry out, demonstrate and/or confirm the development's compliance with the following criteria: Surface water run-off - volume, attenuation, and/or limiting discharge.</p> <p><b>One Credit</b></p> <p>5. Where drainage measures are specified to ensure that the peak rate of run-off from the site to the watercourses (natural or municipal) is no greater for the developed site than it was for the pre-development site. This should comply at the 1-year and 100-year return period events.</p> <p>6. Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS are in place.</p> <p>7. Calculations include an allowance for climate change; this should be made in accordance with current best practice planning guidance.</p> <p><b>One credit</b></p> <p>8. Where flooding of property will not occur in the event of local drainage system failure (caused either by extreme rainfall or a lack of maintenance); AND EITHER</p> <p>9. Drainage design measures are specified to ensure that the post development run-off volume, over the development lifetime, is no greater than it would have been prior to the assessed site's development for the 100-year 6-hour event, including an allowance for climate change (see criterion 14).</p> <p>10. Any additional predicted volume of run-off for this event is prevented from leaving the site by using infiltration or other Sustainable Drainage System (SuDS) techniques.</p>	2	1	<p>Provide:</p> <p>1) Statement from the appropriate consultant confirming that they are qualified in line with the BREEAM definition.</p> <p>2) Consultants report containing all information necessary to demonstrate compliance including.</p> <p>1. Type and storage volume (l) of the drainage measures</p> <p>2. Total area of hard surfaces (m2)</p> <p>3. Peak/Volume flow rates (l/s) pre and post development for the return period events</p> <p>4. Additional allowance for climate change designed in to the system</p> <p>5. Impact on the building of flooding from local drainage system failure</p>	Architects	

Pol 04	Reduction of night-time light pollution	<p><b>One credit where</b></p> <p>1. Where external lighting pollution has been eliminated through effective design that removes the need for external lighting without adversely affecting the safety and security of the site and its users. OR alternatively, where the building does have external lighting, one credit can be awarded as follows:</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</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 ILE Technical Report 5 – The Brightness of Illuminated Advertisements.</p>	1	1	<p>Provide:</p> <p>1) Design drawings OR clauses in spec/contract</p> <p>20 Indicative examples of where and how strategy complies</p>	MEP	New lights to comply with BREEAM regulations.
Pol 05	Noise Attenuation	<p><b>One credit where</b></p> <p>1. Where there are, or will be, no noise-sensitive areas or buildings within 800m radius of the assessed development. OR 2. Alternatively, where the building does have noise-sensitive areas or buildings within 800m radius of the development, one credit can be awarded as follows:</p> <p>a. Where a noise impact assessment in compliance with BS 7445. 1 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	<p>Provide:</p> <p>1) Drawings indicating existing and proposed noise sensitive buildings within 800m</p> <p>2) Acoustician's report including qualifications and professional status OR clauses in spec/contract OR commitment letter</p> <p>3) Recommendations for attenuation to be included in above report and incorporated</p>	Acoustician	Acoustician appointed to undertake a background noise assessment.