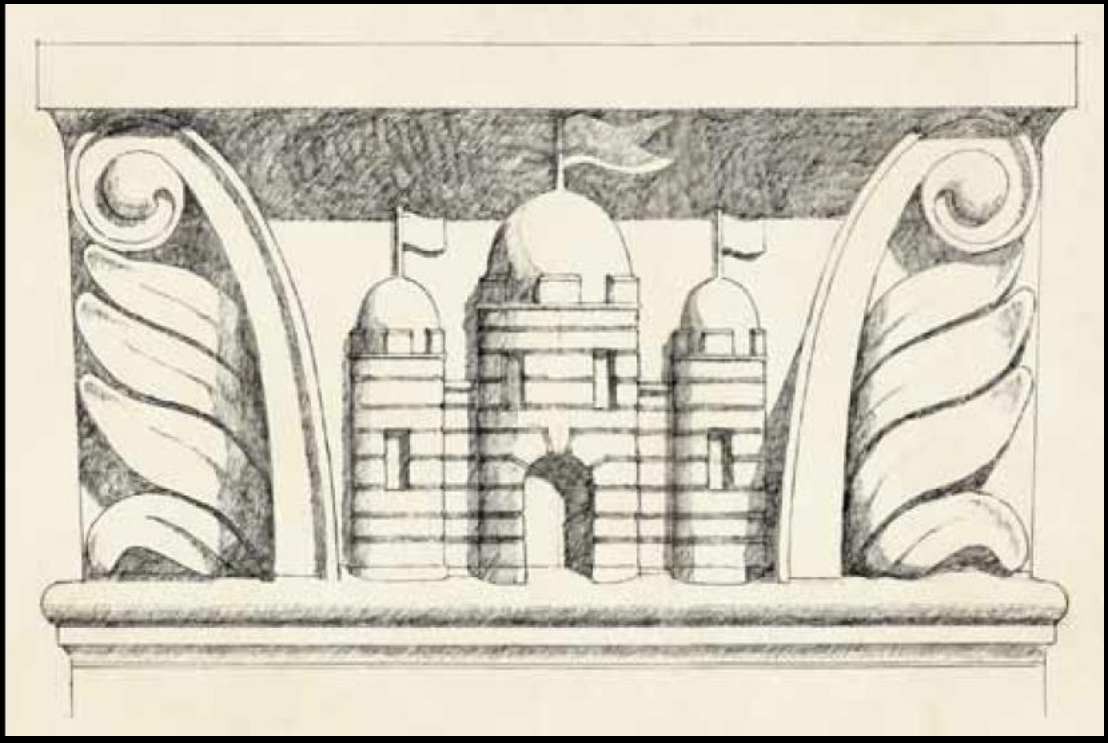

EAGLE QUARTER II
NEWBURY

BREEAM PRE-ASSESSMENT

September 2023

LOCHAILORT

Environmental Economics Ltd

BREEAM Version 6
Retail pre-assessment

Eagle Quarter II, Newbury

Revision history

REVISION	ISSUE DATE	PREPARED BY	CHECKED BY
1	02/09/2022	Matthew Cooke BSc	Tim James C.Eng MCIBSE BSc MSc
2	01/09/2023	Matthew Cooke BSc	Tim James C.Eng MCIBSE BSc MSc
3	21/09/2023	Matthew Cooke BSc	Tim James C.Eng MCIBSE BSc MSc

About Environmental Economics

Our team of experienced consultants specialise in construction and building energy. We have qualifications in sustainability, energy, engineering, building physics and construction as well as environmental, quality management and auditing.

For over 20 years, we have provided assessments and consultancy for some of the largest UK house builders, including Barratt Developments, David Wilson Homes, Bellway Homes, Abbey New Homes and Davidsons. We develop flexible, practical, cost-effective specifications for our clients through identifying solutions and delivering design advice. This includes the following disciplines:

- *Overheating Analysis (dynamic thermal modelling)*
- *Energy Reports*
- *Compliance assessments and advice covering*
    - *Part L (SAP)*
    - *Part F (ventilation)*
    - *Part G (water)*
- *BREEAM*
- *SBEM (existing and new build)*
- *Minimum Energy Efficiency Standards (MEES)*
- *Thermal Bridging (Psi value calculations)*

Contents

Figures

1.0 Executive Summary

1.1 Environmental Economics have been commissioned by Lochailort Newbury Limited to undertake a BREEAM (BRE Environmental Assessment Method) New Construction pre-assessment to support the redevelopment of the Kennet Centre comprising the partial demolition of the existing building on site and the development of new residential dwellings and residents' ancillary facilities; commercial, business and service floorspace including office; access, parking and cycle parking; landscaping and open space; sustainable energy installations; and associated works, henceforth referred to as Eagle Quarter II.

1.2 The proposed redevelopment includes demolition of the existing building and construction of 34 retail units.

1.3 The West Berkshire Core Strategy states that a BREEAM rating of Excellent is required. The pre-assessment focuses on the retail units and illustrates a potential mix of credits which can achieve 72.15%.

1.4 As the development is currently going through planning, it is assumed that the development is at RIBA Stage 2. It has been assumed that the construction will be completed as fully fitted.

1.6 Appendix A contains drawings showing the floor plan of the site.

The potential rating must be subject to constant review as the development progresses. To achieve the predicted BREEAM ratings described by this report, extra effort will be required by the design team and main contractor to implement the required strategies. It is recommended that detailed attention is given to each credit, and all members of the design team should be required to update project information accordingly.

The pre-assessment set out in this report is based on current version of BREEAM New Construction, Version 6 (V6), and it should be noted that future versions of BREEAM may introduce new criteria or alter the existing technical requirements.

It is recommended that the project team consider the requirements of BREEAM V6 during concept design as several credits become unavailable after this period, which limit the credits available to achieve an Excellent rating. Credits which require formal design information during concept design have been avoided where possible.

Introduction

BREEAM schemes

BREEAM is a sustainability and certification scheme applicable to the construction industry. All BREEAM schemes endeavour to encourage continuous improvement and innovation within the construction industry.

In return for monitoring and reducing the environmental impact of projects within the built environment, BREEAM provides recognition via formal audit and certification.

The certificate issued will indicate a rating from pass to outstanding, where the better the rating, the lower the environmental impact of the project.

The BREEAM rating is compiled through achieving credits from within ten categories. The categories are split into several issues, where each of these issues awards credits based on different sustainability criteria.

Please see Figure 1 for a breakdown of the categories covered in BREEAM.

Figure 1: BREEAM Categories

BREEAM New Construction

BREEAM New Construction assessments are based on the category of building use, and then according to the level building services fit-out. The four construction scopes are: Fully Fitted, Simple Building, Shell and Core and Shell Only.

The proposed development includes multiple buildings with different uses. This BREEAM Pre-Assessment focuses on the retail units, to be completed to Fully Fitted.

BREEAM New Construction V6

Overview

This section will detail the minimum credits required to achieve the desired rating and the credits that can be targeted as determined by the pre-assessment.

The credits chosen during the pre-assessment are an estimate based on current information, the credits that contribute to the final certification may differ.

Table 1. Minimum percentage score required to achieve each BREEAM Rating.

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

BREEAM New Construction V6 Minimum Standards

Table 2: BREEAM UK New Construction V6 Minimum Standards

BREEAM Issue	Minimum Standards by BREEAM rating Level				
	PASS	GOOD	VERY GOOD	EXCELLENT	OUTSTANDING
Man 03 - Responsible Construction Practices	None	None	None	1 Credit – (responsible construction management)	2 Credits – (responsible construction management)
Man 04 – Commissioning and handover	None	None	1 Credit (commissioning – test schedule and responsibilities)	1 Credit (commissioning – test schedule and responsibilities)	1 Credit (commissioning – test schedule and responsibilities)
Man 04 – Commissioning and handover	None	None	Criterion 11 (building user guide)	Criterion 11 (building user guide)	Criterion 11 (building user guide)
Man 05 – Aftercare	None	None	None	1 Credit (commissioning – implementation)	1 Credit (commissioning – implementation)
Ene 01 - Reduction of CO2 Emissions	None	None	None	4 Credits (energy performance or prediction of operational energy consumption)	6 credits (energy performance) and four credits (prediction of operational energy consumption)
Ene 02 - Energy monitoring	None	None	1 Credit (1st Sub-metering credit)	1 Credit (1st Sub-metering credit)	1 Credit (1st Sub-metering credit)
Wat 01 - Water Consumption	None	1 Credit	1 Credit	1 Credit	2 Credits
Wat 02 - Water monitoring	None	Criterion 1	Criterion 1	Criterion 1	Criterion 1
Mat 03 - Responsible sourcing of construction products	Criterion 1	Criterion 1	Criterion 1	Criterion 1	Criterion 1
Wst 01 - Construction waste management	None	None	None	None	1 Credit
Wst 03 - Operational waste	None	None	None	1 Credit	1 Credit

BREEAM New Construction Pre-assessment

This report is a summary of the BREEAM New Construction retail pre-assessment conducted, designed to show a selection of available credits that may be targeted to achieve Excellent for this project.

Pre-assessment Summary

Table 3 shows the available credits for the building type and construction scope, the category weighting, and the targeted credits for this development. The chosen credit distribution achieves an Excellent rating with 72.51%.

This should be considered as a potential rating and requires immediate action from the developer to implement additional strategies due to the current stage of the project. Detailed attention should be given to each issue. The credit distribution is subject to the project being registered under the BREEAM New Construction V6 scheme. This pre-assessment is based on the assumption that the buildings works fall in to RIBA stage 5.

Appendix B covers the credits that have been recommended to achieve 72.51%, including a summary of the targeted criteria from the BREEAM V6 manual. For full context and more detailed information on the credit requirements, please refer to the BREEAM V6 manual.

Table 3: Retail pre-assessment summary

Category	Available Credits	Weighting	Targeted Credits
Management	21	7.33%	14
Health and Wellbeing	18	7.78%	10
Energy	23	13.22%	19
Transport	12	10.00%	12
Water	9	6.22%	8
Materials	14	6.43%	6
Waste	10	4.20%	6
Land Use and Ecology	13	12.00%	12
Pollution	15	5.33%	10
Innovation	10	0.00%	0
Total	**72.51%**		
Rating	**EXCELLENT**		

Criteria Summary

Project:	2023-21 – Retail Units – Eagle Quarter II, Newbury
Report:	Pre-Assessment Stage
Design Target:	Excellent - 72.51%

Management: 1 Credit = 0.52%	**Compliance Requirements**	**Available**		**Targeted**	
		Credits	**Percent**	**Credits**	**Percent**
Man 01: Project brief and design **1.** Project delivery planning	**One credit - Project delivery planning** **1.** Prior to completion of the Concept Design, the project delivery stakeholders (see Definitions) meet to identify and define for each key phase of project delivery: **a.** Roles **b.** Responsibilities **c.** Contributions. **2.** Consider each one of the following items when defining roles, responsibilities and contributions for each key phase of the project: **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. Where the building occupants are not known, the list of considerations above still applies. The appropriate project delivery stakeholder considers each item, based on likely scenarios of building occupancy. **3.** 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)	1	0.52%	0	0%

	c. Communication Strategy (see Definitions) **d.** Concept Design.				
Man 01: Project brief and design **2.** Stakeholder consultation	**One credit - Stakeholder consultation (interested parties)** **4.** Prior to completion of the Concept Design, the design team consult with all interested parties (see Definitions) on matters that cover the minimum consultation content (see Methodology). **5.** Demonstrate how the stakeholder contributions and consultation exercise outcomes influence the Initial Project Brief and Concept Design. **6.** Prior to completion of the detailed design (RIBA Stage 4, Technical Design or equivalent), all interested parties (see Definitions) give and receive consultation feedback. **Prerequisite for BREEAM Advisory Professional credits (Concept and Developed Design)** **8.** The project team, including the client, formally agree strategic performance targets (see Definitions) early in the design process, see Definitions, (with the support of the BREEAM AP where appointed).	1	0.52%	0	0%
Man 01: Project brief and design **3.** BREEAM Advisory Professional BREEAM AP (Concept Design)	**One credit (or one exemplary credit for Simple Buildings) - BREEAM AP (Concept Design)** **9.** Involve a BREEAM AP in the project at an appropriate time and level 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 (see Definitions on the next page) agreed under criterion 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 criterion 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.	1	0.52%	0	0%
Man 01: Project brief and design **3.** BREEAM Advisory Professional	**One credit (or one exemplary credit for Simple Buildings) - BREEAM AP (Developed Design)** **10.** Criteria 8 and 9 are achieved. **11.** Involve the BREEAM AP in the project at an appropriate time and level 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.	1	0.52%	1	0.52%

BREEAM AP (Developed Design)	**b.** Monitor progress against the performance targets agreed under criterion 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 criterion 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.				
Man 02: Life cycle cost and service life planning **1.** Elemental life cycle cost (LCC)	**Two credits - Elemental LCC** **1.** A competent person (see Definitions) 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. **2.** The elemental LCC plan: **a.** Provides an indication of future replacement costs over a period of analysis as required by the client (e.g. 20, 30, 50 or 60 years); **b.** Includes service life, maintenance and operation cost estimates. 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). **3.** Demonstrate, using appropriate examples provided by the design team, how the elemental LCC plan has been used to influence building and systems design and specification to minimise life cycle costs and maximise critical value.	2	1.05%	0	0%
Man 02: Life cycle cost and service life planning **2.** Component level life options appraisal	**One credit - Component level LCC options appraisal** **4.** 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, or roofing **b.** Services, e.g. heat source cooling source, or controls **c.** Finishes, e.g. walls, floors or ceilings **d.** External spaces, e.g. alternative hard landscaping, boundary protection.	1	0.52%	1	0.52%

	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. **5.** Demonstrate, using appropriate examples provided by the design team, how the component level LCC options appraisal has been used to influence building and systems design and specification to minimise life cycle costs and maximise critical value.				
Man 02: Life cycle cost and service life planning **3.** Capital cost reporting	**One credit - Capital cost reporting** **6.** Report the capital cost for the building in pounds per square metre of gross internal floor area (£k/m^2) as part of the submission to BRE. See also Methodology below and Additional information.	1	0.52%	1	0.52%
Man 03: Responsible construction practices **1.** Pre-requisite - Legal and sustainable timber	**1.** All timber and timber-based products used during the construction process of the project are legal and sustainable timber (see Definitions). For other materials there are no prerequisite requirements at this stage.	0	0%	0	0%
Man 03: Responsible construction practices **3.** Environmental management	**One credit – Environmental management** **3.** All parties who at any stage manage the construction site (e.g. the principal contractor, the demolition contractor) operate an EMS covering their main operations. The EMS must: **a.** Be third party certified, to ISO 14001: 2015, EMAS (EU Eco-Management and Audit Scheme) or equivalent standard; OR **b.** In compliance with BS 8555: 2016 have: **i.** Appropriate structure **ii.** Reached implementation stage phase four 'implementation and operation of the environmental management system' **iii.** Completed defined phase audits one to four.	1	0.52%	1	0.52%

	4. All parties who at any point manage the construction site (e.g. the principal contractor, the demolition contractor) implement best practice pollution prevention policies and procedures on-site in accordance with Working at construction and demolition sites: PPG6, Pollution Prevention Guidelines.				
Man 03: Responsible construction practices **4.** BREEAM Advisory Professional (Site)	**Pre-requisite for the BREEAM AP credit** **5.** The client and the contractor formally agree performance targets. **One credit – BREEAM AP (site)** **6.** Involve a BREEAM AP in the project at an appropriate time and level 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 criterion 5 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 criterion 5. **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.	1	0.52%	1	0.52%
Man 03: Responsible construction practices **5.** Responsible construction management	**One credit** **7.** Achieve items listed as required for one credit in Table 4.1 Responsible construction management items **Two credits** **8.** Achieve criterion 7. **9.** Achieve six additional items in table 4.1 **Exemplary level criteria: one credit** To achieve an exemplary performance credit: **23.** Achieve all items in Table 4.1.	2	1.05%	2	1.05%
Man 03: Responsible construction practices	**10.** Assign responsibility to an individual for monitoring, recording and reporting energy use, water consumption and transportation data (where measured) resulting from all on-site construction processes (and dedicated off-site manufacturing) throughout the build programme. To ensure the robust collection of information, this individual must have the	0	0%	0	0%

6. Monitoring of construction site impacts Pre-requisite	appropriate authority and responsibility to request and access the data required. Where appointed, the BREEAM AP could perform this role.				
Man 03: Responsible construction practices **6.** Monitoring of construction site impacts Utility consumption	**One credit - Utility consumption** **Energy Consumption** **11.** Achieve criterion 10. **12.** Set targets for the site energy consumption in kWh (and where relevant, litres of fuel used) as a result of the use of construction plant, equipment (mobile and fixed) and site accommodation. **13.** Monitor and record data for the energy consumption described in criterion 12. **14.** Report the total carbon dioxide emissions (total kgCO2/project value) from the construction process via BREEAM Projects (for the purposes of potential future BREEAM performance benchmarking). **Water consumption** **15.** Achieve criterion 10. **16.** Set targets for the potable water consumption (m^3) arising from the use of construction plant, equipment (mobile and fixed) and site accommodation. **17.** Monitor and record data for the potable water consumption described in criterion 16. **18.** Use the collated data to report the total net water consumption (m^3), i.e. consumption minus any recycled water use from the construction process via BREEAM Projects (for the purposes of potential future BREEAM performance benchmarking).	1	0.52%	1	0.52%
Man 03: Responsible construction practices **6.** Monitoring of construction site impacts Transportation of construction materials and waste	**One credit (or one exemplary credit for Simple Buildings) - Transportation of construction materials and waste** **19.** Achieve criterion 10. **20.** Set targets for transportation movements and impacts resulting from delivery of the majority of construction materials to site and construction waste from site. As a minimum cover: **a.** transportation of materials from the point of supply to the building site, including any transport, intermediate storage and point of supply (see Definitions). Monitor as a minimum: **i.** Materials used in major building elements (i.e. those defined in BREEAM issue Mat 01 Environmental impacts from construction products - Building life cycle assessment (LCA)).	1	0.52%	0	0%

	ii. Ground works and landscaping materials. **b.** transportation of construction waste from the construction gate to waste disposal processing or recovery centre gate. This monitoring must cover the construction waste groups outlined in the project's resource management plan. **21.** Monitor and record data for the transportation movements as described in criterion 20 above. **22.** Using the collated data, report separately for materials and waste, the total transport-related carbon dioxide emissions (kgCO2eq), plus total distance travelled (km) via BREEAM Projects (for the purposes of potential future BREEAM performance benchmarking).				
Man 04: Commissioning and handover **1.** Commissioning - testing schedule and responsibilities	**One credit - Commissioning - testing schedule and responsibilities** **1.** Prepare a schedule of commissioning and testing. The schedule identifies and includes a suitable timescale for commissioning and re-commissioning of all complex and non-complex building services and control systems and for testing and inspecting building fabric. **2.** The schedule identifies the appropriate standards for all commissioning activities to be conducted, where applicable, in accordance with: **a.** Current Building Regulations **b.** BSRIA guidelines **c.** CIBSE guidelines **d.** Other appropriate standards (see Methodology) Exclude from the assessment any process or manufacture-related equipment specified as part of the project. However, include such equipment in cases where they form an integral part of the building HVAC services, such as some heat recovery systems. **3.** 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 functional **b.** Include physical measurements of room temperatures, off-coil temperatures and other key parameters, as appropriate, in commissioning results **c.** The BMS or controls installation should be running in auto with satisfactory internal conditions prior to handover **d.** All BMS schematics and graphics (if BMS is present) are fully installed and functional to user interface prior to handover **e.** Fully train the occupier or facilities team in the operation of the system.	1	0.52%	1	0.52%

	4. Appoint an appropriate project team member to monitor and programme pre-commissioning, commissioning and testing. Where necessary include re-commissioning activities on behalf of the client. **5.** The principal contractor accounts for the commissioning and testing programme, responsibilities and criteria within their budget and the main programme of works. Allow the required time to complete all commissioning and testing activities prior to handover.				
Man 04: Commissioning and handover 2. Commissioning - design and preparation	**One credit - Commissioning - design and preparation** **6.** Achieve criteria 1 to 5. **7.** During the design stage, the client or the principal contractor appoints an appropriate project team member (see criterion 4), provided they are not involved in the general installation works for the building services systems, with responsibility for: **a.** Undertaking design reviews and giving advice on suitability for ease of commissioning. **b.** Providing commissioning management input to construction programming and during installation stages. **c.** Management of commissioning, performance testing and handover or post-handover stages. For buildings with complex building services and systems, this role needs to be carried out by a specialist commissioning manager (see Definitions).	1	0.52%	1	0.52%
Man 04: Commissioning and handover 3. Testing and inspecting building fabric	**One credit - Testing and inspecting building fabric** **8.** Achieve criteria 1 to 5. **9.** Complete post-construction testing and inspection to quality-assure the integrity of the building fabric, including continuity of insulation, avoidance of thermal bridging and air leakage paths (this is through air tightness testing and a thermographic survey). A suitably qualified professional (see Definitions) undertakes the survey and testing in accordance with the appropriate standard. **10.** Rectify any defects identified during post-construction testing and inspection prior to building handover and close out. Any remedial work must meet the required performance characteristics for the building or element as defined at the design stage (see Methodology).	1	0.52%	1	0.52%
Man 04: Commissioning and handover 4. Handover	**One credit - Handover** **11.** Prior to handover, develop two building user guides (see Methodology) for the following users: **a.** A non-technical user guide for distribution to the building occupiers. **b.** A technical user guide for the premises facilities managers.	1	0.52%	1	0.52%

	A draft copy is developed and discussed with users first (where the building occupants are known) to ensure the guide is most appropriate and useful to potential users. **12.** Prepare two training schedules timed appropriately around handover and proposed occupation plans for the following users: **a.** A non-technical training schedule for the building occupiers. **b.** A technical training schedule for the premises facilities managers.				
Man 05: Aftercare **1.** Aftercare support	**One credit - Aftercare support** **1.** Provide aftercare support to the building occupiers through having in place operational infrastructure and resources. This includes as a minimum: **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 content of the building user guide (where it exists) and training schedule and their content. **ii.** Present key information about feature of 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.** introduction to and 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 at least the first month of building occupation, 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 months from occupation, e.g. a helpline, nominated individual or other appropriate system to support building users and management. **2.** Establish operational infrastructure and resources to coordinate the collection and monitoring of 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.	1	0.52%	1	0.52%
Man 05: Aftercare	**One credit - Commissioning - implementation** **3.** Complete the following commissioning activities over a minimum 12-month period, once the building becomes substantially occupied:	1	0.52%	1	0.52%

2. Commissioning - implementation	**a.** Complex systems: The specialist commissioning manager will: **i.** Identify changes made by the owner or operator that might have caused impaired or improved performance. **ii.** 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). **iii.** Where applicable, carry out testing during periods of extreme (high or low) occupancy. **iv.** Interview building occupants (where they are affected by the complex services) to identify problems or concerns regarding the effectiveness of the systems. **v.** Produce monthly reports comparing sub-metered energy performance to the predicted one (see Ene 01 Reduction of energy use and carbon emissions). **vi.** Identify inefficiencies and areas in need of improvement. **vii.** 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. **b.** Simple systems (naturally ventilated): The external consultant, aftercare team or facilities manager will: **i.** Review thermal comfort, ventilation, and lighting, at three, six and nine month intervals after initial occupation, either by measurement or occupant feedback. **ii.** Identify deficiencies and areas in need of improvement. **iii.** Re-commission systems and incorporate any relevant revisions in operating procedures into the O&M manuals.				
Man 05: Aftercare **3.** Post Occupancy Evaluation (POE)	**One credit - Post-occupancy evaluation (POE)** **4.** The client or building occupier commits to carry out a POE exercise (see Definitions) one year after the building is substantially occupied. This gains comprehensive in-use performance feedback (see criterion 5.b.v below) 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. **5.** An independent party (see Definitions) carries out the POE covering: **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:	1	0.52%	0	0%

	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 criterion 2 and Methodology) **vi.** Other relevant issues, where appropriate (see Definitions) **6.** The independent party provides a report with lessons learned to the client and building occupiers. **7.** The client or building occupier commits funds to pay for the POE in advance. This requires an independent party to be appointed to carry out the POE as described in criterion 5. Evidence of the appointment of the independent party and schedule of responsibilities which fulfils the BREEAM criteria are acceptable to demonstrate compliance.				
Management Totals		**21**	**11.00%**	**14**	**7.33%**

Health and Wellbeing: 1 Credit = 0.78%	**Compliance Requirements**	**Available**		**Targeted**	
		Credits	**Percent**	**Credits**	**Percent**
Hea 01: Visual comfort **1.** Control of glare from sunlight control	**One credit - Control of glare from sunlight** **1.** 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. **2.** Where risk has been identified within a relevant building area (Definitions on page 85), a glare control strategy is used to design out the potential for glare. **3.** The glare control strategy does not increase energy consumption used for lighting. This is achieved by: **a.** Maximising daylight levels in all weather, cloudy or sunny AND **b.** Ensuring the use or location of shading does not conflict with the operation of lighting control systems.	1	0.78%	1	0.78%
Hea 01: Visual comfort **2.** Daylighting	**Up to two credits - Daylighting (building type dependent)** **4.** Daylighting criteria have been met using either of the following options: **a.** The relevant building areas meet good practice daylight factors and other criterion as outlined in Table 5.1 and Table 5.2 OR	2	1.56%	2	1.56%

	b. The relevant building areas meet good practice average and minimum point daylight illuminance criteria as outlined in Table 5.3. Additional alternative route for healthcare building types only: **c.** The relevant building areas meet the median daylight factors and minimum daylight factors in Table 5.4 (see Methodology). **Exemplary level criteria** To achieve an exemplary performance credit for daylighting: **14.** Daylighting criteria have been met using either of the following options: **a.** Relevant building areas meet exemplary daylight factors and the relevant criteria in Table 5.8. **b.** Relevant building areas meet exemplary average and minimum point daylight illuminance criteria in Table 5.9.				
Hea 01: Visual comfort **3.** View out	**One credit (or two credits healthcare buildings with inpatient areas) - View out** **5.** 95% of the floor area in 95% of spaces for each relevant building area provides an adequate view out (see notes under Adequate View Out) **6.** In addition, the building type criteria in Table 5.6 are applicable to view out criteria.	1	0.78%	1	0.78%
Hea 01: Visual comfort **4.** Internal and external lighting levels, zoning and control	**One credit - Internal and external lighting levels, zoning and control** **Internal lighting** **7.** Internal lighting in all relevant areas of the building is designed to provide illuminance (lux) levels and colouring rendering index in accordance with the SLL Code for Lighting 2012 and any other relevant industry standard. Internal lighting should be appropriate to the tasks undertaken, accounting for building user concentration and comfort levels. **8.** For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 7 sections 2.4, 2.13 to 2.15, 2.20, and 6.10 to 6.20. This gives recommendations highlighting: **a.** Limits to the luminance of the luminaires to avoid screen reflections. (Manufacturers' data for the luminaires should be sought to confirm this.) **b.** Any area where a surface is used to reflect light in to a space, such as uplighting, the recommendations refer to the luminance of the lit ceiling rather than the luminaire; a design team calculation is usually required to demonstrate this. **c.** Recommendations for direct lighting, ceiling illuminance, and average wall illuminance. **External lighting** **9.** All external lighting located within the construction zone is specified in accordance with BS 5489-1:2013 Code for the practice for the design of road lighting. Lighting of roads and public amenity	1	0.78%	1	0.78%

	areas and BS EN 12464-2:2014 Light and lighting - Lighting of work places - Part 2: Outdoor work places. External lighting should provide illuminance levels that enable users to perform outdoor visual tasks efficiently and accurately, especially during the night. **10.** Where no external light fittings are specified (either separate from or mounted on the external building façade or roof), the criteria relating to external lighting do not apply and the credit can be awarded on the basis of compliance with criteria 7–8.c above. If no internal lighting is specified, the credit cannot be awarded. **Zoning and occupant control** **11.** Internal lighting is zoned to allow for occupant control. Zoning is in accordance with the criteria below for relevant areas present within the building: **a.** In office areas, zones of no more than four workplaces **b.** Workstations adjacent to windows or atria and other building areas separately zoned and controlled **c.** Seminar and lecture rooms: zoned for presentation and audience areas **d.** Library spaces: separate zoning of stacks, reading and counter areas **e.** Teaching space or demonstration area **f.** Whiteboard or display screen **g.** Auditoria: zoning of seating areas, circulation space and lectern area **h.** Dining, restaurant, café areas: separate zoning of servery and seating or dining areas **i.** Retail: separate zoning of display and counter areas **j.** Bar areas: separate zoning of bar and seating areas **k.** Wards or bedded areas: zoned lighting control for individual bed spaces and control for staff over groups of bed spaces **l.** Treatment areas, dayrooms, waiting areas: zoning of seating and activity areas and circulation space with controls accessible to staff. **12.** Areas used for teaching, seminar or lecture purposes have lighting controls provided in accordance with CIBSE Lighting Guide 5. **13.** In addition the building type criteria in Table 5.7 (where relevant). **Exemplary level criteria** To achieve an exemplary performance credit for Internal and external lighting levels, zoning and control:				

	15. Lighting in each zone can be manually dimmed by occupants down to 20% of the maximum light output using dimmer switches positioned in accessible locations. Dimming and control gear should avoid flicker and noise.				
Hea 02: Indoor air quality **1.** Pre-requisite	**Pre-requisite - Indoor air quality (IAQ) plan** **1.** A site-specific indoor air quality plan has been produced and implemented in accordance with the guidance in Guidance Note GN06. The objective of the plan is to facilitate a process that leads to design, specification and installation decisions and actions that minimise indoor air pollution during occupation of the building. The indoor air quality plan must consider the following: **a.** Removal of contaminant sources **b.** Dilution and control of contaminant sources: **i.** Where present, consideration is given to the air quality requirements of specialist areas such as laboratories **c.** Procedures for pre-occupancy flush out and purge ventilation **d.** Third party testing and analysis **e.** Maintaining good indoor air quality in-use **f.** Any relevant local authority plans or policies (for example, Air Quality Management Areas or Local Air Quality Action Plans)	0	0%	0	0%
Hea 02: Indoor air quality **2.** Ventilation	**One credit - Ventilation** **2.** 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. **b.** Ventilation pathways are designed to minimise the ingress and build-up of air pollutants inside the building (see Methodology). **c.** Where present, HVAC systems must incorporate suitable filtration to minimise external air pollution, as defined in BS EN 16798:2017. The specified filters should achieve supply air classification of at least SUP 2. **d.** Occupied spaces have carbon dioxide (CO_2) or air quality sensors specified in accordance with Building Regulations ADF2 and: **i.** In mechanically ventilated buildings or spaces: sensors are linked to the mechanical ventilation system and provide demand-controlled ventilation to the space. **ii.** In naturally ventilated buildings or spaces: sensors either have the ability to alert the building owner or manager when CO_2 levels exceed the recommended set point, or are	1	0.78%	0	0%

	linked to controls with the ability to adjust the quantity of fresh air, e.g. automatic opening windows or roof vents. **iii.** The total number of sensors, and the net internal area of relevant areas covered by the sensors, is reported via the BREEAM Scoring and Reporting Tool. **e.** The ventilation strategy provides adequate ventilation rates throughout the year – including sufficient airflow rates in summer to prevent overheating and maintain required thermal comfort conditions – in accordance with: **i.** CIBSE AM10(46) (for naturally ventilated buildings. **ii.** CIBSE AM13(47) (for mixed-mode buildings)				
Hea 02: Indoor air quality **3.** Emissions from construction products	**Up to two credits - Emissions from construction products** **One credit** **3.** 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. **Two Credits** **4.** All of the product types listed meet the emission limits, testing requirements and any additional requirements listed in Table 5.11: Emission criteria byproduct type **Exemplary level criteria** To achieve one exemplary performance credit: **11.** Three of the product types listed meet the emission limits, testing requirements and any additional requirements listed in Table 5.12. Where wood-based products are not one of the 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	2	1.56%	0	0%
Hea 02: Indoor air quality **4.** Post-construction indoor air quality measurement	**One credit - Post-construction indoor air quality measurement** **5.** The formaldehyde concentration in indoor air is measured post construction (but pre-occupancy) and does not exceed 100µg/m^3 averaged over 30 minutes (World Health Organisation guidelines for indoor air quality: Selected pollutants, 2010). **6.** The formaldehyde sampling and analysis is performed in accordance with ISO 16000-2 and ISO 16000-3. **7.** The total volatile organic compound (TVOC) concentration in indoor air is measured post construction (but pre-occupancy) and does not exceed 300µg/m^3 over 8 hours. **8.** The TVOC sampling and analysis is performed in accordance with ISO 16000-5 and ISO 16000-6 or ISO 16017-1.	1	0.78%	0	0%

	9. 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. **10.** The measured concentration levels of formaldehyde (µg/m^3) and TVOC (µg/m^3) are reported, via the BREEAM Scoring and Reporting Tool.				
Hea 04: Thermal comfort **1.** Thermal modelling	**One credit - Thermal modelling** **1.** Thermal modelling has been carried out using software in accordance with CIBSE AM11 Building Energy and Performance Modelling. **2.** The software used to carry out the simulation at the detailed design stage provides full dynamic thermal analysis. For smaller and more basic building designs with less complex heating or cooling systems, an alternative less complex means of analysis may be appropriate (such methodologies must still be in accordance with CIBSE AM11). **3.** The modelling demonstrates that: **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 or level for the building type); or the thermal environment in occupied spaces meet the Category B requirements for PPD, PMV and local discomfort set out in Table A.1 of Annex A of ISO 7730:2005. **b.** For naturally ventilated buildings: **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 or 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 either of the following standards as appropriate; CIBSE TM52: The limits of thermal comfort: avoiding overheating in European buildings or CIBSE TM59: Design methodology for the assessment of overheating risk in homes. **4.** For air-conditioned buildings, the PMV (predicted mean vote) and PPD (predicted percentage of dissatisfied) indices based on the above modelling are reported via the BREEAM assessment scoring and reporting tool.	1	0.78%	1	0.78%

Hea 04: Thermal comfort **2.** Design for future thermal comfort	**One credit - Design for future thermal comfort** **5.** Criteria 1 to 4 are achieved. **6.** The thermal modelling demonstrates that the relevant requirements set out in criterion 3 above are achieved for a projected climate change environment (see Definitions). **7.** Where criterion 6 above 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 criterion 6 above **8.** For air-conditioned buildings, the PMV and PPD indices based on the above modelling are reported via the BREEAM assessment scoring and reporting tool.	1	0.78%	0	0%
Hea 04: Thermal comfort **3.** Thermal zoning and controls	**One credit - Thermal zoning and controls** **9.** Criteria 1 to 4 are achieved. **10.** The thermal modelling analysis (criteria1 on the previous page to 4 on the previous page) has informed the temperature control strategy for the building and its users. **11.** 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). **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.	1	0.78%	1	0.78%

Hea 05: Acoustic performance **1.** Sound insulation	**Up to three credits - Acoustic performance for all building type except Residential institutions (short term and long term stay)** **1.** The building meets the appropriate acoustic performance standards and testing requirements defined in the relevant table below. These tables define criteria for the acoustic principles of: **a.** Sound insulation **b.** Indoor ambient noise level **c.** Room acoustics. OR **2.** A suitably qualified acoustician (SQA) is appointed to define a bespoke set of performance requirements for all function areas in the building. The bespoke performance requirements use the three acoustic principles defined in criterion Hea 05 Acoustic performance - Criterion 1 above, setting out the performance requirements for each and the testing regime required. **Up to four credits - Acoustic performance for Residential institutions (short term and long term stay)**	1	0.78%	1	0.78%
Hea 05: Acoustic performance **2.** Indoor ambient noise level	**Up to three credits - Acoustic performance for all building type except Residential institutions (short term and long term stay)** **1.** The building meets the appropriate acoustic performance standards and testing requirements defined in the relevant table below. These tables define criteria for the acoustic principles of: **a.** Sound insulation **b.** Indoor ambient noise level **c.** Room acoustics. OR **2.** A suitably qualified acoustician (SQA) is appointed to define a bespoke set of performance requirements for all function areas in the building. The bespoke performance requirements use the three acoustic principles defined in criterion Hea 05 Acoustic performance - Criterion 1 above, setting out the performance requirements for each and the testing regime required. **Up to four credits - Acoustic performance for Residential institutions (short term and long term stay)**	1	0.78%	1	0.78%
Hea 05: Acoustic performance **3.** Room acoustics	**Up to three credits - Acoustic performance for all building type except Residential institutions (short term and long term stay)** **1.** The building meets the appropriate acoustic performance standards and testing requirements defined in the relevant table below. These tables define criteria for the acoustic principles of: **a.** Sound insulation **b.** Indoor ambient noise level	1	0.78%	0	0%

	c. Room acoustics. OR **2.** A suitably qualified acoustician (SQA) is appointed to define a bespoke set of performance requirements for all function areas in the building. The bespoke performance requirements use the three acoustic principles defined in criterion Hea 05 Acoustic performance - Criterion 1 above, setting out the performance requirements for each and the testing regime required. **Up to four credits - Acoustic performance for Residential institutions (short term and long term stay)**				
Hea 06: Security	**One credit - Security of site and building** **1.** A Suitably Qualified Security Specialist (SQSS) conducts an evidence based Security Needs Assessment (SNA) during or prior to Concept Design. 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 . **2.** The SQSS develops a set of security controls and recommendations for incorporation in to the proposals. Those controls and recommendations shall directly relate to the threats and assets identified in the preceding SNA. **3.** The controls and recommendations shall be incorporated into proposals and implemented in the as-built development. Any deviation from those controls and recommendations shall be justified and agreed with the SQSS. **Exemplary level criteria** To achieve an exemplary performance credit: **4.** A compliant risk based security rating scheme has been used. The performance against the scheme has been confirmed by independent assessment and verification.	1	0.78%	0	0%
Hea 07: Safe and healthy surroundings **1.** Safe access	**One credit - Safe access** Where external site areas form part of the assessed development the following apply: **1.** Dedicated and safe cycle paths are provided from the site entrance to any cycle storage, and connect to offsite cycle paths where applicable. **2.** Dedicated and safe footpaths are provided on and around the site providing suitable links for the following: **a.** The site entrance to the building entrance, **b.** Car parks (where present) to the building entrance **c.** The building to outdoor space, and **d.** Connecting to off-site paths where applicable.	1	0.78%	1	0.78%

	3. Pedestrian drop-off areas are designed off of, or adjoining to, the access road and should provide direct access to other footpaths. Where vehicle delivery access and drop-off areas form part of the assessed development, the following apply: **4.** Delivery areas are not accessed through general parking areas and do not cross or share the following: **a.** pedestrian and cyclist paths **b.** outside amenity areas accessible to building users and general public. **5.** There is a dedicated parking or waiting area for goods vehicles with appropriate separation from the manoeuvring area and staff and visitor car parking. **6.** 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.				
Hea 07: Safe and healthy surroundings **2.** Outside space	**One credit - Outside space** **7.** There is an outside space providing building users with an external amenity area.	1	0.78%	0	0%
Health and Wellbeing Totals		**18**	**14.00%**	**10**	**7.78%**

Energy: 1 Credit = 0.7%	**Compliance Requirements**	**Available**		**Targeted**	
		Credits	**Percent**	**Credits**	**Percent**
Ene 01: Reduction of energy use and carbon emissions **1.** Energy performance	**Up to nine credits - Energy performance** **1.** Calculate an Energy Performance Ratio for New Constructions (EPR_{NC}). Compare the EPR_{NC} achieved with the benchmarks in Table 6.1 and award the corresponding number of BREEAM credits. **Exemplary level criteria** **Up to two credits - Beyond zero net regulated carbon** **10.** The building achieves an EPR NC≥ 0.9 and zero net regulated CO_2-eq emissions (see Definitions). **11.** Energy generation from on-site and near-site LZC sources is sufficient to offset carbon emissions from regulated energy use plus a percentage of emissions from unregulated energy use.	9	6.26%	9	6.26%

	12. Award the exemplary credits based on the percentage of additional emissions from unregulated energy that are offset by LZC sources (see Table 6.2). **Three credits - Carbon negative** **13.** The building is deemed carbon negative where > 100% (see Table 6.2) of carbon emissions from unregulated (and regulated) energy use are offset by energy generated from on-site and near-site LZC sources (see Definitions).				
Ene 01: Reduction of energy use and carbon emissions **2.** Prediction of operational energy consumption	**Four credits (or two exemplary credits for Simple Buildings) – Prediction of operational energy consumption** **2.** Achieve criterion 2 in Ene 04 Low carbon design. **3.** Estimate the occupancy, energy use for unregulated energy loads and management practices. **4.** Undertake detailed energy modelling to predict the building energy consumption. **5.** Undertake sensitivity analysis to determine the factors that can significantly impact building energy consumption. **6.** Based on the results of the sensitivity analysis, and in discussion with the project team, the client and the prospective occupier devise scenarios to explore how high impact factors might influence the building energy consumption. **7.** Undertake scenario modelling and use these findings to inform improvements to design of the building and to operational, maintenance, and handover strategies. **8.** Determine an energy target for the building based on the results of the scenario modelling. **9.** At the post-construction stage, the scenario modelling should be repeated to reflect the post construction building specification and, if necessary, adjust the energy target. **Exemplary level criteria** **Two credits – Post-occupancy evaluation of energy performance** **14.** Achieve 'Four credits - Prediction of operational energy consumption' (criteria 2 to 9). **15.** Achieve maximum available credits in Ene 02 Energy monitoring. In addition, preschools, primary schools, law courts, prisons and multi-residential buildings must meet the requirements of the second credit for sub-metering of high energy load and tenancy areas. **16.** The client or building occupier commits funds to pay for the post occupancy evaluation. **a.** Where performance targets are set in relation to external rating schemes (e.g. a DEC, UK NABERS energy for offices, or BREEAM In Use rating), confirm that an assessor will be appointed to report on the actual energy consumption compared with the target set in criterion 8 or 9 OR	4	2.78%	4	2.78%

	b. Where the energy performance target is project specific, the funds committed to pay for the post occupancy evaluation explicitly include provision for third party verification of the operational energy performance. **17.** The energy model (criterion 4) is saved so that it can be rerun post occupancy. This can be achieved by either: **a.** Submitting the model to BRE, OR **b.** Reporting the building owner, or named third party, who has access to the model and permission to use or share it.				
Ene 02: Energy monitoring **1.** Sub-metering of end use categories	**One credit - Sub-metering of end-use categories** **1.** 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 (see Methodology). **2.** Meter the energy consumption in buildings according to the total useful floor area: **a.** If the area is greater than 1,000m^2, by end-use category with an appropriate energy monitoring and management system. **b.** If the area is less than 1,000m^2, 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). **3.** Building users can identify the energy consuming end uses, for example through labelling or data outputs.	1	0.7%	1	0.7%
Ene 02: Energy monitoring **2.** Sub-metering of high energy load and tenancy areas	**One credit - Sub-metering of high energy load and tenancy areas** **4.** 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. **5.** Sub-meter per floor plate in large single occupancy or single tenancy buildings with one homogeneous function, for example hotel bedrooms, offices.	1	0.7%	1	0.7%

	This credit is not applicable to preschools, primary schools, lawcourts, prisons and multi-residential buildings, unless the post-occupancy stage Ene 01 credits are targeted.				
Ene 03: External lighting	**One credit** **1.** No external lighting (which includes lighting on the building, at entrances and signs). OR **2.** 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.	1	0.7%	1	0.7%
Ene 04: Low carbon design **1.** Passive design Passive design analysis	**One credit - Passive design analysis** **1.** Achieve the first credit Hea 04 - One credit - Thermal modelling to demonstrate that the building design delivers appropriate thermal comfort levels in occupied spaces. **2.** The project team analyses the proposed building design and development during Concept Design to identify opportunities for the implementation of passive design measures (see Passive design analysis). **3.** Implement passive design measures to reduce the total heating, cooling, mechanical ventilation, lighting loads and energy consumption in line with the passive design analysis findings. **4.** Quantify the reduced total energy demand and carbon dioxide (CO_2-eq) emissions resulting from the passive design measures.	1	0.7%	0	0%
Ene 04: Low carbon design **1.** Passive design Free cooling	**One credit - Free cooling** **5.** Achieve the passive design analysis credit. **6.** Include a free cooling analysis (see Free cooling analysis) in the passive design analysis carried out under criterion 2. **7.** Identify opportunities for the implementation of free cooling solutions. **8.** The building is naturally ventilated or uses any combination of the free cooling strategies listed in the Free cooling analysis list.	1	0.7%	0	0%
Ene 04: Low carbon design **2.** Low and zero carbon technologies	**One credit - Low and zero carbon feasibility study** **9.** An energy specialist (see Definitions) completes a feasibility study (see Low and zero carbon feasibility study) by the end of the Concept Design. **10.** 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. **11.** Specify local LZC technologies for the building or development in line with the feasibility study recommendations.	1	0.7%	1	0.7%

	12. Quantify the reduced regulated carbon dioxide (CO_2-eq) emissions resulting from the feasibility study.				
Ene 06: Energy Efficient transportation systems **1.** Energy consumption	**One credit - Energy consumption** **1.** For specified lifts, escalators or moving walks (transportation types): **a.** Analyse the transportation demand and usage patterns for the building to determine the optimum number and size of lifts, escalators or moving walks. **b.** Calculate the energy consumption in accordance with BS EN ISO 25745 Part 2 or Part 3 for one of the following: **i.** At least two optionsfor each transportation type (e.g. for lifts, hydraulic, traction or machine roomless(MRL)) OR **ii.** At least two options considering different system arrangements and controlstrategies. **c.** Consider the use of regenerative drives, subject to the requirements in Regenerative drives below. **d.** Specify the transportation system with the lowest energy consumption.	1	0.7%	0	0%
Ene 06: Energy Efficient transportation systems **2.** Energy efficient features Lifts	**One credit - Energy efficient features : Lifts** **2.** Achieve criterion 1. **3.** Specify the following three energy efficient features for each lift: **a.** A standby condition for off-peak periods. **b.** The lift car lighting and display lighting provides an average luminous efficacy across all fittings in the car of > 70 luminaire lumens per circuit Watt. **c.** Use of a drive controller capable of variable speed, variable-voltage, and variable-frequency (VVVF) control of the drive motor. **4.** Specify regenerative drives where their use is demonstrated to save energy.	1	0.7%	0	0%
Ene 08: Energy efficient equipment	**Two credits** **1.** 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. **2.** Identify the systems or processes that use a significant proportion of the total annual unregulated energy consumption of the building. **3.** 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, and the associated criteria. If other significant contributions, not listed in the table,	2	1.39%	2	1.39%

	will be specified, the design team should justify how a meaningful reduction will be achieved for these contributors.				
Energy Totals		**23**	**16.00%**	**19**	**13.22%**

Transport: 1 Credit = 0.83%	Compliance Requirements	Available		Targeted	
		Credits	Percent	Credits	Percent
Tra 01: Transport assessment and travel plan	**Two credits - Transport assessment and Travel plan** **1.** No later than Concept Design stage, undertake a site-specific transport assessment (or develop a travel statement) and draft travel plan, which can demonstrably be used to influence the site layout and built form; see Methodology. **2.** The site-specific travel assessment (or statement) shall cover as a minimum: **a.** If relevant, travel patterns and attitudes of existing building or site userstowards cycling, walking and public transport, to identify relevant constraints and opportunities. **b.** Predicted travel patterns and transport impact of future building or site users. **c.** Current local environment for pedestrians and cyclists, accounting for any age-related requirements of occupants and visitors. **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 and types of disability, including visual impairment. **f.** Calculation of the existing public transport Accessibility Index (AI), see Methodology. **g.** Current facilities for cyclists. **3.** Following a transport assessment (in accordance with the requirements set out in criteria 2), develop a site specific travel plan that provides a long term management strategy which encourages more sustainable travel. The travel plan includes measures to increase or improve more sustainable modes of transport and movement of people and goods during the building's operation see Methodology. **4.** If the occupier is known, involve them in the development of the travel plan. **5.** Demonstrate that the travel planwill be implemented and supported by the building's management in operation.	2	1.67%	2	1.67%
Tra 02: Sustainable transport measures	**Pre-requisite** **1.** Achieve criteria 3-5 in the Tra 01 Transport assessment and travel plan credit. **Ten credits – Transport options implementation** **2.** Identify the sustainable transport measures, see Table 7.4. **3.** Award credits according to the existing Accessible Index (A1) of the project, and the total number of points achieved for the options implemented, see Table 7.3.	10	8.33%	10	8.33%
Transport Totals		**12**	**10.00%**	**12**	**10.00%**

Water: 1 Credit = 0.78%	Compliance Requirements	Available		Targeted	
		Credits	Percent	Credits	Percent
Wat 01: Water consumption	**Up to five credits** **1.** Use the BREEAM Wat 01 calculator to assess the efficiency of the domestic water-consuming components. **2.** Use the standard Wat 01 method (see Methodology on the facing page) to compare the water consumption (litres/person/day) for the assessed building against a baseline performance. Award BREEAM credits based upon Table 8.1. Where it is not possible to use the standard method, complete the assessment using the alternative Wat 01 method. **3.** If a greywater or rainwater system (see Definitions) is specified, use its yield in L/person/day to offset potable water demand from components. **4.** 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 EN16941-1:2018 Achieve Wat 02 - Criterion 6, if you intend to pursue a post occupancy stage certification. **Exemplary level criteria** To achieve an exemplary performance credit: **7.** Achieve criteria 1 to 4 on the previous page (and if applicable 5 or 6 above). **8.** The water consumption (litres/person/day) for the assessed building achieves the 65% improvement described as exemplary performance in Table 8.1.	5	3.89%	5	3.89%
Wat 02: Water monitoring	**One credit** **1.** Specify 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. **2.** 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. **3.** For each meter (main and sub): **a.** Install a pulsed or other open protocol communication output AND	1	0.78%	1	0.78%

	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. **4.** 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. **5.** 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:** **6.** The water monitoring strategy used enables the identification of all water consumption for sanitary uses as assessed under Wat 01 (litres/person/day), if a post occupancy stage certification is sought.				
Wat 03: Water leak detection **1.** Leak detection system	**One credit - Leak detection system** **1.** Install a leak detection system capable of detecting a major water leak: **a.** On the utilities water supply within the buildings, to detect any major leaks within the buildings. AND **b.** Between the buildings and the utilities water supply, to detect any major leaks between the utilities supply and the buildings under assessment. **2.** 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.	1	0.78%	1	0.78%

	d. Programmable to suit the owner's or occupier's water consumption criteria. **e.** 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.				
Wat 03: Water leak detection **2.** Flow control devices	**One credit - Flow control devices** **3.** Install flow control devices that regulate the water supply to each WC area or sanitary facility according to demand in order to minimise undetected wastage and leaks from sanitary fittings and supply pipework.	1	0.78%	1	0.78%
Wat 04: Water efficient equipment	**One credit** **1.** Identify all water demands from uses other than those listed under "Calculation of water efficiency performance" in Wat 01 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. **2.** Identify systems or processes to reduce the relevant water demand (criterion 1), and establish, through either good practice design or specification, a demonstrable reduction in the total water demand of the building.	1	0.78%	0	0%
Water Totals		**9**	**7.00%**	**8**	**6.22%**

Materials: 1 Credit = 1.07%	**Compliance Requirements**	**Available**		**Targeted**	
		Credits	**Percent**	**Credits**	**Percent**
Mat 01: Environmental impacts from construction products - Building life cycle	**Up to six credits – Superstructure (all building types)** **Comparison with the BREEAM LCA benchmark during Concept Design (offices, industrial and retail buildings only)** Superstructure (offices, industrial and retail buildings (except for Simple Buildings and where Notes 1.1 and 1.2 apply)) **1.** During the Concept Design, demonstrate the environmental performance of the building as follows:	6	6.43%	0	0%

assessment (LCA) **1.** Superstructure	**a.** Carry out a building LCA on of the superstructure design using either the BREEAM Simplified Building LCA tool or an IMPACT Compliant LCA tool according to the methodology (see Methodology). **b.** Submit the Mat 01/02 Results Submission Tool to BRE at the end of Concept Design, and before planning permission is applied for (that includes external material or product specifications). **Comparison with the BREEAM LCA benchmark during Technical Design (offices, industrial and retail buildings only)** **2.** During Technical Design, demonstrate the environmental performance of the building as follows: **a.** As criterion 1.a **b.** Submit the Mat 01/02 Results Submission Tool to BRE at the end of Technical Design. Where a project has not achieved criterion 1, criterion 2 may still be achieved. **Option appraisal during Concept Design (all building types)** **3.** For offices, industrial and retail building types, achieve criterion 1 (except where Notes 1.0, 1.1 and 1.2 apply). **4.** During Concept Design, identify opportunities for reducing environmental impacts as follows: **a.** Carry out building LCA options appraisal of 2 to 4 significantly different superstructure design options (applicable to the Concept Design stage, see Methodology). **b.** Use a building LCA tool that is recognised by BREEAM (as suitable for assessing superstructure during Concept Design) according to the methodology (see Methodology). **c.** For each design option, fulfil the same functional requirements specified by the client and all statutory requirements (to ensure functional equivalency). **d.** Integrate the LCA options appraisal activity within the wider design decision-making process. Record this in an options appraisal summary document. **e.** Record the following in the Mat 01/02 Results Submission Tool: The differences between the design options; the design option selected by the client to be progressed beyond Concept Design; the reasons for selecting it and the reasons for not selecting the other design options. **f.** Submit the Mat 01/02 Results Submission Tool to BRE at the end of Concept Design, and before planning permission is applied for (that includes external material or product specifications).				

	If the building LCA tool recognised by BREEAM and used for criteria 3 to 5 (and 6 to 9, if pursued) is not an IMPACT Compliant LCA tool and criteria 1 to 2 are applicable, then the BREEAM Simplified Building LCA tool (or an IMPACT Compliant LCA tool) shall be used for criteria 1 to 2. **Options appraisal during Technical Design (all building types)** **5.** During Technical Design identify opportunities for reducing environmental impacts as follows: **a.** Carry out building LCA options appraisal of 2 to 3 significantly different superstructure design options (based on the selected Concept Design option and as applicable to the Technical Design stage). **b.** Use a building LCA tool that is recognised by BREEAM (as suitable for assessing superstructure during Technical Design) according to the methodology. **c.** As criteria 4.c to 4.e above. Where an options appraisal summary document was produced during Concept Design, update it to include the Technical Design options. **d.** Submit the Mat 01/02 Results Submission Tool to BRE at the end of Technical Design. Where a project has not achieved criteria 3 and 4, criterion 5 may still be achieved. **Exemplary level criteria** To achieve exemplary performance credits **One credit – Core building services options appraisal during Concept Design (all building types)** **8.** Criteria 3 to 4 are achieved. **9.** During Concept Design identify opportunities for reducing environmental impacts as follows: **a.** Carry out building LCA options appraisal of at least 3 significantly different core building services design options. **b.** Use a building LCA tool that is recognized by BREEAM (as suitable for assessing core building services during Concept Design) according to the methodology. **c.** As criteria 4.c to 4.f. **One credit – LCA and LCC alignment (all building types)** **10.** Achieve criteria 3 to 5. **11.** Achieve Elemental LCC plan and Component Level LCC options appraisal credits (Man 02 Life cycle cost and service life planning). **12.** Include design options appraised for criteria 3 to 4 (and 6 to 7 and 8 to 9, if pursued) during Concept Design in Assessment scope - The elemental LCC plan. **13.** Include the design options appraised for criterion 5 during Concept Design in the 'Component level LCC option appraisal' (in Man 02 Life cycle cost and service life planning).				

	14. Integrate the aligned LCA and LCC options appraisal activity within the wider design decision-making process. Record this in an options appraisal summary document including the relevant cost information from the 'elemental LCC plan' and 'Component level LCC option appraisal'. **One credit – Third party verification (all building types)** **15.** Criteria 1 to 7 (as applicable to the building type) are achieved. **16.** A suitably qualified third party (see Definitions) either carries out the building LCA workor verifies the building LCA work (if by others), and produces a report describing howthey have checked the building LCA work accurately represent the designs under consideration during Concept Design and Technical Design with reference to the requirements of criteria 1 to 7 (and 8 to 14 if pursued). **17.** For each LCA option, itemise in the report the verification checks made by the suitably qualified third party in the report including, as a minimum, the quality requirements shown in Table 9.4. **18.** Include details of the suitably qualified third party's relevant skills and experience and a declaration of their third party independence from the project client and design team in the report.				
Mat 01: Environmental impacts from construction products - Building life cycle assessment (LCA) **2.** Substructure	**One credit – Substructure and hard landscaping options appraisal during Concept Design (all building types)** **6.** Criteria 3 and 4 are achieved. **7.** During Concept Design identify opportunities for reducing environmental impacts as follows: **a.** 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). **b.** Using a building LCA tool that is recognized by BREEAM (as suitable for assessing substructure and hard landscaping during Concept Design) according to the methodology. **c.** As criteria 4.c to 4.f	1	1.07%	0	0%
Mat 02: Environmental impacts from construction products - Environmental Product Declarations (EPD)	**One credit - Specification of products with a recognised environmental product declaration (EPD)** **1.** Specify construction products with EPD that achieve a total EPD points score of at least 20, according to the Methodology. **2.** 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.	1	1.07%	1	1.07%

Mat 03: Responsible sourcing of construction products **1.** Pre-requisite - Legal and sustainable timber	**1.** 100% of timber and timber-based products used on the project are 'Legal' and 'Sustainable' as per the UK Government's Timber Procurement Policy (TPP) (see Definitions). Compliance with criterion 1 is a minimum requirement for achieving any BREEAM rating. There are no pre-requisite requirements for other materials.	0	0%	0	0%
Mat 03: Responsible sourcing of construction products **2.** Enabling sustainable procurement	**One credit - Enabling sustainable procurement** **2.** 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.	1	1.07%	1	1.07%
Mat 03: Responsible sourcing of construction products **3.** Measuring responsible sourcing	**Up to 3 credits - Measuring responsible sourcing** **3.** Use the Mat 03 calculator tool and methodology to determine the number of credits achieved for the construction products specified or procured. Credits are awarded in proportion to the scope of the assessment and the number of points achieved, as set out in Table 9.10.	3	3.21%	3	3.21%
Mat 05: Designing for	**One credit** **Protecting vulnerable parts of the building from damage**	1	1.07%	1	1.07%

durability and resilience	**1.** 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.). **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** **2.** 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 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. **3.** Include convenient access to the roof and façade for cost-effective cleaning, replacement and repair in the building's design. **4.** Design the roof and façade to prevent water damage, ingress and detrimental ponding. Table 9.14 is a list of relevant industry durability and quality standards than can be used to achieve compliance.				
Mat 06: Material efficiency	**One credit** **1.** 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 **a.** Preparation and Brief **b.** Concept Design **c.** Developed Design **d.** Technical Design	1	1.07%	0	0%

	e. Construction **2.** Develop and record the implementation of material efficiency, see Table 9.15 below, during **a.** Developed Design **b.** Technical Design **c.** Construction **3.** Report the targets and actual material efficiencies achieved.				
Materials Totals		**14**	**15.00%**	**6**	**6.43%**

Waste: 1 Credit = 0.6%	**Compliance Requirements**	**Available**		**Targeted**	
		Credits	**Percent**	**Credits**	**Percent**
Wst 01: Construction waste management **1.** Pre-demolition audit	**One credit - Pre-demolition audit** **1.** Complete a pre-demolition audit of any existing buildings, structures or hard surfaces being considered for demolished. 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 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. **2.** Make reference to the audit in the resource management plan (RMP) (see Definitions). **3.** Compare actual waste arisings and waste management routes used with those forecast and investigate significant deviations from planned targets.	1	0.6%	1	0.6%
Wst 01: Construction waste management **2.** Construction resource efficiency	**Up to three credits - Construction resource efficiency** **4.** 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 Additional information), including demolition and excavation waste. **b.** Accurate data records on waste arisings and waste management routes. **5.** Meet or improve upon the benchmarks in Table 10.1 for non-hazardous construction waste, excluding demolition and excavation waste. **Exemplary level criteria**	3	1.8%	3	1.8%

	To achieve an exemplary performance credit: **8.** Non-hazardous construction waste generated, excluding demolition and excavation waste, is less than or equal to the exemplary level resource efficiency benchmarks (see Table 10.1). **9.** The percentage of non-hazardous construction, demolition and excavation waste (if relevant) diverted from landfill meets or exceeds the exemplary level percentage benchmarks in Table 10.2. **10.** All key waste groups in Table 10.3 for diversion from landfill are covered in the RMP. **11.** Waste data obtained from licensed external waste contractors is reliable and verifiable, by using data from EA/SEPA/EA Wales/NIEA Waste Return Forms or from a PAS 402:2013 compliant company (see Definitions).				
Wst 01: Construction waste management **4.** Diversion of resources from landfill	**One credit - Diversion of resources from landfill** **6.** Meet, where applicable, the diversion from landfill benchmarks in Table 10.2 for non-hazardous construction waste and demolition and excavation waste generated. **7.** Sort waste materials into separate key waste groups as per Table 10.3, either on-site or through a licensed contractor for recovery.	1	0.6%	1	0.6%
Wst 02: Use of recycled and sustainably sourced aggregates	**Pre-requisite** **1.** If demolition occurs on site, to encourage the reuse of site-won material on site, when demolition occurs, complete a pre-demolition audit of any existing buildings, structures or hard surfaces to be demolished in accordance with Wst 01 Criterion 1 and Criterion 2. **One credit - Project Sustainable Aggregate points** **2.** Identify all aggregates uses and type on the project Table 10.5 and Table 10.6. **3.** Determine the quantity in tonnes for each identified use and aggregate type. **4.** Identify the region in which the aggregate source is located. **5.** Identify the distance in kilometres travelled by all aggregates by transport type. **6.** Enter the information into the BREEAM Wst 02 calculator to calculate the Project Sustainable Aggregate points. The corresponding number of BREEAM credits will be awarded as shown in Table 10.4 **Exemplary level criteria** To achieve an exemplary performance credit: **7.** The Project Sustainable Aggregate Points score meets or exceeds the exemplary level performance benchmark in Table 10.4.	1	0.6%	1	0.6%

Wst 03: Operational waste	**One credit - Operational waste** **1.** 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. **2.** 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.	1	0.6%	1	0.6%
Wst 05: Adaptation to climate change	**One credit - Resilience of structure, fabric, building services and renewables installation** **1.** Conduct a climate change adaptation strategy appraisal by the end of Concept Design using: **a.** 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 (see Methodology below): **i.** Hazard identification **ii.** Hazard assessment **iii.** Risk estimation **iv.** Risk evaluation **v.** Risk management. **2.** Develop recommendations or solutions based on the climate change adaptation strategy appraisal, before or during or prior to Concept Design, that aim to mitigate the identified impact.	1	0.6%	0	0%

	3. 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. **Exemplary level criteria – Responding to climate change** Achievement of the following criteria demonstrates a holistic approach to the design and construction of the building's life cycle to mitigate against the impacts of climate change. To achieve an exemplary performance credit: **4.** Meet criteria 1 to 3 above. **5.** Meet the criteria or achieve credits of the assessment issues given in Table 10.11				
Wst 06: Design for disassembly and adaptability 1. Recommendations	**One credit - Design for disassembly and functional adaptability - Recommendations** **1.** Conduct a study to explore the ease of disassembly and the functional adaptation potential of different design scenarios (see Methodology) by the end of Concept Design. **2.** Develop recommendations or solutions (see Methodology) based on the study (criterion 1 above), during or prior to Concept Design, that aim to enable and facilitate disassembly and functional adaptation.	1	0.6%	0	0%
Wst 06: Design for disassembly and adaptability 2. Implementation	**One credit - Disassembly and functional adaptability – Implementation** **3.** Achieve criteria 1 and 2 **4.** 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 have been justified in writing to the assessor. **b.** Changes to the recommendations and solutions during the development of the Technical Design. **5.** Produce a building adaptability and disassembly guide to communicate the characteristics allowing functional adaptability and disassembly to prospective tenants.	1	0.6%	0	0%
Waste Totals		**10**	**6.00%**	**7**	**4.20%**

Land Use and Ecology: 1 Credit = 1%	**Compliance Requirements**	**Available**		**Targeted**	
		Credits	**Percent**	**Credits**	**Percent**
LE 01: Site selection	**One credit - Previously occupied land** **1.** At least 75% of the proposed development is on previously occupied land (see Definitions).	1	1%	1	1%

1. Previously occupied land					
LE 01: Site selection **2.** Contaminated land	**One credit - Contaminated land** **2.** A contaminated land professional undertakes a site investigation, risk assessment and appraisal, which deems that land within the development footprint to be affected by contamination. This report identifies: **a.** The degree of contamination **b.** The contaminant sources or types **c.** The options for remediating sources of contamination which present an unacceptable risk. **3.** The client or principal contractor confirms that a remediation strategy will be implemented, in line with the report (see Definitions).	1	1%	0	0%
LE 02: Ecological risks and opportunities **1.** Statutory obligations	There are two potential routes available dependent on the nature of the site under development. The credits available and the criteria are different depending on the assessment route that is being used. The Foundation route (Route 1) is only available on sites of low ecological risk due to the nature of ecology present prior to site works including site clearance and preparation activities. The Comprehensive route (Route 2) is available for all sites. **IMPORTANT**: Please refer to the Methodology and Definitions sections to ensure the criteria are being fully met and for helpful guidance. **Pre-requisite - Statutory obligations** **1.** The client or contractor confirms compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site.	0	0%	0	0%
LE 02: Ecological risks and opportunities **2.** Survey and evaluation	**As part of one credit* - Foundation route (Route 1)** **2.** The site is evaluated using the BREEAM Ecological Risk Evaluation Checklist (Guidance Note 34) confirming that the Foundation route can be used (see Methodology and Definitions). **Note:** For Route 1, only one credit is awarded when both 'Survey and evaluation' AND 'Determining ecological outcomes' are achieved. **One credit - Comprehensive route (Route 2)** **3.** A Suitably Qualified Ecologist (SQE) carries out a survey and evaluation (see Methodology) for the site early enough to influence site preparation works, layout and, where necessary, strategic planning decisions (typically Preparation and brief stage) (see Definitions). **4.** The SQE's survey and evaluation determines the site's ecological baseline (see Definitions), including: **a.** Current and potential ecological value and condition of the site, and related areas within the zone of influence.	1	1%	1	1%

	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. **5.** Recommendations and data collected from the survey and evaluation are shared with appropriate project team members to influence decisions made for activities during site preparation, design and construction works, which can support ecological features (see Methodology and Definitions).				
LE 02: Ecological risks and opportunities **3.** Determining ecological outcomes	**Foundation and Comprehensive routes (Routes 1 and 2)** **6.** Survey and evaluation criteria relevant to the chosen route (criterion 2 if following the Foundation route or Criteria 3–5 for the Comprehensive route). **7.** The project team liaise and collaborate with representative stakeholders (see Methodology) early enough to influence key planning decisions (typically Concept Design stage), to: **a.** Identify the optimal ecological outcomes for the site. **b.** Identify, appraise and select measures to meet the optimal ecological outcomes for the site (criterion 7.a), in line with the mitigation hierarchy of action, according to the route being used (see Definitions): **Route 1** 1. Avoidance 2. Protection **Route 2** 1. Avoidance 2. Protection 3. Reduction or limitation of negative impacts 4. On site compensation and 5. Enhancement, considering the capacity and feasibility within the site, or where viable, offsite **Note:** For Route 1, only one credit is awarded when both 'Survey and evaluation' AND 'Determining ecological outcomes' are achieved. **Exemplary Level criteria - Wider site sustainability** To achieve one exemplary performance credit: **8.** Achieve criterion 7 above. **9.** Wider sustainability related activities and potential ecosystem service benefits (see Definitions) are considered as part of determining the optimal ecological outcomes for the site (criterion 7), including the areas outlined in the Methodology below.	1	1%	1	1%

	10. Achieve the credits of the assessment issues outlined below: **a.** Hea 07 Safe and healthy surroundings - Both credits **b.** Pol 03 Flood and surface water management - Achieve credits for 'Surface water run-off' and 'Minimising watercourse pollution' **c.** Pol 05 Reduction of noise pollution				
LE 03: Managing impacts on ecology **1.** Ecological risks and opportunities	**Pre-requisite – Ecological risks and opportunities** **1.** LE 02's 'Survey and evaluation and Determining ecological outcomes' criteria have been achieved using the Foundation route (Route 1) or the Comprehensive route (Route 2).	0	0%	0	0%
LE 03: Managing impacts on ecology **2.** Planning and measures on-site	**One credit - Planning and measures on-site** **Foundation and comprehensive route (Routes 1 and 2)** **2.** Further planning to avoid and manage negative ecological impacts on-site is carried out (see Methodology) early enough to influence the concept design and design brief as well as site preparation planning (typically Concept Design stage). **3.** On-site measures for managing negative ecological impacts during site preparation and construction are implemented in-practice (e.g. mitigation measures to protect existing ecological features) (see Methodology). **4.** Criteria 2-3 are based on input from the project team in collaboration with representative stakeholders and data collated as part of the 'Determining ecological outcomes' in LE 02 Ecological risks and opportunities (see Methodology).	1	1%	1	1%
LE 03: Managing impacts on ecology **3.** Managing negative impacts of the project	**Up to two credits - Managing negative impacts** **Foundation route (Route 1) (one credit)** **5.** Criteria 2 and 3 have been achieved. **6.** Negative impacts from site preparation and construction works are managed according to the mitigation hierarchy (see Methodology) and no overall loss (see Definitions) of ecological value has occurred. **Comprehensive route (Route 2) (up to two credits)** **7.** Criteria 2-4 have been achieved. **8.** Negative impacts from site preparation and construction works have been managed accord to the mitigation hierarchy, in line with the SQE's recommendations (see Methodology) and, either: **a.** No overall loss of (see Definitions) ecological value has occurred (two credits).	2	2%	2	2%

	OR where criterion 8.a is not possible: **b.** The loss of ecological value has been minimised (Minimising Loss) (one credit)				
LE 04: Ecological change and enhancement **1.** Managing negative impacts on ecology	**Pre-requisite - Managing negative impacts on ecology** **1.** Criterion 6 (for Foundation route) or 8 (for Comprehensive route) in LE 03 has been achieved. **2.** The client or contractor confirms compliance is monitored against all relevant UK, EU or international legislation relating to the ecology of the site.	0	0%	0	0%
LE 04: Ecological change and enhancement **2.** Change and enhancement of ecology	**One credit - Change and enhancement of ecology** **Foundation route (Route 1) only** **3.** Locally relevant ecological measures have been implemented that enhance the site's ecological value. The measures adopted are based on (see Methodology). **a.** Recommendations from recognised 'local' ecological expertise and specialist input and guidance. **b.** Input from the project team in collaboration with representative stakeholders and data collated as part of 'Determining ecological outcomes' in LE 02. **Up to three credits - Change and enhancement of ecology** **Comprehensive route (Route 2) only** **6.** Up to three credits are awarded based on the change in ecological value occurring as a result of the project. This must be calculated in accordance with the process set out in GN36 - BREEAM, CEEQUAL and HQM Ecology Calculation Methodology – Route 2. Credits are awarded in line with the Reward Scale table in GN36 where there are no residual impacts on protected sites or irreplaceable habitats. **Exemplary Level criteria** To achieve one exemplary performance credit: **7.** The change in ecological value calculated under criterion 6 above confirms significant net gain has been achieved as set out in GN36 - BREEAM, CEEQUAL and HQM Ecology Calculation Methodology – Route 2.	3	3%	3	3%
LE 04: Ecological change and enhancement	**One credit - Ecological enhancement** **Comprehensive route (Route 2) only** **4.** Measures have been implemented that enhance ecological value, which are based on input from the project team and SQE in collaboration with representative stakeholders and data collated	1	1%	1	1%

3. Ecological enhancement	as part of the 'Determining ecological outcomes' in LE 02 (see Methodology). Measures are implemented in the following order: **a.** On site, and where this is not feasible, **b.** Off site within the zone of influence. **5.** Data collated are analysed and where potentially valuable, provided to the local environmental records centres nearest to, or relevant for, the site.				
LE 05: Long term ecological management and maintenance **1.** Statutory obligations, planning and site implementation	**Pre-requisite - Statutory obligations, planning and site implementation** **1.** The client or contractor has confirmed that compliance is being monitored against all relevant UK, EU and international standards relating to the ecology of the site. **2.** The following must be achieved, according to the route being assessed: **a.** Foundation route (Route 1) - Criterion 6 in LE 03 has been achieved. **b.** Comprehensive route (Route 2) - Criterion 8 in LE 03 has been achieved, and at least one credit under LE04 for 'Change and Enhancement of Ecology' has been awarded.	0	0%	0	0%
LE 05: Long term ecological management and maintenance **2.** Management and maintenance throughout the project	**One credit - Foundation and Comprehensive routes (Route 1 and Route 2)** **3.** Measures have been implemented to manage and maintain ecology throughout the project. These measures are based on input from the project team in collaboration with representative stakeholders and data collated as part of the 'Determining ecological outcomes' in LE 02 (see Methodology). To ensure the optimal ecological outcomes agreed in LE 02 are met in-practice, these measures must monitor and review the effectiveness of the mitigation and enhancement measures in place for LE 03 & LE 04 to ensure they are implemented. **4.** A section on Ecology and Biodiversity has been included as part of the tenant or building owner information supplied, to inform the owner or occupant of local ecological features, value and biodiversity on or near the site (see Methodology). This should include detailed management and maintenance plans as required by landscape and asset managers as well as relevant parts of the handover information for occupiers written in a format that encourages understanding and supportive behaviours. **Note:** For Route 1, only one credit is awarded when both 'Management and maintenance throughout the project' AND 'Landscape and ecology management plan' are achieved.	1	1%	1	1%
LE 05: Long term	**One credit - Landscape and ecology management plan**	1	1%	1	1%

ecological management and maintenance **3.** Landscape and ecology management plan	**5.** A Landscape and Ecology Management Plan, or equivalent, has been developed in accordance with BS 42020:2013 Section 11.1(213) covering at least the first five years after project completion as a minimum and including: **a.** Actions and responsibilities of relevant individuals prior to handover **b.** The ecological value and condition of the site at handover and how this is expected to develop and change over time **c.** Identification of opportunities for ongoing alignment with activities beyond the development project, which support the aims of BREEAM's Strategic Ecology Framework **d.** Identification and guidance s to trigger appropriate remedial actions to address previously unforeseen impacts **e.** Clearly defined and allocated roles and responsibilities for delivering the plan **6.** The landscape and management plan or similar will be updated to support maintenance of the ecological value of the site (see sections relating to Maintenance and Monitoring in CIEEM, CIRIA, IEMA, for helpful guidance). **Note:** For Route 1, only one credit is awarded when both 'Management and maintenance throughout the project' AND 'Landscape and ecology management plan' are achieved.				
Land Use and Ecology Totals		**13**	**13.00%**	**12**	**12.00%**

Pollution: 1 Credit = 0.53%	**Compliance Requirements**	**Available**		**Targeted**	
		Credits	**Percent**	**Credits**	**Percent**
Pol 01: Impact of refrigerants **1.** No refrigerant use	**Three credits - No refrigerant use** **1.** No refrigerant use within the installed plant or systems. Shell only assessments are designed to avoid the need for refrigerant containing services. OR alternatively, where the building does use refrigerants, the three credits can be awarded in line with criteria 2-7	3	1.6%	0	0%
Pol 01: Impact of refrigerants **2.** Refrigerant use Pre-requisite	**2.** 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.	0	0%	0	0%

Pol 01: Impact of refrigerants **2.** Refrigerant use Impact of refrigerant	**Two credits** **3.** 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. To calculate the DELC, refer to the relevant definitions in the Methodology below and Additional information sections. OR **4.** All Refrigerants used have a global warming potential (GWP) ≤ 10. OR **One credit** **5.** Systems using refrigerants have a DELC of ≤ 1000 kgCO_2-e/kW cooling and heating capacity.	2	1.07%	0	0%
Pol 01: Impact of refrigerants **2.** Refrigerant use Leak detection	**One credit - Leak detection** **6.** All systems are hermetically sealed or only use environmentally benign refrigerants. See Leak detection and Hermetically sealed systems OR **7.** Where the systems are not hermetically sealed: **a.** Systems have: **i.** A permanent automated refrigerant leak detection system, that is robust and tested and capable of continuously monitoring for leaks. OR **ii.** An inbuilt automated diagnostic procedure for detecting leakage is enabled. **b.** 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 (see Automatic isolation and containment of refrigerant).	1	0.53%	1	0.53%
Pol 02: Local air quality	**Up to two credits** **1.** All heating and hot water is supplied by non-combustion systems. For example only powered by electricity. OR alternatively; **2.** 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. 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.	2	1.07%	2	1.07%
Pol 03: Flood and surface	**1.** An appropriate consultant is appointed to carry out and demonstrate the development's compliance with all criteria.	0	0%	0	0%

water management 1. Pre-requisite					
Pol 03: Flood and surface water management 2. Flood resilience	**Two credits - Low flood risk** **2.** A site-specific flood risk assessment (FRA) confirms the development is in a flood zone that is defined as having a low annual probability of flooding. The FRA takes all current and future sources of flooding into consideration (see Sources of flooding). **One credit - Medium or high flood risk** **3.** A site-specific FRA confirms the development is 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 (see Sources of flooding). For smaller sites refer to Level of detail required in the FRA for smaller sites, which overrides criterion 2 above. **4.** 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 zone (see 600mm threshold). **b.** The final design of the building and the wider site reflects the recommendations made by an appropriate consultant in accordance with the hierarchy approach outlined in section 5 of BS 8533:2011.	2	1.07%	2	1.07%
Pol 03: Flood and surface water management 3. Surface water run-off Pre-requisite	**Pre-requisite for surface water run-off credits** **5.** 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. Note: For Simple Buildings, achieving criteria 5-15 will also achieve an Exemplary credit.	0	0%	0	0%
Pol 03: Flood and surface water management	**One credit - Surface Water Run-Off - Rate** **6.** For brownfied sites, drainage measures are specified so that the peak rate of run-off from the site to the watercourses (natural or municipal) shows a 30% improvement for the developed site compared with the pre-developed site. This should comply at the 1-year and 100-year return period events.	1	0.53%	1	0.53%

3. Surface water run-off Rate	**7.** For Greenfield sites, drainage measures are specified so that the peak rate of run-off from the site to the watercourses (natural or municipal) is no greater for the developed site than it wasfor the pre-development site. This should comply at the 1-year and 100-year return period events. **8.** Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified Sustainable Drainage Systems (SuDS) are in place. **9.** Calculations include an allowance for climate change. This should be made in accordance with current best practice planning guidance (see definitions). Note: For Simple Buildings, achieving criteria 5-16 will also achieve an Exemplary credit.				
Pol 03: Flood and surface water management **3.** Surface water run-off Volume	**One credit - Surface Water Run-Off - Volume** **10.** Flooding of property will not occur in the event of local drainage system failure (caused either by extreme rainfall or a lack of maintenance); AND EITHER **11.** 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 (see criterion 15). **12.** 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 criteria 11 and 12 cannot be achieved): **13.** Justification from the appropriate consultant indicating why the above criteria cannot be achieved, i.e. where infiltration or other SuDS techniques are not technically viable options. **14.** Drainage design measures are specified so 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 one-year peak flow rate **b.** The mean annual flow rate (Qbar) **c.** 2L/s/ha. For the one-year peak flow rate, the one-year return period event criterion applies. **15.** Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS are in place. **16.** For either option, above calculations must include an allowance for climate change; this should be made in accordance with current best practice planning guidance. Note: For Simple Buildings, achieving criteria 5-16 will also achieve an Exemplary credit.	1	0.53%	1	0.53%

Pol 03: Flood and surface water management **5.** Minimising watercourse pollution	**One credit - Minimising watercourse pollution** **17.** There is no discharge from the developed site for rainfall up to 5mm (confirmed by the appropriate consultant). **18.** Areas with a low risk source of watercourse pollution have an appropriate level of pollution prevention treatment is provided, using appropriate SuDS techniques. **19.** 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. **20.** 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. **21.** All water pollution prevention systems have been designed and installed in accordance with the recommendations of documents such as the SuDS manual (227) 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. **22.** A comprehensive and up to date drainage plan of the site will be made available for the building or site occupiers. **23.** Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS must be in place. **24.** All external storage and delivery areas are designed and detailed in accordance with the current best practice planning guidance.	1	0.53%	1	0.53%
Pol 04: Reduction of night time light pollution	**One credit** **1.** 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: **2.** The external lighting strategy has been designed in compliance with Table 2 (and its accompanying notes) of the Institute of Lighting Professionals (ILP) Guidance notes for the reduction of obtrusive light, 2011. Buildings **3.** All external lighting (except for safety and security lighting) can be automatically switched off between 23:00 and 07:00. **4.** If safety or security lighting is provided and will be used between 23:00 and 07:00, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 2 of the ILP guidance notes.	1	0.53%	1	0.53%

	5. Illuminated advertisements are designed in compliance with ILP PLG05 The Brightness of Illuminated Advertisements.				
Pol 05: Reduction of noise pollution	**One credit** **1.** There are no noise-sensitive areas within the assessed building or within 800m radius of the assessed site. OR **2.** Where there are noise-sensitive areas within the assessed building or noise-sensitive areas within 800m radius of the assessed site, a noise impact assessment compliant with BS4142:2014 is commissioned. Noise levels must be measured or determined for: **a.** Existing background noise levels: **i.** at the nearest or most exposed noise-sensitive development to the proposed assessed site **ii.** including existing plant on a building, where the assessed development is an extension to the building **b.** Noise rating level from the assessed building. **3.** The noise impact assessment must be carried out by a suitably qualified acoustic consultant. **4.** 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 the background noise throughout the day and night. **5.** If the noise sources from the assessed building are greater than the levels described in criterion 4, measures have been installed to attenuate the noise at its source to a level where it will comply with the criterion.	1	0.53%	1	0.53%
Pollution Totals		**15**	**8.00%**	**10**	**5.33%**

Innovation: 1 Credit = 1%	**Compliance Requirements**	**Available**		**Targeted**	
		Credits	**Percent**	**Credits**	**Percent**
Inn 01: Innovation	**Up to a maximum of 10 credits are available in aggregate from a combination of the following:** **Exemplary level of performance in existing BREEAM issues** **1.** Where the building demonstrates exemplary performance by meeting defined exemplary level performance criteria in one or more of following BREEAM assessment issues: **a.** Man 01 Project brief and design (Simple buildings only) **b.** Man 03 Responsible construction practices	10	10%	0	0%

	c. Hea 01 Visual comfort **d.** Hea 02 Indoor air quality **e.** Hea 06 Security **f.** Ene 01 Reduction of energy use and carbon emissions **g.** Wat 01 Water consumption **h.** Mat 01 Environmental impacts from construction products - Building life cycle assessment (LCA) **i.** Mat 03 Responsible sourcing of construction products **j.** Wst 01 Construction waste management **k.** Wst 02 Use of recycled and sustainably sourced aggregates **l.** Wst 05 Adaptation to climate change **m.** LE 02 Ecological risks and opportunities **n.** LE 04 Ecological change and enhancement **m.** Pol 03 Flood and surface water management (Simple buildings only). Please refer to the relevant BREEAM issue within this scheme document for details of the exemplary level performance assessment criteria. **Approved innovations** **2.** One innovation credit can be awarded for each innovation application approved by BRE Global, where the building complies with the criteria defined within an approved innovation application form.				
Man 03: Responsible construction practices **1.** Responsible construction management	**Assessment criteria** See compliance requirements for Man 03	1	1%	0	0%
Hea 01: Visual comfort **1.** Daylighting	**Assessment criteria** See compliance requirements for Hea 01	1	1%	0	0%
Hea 01: Visual comfort	**Assessment criteria** See compliance requirements for Hea 01	1	1%	0	0%

2. Internal and external lighting					
Hea 02: Indoor air quality	**Assessment criteria** See compliance requirements for Hea 02	1	1%	0	0%
Hea 06: Security	**Assessment criteria** See compliance requirements for Wat 01	1	1%	0	0%
Ene 01: Reduction of energy use and carbon emissions **1.** Energy performance	**Exemplary level criteria** **Up to two credits - Beyond zero net regulated carbon** **10.** The building achieves an EPR NC≥ 0.9 and zero net regulated CO_2-eq emissions (see Definitions). **11.** Energy generation from on-site and near-site LZC sources is sufficient to offset carbon emissions from regulated energy use plus a percentage of emissions from unregulated energy use. **12.** Award the exemplary credits based on the percentage of additional emissions from unregulated energy that are offset by LZC sources (see Table 6.2). **Three credits - Carbon negative** **13.** The building is deemed carbon negative where > 100% (see Table 6.2) of carbon emissions from unregulated (and regulated) energy use are offset by energy generated from on-site and near-site LZC sources (see Definitions).	3	3%	0	0%
Ene 01: Reduction of energy use and carbon emissions **2.** Prediction of operational energy consumption Post-occupancy stage	**Exemplary level criteria** **Two credits – Post-occupancy evaluation of energy performance** **14.** Achieve 'Four credits - Prediction of operational energy consumption' (criteria 2 to 9). **15.** Achieve maximum available credits in Ene 02 Energy monitoring on page 136. In addition, preschools, primary schools, law courts, prisons and multi-residential buildings must meet the requirements of the second credit for sub-metering of high energy load and tenancy areas. **16.** The client or building occupier commits funds to pay for the post occupancy evaluation. **a.** Where performance targets are set in relation to external rating schemes (e.g. a DEC, UK NABERS energy for offices, or BREEAM In Use rating), confirm that an assessor will be appointed to report on the actual energy consumption compared with the target set in criterion 8 or 9, OR	2	2%	0	0%

	16.b Where the energy performance target is project specific, the funds committed to pay for the post occupancy evaluation explicitly include provision for third party verification of the operational energy performance. **17.** The energy model (criterion 4) is saved so that it can be rerun post occupancy. This can be achieved by either: **a.** Submitting the model to BRE, OR **b.** Reporting the building owner, or named third party, who has access to the model and permission to use or share it.				
Wat 01: Water consumption	**Assessment criteria** See compliance requirements for Wat 01	1	1%	0	0%
Mat 01: Environmental impacts from construction products - Building life cycle assessment (LCA) **1.** Core building services options appraisal during Concept Design	**Assessment criteria** See compliance requirements for Mat 01	1	1%	0	0%
Mat 01: Environmental impacts from construction products - Building life cycle	**Assessment criteria** See compliance requirements for Mat 01	1	1%	0	0%

assessment (LCA) **2.** LCA and LCC alignment					
Mat 01: Environmental impacts from construction products - Building life cycle assessment (LCA) **3.** Third party verification	**Assessment criteria** See compliance requirements for Mat 01	1	1%	0	0%
Mat 03: Responsible sourcing of construction products	**Assessment criteria** See compliance requirements for Mat 03	1	1%	0	0%
Wst 01: Construction waste management **1.** Construction resource efficiency	**Assessment criteria** See compliance requirements for Wst 01	1	1%	0	0%
Wst 02: Use of recycled and sustainably sourced aggregates	**Assessment criteria** See compliance requirements for Wst 02	1	1%	0	0%
Wst 05: Adaptation to	**Assessment criteria** See compliance requirements for Wst 05	1	1%	0	0%

climate change					
LE 02: Ecological risks and opportunities	**Assessment criteria** See compliance requirements for LE 02	1	1%	0	0%
LE 04: Ecological change and enhancement	**Assessment criteria** See compliance requirements for LE 04	1	1%	0	0%
Innovation Totals (Up to a maximum of 10 credits)		**10**	**10.00%**	**0**	**0.00%**
Overall Totals		**145**	**110.00%**	**98**	**72.51%**

APPENDIX A – Ground floor showing non-domestic areas