CAMDEN GOODS YARD

15112-WAT-XX-XX-RP-V-59009 CGY

BREEAM Pre-assessment

March 2025

Camden Goods Yard

BREEAM New Construction v6.1 Pre-assessment
Office & Retail

March 2025

Waterman Building Services Ltd
Pickfords Wharf, Clink Street, London SE1 9DG
www.watermangroup.com

Client Name: St George West London Limited
Document Reference: 15112-WAT-XX-XX-RP-V-59009
Project Number: BSD15112

Quality Assurance – Approval Status

This document has been prepared and checked in accordance with
Waterman Group's IMS (BS EN ISO 9001: 2015, BS EN ISO 14001: 2015 and BS EN ISO 45001:2018)

Revision	Status	Date	Prepared by	Checked by	Approved by
P01	S3	11/02/2025	Jonathan Brown	James Barker	James Barker
P02	S3	18/02/1015	Jonathan Brown	James Barker	James Barker
P03	S3	21/02/2025	Jonathan Brown	James Barker	James Barker
P04	S3	28/02/2025	Jonathan Brown	James Barker	James Barker
C01	A2	28/02/2025	Jonathan Brown	James Barker	James Barker
C02	A2	04/03/2025	Jonathan Brown	James Barker	James Barker

Comments	
P01	Draft issued for comment
P02	Draft issued for comment
P03	Draft issued for comment
P04	Draft Issued for comment
C01	Final issue following comments
C02	Minor update to date, final issue

Revision		Status	
P*nn*	Preliminary (shared; non-contractual)	S1	Coordination
C*nn*	Contractual	S2	Information
		S3	Review & Comment
		S4	Review & Authorise
		S5	Review & Acceptance
		A0, A1, A*n*	Authorised & Accepted (*n*=work stage if applicable)

Disclaimer

This report has been prepared by Waterman Building Services Ltd, with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporation of our General Terms and Condition of Business and taking account of the resources devoted to us by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at its own risk.

Contents

Figures

Tables

1. Introduction

This BREEAM pre-assessment report has been prepared by Waterman Building Services on St George West London Limited ('the Applicant'), to provide a BREEAM pre-assessment of the proposed s73 application to vary the extant planning permission for the Camden Goods Yard project.

This report sets out how the proposals forming part of the S73 application (the "Proposed Development") perform when assessed against the BREEAM criteria guidance. The new build Office spaces in Blocks C and F, the Workspaces in Block C and Retail spaces in Blocks C, D, E1 and F only will both be assessed as 'Shell and Core' under BREEAM New Construction v6.1 (Technical Manual – SD5079) methodology and aim to achieve an 'Excellent' rating. This report sets out how the proposals forming part of the S73 application (the "Proposed Development") perform when assessed against the BREEAM criteria guidance.

Both the Office and Retail assessment will adopt a similar buildings approach under BREEAM New Construction v6.1 methodology. This allows one office BREEAM pre-assessment to cover both the office and affordable office spaces and one retail BREEAM pre-assessment to cover all retail space.

A pre-assessment provides an initial strategy for achieving a specific BREEAM rating based on a review of a project with input from the design team. Compliant evidence must be provided during the subsequent project stages (i.e., Design Stage and Post Construction Stage) to achieve the targeted rating.

The BREEAM New Construction version can be applied to 'fully fitted', 'shell only' and 'shell and core' building projects. The retail and workshops are expected to be 'Shell and Core'. The Office will be subject to a CAT A fit out, therefore this is also expected to be 'Shell and Core.'

2. BREEAM Methodology

The BREEAM method addresses impacts of a building on the global, local and indoor environments across a range of issues, grouped under the headings of:

- Management
- Health and Wellbeing
- Energy
- Transport
- Water
- Materials
- Waste
- Land Use & Ecology
- Pollution

The credits scored are shown as a weighted percentage score, which itself corresponds to an overall rating of Pass, Good, Very Good, Excellent or Outstanding, as set out in Table 1 below. In addition to the percentage score, certain minimum levels of performance are required for each of the BREEAM ratings, these are set out in Table 2.

Table 1: BREEAM rating score thresholds

BREEAM Rating	% Score
OUTSTANDING	≥ 85
EXCELLENT	≥ 70
VERY GOOD	≥ 55
GOOD	≥ 45
PASS	≥ 30
UNCLASSIFIED	< 30

The requirement for the Proposed Development is to achieve an **'Excellent'** rating.

The BREEAM v6.1 methodology includes several mandatory credits which must be obtained to achieve a certain rating. The minimum standards required for each rating level are shown in Table 2 below.

Table 2: Minimum standards by BREEAM rating level (BREEAM New Construction v6.1)

BREEAM issue	Pass	Good	Very Good	Excellent	Outstanding
Man 03: Responsible construction practices	None	None	None	One credit (responsible construction management)	One credit (responsible construction management)
Man 04: Commissioning and handover	None	None	One credit (commissioning-test schedule and responsibilities)	One credit (commissioning-test schedule and responsibilities)	One credit (commissioning-test schedule and responsibilities)
Man 04: Commissioning and handover	None	None	Requirement 11 (Building User Guide)	Requirement 11 (Building User Guide)	Requirement 11 (Building User Guide)
Man 05: Aftercare	None	None	None	One credit (commissioning-implementation)	One credit (commissioning-implementation)
Ene 01: Reduction of energy use and carbon emissions	None	None	None	Four Credits	Six Credits
Ene 02: Energy monitoring	None	None	One credit (First sub metering credit)	One credit (First sub metering credit)	One credit (First sub metering credit)
Wat 01: Water consumption	None	One credit	One credit	One credit	Two credits
Wat 02: Water monitoring	None	Requirement 1 only	Requirement 1 only	Requirement 1 only	Requirement 1 only
Mat 03: Responsible sourcing of materials	Requirement 1 only	Requirement 1 only	Requirement 1 only	Requirement 1 only	Requirement 1 only
Wst 01: Construction waste management	None	None	None	None	One credit
Wst 03: Operational waste	None	None	None	One credit	One credit

3. Project Information

BREEAM Projects has been used to filter out credits which are not in scope for the Proposed Development. The following list of project specific questions provides the information necessary to determine the available credits for both BREEAM assessments.

1) Is the building designed to be untreated?

No

2) Building services - heating system type

Air system

3) Building services - cooling system type

None

4) Does the building have external areas within the boundary of the assessed development?

Yes

5) Are commercial or industrial-sized refrigeration and storage systems specified?

No

6) Are building user lifts present?

No

7) Are building user escalators or moving walks present?

No

8) Are there any water demands present other than those assessed in Wat 01?

Yes

9) Are there statutory requirements, or other issues outside of the control of the project, that impact the ability to provide outdoor space?

No

10) Are there any systems specified that contribute to the unregulated energy load?

No

11) Are the Post-occupancy stage credits targeted in Ene 01 issue?

No

12) Are there laboratories present and if so what % of total building area do they represent?

No

13) Laboratory containment area

No

4. Summary (Office and Retail)

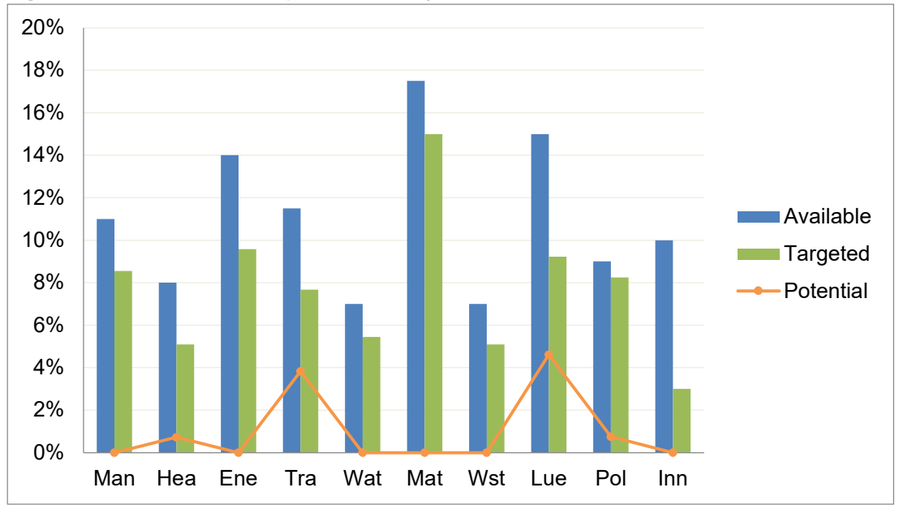
The Office and Workshop spaces will be assessed under one BREEAM New Construction Office 'Shell and Core' Assessment. The Retail will be assessed under one BREEAM New Construction Office 'Shell and Core' Assessment.

Table 3 and Figure 1 below show a summary of the initial pre-assessment strategy that has been produced by a BREEAM Assessor in consultation with the project design team for the office assessment.

Table 3: Summary of BREEAM New Construction (v6.1) Pre-Assessment Scores

Section	Available		Targeted		Potential	
	Credits	Percent	Credits	Percent	Credits	Percent
Management	18	11%	14	8.55%	0	0%
Health and Wellbeing	11	8%	7	5.09%	1	0.73%
Energy	19	14%	13	9.57%	0	0%
Transport	12	11.5%	8	7.66%	4	3.83%
Water	9	7%	7	5.44%	0	0%
Materials	14	17.5%	12	15%	0	0%
Waste	11	7%	8	5.09%	0	0%
Land Use and Ecology	13	15%	8	9.23%	4	4.62%
Pollution	12	9%	11	8.25%	1	0.75%
Innovation	10	10%	3	3%	0	0%
Total	129	110.00%	91	76.90%	10	9.93%

Figure 1: BREEAM credit performance by section



The assumptions made as part of the preliminary pre-assessment indicate that the proposals can meet all the mandatory level requirements for a targeted rating. A score of **76.90%** is predicted at present which is indicative of an **'Excellent'** rating.

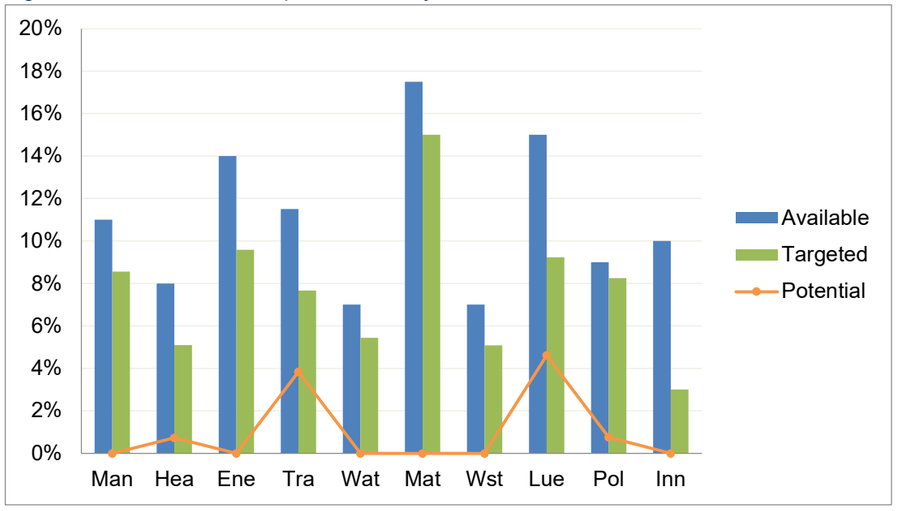
The BREEAM criteria and the commitments made by the project team are shown in the Section 6.

Table 4 and Figure 2 below show a summary of the initial pre-assessment strategy that has been produced by a BREEAM Assessor in consultation with the project design team for the retail assessment.

Table 4: Summary of BREEAM New Construction (v6.1) Pre-Assessment Scores

Section	Available		Targeted		Potential	
	Credits	Percent	Credits	Percent	Credits	Percent
Management	18	11%	14	8.55%	0	0%
Health and Wellbeing	11	8%	7	5.09%	1	0.73%
Energy	19	14%	13	9.57%	0	0%
Transport	12	11.5%	8	7.66%	4	3.83%
Water	9	7%	7	5.44%	0	0%
Materials	14	17.5%	12	15%	0	0%
Waste	10	7%	8	5.6%	0	0%
Land Use and Ecology	13	15%	8	9.23%	4	4.62%
Pollution	12	9%	11	8.25%	1	0.75%
Innovation	10	10%	3	3%	0	0%
Total	128	110.00%	91	77.41%	10	9.93%

Figure 2: BREEAM credit performance by section



The assumptions made as part of the preliminary pre-assessment indicate that the proposals can meet all the mandatory level requirements for a targeted rating. A score of **77.41%** is predicted at present which is indicative of an **'Excellent'** rating.

The BREEAM criteria and the commitments made by the project team are shown in the Section 6.

4.1 Early-Stage Actions

Table 4 outlines credits that have been targeted which include requirements that need to be undertaken prior to the end of RIBA Stage 1 or 2. Details of the credit requirements and evidence needed can be found in Section 5.

Table 5: BREEAM Early-stage Actions

Credit	Action	Responsibility
Man 01 – Project delivery planning	The project delivery stakeholders meet to identify and define for roles, responsibilities and contribution for each key phase of project delivery.	Project Team
Man 01 – Stakeholder consultation (interested parties)	Prior to completion of the Concept Design, the design team consult with all interested parties on matters that cover the minimum consultation content (see BREEAM manual).	Project Team
Man 01 – BREEAM AP	The project team, including the client, formally agree strategic performance targets and a BREEAM AP is appointed to provide guidance to assist the achievement of sustainability targets.	BREEAM AP Project Team
Hea 06 – Security of site and building	A Suitably Qualified Security Specialist (SQSS) conducts an evidence-based Security Needs Assessment (SNA) to identify attributes of the proposal, site and surroundings which may influence the approach to security for the development.	Architect Project Manager Security Specialist
Ene 04 – Passive design analysis	An energy specialist undertakes analysis to identify passive design measures which can be implemented to reduce energy demand and carbon emissions.	Energy Consultant
Ene 04 – Low and zero carbon technologies	An energy specialist undertakes a feasibility study which identifies the most appropriate low and zero carbon technologies for the site.	Energy Consultant
Tra 01 – Travel Plan	Develop a travel plan based on a site-specific travel assessment or statement during feasibility stage.	Transport Consultant
Mat 01 – Building life cycle assessment (LCA)	An life cycle assessment is undertaken including an options appraisal to analyse the embodied carbon of proposed elemental options for the development.	LCA Consultant
Mat 03 – Enabling sustainable procurement	A sustainable procurement plan is produced and put in place prior to Concept Design (RIBA Stage 2).	Client Project Manager
Wst 01 – Pre-demolition audit	A pre-demolition audit is undertaken on all existing buildings, structures and hard surfaces being considered for demolition on the site.	Sustainability Consultant
Wst 05 – Adaptation to climate change	Conduct a climate change adaptation strategy appraisal which identifies the impact of expected extreme weather conditions arising from climate change on the building over its projected life cycle and develop recommendations or solutions based on the climate change adaptation strategy appraisal.	Sustainability Consultant
Wst 06 - Design for disassembly and adaptability	Conduct a study to explore the ease of disassembly and the functional adaptation potential of different design scenarios, developing recommendations based on the study that aim to enable and facilitate disassembly and functional adaptation.	Sustainability Consultant
LE 02-05 – Ecology	Appoint a Suitably Qualified Ecologist (SQE) to undertake a baseline survey, evaluating the current and potential ecological value, any risks, and feasibility for enhancement of the site's ecological value.	Ecologist

5. Credits Requirements and Responsibility Matrix

The following tables are a list of requirements that are outlined for the Proposed Development to achieve the targeted BREEAM rating. These represent the initial commitment made by the project team to integrate these requirements into Proposed Development and to provide robust evidence in compliance with the requirements to the BREEAM assessor at later project stages (Design Stage, Construction Stage etc).

The role/party with overall responsibility for the requirements has been indicated against each issue. This is not indication of whether these requirements are included within the listed party's existing scope of works and additional appointments will likely be required to achieve the targeted credits. It is the responsibility of the project team to ensure the BREEAM requirements are included within the appointed scope of works for the Proposed Development.

An indication of the RIBA Stage at which credit requirements will need actioning has been given. Time critical, RIBA Stage 2, credits have been highlighted in orange.

Those credits which are not targeted are greyed out, but the content is included for the team's reference. Credits that are not within the scope of this BREEAM assessment are indicated with N/A.

5.1 Office Credit Requirements and Responsibility Matrix

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Man 01 Project Brief and Design	Project delivery planning	1	1	0	RIBA stage 2	Client/Project Manager	**Project delivery planning** **(R1)** Prior to completion of the Concept Design, the project delivery stakeholders meet to identify and define for each key phase of project delivery: a. Roles b. Responsibilities c. Contributions. **(R2)** In defining roles, responsibilities, contributions, consider the following: a. End user requirements b. Aims of the design and design strategy c. Particular installation and construction requirements or limitations d. Occupiers' budget and technical expertise in maintaining any proposed systems e. Maintainability and adaptability of the proposals f. Operational energy (see Assessment scope) g. Requirements for the production of project and end user documentation h. Requirements for commissioning, training and aftercare support. **Note: Where the building occupants are not known, the above still applies: to be based on likely scenarios of building occupancy.** **(R3)** The project team demonstrates how the project delivery stakeholders' contributions, and the consultation process outcomes influence the following: a. Initial Project Brief b. Project Execution Plan (see Definitions) c. Communication Strategy (see Definitions) d. Concept Design.	• Responsibilities Matrix • Scope of works of the project team • Project Brief (R2a, b) • DAS (R2b) • Energy statement containing detail operational energy (R2f) • Communication strategy (i.e. as defined by RIBA 2013 - when team meet, how information is issued) • Project execution plan (PEP)/project quality plan (established by the project lead and lead designer • Key Meeting Minutes demonstrating how the contributions have influenced R3 a-d (R3) • Sustainability Statement issued for planning • BREEAM pre-assessment
Man 01 Project Brief and Design	Stakeholder Consultation (interested parties)	1	0	0	RIBA stage 2	Client/Project Manager	**Stakeholder consultation (interested parties)** **(R4)** All interested parties (building users, existing community, partnerships, potential users and if applicable: local education authorities, heritage groups, specialist service (e.g. laboratories), passenger focus group) have been consulted by the design team on the consultation plan. **(R5)** Stakeholder contributions and consultation outcomes have influenced Initial Project Brief and Concept Design. **(R6)** All interested parties give and received consultation feedback prior to end of RIBA stage 4. **(R7)** Additionally for Education, Healthcare, Law courts and Major transport node building types only: The consultation exercise used a method carried out by an independent party. (e.g., Communication agency)	• Copy of the consultation plan (R4) • Meeting Minutes/Consultation report summarising contributions and issues raised (R4) • List of design changes as a result of consultation (R5) • Dated Response/feedback given to interested parties (R6) • If applicable - appointment document of 3rd party undertaking the consultation process (R7)

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Man 01 **Project Brief and Design**	BREEAM AP	1	1	0	RIBA stage 2	BREEAM AP/ Project Manager	**BREEAM AP (concept design)** **(R8)** The project team, including the client, formally agree strategic performance targets (e.g., BREEAM or wider sustainability targets and requirements) early in the design process. **(R9)** Appoint a BREEAM AP during RIBA stage 2 to: a. Work with the project team, including the client, to consider the links between BREEAM issues and assist them in maximising the project's overall performance against BREEAM, from their appointment and throughout Concept Design b. Monitor progress against the performance targets agreed under requirement 8 throughout all stages after their appointment where decisions critically impact BREEAM performance c. Proactively identify risks and opportunities related to the achievement of the targets agreed under requirement 8 d. Provide feedback to the project team as appropriate, to support them in taking corrective actions and achieving their agreed performance targetse. Monitor and, where relevant, coordinate the generation of appropriate evidence by the project team.	• BREEAM pre-assessment + any additional sustainability targets and requirements • Sustainability statement • Meeting minutes or other communication from BREEAM AP demonstrating regular attendance to DTM (monthly) • Appointment doc of BREEAM AP
Man 01 **Project Brief and Design**	Sustainability Champion (Monitoring Process)	1	1	0	RIBA stage 3	BREEAM AP/ Project Manager	**BREEAM AP (developed design)** **(R10)** Requirements 8 and 9 are achieved. **(R11)** Appoint a BREEAM AP during RIBA stage 3 to a. Work with the project team, including the client, to consider the links between BREEAM issues and to assist them in maximising the project's overall performance against BREEAM throughout Developed Design b. Monitor progress against the performance targets agreed under requirement 8 throughout all stages where decisions critically impact the specification and tendering process and the BREEAM performance c. Proactively identify risks and opportunities related to the achievement of the targets agreed under requirement 8 d. Provide feedback to the project team as appropriate, to support them in taking corrective actions and achieving their agreed performance targets.e. Monitor and, where relevant, coordinate the generation of appropriate evidence by the project team.	**As above.**
Man 02 **Life Cycle Cost and Service Life Planning**	Elemental Life Cycle Cost (LCC)	2	0	0	RIBA stage 2	Architect/ LCC Consultant/ Project Manager	**Elemental Life Cycle Cost (LCC)** **(R1)** A competent person carries out an outline, entire asset LCC plan at Process Stage 2 (equivalent to Concept Design - RIBA Stage 2) together with any design options appraisals in line with 'Standardised method of life cycle costing for construction procurement' PD 156865: 2008. **(R2)** Elemental life cycle cost plan is carried out and provides: a. An indication of future replacement costs over a period of analysis as required by the client (e.g., 20, 30, 50 or 60 years).	• Copy of Elemental LCC • List of design changes as a result of the LCC

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
							b. Includes service life, maintenance and operation cost estimates. The study period should ideally be agreed by the client, in line with the design life expectancy of the building. However, where the life expectancy of the building is not yet formally agreed (due to being at very early design stages), the default design life of 60 years should be used for modelling purposes (in line with the UK default). **(R3)** Demonstrate how the LCC has been used to influence building and systems design/specification to minimise life cycle costs and maximise critical value.	
Man 02 Life Cycle Cost and Service Life Planning	Component Level LLC Option Appraisal	1	0	0	RIBA stage 4	Architect/ LCC Consultant/ Project Manager	**Component Level LCC option appraisal** **(R4)** A competent person develops a component level LCC options appraisal by the end of Process Stage 4 (equivalent to Technical Design – RIBA Stage 4) in line with PD 156865: 2008. The component level LCC includes (where present): a. Envelope, e.g., cladding, windows, and/or roofing b. Services, e.g., heat source cooling source, and/or controls c. Finishes, e.g., walls, floors and/or ceilings d. External spaces, e.g., alternative hard landscaping, boundary protection. The Component level LCC option appraisal should review all of the above component types (where present). However, you do not need to consider every single example cited under each component; only a selection of those most likely to draw valued comparisons. This is to ensure that a wide range of options are considered and help focus the analysis on components which would benefit the most from appraisal. **(R5)** Demonstrate how the component level LCC cycle has influenced the design and specification to minimise life cycle costs and maximise critical value.	• Copy of component LCC • List of design changes as a result of the LCC
Man 02 Life Cycle Cost and Service Life Planning	Capital Cost Reporting	1	1	0	RIBA stage 4	BREEAM Assessor/ Client	**Capital Cost Reporting** **(R6)** Report the capital cost for the building in pounds per square metre of gross internal floor area. **Capital Cost** The capital cost for the building includes the expenses related to the initial construction of the building: a. Construction, including preparatory works, materials, equipment and labour b. Site management c. Construction financing d. Insurance and taxes during construction e. Inspection and testing **Note: Costs related to land procurement, clearance, design, statutory approvals and post occupancy aftercare are not included.**	• Report detailing the predicted capital cost of the scheme as per the BREEAM requirements • Predicted capital costs via the BREEAM scoring and reporting tool

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Man 03 **Responsible Construction Practices**	Pre-Requisite **<u>Critical importance</u>**	prerequisite	prerequisite	-	RIBA stage 3	Contractor/ Project Manager	**Pre-Requisite** **(R1)** All timber and timber-based products used on the project is 'Legally harvested and traded timber' (see Relevant definitions). **Note: Full chain of custody must be demonstrated** **<u>Critical importance</u> - This is a pre-requisite to achieve <u>any</u> BREEAM rating**	• All relevant specifications that contain timber products to have the relevant timber requirements. (i.e. only use FSC or PEFC certified timber with full chain of custody) • If appointed at RIBA stage 4 - Environment Management Plan (EMP) from appointed principal contractors which include the requirements to only supply FSC or PEFC certified timber with full chain of custody and detail the procedure to follow during construction to ensure this happens. • Letter of commitment from the Principal contractor's project director to reiterate commitment. • If principal contractor not appointed by the end of RIBA stage 4 - timber requirements clearly highlighted as part of the Employer's requirements
Man 03 **Responsible Construction Practices**	Environmental Management	1	1	0	RIBA stage 4	Contractor/ Project Manager	**Environmental Management** **(R3)** Any party who at any stage manages the construction site (e.g. the principal contractor, the demolition contractor) operates an Environmental Management System (EMS) (i.e. ISO 14001. EMAS, or comply with BS 8555: 2016 and has reached stage 4) **(R4)** Provision of EMP (from PC and/or demolition contractor) that details how best practice pollution prevention policies and procedures/ PPG6 will be implemented on site	• Copy of EMS certificates from Principal contractor and demolition contractor if appointed by RIBA stage 4 alternatively copy of ER include the requirement (R3) • Copy of EMPs for principal contractors, demolition contractors

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Man 03 **Responsible Construction Practices**	BREEAM AP (site)	1	1	0	RIBA stage 5	BREEAM AP/ Client/ Project Manager	**BREEAM AP (site)** **(R5)** Performance targets (i.e., for BREEAM, energy, water, transport) for construction are formally agreed between the client and contractor **(R6)** Appoint BREEAM AP to: a. Work with the project team, including the client, to consider the links between BREEAM issues and assist them in achieving and if possible, going beyond the design intent, to maximise the project's performance against the agreed performance targets throughout the Construction, Handover and Close Out stages. b. Monitor construction progress against the performance targets agreed under requirement 5 above throughout all stages where decisions critically impact BREEAM performance. c. Proactively identify risks and opportunities related to the procurement and construction process and the achievement of the targets agreed under requirement 5 above. d. Provide feedback to the constructors and the project team as appropriate, to support them in taking corrective actions and achieving their agreed performance targets. e. Monitor and, where relevant, coordinate the generation of appropriate evidence by the project team and the provision to the assessor.	• Appointment of AP for construction • Copy of agreed targets during construction and inclusion in ER
Man 03 Responsible Construction Practices	Responsible construction management	2+1	2+1	0	RIBA stage 4	Contractor/ Project Manager	**Responsible construction management** **(R7)** Provide EMP that covers BREEAM responsible construction management key requirements in Table 4.1 of the BREEAM manual **(R8)** Provide EMP that covers BREEAM responsible construction management key requirements plus 6 additional requirements in Table 4.1 of the BREEAM manual **Exemplary Level Criteria** **(R9)** Provide EMP that covers all BREEAM responsible construction management requirements in Table 4.1 of the BREEAM manual	• Copy of EMP if contractor appointed by RIBA stage 4 • Template of environment site inspection that will be used during construction and frequency inspection will be undertaken • Copy of requirement within Contractor's ER's.
Man 03 Responsible Construction Practices	Monitoring of Construction Site Impacts - Utility Consumption	1	1	0	RIBA stage 5	BREEAM AP/ Contractor/ Project Manager/ Site Manager	**Monitoring of Construction Site Impacts** **(R10)** Assign responsibilities to record energy, water, transport data **(R11-18)** Set target, monitor and record data for energy and water consumption throughout the project **NB:** refer to simple building requirements if applicable.	• Environmental Management Plan (EMP) detailing target and commitment to monitor, record energy and water consumption • Copy of requirement within Contractor's ER's.

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Man 03 Responsible Construction Practices	Monitoring of construction site impacts - Transport of construction materials & waste	1	1	0	RIBA stage 5	BREEAM AP/ Contractor/ Project Manager/ Site Manager	**Monitoring of construction site impacts - Transport of construction materials & waste** **(R19)** Achieve R10 **(R20-21)** Set targets, monitor and record CO2e emissions associated with the transport of materials (i.e. major building elements as defined in Mat 01, groundworks, landscape) and waste **NB:** refer to simple building requirements if applicable.	• EMP detailing target and commitment to monitor, record CO2e emissions associated with material and waste transport • Copy of requirement within Contractor's ER's.
Man 04 Commissioning and Handover	Commissioning - testing schedule and responsibilities	1	1	0	RIBA stage 4	Contractor/ M&E Engineer/ Project Manager	**Commissioning - testing schedule and responsibilities** **(R1)** A schedule of commissioning including suitable timescale for commissioning/ re-commissioning of all complex/ non-complex building services and control systems and testing and inspecting building fabric. **(R2)** Commissioning activities carried out in accordance with current Building Regulations, BSRIA, CIBSE guidelines. **(R3)** Where a building management system (BMS) is specified:a. Carry out commissioning of air and water systems when all control devices are installed, wired and functionalb. Include physical measurements of room temperatures, off-coil temperatures and other key parameters, as appropriate, in commissioning resultsc. The BMS or controls installation should be running in auto with satisfactory internal conditions prior to handoverd. All BMS schematics and graphics (if BMS is present) are fully installed and functional to user interface prior to handovere. Fully train the occupier or facilities team in the operation of the system. **(R4) Appoint a team member to monitor and programme pre-commissioning, commissioning, testing activities on behalf of the client.** **(R5)** Contractor accounts for the commissioning within their budget and timeline.	• Appointment letter for commissioning manager. The letter addresses R1-R5. • M&E specification documents detailing commissioning requirements in line with relevant standards and regulations.
Man 04 Commissioning and Handover	Commissioning - design and preparation	1	1	0	RIBA stage 4	Commissioning Manager/ Project Manager	**Commissioning - design and preparation** **(R6)** Achieve R1-5 **(R7)** Appoint an appropriate team member (who are not involved in the installation works) responsible for: **a. undertaking design reviews and giving advice on suitability for ease of commissioning.** b. providing commission management input to construction programming and during installation stages. c. Management of commissioning performance testing and handover. Where there are simple building services, this role can be carried out by an appropriate project team member. **NB**: for complex building services and systems - a **specialist** commissioning manager (e.g., member of the Commissioning Specialists Association (CSA)	• Appointment letter for commissioning manager at RIBA stage 4. • Meeting minutes from commissioning manager showing input during design stage • Evidence the commissioning manager has the relevant qualification (e.g. CSA or equivalent)

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Man 04 Commissioning and Handover	Testing and inspecting building fabric	1	1	0	RIBA stage 5	Air Testing Consultant/ Client/ Contractor/ Project Manager/ Thermographic Survey Consultant	**Testing and Inspecting Building Fabric** **(R8)** Achieve requirements 1-5. **(R9)** Undertake air-tightness test and thermographic survey **(R10)** Rectify any issues flagged by thermographic survey	• Commitment letter from client to undertake thermographic survey and rectify any issues. • Inclusion of requirement within Contractor's ER's.
Man 04 Commissioning and Handover	Handover	1	1	0	RIBA stage 5	Contractor/ Project Manager	**Handover** **(R11)** Develop two Building User Guides (BUG): a. A non-technical for building occupiers b. A technical one for FM. A draft copy is circulated to future users (where occupants known) **(R12)** Prepare two training schedules: a. A non-technical training schedule for the building occupiers b. A technical training schedule for the premises facilities managers.	• Commitment letter from client to undertake two BUGs and corresponding training. • Inclusion of requirement within Contractor's ER's.
Man 05 Aftercare	Aftercare Support	N/A	N/A	N/A	RIBA stage 3	Principal Contractor	**Aftercare Support** **(R1)** Provide aftercare support: a. A meeting between the aftercare support team or individual and the building occupier or management team (prior to initial occupation, or as soon as possible thereafter) to: i. Introduce the aftercare support available, including the building user guide (where existing) and training schedule and their content. ii. Present key information on the building including the design intent and how to use the building to ensure it operates as efficiently and effectively as possible. b. On-site facilities management training including: i. a walkabout of the building and ii. familiarisation with the building systems, their controls and how to operate them in accordance with the design intent and operational demands. c. Provide initial aftercare support for a**t least the first month of building occupatio**n, e.g. weekly attendance on-site, to support building users and management (the level of frequency will depend on the complexity of the building and building operations). d. Provide longer term aftercare support for occupiers for **at least the first 12 month**s from occupation, e.g. a helpline, nominated individual or other appropriate system to support building users and management.	• Commitment letter from client to provide appropriate aftercare support • Inclusion of requirement within Contractor's ER's

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
							(R2) FM to collect and monitor energy and water consumption data for a minimum of 12 months, once the building is substantially occupied. This facilitates analysis of discrepancies between actual and predicted performance, with a view to adjusting systems and user behaviours accordingly.	
Man 05 **Aftercare**	Commissioning - Implementation	N/A	N/A	N/A	RIBA stage 6	Principal Contractor	**Commissioning - Implementation** **(R3) Undertake the following commissioning activities** over a minimum 12-month period, once the building becomes substantially occupied: **a.** Identify changes made by the owner or operator that might have caused impaired or improved performance **b.** Test all building services under full load conditions, i.e. heating equipment in mid-winter, cooling and ventilation equipment in mid-summer and under part load conditions (spring and autumn) **c.** Where applicable, carry out testing during periods of extreme (high or low) occupancy **d.** Interview building occupants (where they are affected by the complex services) to identify problems or concerns regarding the effectiveness of the systems **e.** Produce monthly reports comparing sub-metered energy performance to the predicted one (see Ene 01 Reduction of energy use and carbon emissions) **f.** Identify inefficiencies and areas in need of improvement **g.** Re-commission systems (following any work needed to serve revised loads), and incorporate any revisions in operating procedures into the operations and maintenance (O&M) manuals. **NB:** Refer to alternative requirements for simple buildings.	• Commitment letter from client to provide the following seasonal commissioning activities • Inclusion of requirement within Contractor's ER's
Man 05 **Aftercare**	Post occupancy evaluation (POE)	N/A	N/A	N/A	RIBA stage 6	Client/Project Manager	**Post occupancy evaluation (POE)** **(R4)** Commit to carry out a POE exercise one year after the building is substantially occupied. This gains comprehensive in-use performance feedback (see requirement 5.b.v) and identifies gaps between design intent and in-use performance. The aim is to highlight any improvements or interventions that need to be made and to inform operational processes. **(R5)** POE is undertaken by independent third party and include: a. A review of the design intent and construction process (review of design, procurement, construction and handover processes) b. Feedback from a wide range of building users including facilities management on the design and environmental conditions of the building covering: i. Internal environmental conditions (light, noise, temperature, air quality) ii. Control, operation and maintenance iii. Facilities and amenities iv. Access and layout v. Energy and water consumption (see requirement 2 and Methodology) vi. Other relevant issues, where appropriate (see Definitions). **(R6)** Third party provides a report with lessons learnt to the client and building occupiers. **(R7)** The client or building occupier commits funds to pay for the POE in advance.	• Commitment letter from client/building occupier to undertake POE • POE is allocated in the cost plan for the project

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Hea 01 **Visual Comfort**	Glare control	N/A	N/A	N/A	RIBA stage 3	Architect	**Glare Control** **(R1)** Identify areas at risk of glare using a glare control assessment. The glare control assessment also justifies any areas deemed not at risk of glare. **(R2)** A glare control strategy designs out potential glare in all relevant building areas where risk has been identified. This should be achieved through building form and layout or building design measures (i.e. overhangs, fins, blinds with transmittance value <10%, brise soleil) **(R3)** The glare control strategy does not increase energy consumption used for lighting. This is achieved by maximising daylight levels in all weather, cloudy or sunny and ensuring the use or location of shading does not conflict with the operation of lighting control systems. Relevant areas: For areas where lighting and glare control could be a problem for user e.g. offices, reception desks, areas designed to contain or use work stations, projector screens etc	• Copy of the glare strategy or technical memo covering areas deemed at risk and measures to minimise/avoid glare • For any binds specified provide the datasheet confirming their transmittance value.
Hea 01 **Visual Comfort**	Daylighting	2	0	0	RIBA stage 4	Architect/ Daylighting Consultant	**Daylighting (building type dependent)** **(R4)** The relevant building areas meet good practice daylight factor(s) and other requirement as outlined in Table - 5.1 and Table - 5.2. (e.g., 2-3% over at least 80%; uniformity at least 0.3; 80% of the room has a sky view; appropriate room depth) OR The relevant building areas meet good practice average and minimum point daylight illuminance criteria as outlined in Table - 5.3. (e.g., at least 300lux for 2000 hours over 80%; minimum daylight illuminance complied with etc...) Relevant areas: - sports halls - lab areas - kitchen and catering areas - general communal areas - small offices - meeting rooms - leisure areas - anywhere with close up work Note; can exclude SEN sensory spaces	• Report from specialist confirming the targeted daylight ratio
Hea 01 **Visual Comfort**	View Out	1	0	1	RIBA stage 4	Architect	**View Out** **(R5)** 95% of the relevant building floor area is within 7m of a wall with window and window/opening must be ≥ 20% of the surrounding wall area. Alternatively, where room depths are greater than 8m, compliance with table 1.0 BS8206 is demonstrated. Relevant areas: - there will be workstations or benches or desks for building users - close work will be undertaken or visual aids will be used	• Annotated drawings confirming room depth and window percentage of wall area.

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Hea 01 **Visual Comfort**	Internal and external lighting levels, zoning and control **Exemplary available**	1	1	0	RIBA stage 4	M&E Engineer	**Internal Lighting** **(R7)** Internal lighting in all relevant areas of the building is designed to provide an illuminance (lux) level appropriate to the tasks undertaken, accounting for building user concentration and comfort levels. This can be demonstrated through a lighting design strategy that provides illuminance levels in accordance with the SLL Code for Lighting 2012 and any other relevant industry standard i.e., Building Bulletin 90; lighting design for schools **(R8)** For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 7 sections 2.4, 2.20, and 6.10 to 6.20. This gives recommendations highlighting:Limits to the luminance of the luminaires to avoid screen reflections. (Manufacturers' data for the luminaires should be sought to confirm this.)For up lighting, the recommendations refer to the luminance of the lit ceiling rather than the luminaire; a design team calculation is usually required to demonstrate this. **External Lighting** **(R9)** External lighting = Lighting strategy written in accordance with BS 5489-1:2013 Lighting of roads and public amenity areas and BS EN 12464-2:2014 Light and lighting – Lighting of work. **(R10)** No external lighting → meet R8&R38. **Zoning and occupant control** **(R11)** Internal lighting is zoned to allow for occupant control in accordance with the criteria for relevant areas present within the building. **(R12)** Areas used for teaching, seminar or lecture purposes have lighting controls provided in accordance with CIBSE Lighting Guide 5. **(R13)** In addition meet the building type criteria in Table - 5.7 (where relevant). **(R14-15)** Check exemplary criteria	• Electrical Specification confirming design standards. • Light fittings schedule and accompanying datasheets confirming lux value • Drawing demonstrating zoning and control strategy
Hea 02 **Indoor Air Quality**	Indoor Air Quality (IAQ) plan	prerequisite	prerequisite	-	RIBA stage 4	M&E Engineer	**Indoor Air Quality (IAQ) plan** **(R1)** Air Quality Plan produced and implemented in accordance with the guidance in Guidance Note GN06: a. Removal of contaminant sources b. Dilution and control of contaminant sources i. Where present, consideration is given for the air quality requirements of specialist areas such as laboratories c. Procedures for pre-occupancy flush out d. Third party testing and analysis e. Maintaining good indoor air quality in-use	• Indoor Air Quality Plan (IAQP)

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Hea 02 Indoor Air Quality	Ventilation	1	1	0	RIBA stage 4	M&E Engineer	**Ventilation** **(R2)** The building has been designed to minimise the indoor concentration and recirculation of pollutants in the building as follows: a. Provide fresh air into the building in accordance with the criteria of the relevant standard for ventilation	• Drawings confirming calculations
Hea 02 Indoor Air Quality	Emissions from construction products **Exemplary available**	N/A	N/A	N/A	RIBA stage 3/4	Architect	**Emissions from construction products** **(R3) One credit** - Three out of the five product types meet the emission limits, testing requirements and any additional requirements listed in Table 5.11. Where wood-based products are not one of three selected product types, all wood-based products used for internal fixtures and fittings must be tested and classified as formaldehyde E1 class as a minimum. **(R4) Two credits** - All of the product types listed meet the emission limits, testing requirements and any additional requirements listed in Table 5.11. Note: Exemplary available	• Completed proforma confirming products specified and associated datasheets; • Relevant specifications outlining requirements for any products not specified at design stage.
Hea 02 Indoor Air Quality	Post-construction indoor air quality measurement	N/A	N/A	N/A	RIBA stage 6	Principal contractor	**Post-construction indoor air quality measurement** **(R5)** The formaldehyde concentration in indoor air is measured post construction (but pre-occupancy) and does not exceed 100µg/m³ averaged over 30 minutes (World Health Organisation guidelines for indoor air quality: Selected pollutants, 2010). **(R6)** The formaldehyde sampling and analysis is performed in accordance with ISO 16000-2 and ISO 16000-3. **(R7)** The total volatile organic compound (TVOC) concentration in indoor air is measured post construction (but pre-occupancy) and does not exceed 500µg/m³ over 8 hours. **(R8)** The TVOC sampling and analysis is performed in accordance with ISO 16000-5 and ISO 16000-6 or ISO 16017-1. **(R9)** Where levels are found to exceed these limits, the project team confirms the measures that have, or will be, undertaken in accordance with the IAQ plan, to reduce the TVOC and formaldehyde levels to within the above limits.	• Commitment letter from client to undertake post-construction air quality test • Copy of Contractor's ER's.
Hea 04 Thermal Comfort	Thermal Modelling	1	1	0	RIBA stage 4	BREEAM Assessor/ M&E Engineer	**Thermal Modelling** **(R1)** Thermal modelling has been carried out using software in accordance with CIBSE AM11. Building designed for over heating in accordance with CIBSE TM52. **(R2)** The software used to carry out the simulation at the detailed design stage provides full dynamic thermal analysis. For smaller and more basic building designs with less complex heating or cooling systems, an alternative less complex means of analysis may be appropriate (such methodologies must still be in accordance with CIBSE AM11). **(R3)** The modelling demonstrates that: 1) a. **For air conditioned buildings**, summer and winter operative temperature ranges in occupied spaces are in accordance with the criteria set out in CIBSE Guide A Environmental design, Table 1.5; or other appropriate industry standard (where this sets a higher or more appropriate requirement/level for the building type). b. **For naturally ventilated/free running buildings**:	• Thermal Modelling and full dynamic thermal analysis report

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
							i. Winter operative temperature ranges in occupied spaces are in accordance with the criteria set out in CIBSE Guide A Environmental design, Table 1.5; or other appropriate industry standard (where this sets a higher or more appropriate requirement/level for the building type). ii. The building is designed to limit the risk of overheating, in accordance with the adaptive comfort methodology outlined in CIBSE TM52: The limits of thermal comfort: avoiding overheating in European buildings. **(R4) 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.	
Hea 04 Thermal Comfort	Design for future thermal comfort	1	1	0	RIBA stage 4	BREEAM Assessor/ M&E Engineer	**Design for future thermal comfort** **(R5)** Requirements 1 to 4 are achieved. **(R6)** The thermal modelling demonstrates that the relevant requirements set out in requirement 3 are achieved for a projected climate change environment. **(R7)** Where R6 is not met, the project team demonstrates how the building has been adapted or designed to be easily adapted in future using passive design solutions in order to subsequently meet the requirements under requirement 6. **(R8) For air conditioned buildings**, the PMV and PPD indices based on the above modelling are reported via the BREEAM assessment scoring and reporting tool.	• Thermal Modelling and full dynamic thermal analysis report
Hea 04 Thermal Comfort	Thermal Zoning and Controls	N/A	N/A	N/A	RIBA stage 3	Building Services	**Thermal Zoning and Controls** **(R5)** Requirements 1 to 4 are achieved. **(R10)** The thermal modelling analysis (requirements1-4) has informed the temperature control strategy for the building and its users. **(R11)** The strategy for proposed heating or cooling systems 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. The degree of occupant control required for these zones. This is based on discussions with the end user (or alternatively building type or use specific design guidance, case studies, feedback) and 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 systems, 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 draughts)	• Thermal Modelling and full dynamic thermal analysis report

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
							c. 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 d. The need or otherwise for an accessible building user actuated manual override for any automatic systems.	
Hea 05 Acoustic Performance	Acoustic Performance	1	1	0	RIBA stage 3/4	Acoustic Engineer/ Architect	**Acoustic Performance - sound insulation, indoor ambient noise, room acoustic** **(R1)** Achieve sound insulation, indoor ambient noise and reverberation levels in compliance with relevant standards.	• Acoustic report • Design drawings, technical memos demonstrating the build-ups
Hea 06 Security	Security of site and building **Exemplary available**	1+1	1	0	RIBA stage 2	M&E Engineer/ Security Consultant	**Security of site and building** **(R1)** A Suitably Qualified Security Specialist (SQSS) conducts an evidence-based Security Needs Assessment (SNA) during or prior to Concept Design (RIBA Stage 2 or equivalent). The purpose of the SNA will be to identify attributes of the proposal, site and surroundings which may influence the approach to security for the development. **(R2)** The SQSS develops a set of security controls and recommendations for incorporation into the proposals. Those controls shall directly relate to the threats and assets identified in the preceding SNA. **(R3)** The recommendations shall be incorporated into proposals and implemented in the as-built development. Any deviation from those recommendations shall be justified and agreed with the SQSS. **NB:** This credit can also be satisfied by the architect and project manager meeting with the local police design out crime officer and incorporating their recommendations into the design.	• Report or correspondence with SQSS detailing recommendations of security measures to be incorporated • Drawings, technical memos showing that the recommendations have been incorporated
Hea 07 Safe and healthy surroundings	Safe access	1	0	0	RIBA stage 2	Landscape Architect/ M&E Engineer/ Project Manager	**Safe access** **(R1)** Where external site areas form part of the assessed development the following apply:Dedicated and safe cycle paths are provided from the site entrance to any cycle storage and connect to offsite cycle paths where applicable. **(R2)** Dedicated and safe footpaths are provided on and around the site providing suitable links for the following:The site entrance to the building entranceCar parks (where present) to the building entranceThe building to outdoor space, andConnecting to off-site paths where applicable. **(R3)** Pedestrian drop off areas are designed off of, or adjoining to, the access road and should provide direct access to other footpaths. **(R4)** Where vehicle delivery access and drop-off areas form part of the assessed development, the following apply:Delivery areas are not accessed through general parking areas and do not cross or share the following:Pedestrian and cyclist pathsOutside amenity areas accessible to building users and general public.	• Drawings showing cycle and pedestrian paths, drop off areas, delivery routes, etc. • Servicing Strategy Plan

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
							(R5) There is a dedicated parking or waiting area for goods vehicles with appropriate separation from the manoeuvring area and staff and visitor car parking. **(R6)** Parking and turning areas are designed for simple manoeuvring according to the type of delivery vehicle likely to access the site, thus avoiding the need for repeated shunting.	
	Outside space	1	1	0	RIBA stage 4	Client/ Landscape Architect	**Outside space** **(R7)** There is an outside space providing building users with an external amenity area.	• Drawings showing external spaces and amenities • Calculation demonstrating space available based on building occupancy
Ene 01 Reduction of Energy Use and Carbon Emissions	Energy Performance **Exemplary available**	9+3	4	0	RIBA stage 4	BREEAM Assessor/ Energy Consultant	**Energy Performance** **(R1)** Calculate an Energy Performance Ratio for New Constructions (EPRNC). Compare the EPRNC achieved with the benchmarks in Table - 25 and award the corresponding number of BREEAM credits. Mandatory requirement for 6 credits to achieve an Outstanding rating **Prediction of operational energy consumption** **(R2)** Pre requisite - prelim workshop carried out with relevant members of the design team focusing on operational energy performance. **(R3)** Undertake energy modelling during design and post construction stages to generate predicted operational energy consumption figures. **(R4)** Report predicted energy consumption targets by end use, design assumptions and input data. **(R5)** Carry out risk assessment to highlight any significant technical, design and process risks that should be monitored and managed throughout the construction and commissioning process.	• BRUKL output • Building services report • Energy statement

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Ene 01 Reduction of Energy Use and Carbon Emissions	Prediction of operational energy consumption **Exemplary available**	4+2	4	0	RIBA Stage 4	Client/ Energy Consultant/ M&E Engineer/ Project Manager	**Prediction of operational energy consumption** **(R2)** Pre requisite - prelim workshop carried out with relevant members of the design team focusing on operational energy performance. **(R3)** Undertake energy modelling during design and post construction stages to generate predicted operational energy consumption figures. **(R4)** Report predicted energy consumption targets by end use, design assumptions and input data. **(R5)** Carry out risk assessment to highlight any significant technical, design and process risks that should be monitored and managed throughout the construction and commissioning process.	• Preparation of TM54 like thermal modelling covering all different scenarios listed in the BREEAM manual
Ene 02 **Energy Monitoring**	Sub-metering of end use categories	1	1	0	RIBA stage 4	M&E Engineer	**Sub-metering of end use categories** **(R1)** Install energy metering systems so that at least 90% of the estimated annual energy consumption of each fuel is assigned to the end-use categories. **(R2)** Meter the energy consumption in buildings according to the total useful floor area: a. If the area is greater than 1,000m², by end-use category with an appropriate energy monitoring and management system b. If the area is less than 1,000m², use either: i. an energy monitoring and management system or ii. separate accessible energy sub-meters with pulsed or other open protocol communication outputs, for future connection to an energy monitoring and management system (see Definitions). **(R3)** Building users can identify the energy consuming end uses, for example through labelling or data outputs. Includes:- Space heating- DWH- Humidification- Cooling- Ventilation- Pumps- Lighting- Small power- Renewables- Controls- Other major energy consuming systems/plant	• Schematics showing metering of space heating, cooling, ventilation, lighting, small power etc... • Calculations demonstrating that at least 90% of estimated annual energy consumption of each fuel is assigned to end use categories. • Specification outlining BMS requirements.

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Ene 02 **Energy Monitoring**	Sub-metering of high energy load and tenancy areas	1	1	0	RIBA stage 4	M&E Engineer	**Sub-metering of high energy load and tenancy areas** **(R4)** Monitor a significant majority of the energy supply with: a. An accessible energy monitoring and management system for: i. tenanted areas or ii. relevant function areas or departments in single occupancy buildings. OR b. Separate accessible energy sub-meters with pulsed or other open protocol communication outputs for future connection to an energy monitoring and management system for: i. tenanted areas or ii. relevant function areas or departments in single occupancy buildings. **(R5)** Sub-meter per floor plate in large single occupancy or single tenancy buildings with one homogeneous function, for example hotel bedrooms, offices. Includes: (where applicable)- Offices areas- Catering- Conference suites- Swimming pools- Hotel bedrooms per floor, core or floor plate	• Schematics showing sub-metering of space heating, cooling, ventilation, lighting, small power per tenancy areas or floorplate depending on building type etc...
Ene 03 **External Lighting**	External Lighting	1	1	0	RIBA stage 4	M&E Engineer	**External Lighting** **(R1)** No external lighting (which includes lighting on the building, at entrances and signs). (--> credit awarded by default) OR **(R2)** External light fittings within the construction zone with: a. Average initial luminous efficacy of no less than 70 luminaire lumens per circuit Watt b. Automatic control to prevent operation during daylight hours c. Presence detection in areas of intermittent pedestrian traffic	• Product datasheet confirming that the product specified achieves 70 luminaire lumens per circuit Watt • Spec confirming control (e.g. daylight, movement etc..) installed for external lighting
Ene 04 **Low Carbon Design**	Passive design analysis	1	1	0	RIBA stage 2	Architect/ BREEAM Assessor/ Energy Consultant/ M&E Engineer	**Passive design analysis (PDA)** **(R1)** Achieve Thermal modelling credit under Hea 04. **(R2)** Identify passive measures during RIBA Stage 2. **(R3)** Implement passive design measures. **(R4)** Quantify the reduced total energy demand and carbon dioxide (CO_2) emissions resulting from the passive design measures.	• Passive design analysis (PDA) • BRUKL with passive design measures ONLY - the baseline must use notional values • Thermal modelling • Evidence that a suitably qualified energy specialist has quantified the CO2e reduction • Summarising results / report

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Ene 04 Low Carbon Design	Free cooling	1	0	0	RIBA stage 2	Building Services	**Free cooling** **(R5)** PDA credit achieved. **(R6)** Undertake free cooling analysis **(R7)** Identify opportunities for the implementation of free cooling solutions. **(R8)** The building is naturally ventilated or uses any combination of the free cooling strategies listed in Free cooling analysis.	• PDA with free cooling analysis • Evidence for suitably qualified energy specialist • Dynamic simulation model demonstrating that the cooling demand can be met by free cooling
Ene 04 Low Carbon Design	Low and zero carbon technologies	1	1	0	RIBA stage 2	Energy Consultant/ M&E Engineer	**Low and zero carbon technologies** **(R9)** An energy specialist (see Definitions) completes a feasibility study (see Low and zero carbon feasibility study) by the end of the Concept Design. **(R10)** Establish the most appropriate recognised local (on site or near site) low or zero carbon (LZC) energy sources for the building or development (see Scope of LZC systems and how they are assessed), based on the feasibility study. **(R11)** Specify local LZC technologies for the building or development in line with the feasibility study recommendations. **(R12)** Quantify the reduced regulated carbon dioxide (CO_2) emissions resulting from the feasibility study.	• LZC analysis / report • Evidence for suitably qualified energy specialist • BRUKL report
Ene 05 **Energy Efficient Cold Storage**	Energy efficient cold storage	N/A	N/A	N/A	RIBA stage 3	Building Services	**Refrigeration energy consumption** **(R1)** Design, install and commission the refrigeration system: a. In accordance with the Code of Conduct for carbon reduction in the refrigeration retail sector and BS EN 378-2:2016 b. Using robust and tested refrigeration systems or components included on the Enhanced Capital Allowance (ECA) Energy Technology Product List (ETPL) or an equivalent list (see Components on the ECA Energy Technology Product List for a list of components) **(R2)** Commission the refrigeration plant in compliance with the commissioning requirements in BREEAM issue Man 04 Commissioning and handover. **Indirect greenhouse gas emissions** **(R3)** Achieve requirements 1 and 2. **(R4)** Demonstrate a saving in indirect greenhouse gas emissions (CO_2 eq.) from the installed refrigeration system over the course of its operational life.	

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Ene 06 **Energy Efficient Transportation Systems**	Energy Consumption	N/A	N/A	N/A	RIBA stage 4	Lift Consultant/ Project Manager	**Energy Consumption** **(R1)** For specified lifts, escalators or moving walks (transportation types): 2) a. Analyse the transportation demand and usage patterns for the building to determine the optimum number and size. b. Calculate in accordance with BS EN ISO 25745 Part 2 and/or Part 3: i. At least two types of system (for each transportation type required) 3) 4) OR 5) ii. An arrangement of systems (e.g., for lifts, hydraulic, traction, machine room-less lift (MRL) 6) 7) OR iii. A system strategy which is 'fit for purpose'. c. Consider the use of regenerative drives (if save energy) d. Specify the transportation system with the lowest energy consumption.	• Transportation demand analysis • Energy Consumption analysis • Technical datasheet • Specification
Ene 06 **Energy Efficient Transportation**	Energy Efficient Features	N/A	N/A	N/A	RIBA stage 4	Project Manager	**Energy Efficient Features** **(R2)** Achieve R1 above **(R3) Lifts -** Specify the following: a. standby condition for off-peak periods. b. car lighting > 70 lumens/circuit Watt. c. drive controller capable of variable speed, variable-voltage, and variable-frequency (VVVF) control of the drive motor. **(R4)** Specify regenerative drives if save energy **(R5) Escalators and/or moving walks -** Specify **one** of the following: a. A load-sensing device that synchronises motor output to passenger demand through a variable speed drive; OR b. A passenger-sensing device for automated operation (auto walk), so the escalator operates in auto start mode when there is no passenger demand.	• Technical datasheet • Specification

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Ene 07 **Energy Efficient Laboratory Systems**	Energy Efficient Laboratory Systems	N/A	N/A	N/A	RIBA stage 2/3	Building Services	**Design Specification** **(R1)** Engage with the client during the preparation of the initial project brief to determine occupant requirements and define laboratory performance criteria. Performance criteria will include, but not be limited to: a. Description of purpose b. Occupant or process activities c. Containment requirements and standards d. Interaction between systems e. Flexibility and adaptability of laboratory facilities f. Any other specific requirements (for example requirements relevant to ventilation, heating or cooling). **(R2)** Size the services system equipment (including ventilation supply and extract) correctly **(R3)** Demonstrate the minimised energy demand of the laboratory facilities resulting from the achievement of the defined design performance criteria. **(R4)** Laboratory containment devices and containment areas (criteria only applicable to buildings containing these facilities). For ducted fume cupboard specified: a. Demonstrate that the average design air flow rate is no greater than 0.16m³/s per linear metre (internal width) of fume cupboard workspace b. Measure the volume flow rate in the exhaust duct (at the boundary of the laboratory) to take account of reductions in (inward) volume flow rate from fume cupboard leakage c. Demonstrate that a reduction in air flow does not compromise the defined performance criteria and does not increase the health and safety risk to future building occupants. **Best practice energy efficient measures** **(R5)** If the laboratory area accounts for at least 10% of the total building floor area: Achieve requirements 1 to 4 (or requirements 1 to 3 where there are no ducted fume cupboards). **(R6)** Design, specify and install laboratory plant and systems to promote energy efficiency. Demonstrate compliance with items in Table 6.4 a. Up to 2 credits: laboratory areas account for at least 10% (but less than 25%) of the total building floor area; OR b. Up to 4 credits: laboratory areas account for 25% or more of the total building floor area. **(R7)** Demonstrate that the energy efficient measures specified do not compromise the defined performance criteria, and do not increase the health and safety risk to future building occupants.	

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
							(R8) Demonstrate that the energy efficient measures specified do not compromise the defined performance criteria, and do not increase the health and safety risk to future building occupants.	
Ene 08 Energy Efficient Equipment	Energy efficient equipment	N/A	N/A	N/A	RIBA stage 3	Building Services	**Energy efficient equipment** **(R1)** Identify the building's unregulated energy consuming loads. Estimate their contribution to the total annual unregulated energy consumption of the building, assuming a typical or standard specification **(R2)** Identify the systems or processes that use a significant proportion of the total annual unregulated energy consumption of the building. **(R3)** Demonstrate a meaningful reduction in the total annual unregulated energy consumption of the building. Table 6.5 lists some examples of significant contributors to unregulated energy consumption. If none of the examples listed in the table will be specified in the assessed building, the design team should justify how a meaningful reduction will be achieved for these contributors. **N.B: a method should be used to estimate the actual energy use based on expected equipment loads and hours of operation. This can be hand calculations, benchmark data or by the methods in CIBSE TM54 to show a meaningful reduction in unregulated energy demand.**	• Calculation/ estimate of systems/process that are major contributors to unregulated energy load. • Specification demonstrating compliance with requirements of table 6.5 • Design note providing justification of a meaningful reduction in energy use for major contributors not in table 6.5
Tra 01 Transport assessment and travel plan	Travel plan	2	2	0	RIBA stage 2	Client/ Landscape Architect/ Transport Consultant	**Travel plan** **(R1)** Develop a travel plan based on a site-specific travel assessment or statement during feasibility stage **(R2)** The site-specific travel assessment or statement covers as a minimum: a. Existing travel patterns and opinions of existing building or site users towards cycling and walking identifying constraints and opportunities, if relevant b. Travel patterns and transport impact of future building users c. Current local environment for walkers and cyclists (accounting for visitors who may be accompanied by young children) d. Reporting of the number and type of existing accessible amenities, see Table 7.1 , within 500m of the site e. Disabled access (accounting for varying levels of disability and visual impairment) f. Calculation of the existing public transport Accessibility Index (AI), see Methodology g. Current facilities for cyclists. **(R3)** The travel plan includes proposals to increase or improve sustainable modes of transport and movement of people and goods during the building's operation and use **(R4)** If the occupier is known, involve them in the development of the travel plan. **(R5)** Demonstrate that the travel plan will be implemented post construction and be supported by the building's management in operation.	• Site specific transport assessment • Travel plan/ draft Travel Plan • Drawings showing travel plan proposals

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Tra 02 Sustainable transport measures	Sustainable transport measures	10	6	4	RIBA stage 3/4	Architect/ BREEAM Assessor/ Client/ Landscape Architect/ M&E Engineer/ Project Manager/ Transport Consultant	**Sustainable transport measures** **(R1)** Achieve Tra 01 **(R2)** Identify the sustainable transport measures, see Table 7.4. **(R3)** Award credits according to the Accessible Index (AI) of the project, and the total number of points achieved for the options implemented, see Table 7.3.	• Evidence to demonstrate the measures targeted (at least 6 measures out of 11 shown in Table 7.4) This could include: • Drawings showing cycle parking • Drawings showing appropriate changing facilities, lockers, drying space including associated lighting information for cycle storage areas. • Annotated maps demonstrating distance to local amenities • Specification for travel information display screens within reception areas.
Wat 01 **Water Consumption**	Water consumption **Exemplary available**	5+1	3	0	RIBA stage 4	Architect/ BREEAM Assessor/ M&E Engineer	**Water Consumption** **(R1)** Use the BREEAM Wat 01 calculator to assess the efficiency of the domestic water-consuming components. **(R2)** The water consumption (L/person/day) for the assessed building is compared against a baseline performance and BREEAM credits awarded based upon Table - 35. 1 credit - 12.5% improvement over baseline performance- litres/person/day 2 Credits - 25% improvement over baseline performance- litres/person/day **3 credits - 40% improvement over baseline performance- litres/person/day** 4 credits - 50% improvement over baseline performance- litres/person/day 5 credits - 55% improvement over baseline performance- litres/person/day Exemplary - 65% improvement over baseline performance- litres/person/day **(R3**) If a greywater or rainwater system (see Definitions) is specified, use its yield in L/person/day to offset potable water demand from components. **(R4)** If a greywater or rainwater system is specified and installed: **a.** Greywater systems in compliance with BS 8525-1:2010 Greywater Systems - Part 1 Code of Practice **b.** Rainwater systems in compliance with BS 8515:2009+A1:2013 Rainwater Harvesting Systems - Code of practice. **8)** Achieve Wat 02 requirement 6, if you intend to pursue a post occupancy stage certification.	• Wat 01 calculator • Sanitaryware Specification schedule • Product datasheet confirming flowrates

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Wat 02 Water Monitoring	Prerequisite (good to outstanding)	prerequisite	prerequisite	-	RIBA stage 3	Building Services	**Prerequisite** **(R0)** 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.	• Drawing showing location of water meter
Wat 02 Water Monitoring	Water Monitoring	1	1	0	RIBA stage 4	M&E Engineer	**Water Monitoring** **(R1)** Meet R0 **(R2)** For water-consuming plant or building areas consuming 10% or more of the building's total water demand: a. Fit easily accessible sub-meters, OR b. Install water monitoring equipment integral to the plant or area. **(R3)** For each meter (main and sub): a. Install a pulsed or other open protocol communication output, AND b. Connect it to an appropriate utility monitoring and management system, e.g., a building management system (BMS), for the monitoring of water consumption. If there is no BMS system in operation at Post-Construction stage, award credits provided that the system used enables connection when the BMS becomes operational. **(R4)** In buildings with swimming pools, or large water tanks and aquariums, fit separate sub-meters on the water supply of the above and any associated changing facilities (toilets, showers etc.) irrespective of their water consumption levels. **(R5)** In buildings containing laboratories, fit a separate water meter on the water supply to any process or cooling loop for 'plumbed-in' laboratory process equipment, irrespective of their water consumption levels. **Additionally, for those pursuing a post-occupancy stage certification:** **(R6)** The water monitoring strategy used enables the identification of all water consumption for sanitary uses as assessed under Wat 01 (L/person/day) if a post occupancy stage certification is sought.	• Schematics showing submetering • Specification and corresponding product datasheet of the product • Specification highlighting connection to BMS or ability to be connected

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Wat 03 **Leak Detection**	Leak Detection System	1	1	0	RIBA stage 4	M&E Engineer	**Leak Detection System** **(R1)** Install a leak detection system capable of detecting a major water leak:On the utilities water supply within the buildings, to detect any major leaks within the buildingsANDBetween the buildings and the utilities water supply, to detect any major leaks between the utilities supply and the buildings under assessment. **(R2)** The leak detection system is: a. A permanent automated water leak detection system that alerts the building occupants to the leak OR an inbuilt automated diagnostic procedure for detecting leaks b. Activated when the flow of water passing through the water meter or data logger is at a flow rate above a pre-set maximum for a pre-set period of time. This usually involves installing a system which detects higher than normal flow rates at meters or sub-meters. It does not necessarily require a system that directly detects water leakage along part or the whole length of the water supply system c. Able to identify different flow and therefore leakage rates, e.g. continuous, high or low level, over set time periods. Although high and low level leakage rates are not specified, the leak detection equipment installed must have the flexibility to distinguish between different flow rates to enable it to be programmed to suit the building type and owner's or occupier's usage patterns. d. Programmable to suit the owner's or occupier's water consumption criteriae. Where applicable, designed to avoid false alarms caused by normal operation of large water consuming plant such as chillers.Where there is physically no space for a leak detection system between the utilities water meter and the building, alternative solutions can be used, provided that a major leak can still be detected.	• Specification with leak detection system which meet the criteria in R2 • Product datasheet for the leak detection system
Wat 03 **Leak Detection**	Flow Control Devices	1	1	0	RIBA stage 4	M&E Engineer	**Flow Control Devices** **(R3)** Install flow control devices that regulate the supply of water to each WC area or facility according to demand, in order to minimise undetected wastage and leaks from sanitary fittings and supply pipework.	• Domestic water layouts/schematics with flow controls devices/PIR 9)
Wat 04 **Water Efficient Equipment**	Water Efficient Equipment	1	1	0	RIBA stage 4	Landscape Architect/ M&E Engineer	**Water Efficient Equipment** **(R1)** Identify all water demands from uses other than those listed under Wat 01 Table 8.1 that could be realistically mitigated or reduced. Where there is no water demand from uses other than domestic scale, sanitary use components in the building, this issue is not applicable. **(R2)** Identify systems or processes to reduce the relevant water demand (requirement 1), and establish, through either good practice design or specification, a demonstrable reduction in the total water demand of the building.	• Drawings and specifications for irrigation systems • Evidence to support reduction of water demand

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Mat 01 - Environmental impacts from construction products - Building life cycle assessment (LCA)	Superstructure **Exemplary available**	6+3	6	0	RIBA stage 2	Architect/ BREEAM Assessor/ Life Cycle Assessment (LCA) Consultant	**Life Cycle Impacts** **(R1) Comparison with BREEAM benchmark - RIBA Stage 2** - Carry out LCA of superstructure (using simplified LCA calculator or IMPACT compliant) Submit **before planning submission** (that includes external materials or product spec) Mat 01/02 result submission to BRE **(R2) Comparison with BREEAM benchmark - RIBA Stage 4 -** Carry out LCA of superstructure (using simplified LCA calculator or IMPACT compliant) Submit **before end of RIBA Stage 4** Mat 01/02 results to BRE **Option appraisal - RIBA stage 2** **(R3) -** meet R1 **(R4)** Undertake 2 to 4 significantly different superstructure design options and integrate the LCA option in the wider design decision-making process. Detail Reasons options are progressed beyond Concept design and which ones are not. **Option appraisal - RIBA stage 4** **(R5) -** meet R2 **(R6)** Undertake 2 to 3 significantly different superstructure design options and integrate the LCA option in the wider design decision-making process.	• Specification • Mat 01/02 submission • Allocation to undertake the material assessment • Cost plan
Mat 01 - Environmental impacts from construction products - Building life cycle assessment (LCA)	Substructure	1	1	0	RIBA stage 2	LCA Consultant	**Substructure and hard landscaping options appraisal during Concept Design** **(R6) – R3 & 4 above are achieved (R7)** Carry out building LCA options appraisal of a combined total of at least six significantly different substructure or hard landscaping design options (at least two shall be substructure and at least two shall be hard landscaping)	• Specification • Mat 01/02 submission • Allocation to undertake the material assessment
Mat 02 Environmental impacts from construction products - Environmental Product Declarations (EPD)	Specification of products with a recognised environmental product declaration (EPD)	1	1	0	RIBA stage 4	Architect/ BREEAM Assessor	**Specification of products with a recognised environmental product declaration (EPD)** **(R1)** Specify construction products with EPD that achieve a total EPD points score of at least 20, according to the methodology. **(R2)** Enter the details of each EPD into the Mat 01/02 Results Submission Tool, including the material category classification. The Mat 01/02 Results Submission Tool will verify the EPD points score and credit award. Material categories e.g., timber/concrete and cementitious/ metal/glass/paint/plastic etc.	• Specification • Mat 01/02 submission • Completed proforma outling any products specified during design stage and where applicable a copy of their associated EPD

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Mat 03 - Responsible sourcing of construction products	Timber (pre-requisite) **Critical importance**	prerequisite	prerequisite	-	RIBA stage 3	Architect Principle Contractor	**Pre-requisite** **(R1)** All timber and timber based products used on the project is 'Legally harvested and traded timber' (see Relevant definitions). **Must demonstrate full chain of custody** **Critical importance - This is a pre-requisite to achieve any BREEAM rating**	• All relevant specifications that contain timber products to have the relevant timber requirements. (i.e. only use FSC or PEFC certified timber with full chain of custody) • For any products containing timber that are specified at design stage provide evidence that this is FSC.
Mat 03 - Responsible sourcing of construction products	Enabling sustainable procurement	1	1	0	RIBA stage 1	Project Manager	**Sustainable Procurement Plan** **(R2)** A sustainable procurement plan must be used by the design team to guide specification towards sustainable construction products. The plan must: a. Be in place before Concept Design. b. Include sustainability aims, objectives and strategic targets to guide procurement activities. Note: targets do not need to be achieved for the credit to be awarded but justification must be provided for targets that are not achieved. c. Include a requirement for assessing the potential to procure construction products locally. There must be a policy to procure construction products locally where possible. d. Include details of procedures in place to check and verify the effective implementation of the sustainable procurement plan. In addition, if the plan is applied to several sites or adopted at an organisational level it must: e. Identify the risks and opportunities of procurement against a broad range of social, environmental and economic issues following the process set out in BS ISO20400:2017(170).	• Procurement plan in place before RIBA stage 2
Mat 03 - Responsible sourcing of construction products	Measuring responsible sourcing **Exemplary available**	3+1	2	0	RIBA stage 34	Architect/ BREEAM Assessor/ Project Manager	**Responsible Sourcing of Materials** **(R3)** Fill out Mat 03 calculator	• Materials Schedule • Materials Specification • Design Drawings • For any products specified at design stage provide associated responsible Sourcing Certificates (e.g. BES6001, ISO14001, PEFC, FSC, CARES etc.)
Mat 05 Designing for Durability and Resilience	Protecting vulnerable parts of the building from damage & protecting exposed parts of the building from material degradation	1	1	0	RIBA stage 4	Architect/ Landscape Architect	**Protecting Vulnerable Parts of the Building from Damage.** **(R1)** Protection measures are incorporated into the building's design and construction to reduce damage to the building's fabric or materials in case of accidental or malicious damage occurring. These measures must provide protection against: a. Negative impacts of high user numbers in relevant areas of the building (e.g. corridors, lifts, stairs, doors etc.).	• Drawings • Specification • Design notes

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
							b. Damage from any vehicle or trolley movements within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas. c. External building fabric damage by a vehicle. Protection where parking or manoeuvring areas are within 1 metre of the building façade and where delivery areas or routes are within 2 metres of the façade, i.e. specifying bollards or protection rails. d. Potential malicious damage to building materials and finishes, in public and common areas where appropriate. **Protecting exposed parts of the building from material degradation** **(R2)** Key exposed building elements have been designed and specified to limit long and short term degradation due to environmental factors. This can be demonstrated through one of the following: a. The element or product achieving an appropriate quality or durability standard or design guide. See Table 9.14. If none are available, use BS 7543:2015(172) as the default appropriate standard OR b. A detailed assessment of the element's resilience when exposed to the applicable material degradation and environmental factors. 10) **(R3)** Include convenient access to the roof and façade for cost effective cleaning, replacement and repair in the building's design. **(R4)** Design the roof and façade to prevent water damage, ingress and detrimental ponding. See Table 9.14 for an example list of relevant industry durability and quality standards.	
Mat 06 **Material Efficiency**	Material Efficiency	1	0	0	RIBA stage 1	Architect/ Client/ Project Manager	**Material Efficiency** **(R1)** At the Preparation and Brief and Concept Design stages, set targets and report on opportunities and methods to optimise the use of materials. These must be done for each of the following stages, see Table 9.15, Preparation and Brief, Concept Design, Developed Design, Technical Design, Construction **(R2)** Develop and record the implementation of material efficiency, see Table 9.15, during Developed Design,Technical Design and Construction. **(R3)** Report the targets and actual material efficiencies achieved. Examples include:- Designing to standard material dimensions to reduce cut offs and waste on site- Using materials that can be recycled at the end of their service life- Making use of recycled or reclaimed materials- Designing for deconstruction and material reuse- Using pre fabricated elements where possible to reduce material waste- Using lightweight structural design elements- Optimising the foundation design for embodied environmental impact- Consider using an exposed thermal mass design strategy to reduce finishes	• Material efficiency technical memo/report (must include quantities of materials saved).

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Wst 01 Construction Waste Management	Pre-demolition audit	1	1	0	RIBA Stage 2	Project Manager	**Pre-Demolition Audit** **(R1)** Complete a pre-demolition audit of any existing buildings, structures or hard surfaces being considered for demolition. This must be used to determine whether refurbishment or reuse is feasible and, in the case of demolition, to maximise the recovery of material for subsequent high grade or value applications. The audit must cover the content of Pre-demolition audit scope and: a. Be carried out at Concept Design stage (RIBA Stage 2) by a competent person (see Definitions) prior to strip-out or demolition works b. Guide the design, consider materials for reuse and set targets for waste management c. Engage all contractors in the process of maximising high grade reuse and recycling opportunities d. Compare actual waste arisings and waste management routes used with those forecast and investigate significant deviations from planned targets 11) **(R2)** Make reference to the audit in the resource management plan (RMP)	• Pre-demolition audit covering points a-d by a contractor appointed before end of RIBA stage 4 • Requirement for inclusion of pre-demolition audit in RMP within Contractor's ER's
	Construction Resource Efficiency **Exemplary available**	3+1	2	0	RIBA stage 4	Contractor/ Project Manager	**Construction Resource Efficiency** **(R3)** Prepare a compliant Resource Management Plan (RMP) covering: a. Non-hazardous waste materials (from on-site construction and dedicated off-site manufacture or fabrication, see Definitions), including demolition and excavation waste. b. Accurate data records on waste arisings and waste management routes. 12) **(R4)** Meet the following wastage rates: 1 credit = <11.1 tonnes or <13.3m3 (actual volume, not bulk volume) **2 credits = <6.5 tonnes or <7.5m3** 3 credits = <3.2 tonnes or <1.6m3	• Contractor's ER's requiring the provision of: • RMP • Waste records
	Diversion of resources from Landfill **Exemplary available**	1	1	0	RIBA stage 4	Contractor/ Project Manager	**Diversion of Resources from Landfill** **(R5)** Meet the following diversion from landfill rates: Non-Demo - 70% Volume / 80% Tonnage Demolition - 80% Volume / 90% Tonnage Excavation - n/a **(R6) Sort waste materials into separate key waste groups (e.g., concrete, insulation, timber, packaging, inert, metals, gypsum, plastics, floor coverings etc...)**	• Contractor's ER's requiring the provision of: • RMP • Waste records

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Wst 02 **Recycled Aggregates**	Recycled aggregates **Exemplary available**	1+1	0	0	RIBA stage 4	Principal Contractor Structural Engineer	**Recycled Aggregates** **(R1)** The percentage of high grade aggregate that is recycled or secondary aggregate, specified in each application (present) must meet the following minimum % levels (by weight or volume) to contribute to the total amount of recycled or secondary aggregate, as specified in Table 54. **(R2)** The total amount of recycled or secondary aggregate specified, and meeting requirement 1, is greater than 25% (by weight or volume) of the total high grade aggregate specified for the development. Where the minimum level in requirement 1 is not met for an application, all the aggregate in that application must be considered as primary aggregate when calculating the total high grade aggregate specified. **(R3)** The recycled and/or secondary aggregates are EITHER: a. Construction, demolition and excavation waste obtained on-site or off-site 13) 14) OR 15) b. Secondary aggregates obtained from a non-construction post-consumer industrial by-product source (see Relevant definitions section).	• Recycled content calculator • Specification • Letter of commitment from Contractor
Wst 03 Operational Waste	Operational waste	1	1	0	RIBA stage 4	Architect/ Client	**Operational waste** **(R1)** Provide a dedicated space for the segregation and storage of operational recyclable waste generated. The space is: 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 or weekly operational activities and occupancy rates. **(R2)** For consistent and large amounts of operational waste generated, provide: a. Static waste compactors or balers; situated in a service area or dedicated waste management space b. Vessels for composting suitable organic waste OR adequate spaces for storing segregated food waste and compostable organic material for collection and delivery to an alternative composting facility c. A water outlet provided adjacent to or within the facility for cleaning and hygiene purposes where organic waste is to be stored or composted on site.	• Calculations demonstrating anticipated waste volumes • Drawings demonstrating adequate space based on above calculations and adequately accessible • Confirmation from Client that the space will be clearly labelled. 16)

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Wst 04 Speculative finishes (Offices only)	Speculative finishes	1	0	0	RIBA stage 3	Architect / Client	**Speculative finishes** • **(R1)** For tenanted areas, where the future occupant is not known and carpets or other floor or ceiling finishes are installed, these must be limited to a show area only. • • OR • • **(R1)** Only install floor and ceiling finishes selected by the known occupant of a development. Alternatively, where only ceiling finishes and no carpets are installed, the building owner confirms that the first tenants will not be permitted to make substantial alterations to the ceiling finishes.	• Letter of compliance • Agreement from Client around speculative finishes
Wst 05 Adaptation to Climate Change	Adaptation to Climate Change - structural and fabric resilience **Exemplary available**	1+1	1	0	RIBA stage 2	Architect/ BREEAM Assessor	**Resilience of structure, fabric, building services and renewables installation** **(R1)** A systematic risk assessment to identify the impact of expected extreme weather conditions arising from climate change on the building over its projected life cycle. The assessment covers the installation of building services and renewable systems, as well as structural and fabric resilience aspects and includes: a. Hazard identification b. Hazard assessment c. Risk estimation d. Risk evaluation e. Risk management **(R2)** Develop recommendations or solutions based on the climate change adaptation strategy appraisal, **during or prior to Concept Design**, that aim to mitigate the identified impact. **(R3)** Provide an update during Technical Design demonstrating how the recommendations or solutions proposed at Concept Design have been implemented where practical and cost effective. Omissions have been justified in writing by the assessor.	• Climate Change Adaptation Strategy Appraisal for Structural and fabric resilience • Systematic (Structural and fabric resilience specific) risk assessment 17) Note: requires input from whole design team.

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Wst 06 **Design for disassembly and adaptability**	Design for disassembly and adaptability	2	2	0	RIBA stage 2	Architect/ Contractor	**Design for disassembly and functional adaptability -recommendations** **(R1)** Conduct a study to explore the ease of disassembly and the functional adaptation potential of different design scenarios by Concept Design. **(R2)** Develop recommendations or solutions based on the study (requirement 1 above), during or prior to Concept Design, that aim to enable and facilitate disassembly and functional adaptation. **Disassembly and functional adaptability – implementation** **(R3)** Achieve R1 and R2. **(R4)** Provide an update, during Technical Design, on:a) How the recommendations or solutions proposed by Concept Design have been implemented where practical and cost effective. Omissions to be justified in writing to the assessor.b) Changes to the recommendations and solutions during the development of the Technical Design. **(R5)** Produce a building adaptability and disassembly guide to communicate the characteristics allowing functional adaptability and disassembly to prospective tenants.	• Building-specific functional adaptation strategy study Note: requires input from whole design team.
LE 01 **Site Selection**	Previously Occupied Land	1	1	0	RIBA stage 4	Architect	**Previously Occupied Land** **(R1)** At least 75% of the proposed developments footprint on an area of land which has previously been occupied.	• DAS describing the previous use including historical maps • Contaminated land desk study report if available
LE 01 **Site Selection**	Contaminated Land	1	0	0	RIBA stage 3/4	Client/ Contaminated Land Consultant	**Contaminated land** **(R2)** A contaminated land professional's site investigation, risk assessment and appraisal has deemed land within the site to be affected by contamination. The site investigation, risk assessment and appraisal have identified: a. The degree of contamination b. The contaminant sources/types c. The options for remediating sources of contamination which present an unacceptable risk. **(R3)** The client or principal contractor confirms that remediation of the site will be carried out in accordance with the remediation strategy and its implementation plan as recommended by the contaminated land professional.	• Contaminated site investigation and risk assessment/report • Commitment letter from the contractor that the remediation strategy will be implemented
LE 02 **Identifying and understanding the risks and**	Assessment route selection	prerequisite	prerequisite	-	RIBA stage 1	Ecologist/ Project Manager	**Ecological Value of Site** **(R1) Route 2** (by ecologist) in line BREEAM Guidance Note GN34 BREEAM Ecological Risk Evaluation Checklist.	• Risk evaluation checklist completed • Appointment of ecologist if going through Route 2

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
opportunities for the site							**(R2)** The client or contractor confirms compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site.	• EMP detailing the processes in place during construction to monitor ecology
	Survey and evaluation/Determining the ecological outcome for the site **Exemplary available**	2+1	1	1	RIBA stage 1	Ecologist/ Project Manager	**(R4-5) Route 2 - complex ecological systems -** Ecologist appointed and undertake survey at RIBA stage 1 Baseline survey include: a. Current and potential ecological value and condition of the site, and related areas within the zone of influence. b. Direct and indirect risks to current ecological value c. Capacity and feasibility for enhancement of the ecological value of the site and, where relevant, areas within the zone of influence. **(R6)** Survey will inform site preparation, design and construction works **(R7-9)** Requirements 3, 4-6 have been achieved. During RIBA stage 2, select the optimum ecological outcome according to the appropriate hierarchy: **Route 2:** 1. Avoidance 2. Protection 3. Reduction or limitation of negative impacts 4. On-site compensation 5. Enhancement, considering the capacity and feasibility within the site, or where viable, off-site. **(R10)** Following this the optimal site-wide outcome is selected after liaising with representative stakeholders and the project team.	• Completed assessment using GN35 (Route 1) • Ecologist's survey and recommendation following hierarchy (Route 2) • Evidence of ecologist liaison with stakeholders
LE 03 **Managing negative impacts on ecology**	Identification and understanding the risks and opportunities for the site	1	1	0	RIBA stage 2	Ecologist	**Identification and understanding the risks and opportunities for the site** **(R1-3)** LE 02 has been achieved **(R4-5)** Site preparation and construction works have been planned for and implemented at an early project stage to optimise benefits and outputs.	• Ecology report / study • Contractor's ER's

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
LE 03 Managing negative impacts on ecology	Managing negative impacts of the project	2	1	1	RIBA stage 5	Ecologist	**Managing negative impacts of the project** **(R7) Route 2 (up to two credits)** Negative impacts from site preparation and construction works have been managed according to the hierarchy: a. No overall loss of ecological value has occurred (2 credits) OR b. The loss of ecological value has been limited as far as possible (1 credit)	• Ecology report / study • Contractor's ER's
LE 04 Enhancement of Ecological value	Identification and understanding the risks and opportunities for the site	prerequisite	prerequisite	-	RIBA stage 4	Ecologist	**Identification and understanding the risks and opportunities for the site** **(R1)** LE 03 - R4-5 is achieved **(R2)** LE02 R2 is achieved - compliance with regulations	• Ecology report / study
LE 04 Enhancement of Ecological value	Liaison, implementation and data collection	1	1	0	RIBA Stage 4	Ecologist	**Liaison, implementation and data collection - Route 2 ONLY** **(R4)** Project team implement measures to enhance ecological value: a. on-site b. off-site within zone of influence	• Ecology report / study • Contractor's ER's
LE 04 Enhancement of Ecological value	Change and enhancement of ecology - **Route 2 only Exemplary available**	3+1	1	3	RIBA Stage 4	Ecologist/ Landscape Architect/ Project Manager	**Change and enhancement of ecology - Route 2 ONLY** **(R6) Calculate ecological value using GN 36:** a. Minimising loss of ecological value (75-94%) - 1 credit b. No net loss of ecological value (95-104%) - 2 credits **c.** Net gain of ecological value (105-109%) - 3 credits	• Ecology report / study
LE 05 Long Term Impact on Biodiversity	Roles and responsibilities	prerequisite	prerequisite	-	RIBA Stage 4	Ecologist/ Project Manager	**Long Term Impact on Biodiversity** **(R1)** compliance with UK and EU regs. **(R2)** LE 04 has been implemented	• Ecology report / study • Contractor's ER's

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
LE 05 Long Term Impact on Biodiversity	Planning, liaison, data, monitoring and review management and maintenance	1	1	0	RIBA Stage 4	Ecologist/ Project Manager	**Planning, liaison, data, monitoring and review management and maintenance** **(R3)** Where additional measures to improve the assessed site's long-term biodiversity are adopted, according to Table - 55. One credit where at least 2 additional measures are adopted Two credits where at least 4 additional measures are adopted **(R4)** In support of the above and to help ensure their continued relevance over the period of the project the following should be considered: a. Monitoring and reporting of on the ecological outcomes for site implemented at the design and construction stage b. Monitoring and reporting of outcomes and successes from the project c. Arrangements for the ongoing management of landscape and habitat connected to the project (on and, where relevant, off site) d. Maintaining the ecological value of the site and its relationship or connection to its zone of influence e. Maintaining the site in line with the any sustainability linked activities, e.g. ecosystems benefits (LE 02). f. Remedial or other management actions are carried out which relate to those identified in LE 02, LE 03 and LE 04. **(R5)** Include section in building user guide on Ecology and Biodiversity to inform the owner or occupant of local ecological features, value and biodiversity on or near the site.	• Ecology report / study • Contractor's ER's
LE 05 Long Term Impact on Biodiversity	Landscape and ecology management plan	1	1	0	RIBA Stage 4	Ecologist / Client	**Landscape and ecology management plan** **(R6)** Landscape and ecology management plan, or similar, is developed in accordance with BS 42020:2013(210) covering as a minimum the first five years after project completion and includes: a. Actions and responsibilities, prior to handover, to give to relevant individuals b. The ecological value and condition of the site over the development life. c. Identification of opportunities for ongoing alignment with activities external to the development project and which supports the aims of BREEAM's Strategic Ecology Framework. Identification and guidance to trigger appropriate remedial actions to address previously unforeseen impactse. Clearly defined and allocated roles and responsibilities. **(R7)** The landscape and management plan or similar is updated as appropriate to support maintenance of the ecological value of the site.	• Landscape and ecology management plan • Client commitment to the recommendations of the LEMP

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Pol 01 Impact of Refrigerant	Impact of refrigerants	3	3	0	RIBA stage 4	Building Services	**Impact of Refrigerants** **(R1)** No refrigerant use within the installed plant or systems (3 credits). OR alternatively, where the building does use refrigerants, the three credits can be awarded as follows: **(R2)** Pre-requisite – All systems with electric compressors comply with the requirements of BS EN 378:2016 (parts 2 and 3). Refrigeration systems containing ammonia comply with the Institute of Refrigeration Ammonia Refrigeration Systems code of practice. **(R3)** Impact of refrigerant **2 credits:** The direct effect life cycle CO_2 equivalent emissions (DELC) of ≤100 CO_2-eq/kW. For systems which provide cooling and heating, the worst performing output based on the lower of kW cooling output and kW heating output is used to complete the calculation. OR **(R4)** All refrigerants used have a global warming potential (GWP) ≤10. OR **(R5) 1 Credit:** Systems using refrigerants have a DELC of ≤1000kgCO_2-eq/kW cooling and heating capacity.	• Specifications confirming compliance with specified standards • Datasheets/correspondence with manufacturers for specified systems confirming DELC
Pol 01 Impact of Refrigerant	Leak detection	N/A	N/A	N/A	RIBA stage 4	Building Services	**Leak Detection** **(R6)** All systems are hermetically sealed or only use environmentally benign refrigerants OR **(R7)** Where the systems are not hermetically sealed, systems have: a. A permanent automated refrigerant leak detection system, that is robust and tested, and capable of continuously monitoring for leaks. b. An inbuilt automated diagnostic procedure for detecting leakage is enabled. c. In the event of a leak, the system must be capable of automatically responding and managing the remaining refrigerant charge to limit loss of refrigerant.	• Specifications confirming leak detection specified • Datasheet/manufacturer's correspondence confirming compliance with requirements

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Pol 02 Local Air Quality	Local air quality	2	2	0	RIBA stage 4	M&E Engineer	**Local Air Quality** **(R1)** All heating and hot water is supplied by non-combustion systems. For example, only powered by electricity. OR **(R2)** Emissions from all installed combustion plant that provide space heating and domestic hot water do not exceed the levels set in Table 12.4 and Table 12.5 (please ask the assessor for a copy of these). The measurements must be provided by manufacturers, following the labelling requirements of the European directive 2009/125/EC. No credits can be awarded for Pol 02 if any of the combustion appliances are not covered in Table 12.4 and Table 12.5 (please ask the assessor for these tables).	• Specifications confirming implementation of all electric systems or • Specifications for combustion systems being installed and manufacturers information confirming emissions levels
Pol 03 **Surface Water Run- Off**	Flood Resilience	2	2	0	RIBA stage 4	Civil Engineer/ Flood Risk Assessment (FRA) Specialist	**Flood Resilience** **(R1)** Prerequisite **-**An appropriate consultant is appointed to carry out and demonstrate the development's compliance with all criteria. **(R2)** Two credits - Low flood risk - 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. The FRA must take all current and future sources of flooding into consideration. **(R3)** One credit Medium / High flood risk - 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. The FRA must take all current and future sources of flooding into consideration. For smaller sites refer to Level of detail required in the FRA for smaller sites, which overrides requirement 2. **(R4)** To increase the resilience and resistance of the development to flooding, one of the following must be achieved: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 site's flood zoneb. 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 8533:2017.	• Site-specific Flood Risk Assessment (FRA)
Pol 03 **Surface Water Run- Off**	Surface Water Run-Off	2	2	0	RIBA stage 4	Civil Engineer/ Client	**Surface Water Run-Off** **(R5)** Pre-requisite - Surface water run-off design solutions must be bespoke, i.e. they must take account of the specific site requirements and natural or man-made environment of and surrounding the site. The priority levels detailed in the Methodology must be followed, with justification given by the appropriate consultant where water is allowed to leave the site. **Surface Water Run-off rate (1 credit)** **(R6)** For brownfield sites, drainage measures are specified so that peak rate of run off from the site to watercourses shows 30% improvement for the developed site compared with pre-developed. This should comply at the 1 yr & 100 yr return period events.	• Calculations confirming peak run off rates and site improvement and allowance for climate change • Client confirmation for the long term maintenance of all proposed SuDS • Drawings demonstrating the drainage design measures required to reduce the peak rate of run-off

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
							(R7) For Greenfield sites, drainage measures are specified so that the peak rate of run off from the site to the watercourses is no greater for the site than it was for the pre-development site. This should comply at the 1 year and 100-year return period events. **(R8)** Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified Sustainable Drainage Systems (SuDS) are in place. **(R9)** Calculations include an allowance for climate change. This should be made in accordance with current best practice planning guidance. **Surface water run-off volume (1 credit)** **(R10)** Flooding of property will not occur in the event of local drainage system failure (caused either by extreme rainfall or a lack of maintenance); ANDEITHER **(R11)** Drainage design measures are specified so 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. This must be for the 100-year 6-hour event, including an allowance for climate change **(R12)** Any additional predicted volume of run-off for this event is prevented from leaving the site by using infiltration or other SuDS techniques. OR (only where requirements 11 and 12 cannot be achieved). **(R13)** Justification from the appropriate consultant indicating why the above requirements cannot be achieved, i.e. where infiltration or other SuDS techniques are not technically viable options. **(R14)** Drainage design measures are specified to ensure that the post development peak rate of run-off is reduced to the limiting discharge. The limiting discharge is defined as the highest flow rate from the following options:a. The pre-development 1-year peak flow rate (for the one-year peak flow rate, the one-year return period event requirement applies);b. The mean annual flow rate Qbar; ORc. 2L/s/ha. **(R15)** Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS are in place. **(R16)** For either option, above calculations must include an allowance for climate change; this should be made in accordance with current best practice planning guidance.	

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Pol 03 **Surface Water Run- Off**	Minimising Water Course Pollution	1	0	1	RIBA stage 4	Civil Engineer/ Client	**Minimising Water Course Pollution** **(R17)** There is no discharge from the developed site for rainfall up to 5mm. **(R18)** Areas with a low risk source of watercourse pollution have an appropriate level of pollution prevention treatment is provided, using appropriate SuDS techniques. **(R19)** Areas with a high risk of contamination or spillage of substances such as petrol and oil, have separators (or an equivalent system) are installed in surface water drainage systems. **(R20)** Chemical or liquid gas storage areas have a means of containment fitted to the site drainage system (i.e. shut-off valves). This is to prevent the escape of chemicals to natural watercourses in the event of a spillage or bunding failure. **(R21)** All water pollution prevention systems have been designed and installed in accordance with the recommendations of documents such as the SuDS manual and other relevant industry best practice. They must be bespoke solutions taking account of the specific site requirements and natural or man-made environment of and surrounding the site. **(R22)** A comprehensive and up to date drainage plan of the site will be made available for the building or site occupiers. **(R23)** Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS must be in place. **(R24)** All external storage and delivery areas are designed and detailed in accordance with the current best practice planning guidance.	• Drainage plan highlighting high risk areas and water pollution prevention measures • Calculations demonstrating no rainfall discharge up to 5mm • Client confirmation of maintenance agreements.
Pol 04 **Reduction of Night Time Light Pollution**	Reduction of Night Time Light Pollution	1	1	0	RIBA stage 4	M&E Engineer	**Night-time Light Pollution** **(R1) External** lighting pollution has been eliminated through effective design that removes the need for external lighting. This does not adversely affect 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: **(R2)** 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. **(R3)** All external lighting (except for safety and security lighting) can be automatically switched off between 23:00 and 07:00. **(R4)** 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. **(R5)** Illuminated advertisements, where specified, must be designed in compliance with ILP PLG 05 The Brightness of Illuminated Advertisements.	• Specification confirming compliance with appropriate standards • Specification outlining requirements for lighting control and datasheet where product specified. • Drawings confirming location of external lighting and lighting control

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Pol 05 Reduction of Noise Pollution	Reduction of Noise Pollution	1	1	0	RIBA stage 4	Acoustic Engineer/ M&E Engineer	**Reduction of Noise Pollution** **(R1)** There are no noise-sensitive areas within the assessed building or within 800 m radius of the assessed site. OR **(R2)** Where there are noise-sensitive areas within the assessed building or noise-sensitive areas within 800 m radius of the assessed site, a noise impact assessment compliant with BS 4142:2014 is commissioned. Noise levels must be measured or determined for: a. Existing background noise levels at the nearest or most exposed noise-sensitive development to the proposed assessed site including existing plant on a building, where the assessed development is an extension to the building. b. Noise rating level from the assessed building, **(R3)** The noise impact assessment must be carried out by a suitably qualified acoustic consultant. **(R4)** The noise level from the assessed building, as measured in the locality of the nearest or most exposed noise-sensitive development, must be at least 5dB lower than background noise throughout the day and night. **(R5)** If the noise sources from the assessed building are greater than the levels described in requirement 4, measures have been installed to attenuate the noise at its source to a level where it will comply with the requirement.	• Noise Impact Assessment

5.2 Retail Credit Requirements and Responsibility Matrix

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Man 01 Project Brief and Design	Project delivery planning	1	1	0	RIBA stage 2	Client/Project Manager	**Project delivery planning** **(R1)** Prior to completion of the Concept Design, the project delivery stakeholders meet to identify and define for each key phase of project delivery: d. Roles e. Responsibilities f. Contributions. **(R2)** In defining roles, responsibilities, contributions, consider the following: i. End user requirements j. Aims of the design and design strategy k. Particular installation and construction requirements or limitations l. Occupiers' budget and technical expertise in maintaining any proposed systems m. Maintainability and adaptability of the proposals n. Operational energy (see Assessment scope) o. Requirements for the production of project and end user documentation p. Requirements for commissioning, training and aftercare support. **Note: Where the building occupants are not known, the above still applies: to be based on likely scenarios of building occupancy.** **(R3)** The project team demonstrates how the project delivery stakeholders' contributions, and the consultation process outcomes influence the following: e. Initial Project Brief f. Project Execution Plan (see Definitions) g. Communication Strategy (see Definitions) h. Concept Design.	• Responsibilities Matrix • Scope of works of the project team • Project Brief (R2a, b) • DAS (R2b) • Energy statement containing detail operational energy (R2f) • Communication strategy (i.e. as defined by RIBA 2013 - when team meet, how information is issued) • Project execution plan (PEP)/project quality plan (established by the project lead and lead designer • Key Meeting Minutes demonstrating how the contributions have influenced R3 a-d (R3) • Sustainability Statement issued for planning • BREEAM pre-assessment
Man 01 Project Brief and Design	Stakeholder Consultation (interested parties)	1	0	0	RIBA stage 2	Client/Project Manager	**Stakeholder consultation (interested parties)** **(R4)** All interested parties (building users, existing community, partnerships, potential users and if applicable: local education authorities, heritage groups, specialist service (e.g. laboratories), passenger focus group) have been consulted by the design team on the consultation plan. **(R5)** Stakeholder contributions and consultation outcomes have influenced Initial Project Brief and Concept Design. **(R6)** All interested parties give and received consultation feedback prior to end of RIBA stage 4. **(R7)** Additionally for Education, Healthcare, Law courts and Major transport node building types only: The consultation exercise used a method carried out by an independent party. (e.g., Communication agency)	• Copy of the consultation plan (R4) • Meeting Minutes/Consultation report summarising contributions and issues raised (R4) • List of design changes as a result of consultation (R5) • Dated Response/feedback given to interested parties (R6) • If applicable - appointment document of 3rd party undertaking the consultation process (R7)

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Man 01 **Project Brief and Design**	BREEAM AP	1	1	0	RIBA stage 2	BREEAM AP/ Project Manager	**BREEAM AP (concept design)** **(R8)** The project team, including the client, formally agree strategic performance targets (e.g., BREEAM or wider sustainability targets and requirements) early in the design process. **(R9)** Appoint a BREEAM AP during RIBA stage 2 to: e. Work with the project team, including the client, to consider the links between BREEAM issues and assist them in maximising the project's overall performance against BREEAM, from their appointment and throughout Concept Design f. Monitor progress against the performance targets agreed under requirement 8 throughout all stages after their appointment where decisions critically impact BREEAM performance g. Proactively identify risks and opportunities related to the achievement of the targets agreed under requirement 8 h. Provide feedback to the project team as appropriate, to support them in taking corrective actions and achieving their agreed performance targetse. Monitor and, where relevant, coordinate the generation of appropriate evidence by the project team.	• BREEAM pre-assessment + any additional sustainability targets and requirements • Sustainability statement • Meeting minutes or other communication from BREEAM AP demonstrating regular attendance to DTM (monthly) • Appointment doc of BREEAM AP
Man 01 **Project Brief and Design**	Sustainability Champion (Monitoring Process)	1	1	0	RIBA stage 3	BREEAM AP/ Project Manager	**BREEAM AP (developed design)** **(R10)** Requirements 8 and 9 are achieved. **(R11)** Appoint a BREEAM AP during RIBA stage 3 to e. Work with the project team, including the client, to consider the links between BREEAM issues and to assist them in maximising the project's overall performance against BREEAM throughout Developed Design f. Monitor progress against the performance targets agreed under requirement 8 throughout all stages where decisions critically impact the specification and tendering process and the BREEAM performance g. Proactively identify risks and opportunities related to the achievement of the targets agreed under requirement 8 h. Provide feedback to the project team as appropriate, to support them in taking corrective actions and achieving their agreed performance targets.e. Monitor and, where relevant, coordinate the generation of appropriate evidence by the project team.	**As above.**
Man 02 **Life Cycle Cost and Service Life Planning**	Elemental Life Cycle Cost (LCC)	2	0	0	RIBA stage 2	Architect/ LCC Consultant/ Project Manager	**Elemental Life Cycle Cost (LCC)** **(R1)** A competent person carries out an outline, entire asset LCC plan at Process Stage 2 (equivalent to Concept Design - RIBA Stage 2) together with any design options appraisals in line with 'Standardised method of life cycle costing for construction procurement' PD 156865: 2008. **(R2)** Elemental life cycle cost plan is carried out and provides: c. An indication of future replacement costs over a period of analysis as required by the client (e.g., 20, 30, 50 or 60 years).	• Copy of Elemental LCC • List of design changes as a result of the LCC

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
							d. Includes service life, maintenance and operation cost estimates. The study period should ideally be agreed by the client, in line with the design life expectancy of the building. However, where the life expectancy of the building is not yet formally agreed (due to being at very early design stages), the default design life of 60 years should be used for modelling purposes (in line with the UK default). **(R3)** Demonstrate how the LCC has been used to influence building and systems design/specification to minimise life cycle costs and maximise critical value.	
Man 02 Life Cycle Cost and Service Life Planning	Component Level LLC Option Appraisal	1	0	0	RIBA stage 4	Architect/ LCC Consultant/ Project Manager	**Component Level LCC option appraisal** **(R4)** A competent person develops a component level LCC options appraisal by the end of Process Stage 4 (equivalent to Technical Design – RIBA Stage 4) in line with PD 156865: 2008. The component level LCC includes (where present): e. Envelope, e.g., cladding, windows, and/or roofing f. Services, e.g., heat source cooling source, and/or controls g. Finishes, e.g., walls, floors and/or ceilings h. External spaces, e.g., alternative hard landscaping, boundary protection. The Component level LCC option appraisal should review all of the above component types (where present). However, you do not need to consider every single example cited under each component; only a selection of those most likely to draw valued comparisons. This is to ensure that a wide range of options are considered and help focus the analysis on components which would benefit the most from appraisal. **(R5)** Demonstrate how the component level LCC cycle has influenced the design and specification to minimise life cycle costs and maximise critical value.	• Copy of component LCC • List of design changes as a result of the LCC
Man 02 Life Cycle Cost and Service Life Planning	Capital Cost Reporting	1	1	0	RIBA stage 4	BREEAM Assessor/ Client	**Capital Cost Reporting** **(R6)** Report the capital cost for the building in pounds per square metre of gross internal floor area. **Capital Cost** The capital cost for the building includes the expenses related to the initial construction of the building: f. Construction, including preparatory works, materials, equipment and labour g. Site management h. Construction financing i. Insurance and taxes during construction j. Inspection and testing **Note: Costs related to land procurement, clearance, design, statutory approvals and post occupancy aftercare are not included.**	• Report detailing the predicted capital cost of the scheme as per the BREEAM requirements • Predicted capital costs via the BREEAM scoring and reporting tool

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Man 03 **Responsible Construction Practices**	Pre-Requisite **<u>Critical importance</u>**	prerequisite	prerequisite	-	RIBA stage 3	Contractor/ Project Manager	**Pre-Requisite** **(R1)** All timber and timber-based products used on the project is 'Legally harvested and traded timber' (see Relevant definitions). **Note: Full chain of custody must be demonstrated** **<u>Critical importance</u> - This is a pre-requisite to achieve <u>any</u> BREEAM rating**	• All relevant specifications that contain timber products to have the relevant timber requirements. (i.e. only use FSC or PEFC certified timber with full chain of custody) • If appointed at RIBA stage 4 - Environment Management Plan (EMP) from appointed principal contractors which include the requirements to only supply FSC or PEFC certified timber with full chain of custody and detail the procedure to follow during construction to ensure this happens. • Letter of commitment from the Principal contractor's project director to reiterate commitment. • If principal contractor not appointed by the end of RIBA stage 4 - timber requirements clearly highlighted as part of the Employer's requirements
Man 03 **Responsible Construction Practices**	Environmental Management	1	1	0	RIBA stage 4	Contractor/ Project Manager	**Environmental Management** **(R3)** Any party who at any stage manages the construction site (e.g. the principal contractor, the demolition contractor) operates an Environmental Management System (EMS) (i.e. ISO 14001. EMAS, or comply with BS 8555: 2016 and has reached stage 4) **(R4)** Provision of EMP (from PC and/or demolition contractor) that details how best practice pollution prevention policies and procedures/ PPG6 will be implemented on site	• Copy of EMS certificates from Principal contractor and demolition contractor if appointed by RIBA stage 4 alternatively copy of ER include the requirement (R3) • Copy of EMPs for principal contractors, demolition contractors

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Man 03 **Responsible Construction Practices**	BREEAM AP (site)	1	1	0	RIBA stage 5	BREEAM AP/ Client/ Project Manager	**BREEAM AP (site)** **(R5)** Performance targets (i.e., for BREEAM, energy, water, transport) for construction are formally agreed between the client and contractor **(R6)** Appoint BREEAM AP to: f. Work with the project team, including the client, to consider the links between BREEAM issues and assist them in achieving and if possible, going beyond the design intent, to maximise the project's performance against the agreed performance targets throughout the Construction, Handover and Close Out stages. g. Monitor construction progress against the performance targets agreed under requirement 5 above throughout all stages where decisions critically impact BREEAM performance. h. Proactively identify risks and opportunities related to the procurement and construction process and the achievement of the targets agreed under requirement 5 above. i. Provide feedback to the constructors and the project team as appropriate, to support them in taking corrective actions and achieving their agreed performance targets. j. Monitor and, where relevant, coordinate the generation of appropriate evidence by the project team and the provision to the assessor.	• Appointment of AP for construction • Copy of agreed targets during construction and inclusion in ER
Man 03 Responsible Construction Practices	Responsible construction management	2+1	2+1	0	RIBA stage 4	Contractor/ Project Manager	**Responsible construction management** **(R7)** Provide EMP that covers BREEAM responsible construction management key requirements in Table 4.1 of the BREEAM manual **(R8)** Provide EMP that covers BREEAM responsible construction management key requirements plus 6 additional requirements in Table 4.1 of the BREEAM manual **Exemplary Level Criteria** **(R9)** Provide EMP that covers all BREEAM responsible construction management requirements in Table 4.1 of the BREEAM manual	• Copy of EMP if contractor appointed by RIBA stage 4 • Template of environment site inspection that will be used during construction and frequency inspection will be undertaken • Copy of requirement within Contractor's ER's.
Man 03 Responsible Construction Practices	Monitoring of Construction Site Impacts - Utility Consumption	1	1	0	RIBA stage 5	BREEAM AP/ Contractor/ Project Manager/ Site Manager	**Monitoring of Construction Site Impacts** **(R10)** Assign responsibilities to record energy, water, transport data **(R11-18)** Set target, monitor and record data for energy and water consumption throughout the project **NB:** refer to simple building requirements if applicable.	• Environmental Management Plan (EMP) detailing target and commitment to monitor, record energy and water consumption • Copy of requirement within Contractor's ER's.

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Man 03 Responsible Construction Practices	Monitoring of construction site impacts - Transport of construction materials & waste	1	1	0	RIBA stage 5	BREEAM AP/ Contractor/ Project Manager/ Site Manager	**Monitoring of construction site impacts - Transport of construction materials & waste** **(R19)** Achieve R10 **(R20-21)** Set targets, monitor and record CO2e emissions associated with the transport of materials (i.e. major building elements as defined in Mat 01, groundworks, landscape) and waste **NB:** refer to simple building requirements if applicable.	• EMP detailing target and commitment to monitor, record CO2e emissions associated with material and waste transport • Copy of requirement within Contractor's ER's.
Man 04 Commissioning and Handover	Commissioning - testing schedule and responsibilities	1	1	0	RIBA stage 4	Contractor/ M&E Engineer/ Project Manager	**Commissioning - testing schedule and responsibilities** **(R1)** A schedule of commissioning including suitable timescale for commissioning/ re-commissioning of all complex/ non-complex building services and control systems and testing and inspecting building fabric. **(R2)** Commissioning activities carried out in accordance with current Building Regulations, BSRIA, CIBSE guidelines. **(R3)** Where a building management system (BMS) is specified:a. Carry out commissioning of air and water systems when all control devices are installed, wired and functionalb. Include physical measurements of room temperatures, off-coil temperatures and other key parameters, as appropriate, in commissioning resultsc. The BMS or controls installation should be running in auto with satisfactory internal conditions prior to handoverd. All BMS schematics and graphics (if BMS is present) are fully installed and functional to user interface prior to handovere. Fully train the occupier or facilities team in the operation of the system. **(R4) Appoint a team member to monitor and programme pre-commissioning, commissioning, testing activities on behalf of the client.** **(R5)** Contractor accounts for the commissioning within their budget and timeline.	• Appointment letter for commissioning manager. The letter addresses R1-R5. • M&E specification documents detailing commissioning requirements in line with relevant standards and regulations.
Man 04 Commissioning and Handover	Commissioning - design and preparation	1	1	0	RIBA stage 4	Commissioning Manager/ Project Manager	**Commissioning - design and preparation** **(R6)** Achieve R1-5 **(R7)** Appoint an appropriate team member (who are not involved in the installation works) responsible for: **d. undertaking design reviews and giving advice on suitability for ease of commissioning.** e. providing commission management input to construction programming and during installation stages. f. Management of commissioning performance testing and handover. Where there are simple building services, this role can be carried out by an appropriate project team member. **NB**: for complex building services and systems - a **specialist** commissioning manager (e.g., member of the Commissioning Specialists Association (CSA)	• Appointment letter for commissioning manager at RIBA stage 4. • Meeting minutes from commissioning manager showing input during design stage • Evidence the commissioning manager has the relevant qualification (e.g. CSA or equivalent)

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Man 04 Commissioning and Handover	Testing and inspecting building fabric	1	1	0	RIBA stage 5	Air Testing Consultant/ Client/ Contractor/ Project Manager/ Thermographic Survey Consultant	**Testing and Inspecting Building Fabric** **(R8)** Achieve requirements 1-5. **(R9)** Undertake air-tightness test and thermographic survey **(R10)** Rectify any issues flagged by thermographic survey	• Commitment letter from client to undertake thermographic survey and rectify any issues. • Inclusion of requirement within Contractor's ER's.
Man 04 Commissioning and Handover	Handover	1	1	0	RIBA stage 5	Contractor/ Project Manager	**Handover** **(R11)** Develop two Building User Guides (BUG): c. A non-technical for building occupiers d. A technical one for FM. A draft copy is circulated to future users (where occupants known) **(R12)** Prepare two training schedules: c. A non-technical training schedule for the building occupiers d. A technical training schedule for the premises facilities managers.	• Commitment letter from client to undertake two BUGs and corresponding training. • Inclusion of requirement within Contractor's ER's.
Man 05 Aftercare	Aftercare Support	N/A	N/A	N/A	RIBA stage 3	Principal Contractor	**Aftercare Support** **(R1)** Provide aftercare support: e. A meeting between the aftercare support team or individual and the building occupier or management team (prior to initial occupation, or as soon as possible thereafter) to: iii. Introduce the aftercare support available, including the building user guide (where existing) and training schedule and their content. iv. Present key information on the building including the design intent and how to use the building to ensure it operates as efficiently and effectively as possible. f. On-site facilities management training including: iii. a walkabout of the building and iv. familiarisation with the building systems, their controls and how to operate them in accordance with the design intent and operational demands. g. Provide initial aftercare support for a**t least the first month of building occupatio**n, e.g. weekly attendance on-site, to support building users and management (the level of frequency will depend on the complexity of the building and building operations). h. Provide longer term aftercare support for occupiers for **at least the first 12 month**s from occupation, e.g. a helpline, nominated individual or other appropriate system to support building users and management.	• Commitment letter from client to provide appropriate aftercare support • Inclusion of requirement within Contractor's ER's

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
							(R2) FM to collect and monitor energy and water consumption data for a minimum of 12 months, once the building is substantially occupied. This facilitates analysis of discrepancies between actual and predicted performance, with a view to adjusting systems and user behaviours accordingly.	
Man 05 **Aftercare**	Commissioning - Implementation	N/A	N/A	N/A	RIBA stage 6	Principal Contractor	**Commissioning - Implementation** **(R3) Undertake the following commissioning activities** over a minimum 12-month period, once the building becomes substantially occupied: **h.** Identify changes made by the owner or operator that might have caused impaired or improved performance **i.** Test all building services under full load conditions, i.e. heating equipment in mid-winter, cooling and ventilation equipment in mid-summer and under part load conditions (spring and autumn) **j.** Where applicable, carry out testing during periods of extreme (high or low) occupancy **k.** Interview building occupants (where they are affected by the complex services) to identify problems or concerns regarding the effectiveness of the systems **l.** Produce monthly reports comparing sub-metered energy performance to the predicted one (see Ene 01 Reduction of energy use and carbon emissions) **m.** Identify inefficiencies and areas in need of improvement **n.** Re-commission systems (following any work needed to serve revised loads), and incorporate any revisions in operating procedures into the operations and maintenance (O&M) manuals. **NB:** Refer to alternative requirements for simple buildings.	• Commitment letter from client to provide the following seasonal commissioning activities • Inclusion of requirement within Contractor's ER's
Man 05 **Aftercare**	Post occupancy evaluation (POE)	N/A	N/A	N/A	RIBA stage 6	Client/Project Manager	**Post occupancy evaluation (POE)** **(R4)** Commit to carry out a POE exercise one year after the building is substantially occupied. This gains comprehensive in-use performance feedback (see requirement 5.b.v) and identifies gaps between design intent and in-use performance. The aim is to highlight any improvements or interventions that need to be made and to inform operational processes. **(R5)** POE is undertaken by independent third party and include: c. A review of the design intent and construction process (review of design, procurement, construction and handover processes) d. Feedback from a wide range of building users including facilities management on the design and environmental conditions of the building covering: vii. Internal environmental conditions (light, noise, temperature, air quality) viii. Control, operation and maintenance ix. Facilities and amenities x. Access and layout xi. Energy and water consumption (see requirement 2 and Methodology) xii. Other relevant issues, where appropriate (see Definitions). **(R6)** Third party provides a report with lessons learnt to the client and building occupiers. **(R7)** The client or building occupier commits funds to pay for the POE in advance.	• Commitment letter from client/building occupier to undertake POE • POE is allocated in the cost plan for the project

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Hea 01 **Visual Comfort**	Glare control	N/A	N/A	N/A	RIBA stage 3	Architect	**Glare Control** **(R1)** Identify areas at risk of glare using a glare control assessment. The glare control assessment also justifies any areas deemed not at risk of glare. **(R2)** A glare control strategy designs out potential glare in all relevant building areas where risk has been identified. This should be achieved through building form and layout or building design measures (i.e. overhangs, fins, blinds with transmittance value <10%, brise soleil) **(R3)** The glare control strategy does not increase energy consumption used for lighting. This is achieved by maximising daylight levels in all weather, cloudy or sunny and ensuring the use or location of shading does not conflict with the operation of lighting control systems. Relevant areas: For areas where lighting and glare control could be a problem for user e.g. offices, reception desks, areas designed to contain or use work stations, projector screens etc	• Copy of the glare strategy or technical memo covering areas deemed at risk and measures to minimise/avoid glare • For any binds specified provide the datasheet confirming their transmittance value.
Hea 01 **Visual Comfort**	Daylighting	2	0	0	RIBA stage 4	Architect/ Daylighting Consultant	**Daylighting (building type dependent)** **(R4)** The relevant building areas meet good practice daylight factor(s) and other requirement as outlined in Table - 5.1 and Table - 5.2. (e.g., 2-3% over at least 80%; uniformity at least 0.3; 80% of the room has a sky view; appropriate room depth) OR The relevant building areas meet good practice average and minimum point daylight illuminance criteria as outlined in Table - 5.3. (e.g., at least 300lux for 2000 hours over 80%; minimum daylight illuminance complied with etc...) Relevant areas: - sports halls - lab areas - kitchen and catering areas - general communal areas - small offices - meeting rooms - leisure areas - anywhere with close up work Note; can exclude SEN sensory spaces	• Report from specialist confirming the targeted daylight ratio
Hea 01 **Visual Comfort**	View Out	1	0	1	RIBA stage 4	Architect	**View Out** **(R5)** 95% of the relevant building floor area is within 7m of a wall with window and window/opening must be ≥ 20% of the surrounding wall area. Alternatively, where room depths are greater than 8m, compliance with table 1.0 BS8206 is demonstrated. Relevant areas: - there will be workstations or benches or desks for building users - close work will be undertaken or visual aids will be used	• Annotated drawings confirming room depth and window percentage of wall area.

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Hea 01 **Visual Comfort**	Internal and external lighting levels, zoning and control **Exemplary available**	1	1	0	RIBA stage 4	M&E Engineer	**Internal Lighting** **(R7)** Internal lighting in all relevant areas of the building is designed to provide an illuminance (lux) level appropriate to the tasks undertaken, accounting for building user concentration and comfort levels. This can be demonstrated through a lighting design strategy that provides illuminance levels in accordance with the SLL Code for Lighting 2012 and any other relevant industry standard i.e., Building Bulletin 90; lighting design for schools **(R8)** For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 7 sections 2.4, 2.20, and 6.10 to 6.20. This gives recommendations highlighting:Limits to the luminance of the luminaires to avoid screen reflections. (Manufacturers' data for the luminaires should be sought to confirm this.)For up lighting, the recommendations refer to the luminance of the lit ceiling rather than the luminaire; a design team calculation is usually required to demonstrate this. **External Lighting** **(R9)** External lighting = Lighting strategy written in accordance with BS 5489-1:2013 Lighting of roads and public amenity areas and BS EN 12464-2:2014 Light and lighting – Lighting of work. **(R10)** No external lighting → meet R8&R38. **Zoning and occupant control** **(R11)** Internal lighting is zoned to allow for occupant control in accordance with the criteria for relevant areas present within the building. **(R12)** Areas used for teaching, seminar or lecture purposes have lighting controls provided in accordance with CIBSE Lighting Guide 5. **(R13)** In addition meet the building type criteria in Table - 5.7 (where relevant). **(R14-15)** Check exemplary criteria	• Electrical Specification confirming design standards. • Light fittings schedule and accompanying datasheets confirming lux value • Drawing demonstrating zoning and control strategy
Hea 02 **Indoor Air Quality**	Indoor Air Quality (IAQ) plan	prerequisite	prerequisite	-	RIBA stage 4	M&E Engineer	**Indoor Air Quality (IAQ) plan** **(R1)** Air Quality Plan produced and implemented in accordance with the guidance in Guidance Note GN06: f. Removal of contaminant sources g. Dilution and control of contaminant sources ii. Where present, consideration is given for the air quality requirements of specialist areas such as laboratories h. Procedures for pre-occupancy flush out i. Third party testing and analysis j. Maintaining good indoor air quality in-use	• Indoor Air Quality Plan (IAQP)

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Hea 02 Indoor Air Quality	Ventilation	1	1	0	RIBA stage 4	M&E Engineer	**Ventilation** **(R2)** The building has been designed to minimise the indoor concentration and recirculation of pollutants in the building as follows: b. Provide fresh air into the building in accordance with the criteria of the relevant standard for ventilation	• Drawings confirming calculations
Hea 02 Indoor Air Quality	Emissions from construction products **Exemplary available**	N/A	N/A	N/A	RIBA stage 3/4	Architect	**Emissions from construction products** **(R3) One credit** - Three out of the five product types meet the emission limits, testing requirements and any additional requirements listed in Table 5.11. Where wood-based products are not one of three selected product types, all wood-based products used for internal fixtures and fittings must be tested and classified as formaldehyde E1 class as a minimum. **(R4) Two credits** - All of the product types listed meet the emission limits, testing requirements and any additional requirements listed in Table 5.11. Note: Exemplary available	• Completed proforma confirming products specified and associated datasheets; • Relevant specifications outlining requirements for any products not specified at design stage.
Hea 02 Indoor Air Quality	Post-construction indoor air quality measurement	N/A	N/A	N/A	RIBA stage 6	Principal contractor	**Post-construction indoor air quality measurement** **(R5)** The formaldehyde concentration in indoor air is measured post construction (but pre-occupancy) and does not exceed 100µg/m³ averaged over 30 minutes (World Health Organisation guidelines for indoor air quality: Selected pollutants, 2010). **(R6)** The formaldehyde sampling and analysis is performed in accordance with ISO 16000-2 and ISO 16000-3. **(R7)** The total volatile organic compound (TVOC) concentration in indoor air is measured post construction (but pre-occupancy) and does not exceed 500µg/m³ over 8 hours. **(R8)** The TVOC sampling and analysis is performed in accordance with ISO 16000-5 and ISO 16000-6 or ISO 16017-1. **(R9)** Where levels are found to exceed these limits, the project team confirms the measures that have, or will be, undertaken in accordance with the IAQ plan, to reduce the TVOC and formaldehyde levels to within the above limits.	• Commitment letter from client to undertake post-construction air quality test • Copy of Contractor's ER's.
Hea 04 Thermal Comfort	Thermal Modelling	1	1	0	RIBA stage 4	BREEAM Assessor/ M&E Engineer	**Thermal Modelling** **(R1)** Thermal modelling has been carried out using software in accordance with CIBSE AM11. Building designed for over heating in accordance with CIBSE TM52. **(R2)** The software used to carry out the simulation at the detailed design stage provides full dynamic thermal analysis. For smaller and more basic building designs with less complex heating or cooling systems, an alternative less complex means of analysis may be appropriate (such methodologies must still be in accordance with CIBSE AM11). **(R3)** The modelling demonstrates that: 18) c. **For air conditioned buildings**, summer and winter operative temperature ranges in occupied spaces are in accordance with the criteria set out in CIBSE Guide A Environmental design, Table 1.5; or other appropriate industry standard (where this sets a higher or more appropriate requirement/level for the building type). d. **For naturally ventilated/free running buildings**:	• Thermal Modelling and full dynamic thermal analysis report

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
							iii. Winter operative temperature ranges in occupied spaces are in accordance with the criteria set out in CIBSE Guide A Environmental design, Table 1.5; or other appropriate industry standard (where this sets a higher or more appropriate requirement/level for the building type). iv. The building is designed to limit the risk of overheating, in accordance with the adaptive comfort methodology outlined in CIBSE TM52: The limits of thermal comfort: avoiding overheating in European buildings. **(R4) 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.	
Hea 04 Thermal Comfort	Design for future thermal comfort	1	1	0	RIBA stage 4	BREEAM Assessor/ M&E Engineer	**Design for future thermal comfort** **(R5)** Requirements 1 to 4 are achieved. **(R6)** The thermal modelling demonstrates that the relevant requirements set out in requirement 3 are achieved for a projected climate change environment. **(R7)** Where R6 is not met, the project team demonstrates how the building has been adapted or designed to be easily adapted in future using passive design solutions in order to subsequently meet the requirements under requirement 6. **(R8) For air conditioned buildings**, the PMV and PPD indices based on the above modelling are reported via the BREEAM assessment scoring and reporting tool.	• Thermal Modelling and full dynamic thermal analysis report
Hea 04 Thermal Comfort	Thermal Zoning and Controls	N/A	N/A	N/A	RIBA stage 3	Building Services	**Thermal Zoning and Controls** **(R5)** Requirements 1 to 4 are achieved. **(R10)** The thermal modelling analysis (requirements1-4) has informed the temperature control strategy for the building and its users. **(R11)** The strategy for proposed heating or cooling systems demonstrates that it has addressed the following: e. 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 f. The degree of occupant control required for these zones. This is based on discussions with the end user (or alternatively building type or use specific design guidance, case studies, feedback) and considers: v. User knowledge of building services vi. Occupancy type, patterns and room functions (and therefore appropriate level of control required) vii. How the user is likely to operate or interact with the systems, e.g., are they likely to open windows, access thermostatic radiator valves (TRV) on radiators, change air-conditioning settings etc. viii. The user expectations (this may differ in the summer and winter) and degree of individual control (i.e. obtaining the balance between occupant preferences, for example some occupants like fresh air and others dislike draughts)	• Thermal Modelling and full dynamic thermal analysis report

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
							g. 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 h. The need or otherwise for an accessible building user actuated manual override for any automatic systems.	
Hea 05 Acoustic Performance	Acoustic Performance	1	1	0	RIBA stage 3/4	Acoustic Engineer/ Architect	**Acoustic Performance - sound insulation, indoor ambient noise, room acoustic** **(R1)** Achieve sound insulation, indoor ambient noise and reverberation levels in compliance with relevant standards.	• Acoustic report • Design drawings, technical memos demonstrating the build-ups
Hea 06 Security	Security of site and building **Exemplary available**	1+1	1	0	RIBA stage 2	M&E Engineer/ Security Consultant	**Security of site and building** **(R1)** A Suitably Qualified Security Specialist (SQSS) conducts an evidence-based Security Needs Assessment (SNA) during or prior to Concept Design (RIBA Stage 2 or equivalent). The purpose of the SNA will be to identify attributes of the proposal, site and surroundings which may influence the approach to security for the development. **(R2)** The SQSS develops a set of security controls and recommendations for incorporation into the proposals. Those controls shall directly relate to the threats and assets identified in the preceding SNA. **(R3)** The recommendations shall be incorporated into proposals and implemented in the as-built development. Any deviation from those recommendations shall be justified and agreed with the SQSS. **NB:** This credit can also be satisfied by the architect and project manager meeting with the local police design out crime officer and incorporating their recommendations into the design.	• Report or correspondence with SQSS detailing recommendations of security measures to be incorporated • Drawings, technical memos showing that the recommendations have been incorporated
Hea 07 Safe and healthy surroundings	Safe access	1	0	0	RIBA stage 2	Landscape Architect/ M&E Engineer/ Project Manager	**Safe access** **(R1)** Where external site areas form part of the assessed development the following apply:Dedicated and safe cycle paths are provided from the site entrance to any cycle storage and connect to offsite cycle paths where applicable. **(R2)** Dedicated and safe footpaths are provided on and around the site providing suitable links for the following:The site entrance to the building entranceCar parks (where present) to the building entranceThe building to outdoor space, andConnecting to off-site paths where applicable. **(R3)** Pedestrian drop off areas are designed off of, or adjoining to, the access road and should provide direct access to other footpaths. **(R4)** Where vehicle delivery access and drop-off areas form part of the assessed development, the following apply:Delivery areas are not accessed through general parking areas and do not cross or share the following:Pedestrian and cyclist pathsOutside amenity areas accessible to building users and general public.	• Drawings showing cycle and pedestrian paths, drop off areas, delivery routes, etc. • Servicing Strategy Plan

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
							(R5) There is a dedicated parking or waiting area for goods vehicles with appropriate separation from the manoeuvring area and staff and visitor car parking. **(R6)** Parking and turning areas are designed for simple manoeuvring according to the type of delivery vehicle likely to access the site, thus avoiding the need for repeated shunting.	
	Outside space	1	1	0	RIBA stage 4	Client/ Landscape Architect	**Outside space** **(R7)** There is an outside space providing building users with an external amenity area.	• Drawings showing external spaces and amenities • Calculation demonstrating space available based on building occupancy
Ene 01 Reduction of Energy Use and Carbon Emissions	Energy Performance **Exemplary available**	9+3	4	0	RIBA stage 4	BREEAM Assessor/ Energy Consultant	**Energy Performance** **(R1)** Calculate an Energy Performance Ratio for New Constructions (EPRNC). Compare the EPRNC achieved with the benchmarks in Table - 25 and award the corresponding number of BREEAM credits. Mandatory requirement for 6 credits to achieve an Outstanding rating **Prediction of operational energy consumption** **(R2)** Pre requisite - prelim workshop carried out with relevant members of the design team focusing on operational energy performance. **(R3)** Undertake energy modelling during design and post construction stages to generate predicted operational energy consumption figures. **(R4)** Report predicted energy consumption targets by end use, design assumptions and input data. **(R5)** Carry out risk assessment to highlight any significant technical, design and process risks that should be monitored and managed throughout the construction and commissioning process.	• BRUKL output • Building services report • Energy statement

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Ene 01 Reduction of Energy Use and Carbon Emissions	Prediction of operational energy consumption **Exemplary available**	4+2	4	0	RIBA Stage 4	Client/ Energy Consultant/ M&E Engineer/ Project Manager	**Prediction of operational energy consumption** **(R2)** Pre requisite - prelim workshop carried out with relevant members of the design team focusing on operational energy performance. **(R3)** Undertake energy modelling during design and post construction stages to generate predicted operational energy consumption figures. **(R4)** Report predicted energy consumption targets by end use, design assumptions and input data. **(R5)** Carry out risk assessment to highlight any significant technical, design and process risks that should be monitored and managed throughout the construction and commissioning process.	• Preparation of TM54 like thermal modelling covering all different scenarios listed in the BREEAM manual
Ene 02 **Energy Monitoring**	Sub-metering of end use categories	1	1	0	RIBA stage 4	M&E Engineer	**Sub-metering of end use categories** **(R1)** Install energy metering systems so that at least 90% of the estimated annual energy consumption of each fuel is assigned to the end-use categories. **(R2)** Meter the energy consumption in buildings according to the total useful floor area: c. If the area is greater than 1,000m², by end-use category with an appropriate energy monitoring and management system d. If the area is less than 1,000m², use either: iii. an energy monitoring and management system or iv. separate accessible energy sub-meters with pulsed or other open protocol communication outputs, for future connection to an energy monitoring and management system (see Definitions). **(R3)** Building users can identify the energy consuming end uses, for example through labelling or data outputs. Includes:- Space heating- DWH- Humidification- Cooling- Ventilation- Pumps- Lighting- Small power- Renewables- Controls- Other major energy consuming systems/plant	• Schematics showing metering of space heating, cooling, ventilation, lighting, small power etc... • Calculations demonstrating that at least 90% of estimated annual energy consumption of each fuel is assigned to end use categories. • Specification outlining BMS requirements.

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Ene 02 **Energy Monitoring**	Sub-metering of high energy load and tenancy areas	1	1	0	RIBA stage 4	M&E Engineer	**Sub-metering of high energy load and tenancy areas** **(R4)** Monitor a significant majority of the energy supply with: c. An accessible energy monitoring and management system for: iii. tenanted areas or iv. relevant function areas or departments in single occupancy buildings. OR d. Separate accessible energy sub-meters with pulsed or other open protocol communication outputs for future connection to an energy monitoring and management system for: iii. tenanted areas or iv. relevant function areas or departments in single occupancy buildings. **(R5)** Sub-meter per floor plate in large single occupancy or single tenancy buildings with one homogeneous function, for example hotel bedrooms, offices. Includes: (where applicable)- Offices areas- Catering- Conference suites- Swimming pools- Hotel bedrooms per floor, core or floor plate	• Schematics showing sub-metering of space heating, cooling, ventilation, lighting, small power per tenancy areas or floorplate depending on building type etc...
Ene 03 **External Lighting**	External Lighting	1	1	0	RIBA stage 4	M&E Engineer	**External Lighting** **(R1)** No external lighting (which includes lighting on the building, at entrances and signs). (--> credit awarded by default) OR **(R2)** External light fittings within the construction zone with: d. Average initial luminous efficacy of no less than 70 luminaire lumens per circuit Watt e. Automatic control to prevent operation during daylight hours f. Presence detection in areas of intermittent pedestrian traffic	• Product datasheet confirming that the product specified achieves 70 luminaire lumens per circuit Watt • Spec confirming control (e.g. daylight, movement etc..) installed for external lighting
Ene 04 **Low Carbon Design**	Passive design analysis	1	1	0	RIBA stage 2	Architect/ BREEAM Assessor/ Energy Consultant/ M&E Engineer	**Passive design analysis (PDA)** **(R1)** Achieve Thermal modelling credit under Hea 04. **(R2)** Identify passive measures during RIBA Stage 2. **(R3)** Implement passive design measures. **(R4)** Quantify the reduced total energy demand and carbon dioxide (CO_2) emissions resulting from the passive design measures.	• Passive design analysis (PDA) • BRUKL with passive design measures ONLY - the baseline must use notional values • Thermal modelling • Evidence that a suitably qualified energy specialist has quantified the CO2e reduction • Summarising results / report

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Ene 04 Low Carbon Design	Free cooling	1	0	0	RIBA stage 2	Building Services	**Free cooling** **(R5)** PDA credit achieved. **(R6)** Undertake free cooling analysis **(R7)** Identify opportunities for the implementation of free cooling solutions. **(R8)** The building is naturally ventilated or uses any combination of the free cooling strategies listed in Free cooling analysis.	• PDA with free cooling analysis • Evidence for suitably qualified energy specialist • Dynamic simulation model demonstrating that the cooling demand can be met by free cooling
Ene 04 Low Carbon Design	Low and zero carbon technologies	1	1	0	RIBA stage 2	Energy Consultant/ M&E Engineer	**Low and zero carbon technologies** **(R9)** An energy specialist (see Definitions) completes a feasibility study (see Low and zero carbon feasibility study) by the end of the Concept Design. **(R10)** Establish the most appropriate recognised local (on site or near site) low or zero carbon (LZC) energy sources for the building or development (see Scope of LZC systems and how they are assessed), based on the feasibility study. **(R11)** Specify local LZC technologies for the building or development in line with the feasibility study recommendations. **(R12)** Quantify the reduced regulated carbon dioxide (CO_2) emissions resulting from the feasibility study.	• LZC analysis / report • Evidence for suitably qualified energy specialist • BRUKL report
Ene 05 **Energy Efficient Cold Storage**	Energy efficient cold storage	N/A	N/A	N/A	RIBA stage 3	Building Services	**Refrigeration energy consumption** **(R1)** Design, install and commission the refrigeration system: c. In accordance with the Code of Conduct for carbon reduction in the refrigeration retail sector and BS EN 378-2:2016 d. Using robust and tested refrigeration systems or components included on the Enhanced Capital Allowance (ECA) Energy Technology Product List (ETPL) or an equivalent list (see Components on the ECA Energy Technology Product List for a list of components) **(R2)** Commission the refrigeration plant in compliance with the commissioning requirements in BREEAM issue Man 04 Commissioning and handover. **Indirect greenhouse gas emissions** **(R3)** Achieve requirements 1 and 2. **(R4)** Demonstrate a saving in indirect greenhouse gas emissions (CO_2 eq.) from the installed refrigeration system over the course of its operational life.	

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Ene 06 **Energy Efficient Transportation Systems**	Energy Consumption	N/A	N/A	N/A	RIBA stage 4	Lift Consultant/ Project Manager	**Energy Consumption** **(R1)** For specified lifts, escalators or moving walks (transportation types): 19) e. Analyse the transportation demand and usage patterns for the building to determine the optimum number and size. f. Calculate in accordance with BS EN ISO 25745 Part 2 and/or Part 3: iv. At least two types of system (for each transportation type required) 20) 21) OR 22) v. An arrangement of systems (e.g., for lifts, hydraulic, traction, machine room-less lift (MRL) 23) 24) OR vi. A system strategy which is 'fit for purpose'. g. Consider the use of regenerative drives (if save energy) h. Specify the transportation system with the lowest energy consumption.	• Transportation demand analysis • Energy Consumption analysis • Technical datasheet • Specification
Ene 06 **Energy Efficient Transportation**	Energy Efficient Features	N/A	N/A	N/A	RIBA stage 4	Project Manager	**Energy Efficient Features** **(R2)** Achieve R1 above **(R3) Lifts -** Specify the following: d. standby condition for off-peak periods. e. car lighting > 70 lumens/circuit Watt. f. drive controller capable of variable speed, variable-voltage, and variable-frequency (VVVF) control of the drive motor. **(R4)** Specify regenerative drives if save energy **(R5) Escalators and/or moving walks** - Specify **one** of the following: c. A load-sensing device that synchronises motor output to passenger demand through a variable speed drive; OR d. A passenger-sensing device for automated operation (auto walk), so the escalator operates in auto start mode when there is no passenger demand.	• Technical datasheet • Specification

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Ene 07 **Energy Efficient Laboratory Systems**	Energy Efficient Laboratory Systems	N/A	N/A	N/A	RIBA stage 2/3	Building Services	**Design Specification** **(R1)** Engage with the client during the preparation of the initial project brief to determine occupant requirements and define laboratory performance criteria. Performance criteria will include, but not be limited to: g. Description of purpose h. Occupant or process activities i. Containment requirements and standards j. Interaction between systems k. Flexibility and adaptability of laboratory facilities l. Any other specific requirements (for example requirements relevant to ventilation, heating or cooling). **(R2)** Size the services system equipment (including ventilation supply and extract) correctly **(R3)** Demonstrate the minimised energy demand of the laboratory facilities resulting from the achievement of the defined design performance criteria. **(R4)** Laboratory containment devices and containment areas (criteria only applicable to buildings containing these facilities). For ducted fume cupboard specified: d. Demonstrate that the average design air flow rate is no greater than 0.16m³/s per linear metre (internal width) of fume cupboard workspace e. Measure the volume flow rate in the exhaust duct (at the boundary of the laboratory) to take account of reductions in (inward) volume flow rate from fume cupboard leakage f. Demonstrate that a reduction in air flow does not compromise the defined performance criteria and does not increase the health and safety risk to future building occupants. **Best practice energy efficient measures** **(R5)** If the laboratory area accounts for at least 10% of the total building floor area: Achieve requirements 1 to 4 (or requirements 1 to 3 where there are no ducted fume cupboards). **(R6)** Design, specify and install laboratory plant and systems to promote energy efficiency. Demonstrate compliance with items in Table 6.4 c. Up to 2 credits: laboratory areas account for at least 10% (but less than 25%) of the total building floor area; OR d. Up to 4 credits: laboratory areas account for 25% or more of the total building floor area. **(R7)** Demonstrate that the energy efficient measures specified do not compromise the defined performance criteria, and do not increase the health and safety risk to future building occupants.	

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
							(R8) Demonstrate that the energy efficient measures specified do not compromise the defined performance criteria, and do not increase the health and safety risk to future building occupants.	
Ene 08 Energy Efficient Equipment	Energy efficient equipment	N/A	N/A	N/A	RIBA stage 3	Building Services	**Energy efficient equipment** **(R1)** Identify the building's unregulated energy consuming loads. Estimate their contribution to the total annual unregulated energy consumption of the building, assuming a typical or standard specification **(R2)** Identify the systems or processes that use a significant proportion of the total annual unregulated energy consumption of the building. **(R3)** Demonstrate a meaningful reduction in the total annual unregulated energy consumption of the building. Table 6.5 lists some examples of significant contributors to unregulated energy consumption. If none of the examples listed in the table will be specified in the assessed building, the design team should justify how a meaningful reduction will be achieved for these contributors. **N.B: a method should be used to estimate the actual energy use based on expected equipment loads and hours of operation. This can be hand calculations, benchmark data or by the methods in CIBSE TM54 to show a meaningful reduction in unregulated energy demand.**	• Calculation/ estimate of systems/process that are major contributors to unregulated energy load. • Specification demonstrating compliance with requirements of table 6.5 • Design note providing justification of a meaningful reduction in energy use for major contributors not in table 6.5
Tra 01 Transport assessment and travel plan	Travel plan	2	2	0	RIBA stage 2	Client/ Landscape Architect/ Transport Consultant	**Travel plan** **(R1)** Develop a travel plan based on a site-specific travel assessment or statement during feasibility stage **(R2)** The site-specific travel assessment or statement covers as a minimum: h. Existing travel patterns and opinions of existing building or site users towards cycling and walking identifying constraints and opportunities, if relevant i. Travel patterns and transport impact of future building users j. Current local environment for walkers and cyclists (accounting for visitors who may be accompanied by young children) k. Reporting of the number and type of existing accessible amenities, see Table 7.1 , within 500m of the site l. Disabled access (accounting for varying levels of disability and visual impairment) m. Calculation of the existing public transport Accessibility Index (AI), see Methodology n. Current facilities for cyclists. **(R3)** The travel plan includes proposals to increase or improve sustainable modes of transport and movement of people and goods during the building's operation and use **(R4)** If the occupier is known, involve them in the development of the travel plan. **(R5)** Demonstrate that the travel plan will be implemented post construction and be supported by the building's management in operation.	• Site specific transport assessment • Travel plan/ draft Travel Plan • Drawings showing travel plan proposals

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Tra 02 Sustainable transport measures	Sustainable transport measures	10	6	4	RIBA stage 3/4	Architect/ BREEAM Assessor/ Client/ Landscape Architect/ M&E Engineer/ Project Manager/ Transport Consultant	**Sustainable transport measures** **(R1)** Achieve Tra 01 **(R2)** Identify the sustainable transport measures, see Table 7.4. **(R3)** Award credits according to the Accessible Index (AI) of the project, and the total number of points achieved for the options implemented, see Table 7.3.	• Evidence to demonstrate the measures targeted (at least 6 measures out of 11 shown in Table 7.4) This could include: • Drawings showing cycle parking • Drawings showing appropriate changing facilities, lockers, drying space including associated lighting information for cycle storage areas. • Annotated maps demonstrating distance to local amenities • Specification for travel information display screens within reception areas.
Wat 01 **Water Consumption**	Water consumption **Exemplary available**	5+1	3	0	RIBA stage 4	Architect/ BREEAM Assessor/ M&E Engineer	**Water Consumption** **(R1)** Use the BREEAM Wat 01 calculator to assess the efficiency of the domestic water-consuming components. **(R2)** The water consumption (L/person/day) for the assessed building is compared against a baseline performance and BREEAM credits awarded based upon Table - 35. 1 credit - 12.5% improvement over baseline performance- litres/person/day 2 Credits - 25% improvement over baseline performance- litres/person/day **3 credits - 40% improvement over baseline performance- litres/person/day** 4 credits - 50% improvement over baseline performance- litres/person/day 5 credits - 55% improvement over baseline performance- litres/person/day Exemplary - 65% improvement over baseline performance- litres/person/day **(R3**) If a greywater or rainwater system (see Definitions) is specified, use its yield in L/person/day to offset potable water demand from components. **(R4)** If a greywater or rainwater system is specified and installed: **c.** Greywater systems in compliance with BS 8525-1:2010 Greywater Systems - Part 1 Code of Practice **d.** Rainwater systems in compliance with BS 8515:2009+A1:2013 Rainwater Harvesting Systems - Code of practice. **25)** Achieve Wat 02 requirement 6, if you intend to pursue a post occupancy stage certification.	• Wat 01 calculator • Sanitaryware Specification schedule • Product datasheet confirming flowrates

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Wat 02 Water Monitoring	Prerequisite (good to outstanding)	prerequisite	prerequisite	-	RIBA stage 3	Building Services	**Prerequisite** **(R0)** 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.	• Drawing showing location of water meter
Wat 02 Water Monitoring	Water Monitoring	1	1	0	RIBA stage 4	M&E Engineer	**Water Monitoring** **(R1)** Meet R0 **(R2)** For water-consuming plant or building areas consuming 10% or more of the building's total water demand: c. Fit easily accessible sub-meters, OR d. Install water monitoring equipment integral to the plant or area. **(R3)** For each meter (main and sub): c. Install a pulsed or other open protocol communication output, AND d. Connect it to an appropriate utility monitoring and management system, e.g., a building management system (BMS), for the monitoring of water consumption. If there is no BMS system in operation at Post-Construction stage, award credits provided that the system used enables connection when the BMS becomes operational. **(R4)** In buildings with swimming pools, or large water tanks and aquariums, fit separate sub-meters on the water supply of the above and any associated changing facilities (toilets, showers etc.) irrespective of their water consumption levels. **(R5)** In buildings containing laboratories, fit a separate water meter on the water supply to any process or cooling loop for 'plumbed-in' laboratory process equipment, irrespective of their water consumption levels. **Additionally, for those pursuing a post-occupancy stage certification:** **(R6)** The water monitoring strategy used enables the identification of all water consumption for sanitary uses as assessed under Wat 01 (L/person/day) if a post occupancy stage certification is sought.	• Schematics showing submetering • Specification and corresponding product datasheet of the product • Specification highlighting connection to BMS or ability to be connected

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Wat 03 **Leak Detection**	Leak Detection System	1	1	0	RIBA stage 4	M&E Engineer	**Leak Detection System** **(R1)** Install a leak detection system capable of detecting a major water leak:On the utilities water supply within the buildings, to detect any major leaks within the buildingsANDBetween the buildings and the utilities water supply, to detect any major leaks between the utilities supply and the buildings under assessment. **(R2)** The leak detection system is: e. A permanent automated water leak detection system that alerts the building occupants to the leak OR an inbuilt automated diagnostic procedure for detecting leaks f. Activated when the flow of water passing through the water meter or data logger is at a flow rate above a pre-set maximum for a pre-set period of time. This usually involves installing a system which detects higher than normal flow rates at meters or sub-meters. It does not necessarily require a system that directly detects water leakage along part or the whole length of the water supply system g. Able to identify different flow and therefore leakage rates, e.g. continuous, high or low level, over set time periods. Although high and low level leakage rates are not specified, the leak detection equipment installed must have the flexibility to distinguish between different flow rates to enable it to be programmed to suit the building type and owner's or occupier's usage patterns. h. Programmable to suit the owner's or occupier's water consumption criteriae. Where applicable, designed to avoid false alarms caused by normal operation of large water consuming plant such as chillers.Where there is physically no space for a leak detection system between the utilities water meter and the building, alternative solutions can be used, provided that a major leak can still be detected.	• Specification with leak detection system which meet the criteria in R2 • Product datasheet for the leak detection system
Wat 03 **Leak Detection**	Flow Control Devices	1	1	0	RIBA stage 4	M&E Engineer	**Flow Control Devices** **(R3)** Install flow control devices that regulate the supply of water to each WC area or facility according to demand, in order to minimise undetected wastage and leaks from sanitary fittings and supply pipework.	• Domestic water layouts/schematics with flow controls devices/PIR 26)
Wat 04 **Water Efficient Equipment**	Water Efficient Equipment	1	1	0	RIBA stage 4	Landscape Architect/ M&E Engineer	**Water Efficient Equipment** **(R1)** Identify all water demands from uses other than those listed under Wat 01 Table 8.1 that could be realistically mitigated or reduced. Where there is no water demand from uses other than domestic scale, sanitary use components in the building, this issue is not applicable. **(R2)** Identify systems or processes to reduce the relevant water demand (requirement 1), and establish, through either good practice design or specification, a demonstrable reduction in the total water demand of the building.	• Drawings and specifications for irrigation systems • Evidence to support reduction of water demand

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Mat 01 - Environmental impacts from construction products - Building life cycle assessment (LCA)	Superstructure **Exemplary available**	6+3	6	0	RIBA stage 2	Architect/ BREEAM Assessor/ Life Cycle Assessment (LCA) Consultant	**Life Cycle Impacts** **(R1) Comparison with BREEAM benchmark - RIBA Stage 2** - Carry out LCA of superstructure (using simplified LCA calculator or IMPACT compliant) Submit **before planning submission** (that includes external materials or product spec) Mat 01/02 result submission to BRE **(R2) Comparison with BREEAM benchmark - RIBA Stage 4 -** Carry out LCA of superstructure (using simplified LCA calculator or IMPACT compliant) Submit **before end of RIBA Stage 4** Mat 01/02 results to BRE **Option appraisal - RIBA stage 2** **(R3) -** meet R1 **(R4)** Undertake 2 to 4 significantly different superstructure design options and integrate the LCA option in the wider design decision-making process. Detail Reasons options are progressed beyond Concept design and which ones are not. **Option appraisal - RIBA stage 4** **(R5) -** meet R2 **(R6)** Undertake 2 to 3 significantly different superstructure design options and integrate the LCA option in the wider design decision-making process.	• Specification • Mat 01/02 submission • Allocation to undertake the material assessment • Cost plan
Mat 01 - Environmental impacts from construction products - Building life cycle assessment (LCA)	Substructure	1	1	0	RIBA stage 2	LCA Consultant	**Substructure and hard landscaping options appraisal during Concept Design** **(R6) – R3 & 4 above are achieved (R7)** Carry out building LCA options appraisal of a combined total of at least six significantly different substructure or hard landscaping design options (at least two shall be substructure and at least two shall be hard landscaping)	• Specification • Mat 01/02 submission • Allocation to undertake the material assessment
Mat 02 Environmental impacts from construction products - Environmental Product Declarations (EPD)	Specification of products with a recognised environmental product declaration (EPD)	1	1	0	RIBA stage 4	Architect/ BREEAM Assessor	**Specification of products with a recognised environmental product declaration (EPD)** **(R1)** Specify construction products with EPD that achieve a total EPD points score of at least 20, according to the methodology. **(R2)** Enter the details of each EPD into the Mat 01/02 Results Submission Tool, including the material category classification. The Mat 01/02 Results Submission Tool will verify the EPD points score and credit award. Material categories e.g., timber/concrete and cementitious/ metal/glass/paint/plastic etc.	• Specification • Mat 01/02 submission • Completed proforma outling any products specified during design stage and where applicable a copy of their associated EPD

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Mat 03 - Responsible sourcing of construction products	Timber (pre-requisite) **Critical importance**	prerequisite	prerequisite	-	RIBA stage 3	Architect Principle Contractor	**Pre-requisite** **(R1)** All timber and timber based products used on the project is 'Legally harvested and traded timber' (see Relevant definitions). **Must demonstrate full chain of custody** **Critical importance - This is a pre-requisite to achieve any BREEAM rating**	• All relevant specifications that contain timber products to have the relevant timber requirements. (i.e. only use FSC or PEFC certified timber with full chain of custody) • For any products containing timber that are specified at design stage provide evidence that this is FSC.
Mat 03 - Responsible sourcing of construction products	Enabling sustainable procurement	1	1	0	RIBA stage 1	Project Manager	**Sustainable Procurement Plan** **(R2)** A sustainable procurement plan must be used by the design team to guide specification towards sustainable construction products. The plan must: f. Be in place before Concept Design. g. Include sustainability aims, objectives and strategic targets to guide procurement activities. Note: targets do not need to be achieved for the credit to be awarded but justification must be provided for targets that are not achieved. h. Include a requirement for assessing the potential to procure construction products locally. There must be a policy to procure construction products locally where possible. i. Include details of procedures in place to check and verify the effective implementation of the sustainable procurement plan. In addition, if the plan is applied to several sites or adopted at an organisational level it must: j. Identify the risks and opportunities of procurement against a broad range of social, environmental and economic issues following the process set out in BS ISO20400:2017(170).	• Procurement plan in place before RIBA stage 2
Mat 03 - Responsible sourcing of construction products	Measuring responsible sourcing **Exemplary available**	3+1	2	0	RIBA stage 34	Architect/ BREEAM Assessor/ Project Manager	**Responsible Sourcing of Materials** **(R3)** Fill out Mat 03 calculator	• Materials Schedule • Materials Specification • Design Drawings • For any products specified at design stage provide associated responsible Sourcing Certificates (e.g. BES6001, ISO14001, PEFC, FSC, CARES etc.)
Mat 05 Designing for Durability and Resilience	Protecting vulnerable parts of the building from damage & protecting exposed parts of the building from material degradation	1	1	0	RIBA stage 4	Architect/ Landscape Architect	**Protecting Vulnerable Parts of the Building from Damage.** **(R1)** Protection measures are incorporated into the building's design and construction to reduce damage to the building's fabric or materials in case of accidental or malicious damage occurring. These measures must provide protection against: e. Negative impacts of high user numbers in relevant areas of the building (e.g. corridors, lifts, stairs, doors etc.).	• Drawings • Specification • Design notes

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
							f. Damage from any vehicle or trolley movements within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas. g. External building fabric damage by a vehicle. Protection where parking or manoeuvring areas are within 1 metre of the building façade and where delivery areas or routes are within 2 metres of the façade, i.e. specifying bollards or protection rails. h. Potential malicious damage to building materials and finishes, in public and common areas where appropriate. **Protecting exposed parts of the building from material degradation** **(R2)** Key exposed building elements have been designed and specified to limit long and short term degradation due to environmental factors. This can be demonstrated through one of the following: c. The element or product achieving an appropriate quality or durability standard or design guide. See Table 9.14. If none are available, use BS 7543:2015(172) as the default appropriate standard OR d. A detailed assessment of the element's resilience when exposed to the applicable material degradation and environmental factors. 27) **(R3)** Include convenient access to the roof and façade for cost effective cleaning, replacement and repair in the building's design. **(R4)** Design the roof and façade to prevent water damage, ingress and detrimental ponding. See Table 9.14 for an example list of relevant industry durability and quality standards.	
Mat 06 **Material Efficiency**	Material Efficiency	1	0	0	RIBA stage 1	Architect/ Client/ Project Manager	**Material Efficiency** **(R1)** At the Preparation and Brief and Concept Design stages, set targets and report on opportunities and methods to optimise the use of materials. These must be done for each of the following stages, see Table 9.15, Preparation and Brief, Concept Design, Developed Design, Technical Design, Construction **(R2)** Develop and record the implementation of material efficiency, see Table 9.15, during Developed Design,Technical Design and Construction. **(R3)** Report the targets and actual material efficiencies achieved. Examples include:- Designing to standard material dimensions to reduce cut offs and waste on site- Using materials that can be recycled at the end of their service life- Making use of recycled or reclaimed materials- Designing for deconstruction and material reuse- Using pre fabricated elements where possible to reduce material waste- Using lightweight structural design elements- Optimising the foundation design for embodied environmental impact- Consider using an exposed thermal mass design strategy to reduce finishes	• Material efficiency technical memo/report (must include quantities of materials saved).

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Wst 01 Construction Waste Management	Pre-demolition audit	1	1	0	RIBA Stage 2	Project Manager	**Pre-Demolition Audit** **(R1)** Complete a pre-demolition audit of any existing buildings, structures or hard surfaces being considered for demolition. This must be used to determine whether refurbishment or reuse is feasible and, in the case of demolition, to maximise the recovery of material for subsequent high grade or value applications. The audit must cover the content of Pre-demolition audit scope and: e. Be carried out at Concept Design stage (RIBA Stage 2) by a competent person (see Definitions) prior to strip-out or demolition works f. Guide the design, consider materials for reuse and set targets for waste management g. Engage all contractors in the process of maximising high grade reuse and recycling opportunities h. Compare actual waste arisings and waste management routes used with those forecast and investigate significant deviations from planned targets 28) **(R2)** Make reference to the audit in the resource management plan (RMP)	• Pre-demolition audit covering points a-d by a contractor appointed before end of RIBA stage 4 • Requirement for inclusion of pre-demolition audit in RMP within Contractor's ER's
	Construction Resource Efficiency **Exemplary available**	3+1	2	0	RIBA stage 4	Contractor/ Project Manager	**Construction Resource Efficiency** **(R3)** Prepare a compliant Resource Management Plan (RMP) covering: c. Non-hazardous waste materials (from on-site construction and dedicated off-site manufacture or fabrication, see Definitions), including demolition and excavation waste. d. Accurate data records on waste arisings and waste management routes. 29) **(R4)** Meet the following wastage rates: 1 credit = <11.1 tonnes or <13.3m3 (actual volume, not bulk volume) **2 credits = <6.5 tonnes or <7.5m3** 3 credits = <3.2 tonnes or <1.6m3	• Contractor's ER's requiring the provision of: • RMP • Waste records
	Diversion of resources from Landfill **Exemplary available**	1	1	0	RIBA stage 4	Contractor/ Project Manager	**Diversion of Resources from Landfill** **(R5)** Meet the following diversion from landfill rates: Non-Demo - 70% Volume / 80% Tonnage Demolition - 80% Volume / 90% Tonnage Excavation - n/a **(R6) Sort waste materials into separate key waste groups (e.g., concrete, insulation, timber, packaging, inert, metals, gypsum, plastics, floor coverings etc...)**	• Contractor's ER's requiring the provision of: • RMP • Waste records

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Wst 02 **Recycled Aggregates**	Recycled aggregates **Exemplary available**	1+1	0	0	RIBA stage 4	Principal Contractor Structural Engineer	**Recycled Aggregates** **(R1)** The percentage of high grade aggregate that is recycled or secondary aggregate, specified in each application (present) must meet the following minimum % levels (by weight or volume) to contribute to the total amount of recycled or secondary aggregate, as specified in Table 54. **(R2)** The total amount of recycled or secondary aggregate specified, and meeting requirement 1, is greater than 25% (by weight or volume) of the total high grade aggregate specified for the development. Where the minimum level in requirement 1 is not met for an application, all the aggregate in that application must be considered as primary aggregate when calculating the total high grade aggregate specified. **(R3)** The recycled and/or secondary aggregates are EITHER: c. Construction, demolition and excavation waste obtained on-site or off-site 30) 31) OR 32) d. Secondary aggregates obtained from a non-construction post-consumer industrial by-product source (see Relevant definitions section).	• Recycled content calculator • Specification • Letter of commitment from Contractor
Wst 03 Operational Waste	Operational waste	1	1	0	RIBA stage 4	Architect/ Client	**Operational waste** **(R1)** Provide a dedicated space for the segregation and storage of operational recyclable waste generated. The space is: d. Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams e. Accessible to building occupants or facilities operators for the deposit of materials and collections by waste management contractors f. Of a capacity appropriate to the building type, size, number of units (if relevant) and predicted volumes of waste that will arise from daily or weekly operational activities and occupancy rates. **(R2)** For consistent and large amounts of operational waste generated, provide: d. Static waste compactors or balers; situated in a service area or dedicated waste management space e. Vessels for composting suitable organic waste OR adequate spaces for storing segregated food waste and compostable organic material for collection and delivery to an alternative composting facility f. A water outlet provided adjacent to or within the facility for cleaning and hygiene purposes where organic waste is to be stored or composted on site.	• Calculations demonstrating anticipated waste volumes • Drawings demonstrating adequate space based on above calculations and adequately accessible • Confirmation from Client that the space will be clearly labelled. 33)

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Wst 04 Speculative finishes (Offices only)	Speculative finishes	N/A	N/A	N/A	RIBA stage 3	Architect / Client	**Speculative finishes** • **(R1)** For tenanted areas, where the future occupant is not known and carpets or other floor or ceiling finishes are installed, these must be limited to a show area only. • • OR • • **(R1)** Only install floor and ceiling finishes selected by the known occupant of a development. Alternatively, where only ceiling finishes and no carpets are installed, the building owner confirms that the first tenants will not be permitted to make substantial alterations to the ceiling finishes.	• Letter of compliance • Agreement from Client around speculative finishes
Wst 05 Adaptation to Climate Change	Adaptation to Climate Change - structural and fabric resilience **Exemplary available**	1+1	1	0	RIBA stage 2	Architect/ BREEAM Assessor	**Resilience of structure, fabric, building services and renewables installation** **(R1)** A systematic risk assessment to identify the impact of expected extreme weather conditions arising from climate change on the building over its projected life cycle. The assessment covers the installation of building services and renewable systems, as well as structural and fabric resilience aspects and includes: f. Hazard identification g. Hazard assessment h. Risk estimation i. Risk evaluation j. Risk management **(R2)** Develop recommendations or solutions based on the climate change adaptation strategy appraisal, **during or prior to Concept Design**, that aim to mitigate the identified impact. **(R3)** Provide an update during Technical Design demonstrating how the recommendations or solutions proposed at Concept Design have been implemented where practical and cost effective. Omissions have been justified in writing by the assessor.	• Climate Change Adaptation Strategy Appraisal for Structural and fabric resilience • Systematic (Structural and fabric resilience specific) risk assessment 34) Note: requires input from whole design team.

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Wst 06 **Design for disassembly and adaptability**	Design for disassembly and adaptability	2	2	0	RIBA stage 2	Architect/ Contractor	**Design for disassembly and functional adaptability -recommendations** **(R1)** Conduct a study to explore the ease of disassembly and the functional adaptation potential of different design scenarios by Concept Design. **(R2)** Develop recommendations or solutions based on the study (requirement 1 above), during or prior to Concept Design, that aim to enable and facilitate disassembly and functional adaptation. **Disassembly and functional adaptability – implementation** **(R3)** Achieve R1 and R2. **(R4)** Provide an update, during Technical Design, on:a) How the recommendations or solutions proposed by Concept Design have been implemented where practical and cost effective. Omissions to be justified in writing to the assessor.b) Changes to the recommendations and solutions during the development of the Technical Design. **(R5)** Produce a building adaptability and disassembly guide to communicate the characteristics allowing functional adaptability and disassembly to prospective tenants.	• Building-specific functional adaptation strategy study Note: requires input from whole design team.
LE 01 **Site Selection**	Previously Occupied Land	1	1	0	RIBA stage 4	Architect	**Previously Occupied Land** **(R1)** At least 75% of the proposed developments footprint on an area of land which has previously been occupied.	• DAS describing the previous use including historical maps • Contaminated land desk study report if available
LE 01 **Site Selection**	Contaminated Land	1	0	0	RIBA stage 3/4	Client/ Contaminated Land Consultant	**Contaminated land** **(R2)** A contaminated land professional's site investigation, risk assessment and appraisal has deemed land within the site to be affected by contamination. The site investigation, risk assessment and appraisal have identified: d. The degree of contamination e. The contaminant sources/types f. The options for remediating sources of contamination which present an unacceptable risk. **(R3)** The client or principal contractor confirms that remediation of the site will be carried out in accordance with the remediation strategy and its implementation plan as recommended by the contaminated land professional.	• Contaminated site investigation and risk assessment/report • Commitment letter from the contractor that the remediation strategy will be implemented
LE 02 **Identifying and understanding the risks and**	Assessment route selection	prerequisite	prerequisite	-	RIBA stage 1	Ecologist/ Project Manager	**Ecological Value of Site** **(R1) Route 2** (by ecologist) in line BREEAM Guidance Note GN34 BREEAM Ecological Risk Evaluation Checklist.	• Risk evaluation checklist completed • Appointment of ecologist if going through Route 2

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
opportunities for the site							**(R2)** The client or contractor confirms compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site.	• EMP detailing the processes in place during construction to monitor ecology
	Survey and evaluation/Determining the ecological outcome for the site **Exemplary available**	2+1	1	1	RIBA stage 1	Ecologist/ Project Manager	**(R4-5) Route 2 - complex ecological systems -** Ecologist appointed and undertake survey at RIBA stage 1 Baseline survey include: d. Current and potential ecological value and condition of the site, and related areas within the zone of influence. e. Direct and indirect risks to current ecological value f. Capacity and feasibility for enhancement of the ecological value of the site and, where relevant, areas within the zone of influence. **(R6)** Survey will inform site preparation, design and construction works **(R7-9)** Requirements 3, 4-6 have been achieved. During RIBA stage 2, select the optimum ecological outcome according to the appropriate hierarchy: **Route 2:** 6. Avoidance 7. Protection 8. Reduction or limitation of negative impacts 9. On-site compensation 10. Enhancement, considering the capacity and feasibility within the site, or where viable, off-site. **(R10)** Following this the optimal site-wide outcome is selected after liaising with representative stakeholders and the project team.	• Completed assessment using GN35 (Route 1) • Ecologist's survey and recommendation following hierarchy (Route 2) • Evidence of ecologist liaison with stakeholders
LE 03 **Managing negative impacts on ecology**	Identification and understanding the risks and opportunities for the site	1	1	0	RIBA stage 2	Ecologist	**Identification and understanding the risks and opportunities for the site** **(R1-3)** LE 02 has been achieved **(R4-5)** Site preparation and construction works have been planned for and implemented at an early project stage to optimise benefits and outputs.	• Ecology report / study • Contractor's ER's

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
LE 03 Managing negative impacts on ecology	Managing negative impacts of the project	2	1	1	RIBA stage 5	Ecologist	**Managing negative impacts of the project** **(R7) Route 2 (up to two credits)** Negative impacts from site preparation and construction works have been managed according to the hierarchy: c. No overall loss of ecological value has occurred (2 credits) OR d. The loss of ecological value has been limited as far as possible (1 credit)	• Ecology report / study • Contractor's ER's
LE 04 Enhancement of Ecological value	Identification and understanding the risks and opportunities for the site	prerequisite	prerequisite	-	RIBA stage 4	Ecologist	**Identification and understanding the risks and opportunities for the site** **(R1)** LE 03 - R4-5 is achieved **(R2)** LE02 R2 is achieved - compliance with regulations	• Ecology report / study
LE 04 Enhancement of Ecological value	Liaison, implementation and data collection - **Route 2 only**	1	1	0	RIBA Stage 4	Ecologist	**Liaison, implementation and data collection - Route 2 ONLY** **(R4)** Project team implement measures to enhance ecological value: c. on-site d. off-site within zone of influence	• Ecology report / study • Contractor's ER's
LE 04 Enhancement of Ecological value	Change and enhancement of ecology - **Route 2 only Exemplary available**	3+1	1	3	RIBA Stage 4	Ecologist/ Landscape Architect/ Project Manager	**Change and enhancement of ecology - Route 2 ONLY** **(R6) Calculate ecological value using GN 36:** d. Minimising loss of ecological value (75-94%) - 1 credit e. No net loss of ecological value (95-104%) - 2 credits **f.** Net gain of ecological value (105-109%) - 3 credits	• Ecology report / study
LE 05 Long Term Impact on Biodiversity	Roles and responsibilities	prerequisite	prerequisite	-	RIBA Stage 4	Ecologist/ Project Manager	**Long Term Impact on Biodiversity** **(R1)** compliance with UK and EU regs. **(R2)** LE 04 has been implemented	• Ecology report / study • Contractor's ER's

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
LE 05 Long Term Impact on Biodiversity	Planning, liaison, data, monitoring and review management and maintenance	1	1	0	RIBA Stage 4	Ecologist/ Project Manager	**Planning, liaison, data, monitoring and review management and maintenance** **(R3)** Where additional measures to improve the assessed site's long-term biodiversity are adopted, according to Table - 55. One credit where at least 2 additional measures are adopted Two credits where at least 4 additional measures are adopted **(R4)** In support of the above and to help ensure their continued relevance over the period of the project the following should be considered: g. Monitoring and reporting of on the ecological outcomes for site implemented at the design and construction stage h. Monitoring and reporting of outcomes and successes from the project i. Arrangements for the ongoing management of landscape and habitat connected to the project (on and, where relevant, off site) j. Maintaining the ecological value of the site and its relationship or connection to its zone of influence k. Maintaining the site in line with the any sustainability linked activities, e.g. ecosystems benefits (LE 02). l. Remedial or other management actions are carried out which relate to those identified in LE 02, LE 03 and LE 04. **(R5)** Include section in building user guide on Ecology and Biodiversity to inform the owner or occupant of local ecological features, value and biodiversity on or near the site.	• Ecology report / study • Contractor's ER's
LE 05 Long Term Impact on Biodiversity	Landscape and ecology management plan	1	1	0	RIBA Stage 4	Ecologist / Client	**Landscape and ecology management plan** **(R6)** Landscape and ecology management plan, or similar, is developed in accordance with BS 42020:2013(210) covering as a minimum the first five years after project completion and includes: d. Actions and responsibilities, prior to handover, to give to relevant individuals e. The ecological value and condition of the site over the development life. f. Identification of opportunities for ongoing alignment with activities external to the development project and which supports the aims of BREEAM's Strategic Ecology Framework. Identification and guidance to trigger appropriate remedial actions to address previously unforeseen impactse. Clearly defined and allocated roles and responsibilities. **(R7)** The landscape and management plan or similar is updated as appropriate to support maintenance of the ecological value of the site.	• Landscape and ecology management plan • Client commitment to the recommendations of the LEMP

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Pol 01 Impact of Refrigerant	Impact of refrigerants	3	3	0	RIBA stage 4	Building Services	**Impact of Refrigerants** **(R1)** No refrigerant use within the installed plant or systems (3 credits). OR alternatively, where the building does use refrigerants, the three credits can be awarded as follows: **(R2)** Pre-requisite – All systems with electric compressors comply with the requirements of BS EN 378:2016 (parts 2 and 3). Refrigeration systems containing ammonia comply with the Institute of Refrigeration Ammonia Refrigeration Systems code of practice. **(R3)** Impact of refrigerant **2 credits:** The direct effect life cycle CO_2 equivalent emissions (DELC) of ≤100 CO_2-eq/kW. For systems which provide cooling and heating, the worst performing output based on the lower of kW cooling output and kW heating output is used to complete the calculation. OR **(R4)** All refrigerants used have a global warming potential (GWP) ≤10. OR **(R5) 1 Credit:** Systems using refrigerants have a DELC of ≤1000kgCO_2-eq/kW cooling and heating capacity.	• Specifications confirming compliance with specified standards • Datasheets/correspondence with manufacturers for specified systems confirming DELC
Pol 01 Impact of Refrigerant	Leak detection	N/A	N/A	N/A	RIBA stage 4	Building Services	**Leak Detection** **(R6)** All systems are hermetically sealed or only use environmentally benign refrigerants OR **(R7)** Where the systems are not hermetically sealed, systems have: d. A permanent automated refrigerant leak detection system, that is robust and tested, and capable of continuously monitoring for leaks. e. An inbuilt automated diagnostic procedure for detecting leakage is enabled. f. In the event of a leak, the system must be capable of automatically responding and managing the remaining refrigerant charge to limit loss of refrigerant.	• Specifications confirming leak detection specified • Datasheet/manufacturer's correspondence confirming compliance with requirements

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Pol 02 Local Air Quality	Local air quality	2	2	0	RIBA stage 4	M&E Engineer	**Local Air Quality** **(R1)** All heating and hot water is supplied by non-combustion systems. For example, only powered by electricity. OR **(R2)** Emissions from all installed combustion plant that provide space heating and domestic hot water do not exceed the levels set in Table 12.4 and Table 12.5 (please ask the assessor for a copy of these). The measurements must be provided by manufacturers, following the labelling requirements of the European directive 2009/125/EC. No credits can be awarded for Pol 02 if any of the combustion appliances are not covered in Table 12.4 and Table 12.5 (please ask the assessor for these tables).	• Specifications confirming implementation of all electric systems or • Specifications for combustion systems being installed and manufacturers information confirming emissions levels
Pol 03 **Surface Water Run- Off**	Flood Resilience	2	2	0	RIBA stage 4	Civil Engineer/ Flood Risk Assessment (FRA) Specialist	**Flood Resilience** **(R1)** Prerequisite **-**An appropriate consultant is appointed to carry out and demonstrate the development's compliance with all criteria. **(R2)** Two credits - Low flood risk - 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. The FRA must take all current and future sources of flooding into consideration. **(R3)** One credit Medium / High flood risk - 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. The FRA must take all current and future sources of flooding into consideration. For smaller sites refer to Level of detail required in the FRA for smaller sites, which overrides requirement 2. **(R4)** To increase the resilience and resistance of the development to flooding, one of the following must be achieved: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 site's flood zoneb. 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 8533:2017.	• Site-specific Flood Risk Assessment (FRA)
Pol 03 **Surface Water Run- Off**	Surface Water Run-Off	2	2	0	RIBA stage 4	Civil Engineer/ Client	**Surface Water Run-Off** **(R5)** Pre-requisite - Surface water run-off design solutions must be bespoke, i.e. they must take account of the specific site requirements and natural or man-made environment of and surrounding the site. The priority levels detailed in the Methodology must be followed, with justification given by the appropriate consultant where water is allowed to leave the site. **Surface Water Run-off rate (1 credit)** **(R6)** For brownfield sites, drainage measures are specified so that peak rate of run off from the site to watercourses shows 30% improvement for the developed site compared with pre-developed. This should comply at the 1 yr & 100 yr return period events.	• Calculations confirming peak run off rates and site improvement and allowance for climate change • Client confirmation for the long term maintenance of all proposed SuDS • Drawings demonstrating the drainage design measures required to reduce the peak rate of run-off

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
							(R7) For Greenfield sites, drainage measures are specified so that the peak rate of run off from the site to the watercourses is no greater for the site than it was for the pre-development site. This should comply at the 1 year and 100-year return period events. **(R8)** Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified Sustainable Drainage Systems (SuDS) are in place. **(R9)** Calculations include an allowance for climate change. This should be made in accordance with current best practice planning guidance. **Surface water run-off volume (1 credit)** **(R10)** Flooding of property will not occur in the event of local drainage system failure (caused either by extreme rainfall or a lack of maintenance); ANDEITHER **(R11)** Drainage design measures are specified so 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. This must be for the 100-year 6-hour event, including an allowance for climate change **(R12)** Any additional predicted volume of run-off for this event is prevented from leaving the site by using infiltration or other SuDS techniques. OR (only where requirements 11 and 12 cannot be achieved). **(R13)** Justification from the appropriate consultant indicating why the above requirements cannot be achieved, i.e. where infiltration or other SuDS techniques are not technically viable options. **(R14)** Drainage design measures are specified to ensure that the post development peak rate of run-off is reduced to the limiting discharge. The limiting discharge is defined as the highest flow rate from the following options:a. The pre-development 1-year peak flow rate (for the one-year peak flow rate, the one-year return period event requirement applies);b. The mean annual flow rate Qbar; ORc. 2L/s/ha. **(R15)** Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS are in place. **(R16)** For either option, above calculations must include an allowance for climate change; this should be made in accordance with current best practice planning guidance.	

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Pol 03 **Surface Water Run- Off**	Minimising Water Course Pollution	1	0	1	RIBA stage 4	Civil Engineer/ Client	**Minimising Water Course Pollution** **(R17)** There is no discharge from the developed site for rainfall up to 5mm. **(R18)** Areas with a low risk source of watercourse pollution have an appropriate level of pollution prevention treatment is provided, using appropriate SuDS techniques. **(R19)** Areas with a high risk of contamination or spillage of substances such as petrol and oil, have separators (or an equivalent system) are installed in surface water drainage systems. **(R20)** Chemical or liquid gas storage areas have a means of containment fitted to the site drainage system (i.e. shut-off valves). This is to prevent the escape of chemicals to natural watercourses in the event of a spillage or bunding failure. **(R21)** All water pollution prevention systems have been designed and installed in accordance with the recommendations of documents such as the SuDS manual and other relevant industry best practice. They must be bespoke solutions taking account of the specific site requirements and natural or man-made environment of and surrounding the site. **(R22)** A comprehensive and up to date drainage plan of the site will be made available for the building or site occupiers. **(R23)** Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS must be in place. **(R24)** All external storage and delivery areas are designed and detailed in accordance with the current best practice planning guidance.	• Drainage plan highlighting high risk areas and water pollution prevention measures • Calculations demonstrating no rainfall discharge up to 5mm • Client confirmation of maintenance agreements.
Pol 04 **Reduction of Night Time Light Pollution**	Reduction of Night Time Light Pollution	1	1	0	RIBA stage 4	M&E Engineer	**Night-time Light Pollution** **(R1) External** lighting pollution has been eliminated through effective design that removes the need for external lighting. This does not adversely affect 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: **(R2)** 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. **(R3)** All external lighting (except for safety and security lighting) can be automatically switched off between 23:00 and 07:00. **(R4)** 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. **(R5)** Illuminated advertisements, where specified, must be designed in compliance with ILP PLG 05 The Brightness of Illuminated Advertisements.	• Specification confirming compliance with appropriate standards • Specification outlining requirements for lighting control and datasheet where product specified. • Drawings confirming location of external lighting and lighting control

Issue	Credit	Credit(s) Available	Credit(s) Targeted	Potential Credit(s)	RIBA Stage Action Required	Responsibility	Credit Requirements	Design Stage Evidence*
Pol 05 Reduction of Noise Pollution	Reduction of Noise Pollution	1	1	0	RIBA stage 4	Acoustic Engineer/ M&E Engineer	**Reduction of Noise Pollution** **(R1)** There are no noise-sensitive areas within the assessed building or within 800 m radius of the assessed site. OR **(R2)** Where there are noise-sensitive areas within the assessed building or noise-sensitive areas within 800 m radius of the assessed site, a noise impact assessment compliant with BS 4142:2014 is commissioned. Noise levels must be measured or determined for: c. Existing background noise levels at the nearest or most exposed noise-sensitive development to the proposed assessed site including existing plant on a building, where the assessed development is an extension to the building. d. Noise rating level from the assessed building, **(R3)** The noise impact assessment must be carried out by a suitably qualified acoustic consultant. **(R4)** The noise level from the assessed building, as measured in the locality of the nearest or most exposed noise-sensitive development, must be at least 5dB lower than background noise throughout the day and night. **(R5)** If the noise sources from the assessed building are greater than the levels described in requirement 4, measures have been installed to attenuate the noise at its source to a level where it will comply with the requirement.	• Noise Impact Assessment

We are Waterman, where every project matters

We deliver progressive, sustainability-driven environmental and engineering consultancy services across every sector. We think differently, and we're harnessing our collective expertise to deliver greener, healthier and well-connected communities, networks and built environments.

Based in strategic locations throughout the UK and Ireland, our team of specialists is at the forefront of tackling the climate emergency and forging a path to a Net Zero built environment.

UK & Ireland Office Locations