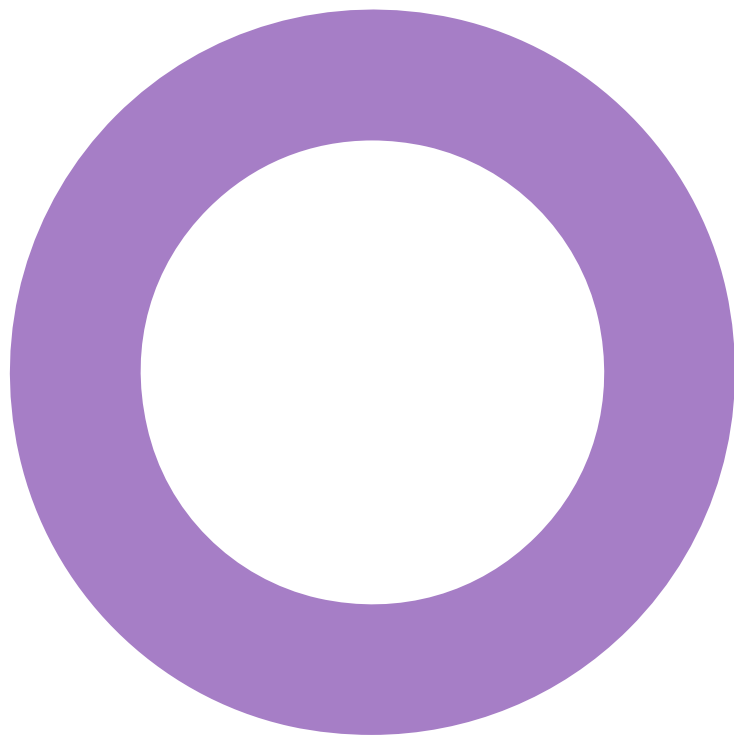


**Hosier Street Hotel.
Reading.**
Inception (Reading) Sarl.

SUSTAINABILITY

BREEAM NEW CONSTRUCTION 2018
PRE-ASSESSMENT REPORT
REVISION 4 – 16 NOVEMBER 2018



Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
1	12/10/2018	Draft Issue	ER	TPS	JRF
2	16/10/2018	Planning Issue	ER	TPS	JRF
3	22/10/2018	Amendments following comments	ER	TPS	JRF
4	16/11/2018	Amendments following comments	ER	TPS	JRF

This document has been prepared for Inception (Reading) Sarl only and solely for the purposes expressly defined herein. We owe no duty of care to any third parties in respect of its content. Therefore, unless expressly agreed by us in signed writing, we hereby exclude all liability to third parties, including liability for negligence, save only for liabilities that cannot be so excluded by operation of applicable law. The consequences of climate change and the effects of future changes in climatic conditions cannot be accurately predicted. This report has been based solely on the specific design assumptions and criteria stated herein.

Project number: 23/23208
Document reference: REP-2323208-5A-ER-20181116-BREEAM 2018 PRE ASSESSMENT Proposed Hotel Hosier St-Rev04

BREEAM Audit box

BRE registration number	BREEAM 0077-0347
Licensed assessor	Elliot Rawstrone
Assessor support	-
BREEAM scheme	New Construction Other Buildings
BREEAM scheme version	2018
Assessment stage	Pre-Assessment
Technical manual version	SD5078 Issue 1.2
Tier code (internal use only)	Tier 3

BREEAM Credit filtering box

Building type and sub-group	Residential institution (short term stay), Residential institution (short term stay) - Hotel, hostel, boarding and guest house
Building floor area	3,500m²
Designed to be untreated?	No
Building services (heating)	Other type of heating system
Building services (cooling)	Comfort cooling
Commercial cold storage systems	No
Transportation systems	Yes
Laboratory (type, area and size)	No
Fume cupboards / containment devices	No
Unregulated water uses	No
External areas?	No
Statutory requirements impacting outdoor space?	Yes
Unregulated energy load	No
Post occupancy ENE01 credits targeted?	No

Contents.

Audit sheet.	2
BREEAM Audit box	2
BREEAM Credit filtering box	2
1. Executive summary	4
2. BREEAM Pre-Assessment	5
2.1 Introduction	5
2.2 Initial Pre-Assessment	5
2.3 Project Team Members	5
3. Summary Score Sheet	6
4. Conclusion	7
5. Appendix A: Early Action Credits	8
5.1 Project brief stage	8
5.2 Concept design stage	9
6. Appendix B: Detailed Credit Assessment	10
7. Appendix C: Credit Weightings BREEAM 2018	44

1. Executive summary

This report provides an indicative BREEAM 2018 New Construction pre-assessment for the Proposed Hotel Hosier Street development.

The development falls under the BREEAM New Construction Residential Institution (short term stay) – Hotel category and a Fully fitted assessment has been conducted. The proposed development is targeting a BREEAM 'Very Good' rating as a minimum with an aspiration for 'Excellent'.

The current anticipated baseline score is 68.23%, equivalent to a BREEAM 'Very Good' rating, with a difference between the minimum required score for a BREEAM 'Very Good' rating of 55% of 13.23%.

A number of potential credits have also been identified that if included within the assessment strategy could result in the building achieving a potential score of 69.30%, equivalent to a BREEAM 'Very Good' rating with a difference of 14.30% above the minimum required score.

A margin of at least 3% – 5% is recommended above the minimum required score at this stage to secure the target rating taking into account contingency for design changes and potential constraints identified during the construction stage.

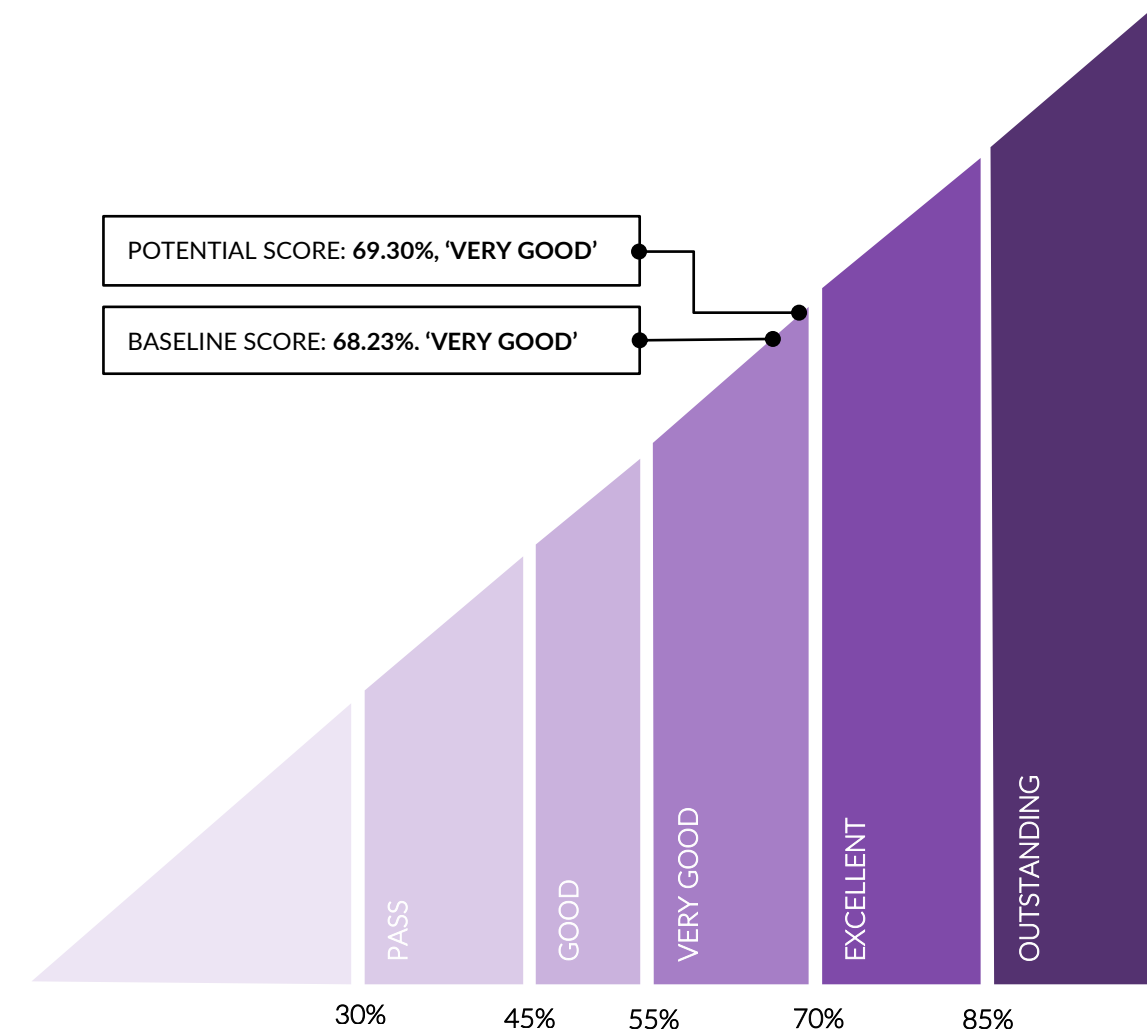


Figure 1: BREEAM 2018 Scale and Anticipated Performance Scores.

2. BREEAM Pre-Assessment

2.1 Introduction

This report relates to the Proposed Hotel, Hosier Street. It is recommended the building should be registered under the BREEAM 2018 scheme and assessed using the New Construction Residential Institution (short term stay) – Hotel criteria. The building is currently considered to be most suitable to be assessed using a Fully fitted assessment type. The assessment will be targeting a BREEAM ‘Very Good’ rating as a minimum.

2.2 Initial Pre-Assessment

This pre-assessment has been carried out independently by a qualified BREEAM assessor which has been subsequently reviewed by the project design team. This report sets out a route to achieving the target rating, and highlights the design team members responsible for each credit issue.

The following predicted scores have been calculated based upon experience with similar buildings and Hoare Lea’s current understanding of the proposed development:

- Baseline score / rating: 68.23% equivalent to a BREEAM 'Very Good' rating.
- Potential score / rating: 69.30% equivalent to a BREEAM 'Very Good' rating.

All mandatory and minimum standards for the BREEAM 'Very Good' rating have been included within the assessment strategy for the target baseline score.

The following potential credits have been identified that allow a BREEAM 'Very Good' rating to be achieved:

- MAT01 Environmental Impacts From Construction – Building Life Cycle Assessment (Substructure & Hard Landscaping credit)

Refer to Appendix B for detailed credit requirements.

2.3 Project Team Members

Discipline	Organisation	Abbreviation
Client / Developer	Inception (Reading) Sarl	Client
Architect	Corstorphine & Wright	Architect
Building Services Consultant	Hoare Lea	MEP
Civils / Structural Consultant	BJB Consulting	Civil Engineer
Cost Consultant	RLB	Cost Consultant
Planning Consultant	DP9	Planning Consultant

Table 1: Project Team Members.

3. Summary Score Sheet

The summary table below highlights the list of targeted credits for the current BREEAM 2018 pre-assessment. Mandatory credits to achieve a 'Very Good' rating and above are highlighted by **(M_v)**. Additional mandatory credits for an 'Excellent' or 'Outstanding' rating are highlighted by **(M_e)** and **(M_o)** respectively. Exemplary (innovation) credits are written in brackets; e.g. (+1).

Table 2: BREEAM Target Summary.

Category	Issue	Credits		
		Available	Targeted	Potential
Management	Man 01: Project brief and design	4	2	-
	Man 02: Lifecycle cost and service life planning	4	4	-
	Man 03: Responsible construction practices (M _e), (M _o)	6	6	-
	Man 04: Commissioning and handover (M _e), (M _o)	4	4	-
	Man 05: Aftercare (M _e), (M _o)	3	3	-
Health & Wellbeing	Hea 01: Visual comfort	4	3	-
	Hea 02: Indoor air quality	4	2	-
	Hea 04: Thermal comfort	3	3	-
	Hea 05: Acoustic performance	4	4	-
	Hea 06: Security	1	1	-
	Hea 07 Safe and healthy surroundings	-	-	-
Energy	Ene 01: Reduction of energy use and carbon emissions (M _e) (M _o)	13	7	-
	Ene 02: Energy monitoring (M) (M _e) (M _o)	2	2	-
	Ene 03: External lighting	1	1	-
	Ene 04: Low carbon design	3	1	-
	Ene 05: Energy efficient cold storage	-	-	-
	Ene 06: Energy efficient transportation systems	2	2	-
	Ene 07 Energy efficient laboratory systems	-	-	-
	Ene 08: Energy efficient equipment	-	-	-
Transport	Tra 01: Transport assessment and travel plan	2	2	-
	Tra 02: Sustainable transport measures	10	5	-
Water	Wat 01: Water consumption (M _v) (M _e) (M _o)	5	3	-
	Wat 02: Water monitoring (M _v) (M _e) (M _o)	1	1	-
	Wat 03: Water leak detection	2	2	-
	Wat 04: Water efficient equipment	-	-	-
Materials	Mat 01: Environmental impacts from construction products - Building life cycle assessment	7	6	+1

Category	Issue	Credits		
		Available	Targeted	Potential
	Mat 02: Environmental impacts from construction products	1	0	-
	Mat 03: Responsible sourcing of construction products (M _v) (M _e) (M _o)	4	2	-
	Mat 05: Designing for durability and resilience	1	1	-
	Mat 06: Material efficiency	1	1	-
Waste	Wst 01: Construction waste management (M _o)	5	4	-
	Wst 02: Use of recycled and sustainably sourced aggregates	1	0	-
	Wst 03: Operational waste (M _e), (M _o)	1	1	-
	Wst 04 Speculative finishes	-	-	-
	Wst 05: Adaptation to climate change	1	0	-
	Wst 06: Design for disassembly and adaptability	2	2	-
Land Use and Ecology	LE 01: Site Selection	2	1	-
	LE 02: Identifying and understanding the risks and opportunities for the project	2	1	-
	LE 03: Managing negative impacts on ecology	3	2	-
	LE 04: Change and enhancement of ecological value	1	1	-
	LE 05: Long term ecology management and maintenance	1	1	-
Pollution	Pol 01: Impact of refrigerants	3	0	-
	Pol 02: Local air quality	2	0	-
	Pol 03: Flood and surface water management	5	4	-
	Pol 04: Reduction of night time light pollution	1	1	-
	Pol 05: Reduction of noise pollution	1	1	-
Innovation	Inn 01: Approved innovation and exemplary level credits	19	1	-
	Targeted weighted score rating:	68.23%, 'Very Good'		
	Potential weighted score rating:	69.30%, 'Very Good'		

4. Conclusion

Based upon an initial credit review independent of the project design team, it is anticipated that the Proposed Development could achieve a score of 68.23%, equivalent to a BREEAM 'Very Good' rating.

Additional potential credits have also been identified which, if targeted, could result in a higher BREEAM performance score and rating; 69.30%, equivalent to a BREEAM 'Very Good'. The potential credits include the following credit issues:

- MAT01 Environmental Impacts From Construction - Building Life Cycle Assessment (Substructure & Hard Landscaping credit)

Figure 2 outlines the Proposed Development scores in each category. It also outlines where potential credits could be targeted to increase the assessment score and rating.

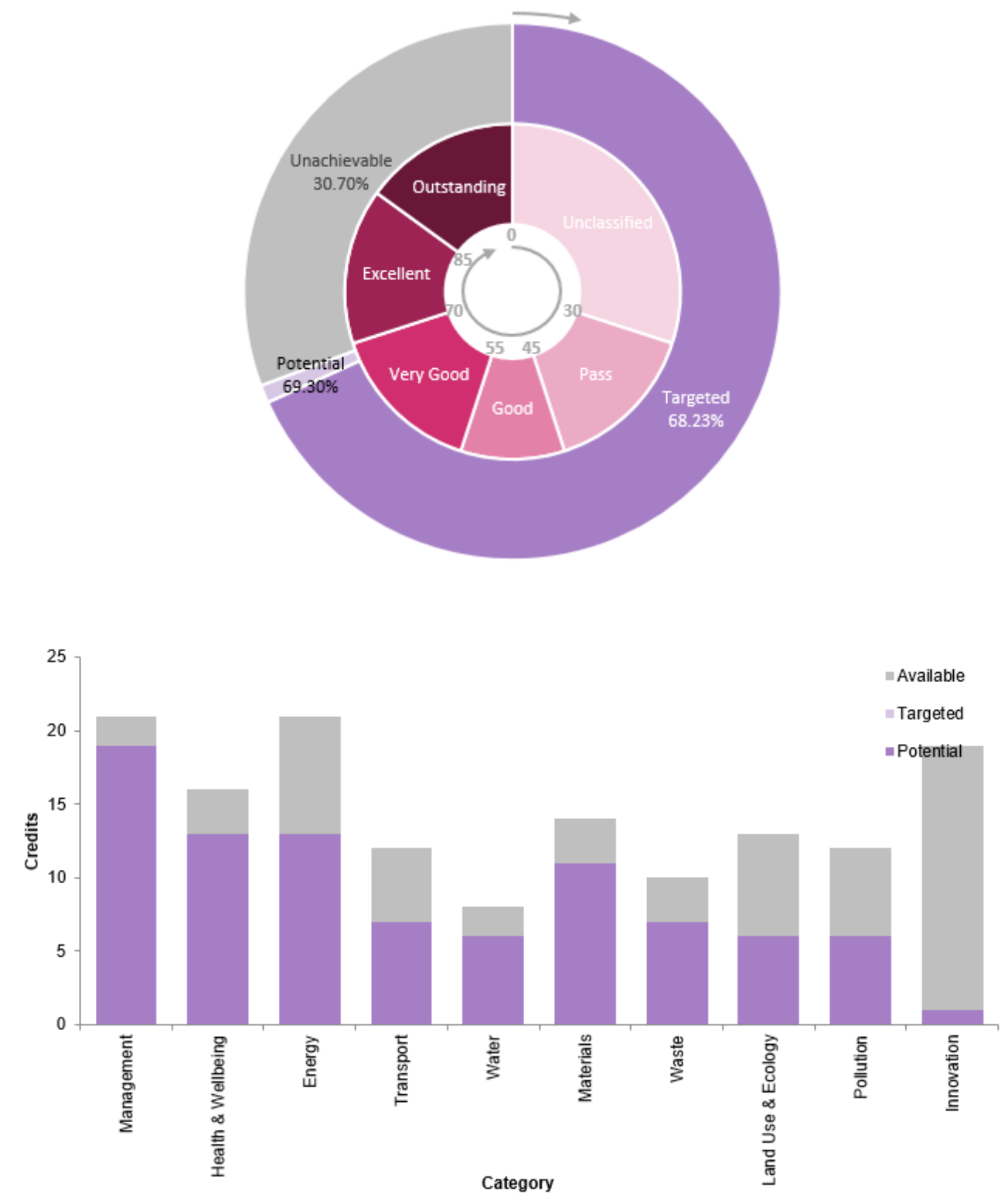


Figure 2: BREEAM Performance Summary and Targeted Credits.

5. Appendix A: Early Action Credits

5.1 Project brief stage

Under the BREEAM, there are a number of credits that are time critical and require early action by the design team in order for the credits to be achieved. For these credits, the actions required prior to end of RIBA Stages 1 and 2; and the members of the design team responsible for these are listed below:

Credit Issues	RIBA Stage 1 Actions	Owner
Man 01 Project brief and design	First credit: Stakeholder consultation: By the end of Stage 1 – definition and engagement of key stakeholders (incl. team member with significant construction experience) and their roles and responsibilities.	Project Manager BREEAM AP
Ene 07 Energy efficiency laboratory systems	Client engagement during preparation of the brief to determine occupant requirements and define laboratory performance criteria.	Client.
Tra 01 Travel Plan	Develop a travel plan based on a site-specific travel assessment or statement.	Transport Consultant Client
Mat 06 Material efficiency	Consult with relevant design team members to identify and implement measures for efficient use of materials throughout all key stages. Suggested actions include: - Provide details outlining activities relating to material efficiency. - Provide drawings or building integrated model (BIM), calculations showing reduction of material use through design. - Collate meeting notes, construction programme, and responsibilities schedule (indicating parties consulted).	Planning Consultant

Table 3: BREEAM 2018 Early Action Credits (RIBA Stage 1)

5.2 Concept design stage

Credit Issues	RIBA Stages 2 Actions	Owner
Man 01 Project brief and design	- First credit: Develop roles, responsibilities and contributions schedule detailing relevant roles throughout the project. - Second credit: Stakeholder consultation by completion of Concept Design. - Advisory professional: BREEAM performance targets to be formally agreed between the client and design/project team no later than Concept Design stage (RIBA Stage 2).	Planning Consultant Client BREEAM AP
Man 02: Life cycle costing and service life planning	An elemental level Life Cycle Cost (LCC) analysis has been carried out based on the proposals developed during RIBA Work Stage 2.	Cost Consultant
Hea 02 Indoor air quality	Production of an indoor air quality plan (this is a prerequisite item and may block several related credits being achieved).	Air Quality MEP
Hea 06 Security	Appoint Suitability Qualified Security Specialist (SQSS) to conduct a Security Needs Assessment (SNA).	Architect SQSS
Ene 01 Prediction of operational energy consumption	Prior to completion of the concept design, relevant members of the design team hold a preliminary design workshop focusing on operational energy performance.	Sustainability MEP
Ene 04 Low carbon design	Carry out a passive design analysis and a renewable energy systems feasibility study.	MEP Sustainability Consultant
Mat 01 Environmental impacts from construction products - Building life cycle assessment	Conduct outline design LCA assessment and options appraisal. This LCA must be submitted to BRE Global prior to planning application submission.	Architect Civil and structural engineer Cost Consultant
Mat 03 Responsible sourcing of materials	Development and use a project sustainable procurement plan for the project.	Project manager Sustainability consultant
Mat 06 Material efficiency	Set targets and report on opportunities and methods to optimise the use of materials. Develop and record the implementation of material efficiency.	Architect Structural / Civil engineer

Credit Issues	RIBA Stages 2 Actions	Owner
Wst01 Construction waste management	Carry out (where relevant) a pre-demolition audit.	Demolition contractor Client
Wst 05 Adaptation to climate change	Conduct a climate change adaption strategy appraisal for structural and fabric resistance.	Architect + Structural Engineer
Wst 06 Design for disassembly and adaptability	- Undertake a building-specific disassembly assessment and functional adaptation strategy study. - Subsequently incorporate adaption measures into the design where practical and cost effective at RIBA Stage 4.	Architect Structural Engineer
LE 02 Identifying and understanding the risks and opportunities for the project	The project team is required to liaise and collaborate with representative stakeholders to identify and consider ecological outcome for the sites.	Ecologist Project manager
LE 03 Managing negative impacts on ecology	Roles and responsibilities have been clearly defined, allocated and implemented to support successful delivery of project outcomes at an early enough stage to influence the concept design or design brief.	Ecologist Project manager
LE 04 Change & Enhancement of Ecological Value	Implement solutions and measures to enhance ecological on and off site	Ecologist Landscape Architect Client
LE 05 Long term ecology management and maintenance	Secure ongoing monitoring, management and maintenance of the site and, its habitats ecological features to ensure intended outcomes are realised for the long term	Ecologist Landscape Architect Client

Table 4: BREEAM 2018 Early Action Credits (RIBA Stage 2)

6. Appendix B: Detailed Credit Assessment

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Management					
Man 01 Project brief and design	First credit - Stakeholder consultation (project delivery): Where evidence provided demonstrated that from RIBA stage 2 (design brief) or equivalent the client, building occupier, design team and contractor have met and are involved in contributing to the decision making process for the project. As a minimum this includes meeting to identify and define their roles, responsibilities and contributions during each key phase. Consideration of contributions must meet specified minimum requirements The project team demonstrates how the project delivery stakeholder contributions and consultation process outcomes influence the following: - Initial Project Brief - Project Execution Plan - Communication Strategy - Concept Design	1	1	ACTION REQUIRED NOW Development of design responsibility matrix to identify project roles and responsibilities. How allocation of these roles and responsibilities has altered the responsibility matrix should be identified.	Project Manager
	Second credit - Stakeholder consultation (interested parties): Where evidence provided demonstrates that prior to the completion of the Concept Design stage, all relevant interested party stakeholders have been consulted by the design team and this covers the minimum consultation content (including but not limited to functionality, impacts on local community, inclusive and accessible design). The impact this consultation has had on the Project Brief and Concept Design must be demonstrated and consultation feedback has been given to all relevant parties by the developed design stage. A design workshop is undertaken that focuses on operational energy.	1	1	ACTION REQUIRED NOW External consultation exercise to be performed that includes all relevant stakeholders. Stakeholders should have the ability to comment on proposals, with all feasible consultation incorporated. Consultation feedback to be provided to consultee group.	Project Manager
	Pre-requisite The project team, early in the design process formally agrees BREEAM targets for the project. Third credit – BREEAM AP (concept design): Where evidence provided demonstrates that a BREEAM AP has been appointed to facilitate the setting and achievement of BREEAM performance target(s) for the project and evidence shows that the designed BREEAM performance target(s) has been contractually agreed and demonstrably achieved by project design. The BREEAM AP appointment must be separate to the appointed assessor.	1	0	Credit not currently targeted Appointment of BREEAM AP to assist in setting the targets for the project. Consultant appointment documentation should include a requirement to design to the agreed project target.	Project Manager
	Fourth credit – BREEAM AP (developed design): Where evidence provided demonstrates that the Third credit is achieved and a BREEAM AP is appointed to monitor progress against the agreed BREEAM performance target(s). This is done by attending key project/design team meetings during the developed design and reporting to the client throughout the process.	1	0	Credit not currently targeted Appointment of BREEAM AP to regularly update the design team on the progress of the BREEAM assessment and to consider how design development will impact the score. Note: This does not form part of the BREEAM assessor's standard scope of works and would need to be an additional appointment by the Client or Contractor.	Project Manager

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Man 02 Life cycle impacts	First and second credit - Elemental life cycle cost (LCC): Where evidence provided demonstrates that an elemental Life Cycle Cost (LCC) analysis has been carried out based on the proposals developed during Process Stage 2 (concept design/RIBA Stage 2) or equivalent. The LCC analysis shows an outline LCC plan for the project, appraising a range of options based on multiple cash flow scenarios e.g. 20, 30, 50, or 60 years and a fabric and servicing strategy for the project outlining services component and fit-out options.	2	2	ACTION REQUIRED NOW Elemental LCC study to be commissioned to address different design options. The design should incorporate the lowest lifecycle cost design features.	Client & Cost Consultant
	Third credit - Component level LCC option appraisal: Where evidence provided demonstrates that a component level LCC plan has been developed by end of Process Stage 4 (RIBA Stage 4) including the following component types: - Envelope: e.g. cladding, windows, and/or roofing - Services: e.g. heat source cooling source, and/or controls - Finishes: e.g. walls, floors and/or ceilings - External spaces Demonstrate using appropriate examples provided by the design team, how the component level LCC plan has been used to influence building and systems design/specification to minimise life cycle costs and maximise critical value.	1	1	Update Required at RIBA Stage 4 Update to LCC model for the development to identify lowest lifecycle cost design features are incorporated.	Client & Cost Consultant
	Fourth credit - Capital cost reporting: Where evidence provided demonstrates reporting of the capital cost for the building in pounds per square metre (£/m²) via the BREEAM Assessment Scoring and Reporting tool, Assessment Issue Scoring tab, Management section.	1	1	Cost consultant to confirm the cost of the project with the relevant inclusions and exclusions.	Client & Cost Consultant
Man 03 (M_e) (M_o) Responsible construction practices  Mandatory: - One credit (responsible construction management) for Excellent - Two credits (responsible construction management) for Outstanding	Pre-requisite All timber and timber based products used on the project is 'legally' harvested and traded timber First credit - Environmental management: Evidence which demonstrates that the principle contractor operates an environmental management system (EMS) covering main operations e.g. third party certified to ISO 14001/EMAS or equivalent standard or have a structure that is in compliance with BS 8555-2003 and has reached stage 4 of implemented stage. Evidence that the principal contractor implements best practice pollution policies and procedures on-site in accordance with Pollution Prevention Guidelines, PPG6. It is understood this document has been withdrawn, however BRE identify this still constitutes best practice.	1	1	INCLUDE WITHIN ER DOCUMENTATION This requirement can be incorporated into the project's employer's requirements documentation to require the contractor to achieve.	Client & Contractor
	Pre-requisite The client and contractor formally agree and demonstrate performance targets. Second credit - BREEAM AP (site): Evidence which demonstrates that a BREEAM AP is appointed to monitor the project to ensure ongoing compliance with relevant sustainability performance/process criteria. The defined BREEAM performance target forms a requirement of the principal contractor's contract and to achieve this credit in final post construction phase of assessment, the BREEAM-related performance target must be demonstrably achieved by the project.	1	1	INCLUDE WITHIN ER DOCUMENTATION This requirement can be incorporated into the project's employer's requirements documentation to require the contractor to achieve.	Client & Contractor
	Third and fourth credit - Responsible construction management: Using the BREEAM checklist - up to two credits: Appoint a dedicated person to be responsible for monitoring and reporting on activities against risk evaluation documents collected.	2	2	INCLUDE WITHIN ER DOCUMENTATION This requirement can be incorporated into the project's employer's requirements documentation to require the contractor to achieve.	Client & Contractor

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	The principal contractor evaluates the risks (on-site and off-site), plans and implements actions to minimise the identified risks, covering the following, where appropriate: - Vehicle movement on and near site - Management of construction site entrance (M) - Ensure development footprint is accessible for delivery vehicles with safety features (eg. Side under run protection) - Identify access routes to the development footprint, including for heavy vehicles to minimise the safety risks and disruption to others. - Pollution management - Minimise the risks of air, land and water pollution. (M) - Minimise the risks of nuisance from vibration, light and noise pollution. - Tidiness - Practices ensure the development footprint is safe, clean and organised at all times. This includes, but is not limited to, facilities, materials and waste storage. (M) - Ensure clear and safe access in and around the buildings at the point of handover. (M) - Health and wellbeing - Provide processes and equipment required to respond to medical emergencies. (M) - The principal contractor identifies and implements initiatives to promote and maintain the health and wellbeing of all site operatives within the development footprint. This can be via site facilities, site management arrangements, staff policies etc. - Establish management practices and facilities encouraging equality, fair treatment and respect of all site operatives. (M) - Provide secure, clean and organised facilities (e.g. changing and storage facilities) for site operatives within the development footprint. - Security processes - Minimise risks of the site becoming a focus for antisocial behaviour in the local community (e.g. robust perimeter fencing, CCTV, avoid creating dark corners etc.). - Training, awareness and feedback - Aspects of the construction process that might impact the community are communicated regularly, ensuring that nuisance and intrusion are minimised. - Ensure ongoing training is provided, and up to date, for personnel and visitors. (M) - The principal contractor ensures that site operatives are trained for the tasks they are undertaking. (M) - The fleet operators, undertakes driver training and awareness to promote safety within the development footprint and off site. - Monitoring and reporting - The fleet operators, captures and investigates any road accidents, incidents and near misses and reports them back to the principal contractor. The principal contractor analyses these items. - All visitor, workforce and community accidents, incidents and near misses are recorded and action is taken to reduce the likelihood of them reoccurring. (M) - Processes are in place to facilitate collecting and recording feedback from the community and to address any concerns related to the development footprint. One credit is achieved for meeting the requirements for all mandatory sections, identified by (M) Two credits are achieved for meeting the requirements for all mandatory and six additional requirements An additional exemplar level credit is available for achieving all requirements within Table 4.1 (identified above)				
	Exemplary credit - Responsible construction practices:	1	1	INCLUDE WITHIN ER DOCUMENTATION	

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	An additional exemplary level credit is available for achieving all requirements within Table 4.1 (identified above)			This requirement can be incorporated into the project's employer's requirements documentation to require the contractor to achieve.	
	Fifth and sixth credit - Monitoring of construction-site impacts: Where evidence provided demonstrates the responsibility has been assigned to an individual for monitoring, recording and reporting energy use, water consumption and transport data from all on-site construction processes throughout the build programme.	2	2	INCLUDE WITHIN ER DOCUMENTATION This requirement can be incorporated into the project's employer's requirements documentation to require the contractor to achieve.	Client & Contractor
Man 04 (M_v), (M_e), (M_o) Commissioning and handover  Mandatory: - One credit (commissioning test schedule and responsibilities) and criterion 11 (Building User Guide for for Very Good and above)	First credit - Commissioning and testing schedule and responsibilities: - Where evidence provided demonstrates a schedule of commissioning and testing that identifies and includes a suitable timescale for commissioning and re-commissioning of all complex and non-complex building services and control systems and testing and inspecting building fabric, and that all commissioning is done in accordance with current Building Regulations, BSRIA and CIBSE guidelines. - An appropriate project team member(s) is appointed to monitor and programme pre-commissioning, testing, and where necessary, re-commissioning on behalf of the client - The principal contractor accounts for the commissioning and testing programmes, responsibilities and criteria within their budget and main programme of works, allowing for sufficient time to complete commissioning and testing prior to handover. - Specific requirements relate to BMS commissioning	1	1	ACTION REQUIRED AT STAGE 4 To be included within the Employer's Requirements Preliminaries and MEP documentation.	Contractor MEP
	Second credit - Commissioning - design and preparation: Where evidence provided demonstrates a specialist commissioning manager is appointed during the design stage with responsibility for: - Undertaking design reviews - Providing commissioning management input - Management of commissioning and performance testing.	1	1	ACTION REQUIRED AT STAGE 4 To be included within the Employer's Requirements Preliminaries and MEP documentation.	Contractor MEP
	Third credit - Testing and inspecting building fabric: Where credit 1 is achieved and evidence provided demonstrates that the integrity of the building fabric is quality assured through compliant post construction testing and inspection. Any defects identified in the thermographic survey or airtightness testing reports are rectified prior to building handover and close out.	1	1	INCLUDE WITHIN ER DOCUMENTATION This requirement can be incorporated into the project's employer's requirements documentation to require the contractor to achieve.	Contractor
	Fourth credit - Handover: - Where evidence provided demonstrates that Building User Guides are provided and are appropriate to all users of the building (general users including staff and if applicable residents, as well as the non-technical facilities management team/building manager). This must be presented to the building user first and amended to suit the occupier's needs. - A training schedule is prepared for building occupiers/premises managers, timed appropriately around handover and proposed occupation plans in addition to training for building occupiers (non-technical building users).	1	1	ACTION REQUIRED AT STAGE 4 To be included within the Employer's Requirements Preliminaries and MEP documentation.	Contractor
Man 05 (M_e), (M_o) Aftercare  Mandatory: - One credit (commissioning)	First credit - Aftercare support There is (or will be) operational infrastructure and resources in place to provide aftercare support to the building occupier(s), which includes the following as a minimum: a. A meeting programmed to occur between the aftercare team/individual and the building occupier/management (prior to initial occupation, or as soon as possible thereafter) to: i. Introduce the aftercare team or individual to the aftercare support available, including the Building User Guide (where existing) and training schedule/content.	1	1	ACTION REQUIRED AT STAGE 4 To be included within the Employer's Requirements Preliminaries and MEP documentation.	Client Occupant Contractor

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
implementation) for Excellent - One credit (commissioning implementation) for Outstanding	ii. Present key information about the building including the design intent and how to use the building to ensure it operates as efficiently and effectively as possible. iii. On-site facilities management training, to include a walkabout of the building and introduction to and familiarisation with the building systems, their controls and how to operate them in accordance with the design intent and operational demands. b. Initial aftercare support provision for at least the first month of building occupation, e.g. on-site attendance on a weekly basis to support building users and management (this could be more or less frequent depending on the complexity of the building and building operations). c. Longer term aftercare support provision for occupants for at least the first 12 months from occupation, e.g. a helpline, nominated individual or other appropriate system to support building users/management. There is (or will be) operational infrastructure and resources in place to coordinate the collection and monitoring of energy and water consumption data for a minimum of 12 months, once the building is occupied. This is done to facilitate analysis of discrepancies between actual and predicted performance, with a view to adjusting systems and/or user behaviours accordingly.				
	Second credit - Commissioning - implementation The following seasonal commissioning activities will be completed over a minimum 12-month period, once the building becomes substantially occupied: a. Complex systems - Specialist Commissioning Manager: i. Identify changes made by the owner or operator that might have caused impaired or improved performance. ii. Testing of all building services under full load conditions, i.e. heating equipment in mid-winter, cooling/ventilation equipment in mid-summer, and under part load conditions (spring/autumn). iii. Where applicable, testing should also be carried out during period of extreme (high or low) occupancy. iv. Interviews with 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 ones. vi. Re-commissioning of systems (following any work needed to serve revised loads), and incorporating any revisions in operating procedures into the operations and maintenance (O&M) manuals. b. Simple systems (naturally ventilated) - external consultant/aftercare team/facilities manager: i. Review thermal comfort, ventilation, and lighting, at three, six and nine month intervals after initial occupation, either by measurement or occupant feedback. ii. 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.	1	1	ACTION REQUIRED AT STAGE 4 To be included within the Employer's Requirements Preliminaries and MEP documentation.	Client Occupant Contractor MEP
	Third credit - Post occupancy evaluation The client or building occupier makes a commitment to carry out a post occupancy evaluation (POE) exercise one year after initial building occupation. The POE is carried out by an independent third party and needs to cover: a. A review of the design intent and construction process (review of design, procurement, construction and handover processes). b. Feedback from a wide range of building users including Facilities Management on the design and environmental conditions of the building covering: i. Internal environmental conditions (light, noise, temperature, air quality) ii. Control, operation and maintenance iii. Facilities and amenities iv. Access and layout v. Energy and water consumption	1	1	The client will be required to commission a Post Occupancy Evaluation for the project, to be undertaken 12 months from the completion of the project. The client will be required to confirm they will share lessons learnt with the project team. The client or building occupier commits funds to pay for the POE in advance	Client Occupant Contractor

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	vi. Other relevant issues The independent party provides a report with lessons learned to the client and building occupiers. The client or building occupier makes a commitment to carry out the appropriate dissemination of information on the building's post occupancy performance. This is done to share good practice and lessons learned and inform changes in user behaviour, building operational processes and procedures, and system controls.				
Health and Wellbeing					
Hea 01 Visual comfort	First credit - Control of glare from sunlight Glare control assessment is developed to identify how areas at risk of glare are protected. The glare control assessment would also identify where areas deemed not at risk are located. In addition, a glare control strategy must be developed in tandem with the lighting strategy to ensure that glare is minimised whilst avoiding potential conflict with the lighting control systems, therefore avoiding higher than expected energy consumption.	1	1	Glare control achieved in all areas. Bedroom use in hotel does not preclude achieving the credit.	Architect & Occupant
	Second credit – Average daylighting: - Where evidence provided demonstrates that the relevant building areas meet good practice daylighting criteria as outlined below, in addition to room depth criterion, daylight uniformity or annual illuminance levels. Residential Institution (short term stay) – Hotel buildings: one credit - All occupied spaces: 2.0%, 80% area	1	0	One credit applicable to assessment type Credit not currently targeted. Required levels of Daylighting unlikely to be achieved.	Architect & Daylight Consultant
	Third credit - View out: Where evidence provided demonstrates that 95% of floor areas in relevant building areas are within 8m of a wall which has a window or permanent opening that provides an adequate view out. The window/opening must be ≥20% of the surrounding wall area. Residential Institution (short term stay) – Hotel buildings All positions within relevant areas are to be within 5m of a wall which has a window or permanent opening providing an adequate view out. The window/opening must be ≥ 20% of the surrounding wall area.	1	1	View Out will be achieved from all bedrooms following review of wall & window areas. Internal security office does not need to comply with criteria due to security concerns.	Architect
	Fourth credit - Lighting levels and controls: Where evidence provided demonstrates that internal and external lighting is designed in accordance with the required standard. - Internal lighting in all relevant areas of the building is designed to provide an illuminance (lux) level appropriate to the tasks undertaken. This can be demonstrated through a lighting design strategy that provides illuminance levels in accordance with the SLL Code for Lighting 2012 and any other relevant industry standard. - For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 7 sections 2.4, 2.13, 2.15, 2.20, 6.10 and 6.20. - For external areas, lighting provided is specified in accordance with BS 5489-1:2013 Lighting of roads and public amenity areas Lighting of roads and public amenity areas, Code of Practice for the design of road lighting, BSI, 2013 and BS EN 12464-2:2014 ight and lighting - Lighting of work places - Part 2: Outdoor work places. Lighting should be zoned as follows: - In office areas, zones of no more than four workplaces	1	1	ACTION REQUIRED AT STAGE 4 To be included within the Employer's Requirements MEP documentation.	MEP

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	- Workstations adjacent to windows/atria and other building areas separately zoned and controlled - Areas used for teaching, seminar or lecture purposes have lighting controls provided in accordance with CIBSE Lighting Guide 5				
	Exemplary credits: Up to two credits are available where evidence is provided which demonstrates that the exemplary level daylight requirements and the exemplary level artificial lighting requirements are achieved, as outlined below: Daylight: One credit Daylight criteria achieved by either the exemplar daylight factors, or exemplary level minimum and average point illuminance factors. Daylight Factors - All building types (excluding retail): - Functions as identified in the standard criteria (multi storey buildings): 3.0%, 80% area - Functions as identified in the standard criteria (single storey buildings): 4.0%, 80% area - Prisons and court cells: 2.0%, 80% area - Prison internal association/atrium area: 5.0%, 80% area OR Minimum and Point Illuminance Factor - All building types (excluding retail): - Multi-storey buildings: 80% area. Average daylight illuminance: At least 300 lux for 2,650 hours per year or more, Minimum daylight illuminance at least 90 lux for 2,650 hours per year or more. - Single storey buildings: 80% area. Average daylight illuminance: At least 300 lux for 3,000 hours per year or more, Minimum daylight illuminance at least 120 lux for 3,000 hours per year or more. Artificial Light: One credit One credit is available where 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.	2	0	Daylight credit: Credit not currently targeted Artificial light credit: Credit not currently targeted	Architect & Daylight Consultant
Hea 02 Indoor air quality	Prerequisite - Indoor air quality (IAQ) plan: Where evidence provided demonstrates that an indoor air quality plan has been produced no later than the end of concept design stage, with the objective of facilitating a process that leads to design, specification and installation decisions and actions that minimise indoor air pollution during occupation of the building. The IAQ must include: - Removal of contaminant sources - Dilution and control of contaminant sources - Where present, consideration is given to the air quality requirements of specialist areas such as Laboratories - Procedures for pre-occupancy flush out - Third party testing and analysis - Maintaining good indoor air quality in-use.	-	-	ACTION REQUIRED AT STAGE 2 Indoor air quality plan to be developed for the ventilation design for the project	Architect MEP IAQ Specialist
	First credit - Ventilation: Where fresh air is provided in accordance with the relevant standard for ventilation based on the building type. Ventilation pathways are designed to minimise the ingress and build up of pollutants inside the building. Suitable filtration is provided to reduce the impact of external air pollution.	1	0	Credit not currently targeted Unlikely to achieve required separation between inlets & exhausts.	Architect & MEP

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	Filtration to be design in accordance with BS EN 13779:2007 Annex A3. The specified filters should achieve a minimum Indoor Air Quality of IDA2. For air-conditioned and mixed-mode buildings: the building's air intakes and exhausts are over 10m apart to minimise recirculation and intakes are over 20m from sources of external pollution or designed in accordance with BS EN 13779:2007 Annex A2. Areas of the building subject to large and unpredictable or variable occupancy patterns have CO₂ or air quality sensors specified and: - In mechanically ventilated spaces, the sensor(s) are linked to the mechanical ventilation system and provide demand-controlled ventilation to the space. - In naturally ventilated spaces, the sensors either have the ability to alert the building owner/manager when CO₂ levels exceed the recommended set point, or are linked to controls with the ability to adjust the quantity of fresh air, i.e. automatic opening windows/roof vents. For naturally ventilated or mixed mode buildings, the design demonstrates that the ventilation strategy provides adequate cross flow of air to maintain the required thermal comfort conditions and ventilation rates in accordance with CIBSE AM10			ACTION REQUIRED AT STAGE 4 Design to include suitable filtration and separation of extract/supply grilles. Consideration of relevant areas required for CO₂ sensors controlling the ventilation system	
	Second credit - Emissions from building products Where evidence provided demonstrates that three of the five available product types meet the emission limits, testing requirements and additional requirements identified by the Table 5.11 in the BREEAM criteria. All wood based products should be tested and classed as formaldehyde E1 as a minimum. Compliance is achieved where the Emission limit (1) identified by the testing requirement (2) as well as any other additional requirements are met. Product types include: - Interior paints and varnishes - Wood based products - Flooring materials - Ceiling wall and acoustic and thermal insulation materials - Interior adhesives and sealants (including flooring adhesives) Third credit - Emissions from building products Where evidence provided demonstrates that all of the product types listed meet the emission limits, testing requirements and any additional requirements listed in Table 5.11.	2	1	Second credit: Credit targeted Third credit: Credit not currently targeted ACTION REQUIRED AT STAGE 4 NBS specifications to include all relevant criteria in individual NBS sections. Unlikely to achieve 2nd credit with material specification.	Contractor
	Fourth credit - Post-construction indoor air quality measurement Where evidence demonstrates that formaldehyde and TVOC emissions are measured post construction but pre-occupancy and do not exceed the emissions criteria. The formaldehyde and TVOC analysis demonstrates that levels are within best practice emission limits. TVOC Does not exceed 500 µg/ m³ over 8 hours. In accordance with ISO 16000-5 and ISO 16000-6 or ISO 16017-1 Formaldehyde	1	1	ACTION REQUIRED AT STAGE 4 To be included within the Employer's Requirements Preliminaries documentation.	Contractor

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	Does not exceed 100 µg/ m³ averaged over 30 minutes (World Health Organization guidelines for indoor air quality: Selected pollutants, 2010) Sampled in accordance with ISO 16000-2 and ISO 16000-3				
	Exemplary credit: One credit - Three of the product types listed meet the emission limits, testing requirements and any additional requirements listed in Table 5.12 of the BREEAM criteria. - 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.	1	0	Credit not currently targeted Exemplary level of emission testing unlikely to be achieved with specification	
Hea 04 Thermal comfort	First credit: Thermal modelling Where evidence provided demonstrates that thermal modelling has been carried out using software in accordance with CIBSE AM11. The modelling demonstrates that the building design and services strategy can deliver thermal comfort levels in occupied spaces in accordance with the criteria set out in CIBSE Guide A Environmental Design (winter) and CIBSE TM52/TM59 methodologies (summer) as appropriate to the building and/or building areas.	1	1	ACTION REQUIRED AT STAGE 3/4 Thermal model based on latest design to be provided to identify compliance with comfort criteria.	MEP
	Second credit: Design for future thermal comfort Where credit 1 is achieved and evidence provided outlines that the thermal modelling demonstrates that the building design and services strategy can deliver thermal comfort levels in occupied spaces in accordance with the criteria set out in CIBSE Guide A Environmental Design, and CIBSE TM52/TM59 for a projected climate change environment. Where these levels are not met the project team demonstrates how the building has been adapted or designed to be easily adapted in future using passive design solutions. Additionally evidence is provided for air conditioned buildings, the PMV and PPD indices based on the modelling are reported via the BREEAM assessment scoring and reporting tool.	1	1	ACTION REQUIRED AT STAGE 3/4 Thermal model to be simulated using future climate predictions. When using system sizes based on current weather patterns, the buildings may not achieve compliance.	MEP
	Third credit: Thermal zoning and controls Where credit 1 is achieved and the thermal modelling analysis has informed the temperature control strategy for the building and its users. The strategy for proposed heating/cooling system(s) demonstrates that it has addressed the following: - 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. - The degree of occupant control required for these zones, based on discussions with the end user (or alternatively building type or use specific design guidance, case studies, feedback) considers: - User knowledge of building services - Occupancy type, patterns and room functions (and therefore appropriate level of control required) - How the user is likely to operate or interact with the system(s), e.g. are they likely to open windows, access thermostatic radiator valves (TRV) on radiators, change air-conditioning settings etc. - 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). - 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. - The need or otherwise for an accessible building user actuated manual override for any automatic systems.	1	1	Thermal zoning rationale to be provided, identifying how the design strategy has been developed.	MEP
Hea 05 Acoustic performance	Four credits: Up to four credits can be awarded where the following criteria is met.	4	4	Sound Insulation: Credit 1 & 2 targeted	Acoustician & Architect

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	One credit Airborne sound insulation values are at least 3 dB higher and impact sound insulation values are at least 3 dB lower than the performance standards in the relevant building regulations or standards. Two credits Airborne sound insulation values are at least 5 dB higher and impact sound insulation values are at least 5 dB lower than the performance standards in the relevant building regulations or standards. Third credit: Achieve indoor ambient noise levels that comply with the design ranges given in Section 7 of BS 8233:2014 Fourth credit: Achieve the requirements relating to sound absorption and within the common spaces of the building described in the relevant building regulations or building standards national guidance.			Indoor ambient noise levels: Credit 3 targeted Sound Absorption: Credit 4 targeted ACTION REQUIRED NOW Acoustic assessment of the proposed spaces to feed into architectural and structural design.	
Hea 06 Security	One credit - Security of site and building: Where evidence provided demonstrates that a suitably qualified security specialist (SQSS) conducts an evidence-based Security Needs Assessment during or prior to Concept Design (RIBA Stage 2). The recommendations from the SQSS must be implemented into the design.	1	1	ACTION REQUIRED NOW A Security Needs Assessment (SNA) is required to be performed by a Suitability Qualified Security Specialist (SQSS). Following assessment of the scheme, the design incorporates the recommendations of the scheme.	Architect
	Exemplary level criteria A compliant risk based security rating scheme has been used e.g. SABRE. The performance against the scheme has been confirmed by independent assessment and verification.	1	0	Credit not currently targeted. ACTION REQUIRED NOW A Security Needs Assessment (SNA) is required to be performed by a Suitability Qualified Security Specialist (SQSS) who is qualified in SABRE. Following assessment of the scheme, the design incorporates the recommendations of the scheme.	SQSS
Hea 07 Safe and healthy surroundings	First credit - Safe access: Where external site areas form part of the assessed development the following apply: - Dedicated and safe cycle paths are provided from the site entrance to any cycle storage, and connect to offsite cycle paths where applicable. - Dedicated and safe footpaths are provided on and around the site providing suitable links for the following: - The site entrance to the building entrance, - Car parks (where present) to the building entrance - The building to outdoor space - Connecting to off-site paths where applicable. - Pedestrian drop-off areas are designed off, 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: - Delivery areas are not accessed through general parking areas and do not cross or share the following: - pedestrian and cyclist paths - outside amenity areas accessible to building users and general public.	0	0	First credit: Credit not applicable to assessment type Second credit: Credit not applicable to assessment type Not applicable due to lack of external space within footprint of development.	Architect

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member								
		Available	Targeted (Potential)										
	Prior to completion of the concept design, relevant members of the design team hold a preliminary design workshop focusing on operational energy performance. Four credits – Energy modelling and reporting Undertake additional energy modelling during the design and post-construction stage to generate predicted operational energy consumption figures and report predicted energy consumption targets by end use, design assumptions and input data (with justifications). In addition credits are achieved for completing a risk assessment to highlight any significant design, technical, and process risks that should be monitored and managed throughout the construction and commissioning process.			No prediction of operational energy consumption will be undertaken and therefore these credits are not targeted.									
	Exemplary level criteria Up to two credits - Beyond zero net regulated carbon The building achieves an EPR NC ≥ 0.9 and zero net regulated CO₂ emissions. Energy generation from on-site and near-site LZO sources is sufficient to offset carbon emissions from regulated energy use plus a percentage of emissions from unregulated energy use. Credits are achieved based on the percentage of additional emissions from unregulated energy that are offset by LZO sources. Three credits - Carbon negative The building is deemed carbon negative where > 100% (see Table 6.2 below) of carbon emissions from unregulated (and regulated) energy use are offset by energy generated from on-site and near-site LZO sources <table><tr><th>Exemplary performance credits</th><th>Equivalent % criteria</th></tr><tr><td>1</td><td>10%</td></tr><tr><td>2</td><td>50%</td></tr><tr><td>3</td><td>>100%</td></tr></table>	Exemplary performance credits	Equivalent % criteria	1	10%	2	50%	3	>100%	3	0	Three credits applicable to assessment type Credits not currently targeted This credit is not currently targeted as the development will not achieve all of the standard credits and will not additionally be carbon negative.	MEP / Sustainability
	Exemplary performance credits	Equivalent % criteria											
	1	10%											
2	50%												
3	>100%												
Two credits – Post-occupancy stage Achieve maximum available credits in Ene02 Energy monitoring. In addition, preschools, primary schools, law courts, prisons and multi-residential buildings must separately monitor relevant function areas or departments in accordance with ENE02 criteria, below. The client or building occupier commits funds to pay for the post occupancy stage. This requires an assessor to be appointed and to report on the actual energy consumption compared with the targets set in criterion 4 above. The energy model (above) is: i. Submitted to BRE and ii. Retained by the building owner.	2	0	Three credits applicable to assessment type Credits not currently targeted The credits are achieved for reporting on the actual energy consumption compared to the modelled operational energy (TM 54). The client or building occupier commits funds to pay for the post occupancy stage	MEP / Sustainability									
Ene 02 (M), (Me), (Mo) Energy monitoring	First credit: Sub-metering of major energy consuming systems Where evidence provided demonstrates that the energy metering systems are installed that enable 90% of the estimated annual energy consumption of each fuel to be assigned to the various end-use categories of energy consuming systems. For buildings with a total useful floor area > 1000m² are metered using an appropriate energy monitoring and management system and systems in smaller buildings are metered either with an energy monitoring and	1	1	ACTION REQUIRED AT STAGE 4 Requirements to be included within the Employer's Requirements MEP documentation and drawings. Metering strategy to be confirmed prior to issue.	MEP								

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Mandatory: One credit for Very Good and above.	management system or separate assessable energy sub-meters with pulsed or other open protocol communication outputs, to enable future connection to an energy monitoring and management system. The end energy consuming use is identifiable to the building user through labelling or data outputs. Large-scale medical equipment/systems can be excluded when assessing compliance with this issue (although it is recommended that sub-metering is considered in such instances).				
	Second credit: Sub – metering of high energy load and tenancy areas An accessible energy monitoring and management system or separate accessible energy sub-meters with pulsed or other open protocol communication outputs to enable future connection to an energy monitoring and management system are provided, covering a significant majority of the energy supply to tenanted areas or, in the case of single occupancy buildings, relevant function areas or departments within the building/unit.	1	1	ACTION REQUIRED AT STAGE 4 Requirements to be included within the Employer's Requirements MEP documentation and drawings. Metering strategy to be confirmed prior to issue.	MEP
Ene 03 External lighting	One credit: Where evidence provided demonstrates that the external lighting has an average initial luminous efficacy of the external light fittings within the construction zone is not less than 70 luminaire lumens per circuit watt and that all external light fittings are automatically controlled for prevention of operation during daylight hours and presence detection in areas of intermittent pedestrian traffic.	1	1	INCLUDE WITHIN ER DOCUMENTATION The only relevant requirement for this project relates to external lighting design. This requirement can be incorporated into the project's employer's requirements documentation to require the contractor to achieve.	MEP
Ene 04 Low carbon design	First credit - Passive design analysis: Where the first credit of Hea 04 (Thermal comfort) is achieved and the project team carries out an analysis of the design to identify opportunities for the implementation of passive design solutions that reduce demands for energy consuming building services, and that these solutions are implemented meaningfully into the design.	1	0	Credit not currently targeted Mechanical cooling will be incorporated as part of the specification	Sustainability
	Second credit - Free cooling: Where the first credit is achieved, the passive design analysis includes an analysis of free cooling and identifies opportunities for the implementation of free cooling solutions. Free cooling solutions might include night time cooling, ground coupled air cooling or surface water cooling (for example); i.e. does not use active cooling.	1	0	Credit not currently targeted There will be no free cooling technology designed into the development and there will be mechanical cooling system.	MEP / Sustainability
	Third credit - Low zero carbon feasibility study: Where evidence provided demonstrates that a feasibility study has been carried out by the completion of the Concept Design stage (RIBA Stage 2) by an energy specialist to establish the most appropriate recognised local (on- or near-site) low or zero carbon energy source(s) for the development. A local LZC technology/ies has been specified for the building in line with the recommendations of this feasibility study and this method of supply results in a meaningful reduction in regulated CO ₂ emissions.	1	1	ACTION REQUIRED NOW Energy Assessment will include Low Carbon technology feasibility assessment.	MEP / Sustainability
Ene 05 Energy efficient cold storage	One credit: The refrigeration system, its controls and components have been designed, installed and commissioned as follows: – In accordance with the Code of Conduct for carbon reduction in the refrigeration retail sector and BS EN 378-2 Refrigeration systems and heat pumps - Safety and environmental requirements. – Using robust and tested refrigeration systems/components, normally defined as those included on the Enhanced Capital Allowance (ECA) Energy Technology Product List (ETPL) or an equivalent list (see CN3.2 within the BREEAM criteria document for a list of components).	0	0	First credit: Credit not applicable to assessment type Second credit: Credit not applicable to assessment type	MEP

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	The refrigeration plant has been commissioned to comply with the criteria for commissioning outlined in BREEAM issue Man 04 Commissioning and handover. Two credits: The installed refrigeration system demonstrates a saving in indirect greenhouse gas emissions (CO₂ eq.) over the course of its operational life.				
Ene 06 Energy efficient transportation systems	First credit - Energy consumption: Where evidence provided demonstrates that where either lifts, escalators or moving walks are required: - An analysis of the transportation demand and usage patterns for the building has been carried out in accordance with BS EN ISO 25745 to determine the optimum number and size of lifts, (including counter-balancing ratio), escalators and/or moving walks. - The energy consumption has been estimated for different types and the lift/escalator/moving walk system/strategy with the lowest energy consumption has been specified. - Regenerative drives should be considered. - The transportation system with the lowest energy consumption is specified.	1	1	ACTION REQUIRED NOW Lift energy analysis to be completed to guide selection of most appropriate lift system.	MEP
	Second and third credit - Energy efficient features: Where evidence provided demonstrates that the first credit has been achieved and: For lifts, of the following energy-efficient features the three that offer the greatest potential energy savings are specified: - The lifts operate in a stand-by condition during off-peak periods. - The lift car uses energy-efficient lighting and display lighting - The lift uses a drive controller capable of variable-speed, variable-voltage, variable frequency (VVVF) control of the drive motor. Where regenerative drives are demonstrated to save energy, they are specified. For escalators and/or moving walks, each escalator and/or moving walk complies with EITHER of the following: - It is fitted with a load sensing device that synchronises motor output to passenger demand through a variable speed drive. OR It is fitted with a passenger sensing device for automated operation (auto walk), so the escalator operates in stand-by mode when there is no passenger demand.	1	1	Second credit: Credit targeted Third credit: Credit not applicable to assessment type ACTION REQUIRED NOW Lift energy analysis to be completed to guide selection of most appropriate lift system.	MEP

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member								
		Available	Targeted (Potential)										
Ene 07 Energy efficient laboratory systems	One credit - Design specification Client engagement is sought through consultation during the preparation of the initial project brief (RIBA Stage 1 or equivalent) to determine occupant requirements and define laboratory performance criteria. Performance criteria should include, but not be limited to the following aspects: - Description of purpose - Occupant/process activities - Containment requirements and standards - Air change rate requirements - Ventilation system performance and efficiencies - Heating and cooling requirements - Interaction between systems - Flexibility/adaptability of laboratory facilities. The design team demonstrates that the energy demand of the laboratory facilities has been minimised as a result of achieving the defined design performance criteria. This has informed the right-sizing (see Relevant definitions from the BREEAM Criteria) of the services system equipment (including ventilation supply and extract). Laboratory containment devices and containment areas (criteria only applicable to buildings containing these facilities) For ducted fume cupboards specified: - Demonstrate that the average design air flow rate is no greater than 0.16 m³/s per linear metre (internal width) of fume cupboard workspace - Measure the volume flow rate in the exhaust duct (at the boundary of the laboratory) to take account of reductions in (inward) volume flow rate from fume cupboard leakage - Demonstrate that a reduction in air flow does not compromise the defined performance criteria and does not increase the health and safety risk to future building occupants. Up to two/four credits For projects with a laboratory area between 10 – 25% of the total floor area two credits are available. For projects with a laboratory area over 25% of the total floor area four credits are available. Laboratory plant and systems are designed, specified and installed to promote energy efficiency, demonstrated through compliance with best practice energy efficiency measures within the BREEAM Criteria. The measures selected must demonstrate a reasonably significant effect (2% reduction) on the total energy consumption. Features include: <table><tr><th>Item description</th><th>Credits</th></tr><tr><td>Fume cupboard volume flow rates (further reduction) An average design air flow rate of < 0.12 m³/s per linear metre (internal width) of fume cupboard workspace.</td><td>0.5</td></tr><tr><td>Grouping or isolation of high filtration or ventilation activities Minimisation of room air change rates and overall facility ventilation flows by grouping together or isolating activities and equipment with high filtration or ventilation requirements.</td><td>0.5</td></tr><tr><td>Energy recovery – heat</td><td>0.5</td></tr></table>	Item description	Credits	Fume cupboard volume flow rates (further reduction) An average design air flow rate of < 0.12 m³/s per linear metre (internal width) of fume cupboard workspace.	0.5	Grouping or isolation of high filtration or ventilation activities Minimisation of room air change rates and overall facility ventilation flows by grouping together or isolating activities and equipment with high filtration or ventilation requirements.	0.5	Energy recovery – heat	0.5	0	0	Design specification credit: Credit not applicable to assessment type Best practice measures credits: Credit not applicable to assessment type	MEP
Item description	Credits												
Fume cupboard volume flow rates (further reduction) An average design air flow rate of < 0.12 m³/s per linear metre (internal width) of fume cupboard workspace.	0.5												
Grouping or isolation of high filtration or ventilation activities Minimisation of room air change rates and overall facility ventilation flows by grouping together or isolating activities and equipment with high filtration or ventilation requirements.	0.5												
Energy recovery – heat	0.5												

Issue	Credit Requirements		Credits		Comments / Actions	Responsible Team Member						
			Available	Targeted (Potential)								
	Heat recovery from exhaust air (where there is no risk of cross contamination) or via refrigerant or water cooling systems.											
	Energy recovery – cooling Cooling recovery via exhaust air heat exchangers (where there is no risk of cross-contamination) or via refrigerant or water cooling systems.	0.5										
	Grouping of cooling loads Grouping of cooling loads to enable supply efficiencies and thermal transfer.	0.5										
	Free cooling Specification of free cooling coils in chillers or dry air coolers related to laboratory-specific activities.	0.5										
	Load responsiveness Effective matching of supply with demand through modularity, variable speed drives and pumps, and other mechanisms.	0.5										
	Clean rooms Specification of particle monitoring systems, linked to airflow controls.	0.5										
	Diversity Achievement of high levels of diversity in central plant sizing and laboratory duct sizing, where compatible with safety.	0.5										
	Room air changes rates Reducing air change rates by matching ventilation airflows to environmental needs and demands of containment devices.	0.5										
	Fan power Specification and achievement of best practice fan power figures (as shown below) for all air handling units, laboratory extract systems, local extract ventilation, containment area extracts (where applicable) and fume cupboard extracts (where applicable).	1.0										
Ene 08 Energy efficient equipment	Two credits: - Identify the building's unregulated energy consuming loads and estimate their contribution to the total annual unregulated energy consumption of the building, assuming a typical/standard specification. - Identify the systems and/or processes that use a significant proportion of the total annual unregulated energy consumption of the development and its operation. - Demonstrate a meaningful reduction in the total annual unregulated energy consumption of the building. <table><tr><th></th><th>Function / Equipment</th><th>Criteria</th></tr><tr><td>A</td><td>Swimming pool</td><td> 1. Specify automatic or semi-automatic pool covers, or 'liquid' pool covers with an automatic dosing system to ALL pools, including spa pools and hot tubs. 2. The covers envelop the entire pool surface when fully extended. 3. Control the air temperature in the pool hall so that it is 1 °C above the water temperature. </td></tr></table>			Function / Equipment	Criteria	A	Swimming pool	1. Specify automatic or semi-automatic pool covers, or 'liquid' pool covers with an automatic dosing system to ALL pools, including spa pools and hot tubs. 2. The covers envelop the entire pool surface when fully extended. 3. Control the air temperature in the pool hall so that it is 1 °C above the water temperature.	0	0	Credits not applicable to assessment type	MEP
	Function / Equipment	Criteria										
A	Swimming pool	1. Specify automatic or semi-automatic pool covers, or 'liquid' pool covers with an automatic dosing system to ALL pools, including spa pools and hot tubs. 2. The covers envelop the entire pool surface when fully extended. 3. Control the air temperature in the pool hall so that it is 1 °C above the water temperature.										

Issue	Credit Requirements			Credits		Comments / Actions	Responsible Team Member
				Available	Targeted (Potential)		
	B	Laundry facilities with commercial-sized appliances	Demonstrate at least one of the following for commercial-sized appliances: 1. Specification of heat recovery from waste water. 2. Use of greywater for part of the washing process. This may be recycled from the final rinse and used for the next pre-wash. 3. The commercial or industrial sized machines are identified as eligible for the UK's Enhanced Capital Allowance Scheme for water.				
	C	Data centres	1. Design is in accordance with the 'Best practices for the EU Code of Conduct on Data Centres' principles with the data centre achieving at least the 'Expected minimum practice' level (as defined in the Code of Conduct). 2. Temperature set points are not less than 24°C, as measured at the inlet of the equipment in the rack.				
	D	IT-intensive operating areas	1. Uses a natural ventilation and cooling strategy as standard, with forced ventilation only to be used when the internal temperature exceeds 20°C and active cooling only when the internal temperature exceeds 22°C 2. Specify a mechanism to achieve automatic power-down of equipment when not in use, including overnight.				
	E	Domestic scale appliances (individual and communal facilities)	Domestic scale appliances have the following ratings (or better) under the EU Energy Efficiency Labelling Scheme, where provided: 1. Fridges, fridge-freezers: A+ rating 2. Washing machines: A++ rating 3. Dishwashers: A+ rating 4. Washer-dryers and tumble dryers: A rating. OR 5. If any of the appliances will be purchased during occupation by the tenant/owner, information on the EU Energy Efficiency Labelling Scheme of efficient white goods must be provided to the residential areas of the building.				
	F	Healthcare	1. The procurement of large-scale equipment (where present, see compliance note CN4) and sets of electrical equipment (where numbering more than 50) has been informed and selected by life cycle costing analysis for at least two options in accordance with HTM07-02,Part B, Chapter 1.				
	G	Kitchen and catering facilities	The project has incorporated at least two-thirds of the energy efficiency measures outlined in the section summaries of each of the following sections of CIBSE Guide TM50 (except as specified): 1. Section 8 (Drainage and kitchen waste removal)				

Issue	Credit Requirements				Credits		Comments / Actions	Responsible Team Member																																																
					Available	Targeted (Potential)																																																		
			2. Section 9 (Energy controls - specifically controls relevant to appliances)																																																					
			3. Section 11 (Appliance specification - not fabrication or utensil specifications)																																																					
			4. Section 12 (Refrigeration)																																																					
			5. Section 13 (Warewashing: dishwashers and glasswashers)																																																					
			6. Section 14 (Cooking appliance selection)																																																					
			Section 15 (Water temperatures, taps, faucets and water saving controls).																																																					
Transport																																																								
Tra 01 Transport assessment and travel plan	Two credits: - Where evidence provided demonstrates that a travel plan has been developed as part of the feasibility and design stages which considers all types of travel relevant to the building type and users. - The travel plan must be structured to the needs of the particular site and takes into consideration the findings of a site-specific transport survey. - The travel plan must include a package of measures that have been used to steer the design of the development in order to meet the travel plan objectives and minimise car-based travel patterns. The travel plan must be demonstrated in action post construction.				2	2	ACTION REQUIRED AT STAGE 1 - 4 A compliant travel plan is required for the development that includes recommendations for reduction of impact resultant from transport. These measures are then required to be incorporated into the design of the development.	Transport Consultant & Architect																																																
Tra 02 Sustainable transport measures	Ten credits Features included to achieve a Tra02 points score. Credits are achieved based on the site's Accessibility Index and the features provided. <table><tr><th>Points</th><th>Points</th><th>Points</th><th>Credits</th></tr><tr><td>AI < 25</td><td>25 ≤ AI < 40 (urban centres)</td><td>AI of ≥ 40 (metropolitan centre locations)</td><td></td></tr><tr><td>1</td><td>1</td><td></td><td>1</td></tr><tr><td>2</td><td></td><td>1</td><td>2</td></tr><tr><td>3</td><td>2</td><td></td><td>3</td></tr><tr><td>4</td><td></td><td>2</td><td>4</td></tr><tr><td>5</td><td>3</td><td></td><td>5</td></tr><tr><td>6</td><td>4</td><td>3</td><td>6</td></tr><tr><td>7</td><td>5</td><td></td><td>7</td></tr><tr><td>8</td><td>6</td><td>5</td><td>8</td></tr><tr><td>9</td><td>7</td><td>6</td><td>9</td></tr><tr><td>10</td><td>8</td><td>7</td><td>10</td></tr></table>				Points	Points	Points	Credits	AI < 25	25 ≤ AI < 40 (urban centres)	AI of ≥ 40 (metropolitan centre locations)		1	1		1	2		1	2	3	2		3	4		2	4	5	3		5	6	4	3	6	7	5		7	8	6	5	8	9	7	6	9	10	8	7	10	10	5	Ten credits applicable to assessment type Five credits targeted Currently anticipated that sufficient features can be incorporated to achieve the targeted credits. Features anticipated include: - An Accessibility Index of >8 (1 point), - 3 amenities located locally (1 point), - 1 additional amenity provided (food outlet) - (2 points). 3 points overall = 5 credits targeted	Transport Consultant & Architect
Points	Points	Points	Credits																																																					
AI < 25	25 ≤ AI < 40 (urban centres)	AI of ≥ 40 (metropolitan centre locations)																																																						
1	1		1																																																					
2		1	2																																																					
3	2		3																																																					
4		2	4																																																					
5	3		5																																																					
6	4	3	6																																																					
7	5		7																																																					
8	6	5	8																																																					
9	7	6	9																																																					
10	8	7	10																																																					
Sustainability Transport Measures:																																																								

Issue	Credit Requirements		Credits		Comments / Actions	Responsible Team Member
			Available	Targeted (Potential)		
	Public transport measures	Points				
	Public transport measures					
	- The existing AI calculated in Tra 01 achieves the following: - ≥ 4 for prison or MOD sites, rural location sensitive buildings, and other building group 3 - ≥ 8 for all other building type	1				
	- Demonstrate an increase over the existing Accessibility Index through negotiation with local bus, train or tram companies to increase the frequency of the local service provision for the development;	2				
	- Demonstrate an increase over the existing Accessibility Index. This could be through provision of a diverted bus route, a new or enhanced bus stop, or other similar solutions.	3				
	- Provide a dedicated service, such as a bus route or service	3				
	- Provide a public transport information system in a publicly accessible area, to allow building users access to up-to-date information on the available public transport and transport infrastructure. This may include signposting to public transport, cycling, walking infrastructure or local amenities.	1				
	Private transport measures					
	- Provide electric recharging stations of a minimum of 3kW for at least 10% of the total car parking capacity for the development.	1				
	- Set up a car sharing group or facility to facilitate and encourage building users to car share. - Raise awareness of the sharing scheme with marketing and communication materials. - Provide priority spaces for car sharers for at least 5% of the total car parking capacity for the development. - Locate priority parking spaces nearest the development entrance used by the sharing scheme participants.	1				
	Active travel measures					
	- During preparation of the brief, the design team consults with the local authority (LA) on the state of the local cycling network and public accessible pedestrian routes, to focus on whichever the LA deems most relevant to the project, and how to improve it. - Agree and implement one proposition chosen with the local authority. The proposition supported by the development is additional to existing local plans and has a significant impact on the local cycling network or on pedestrian routes open to the public	2				
	- Install compliant cycle storage spaces to meet the minimum levels set out the BREEAM criteria	1				
	- Option 7 has been achieved. - Provide at least two compliant cyclists' facilities for the building users, (including pupils where appropriate to the building type): - Showers - Changing facilities - Lockers - Drying spaces.	1				
	Existing amenities:	1				

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member														
		Available	Targeted (Potential)																
	<table><tr><td>– At least three existing accessible amenities are present, see Table 7.6 on page 179, where relevant for a Building Group.</td><td></td></tr><tr><td>Enhanced amenities: – Ensure a minimum of one new accessible amenity is provided.</td><td>2</td></tr><tr><td>Ensure more than one new accessible amenity, in accordance with Table 7.6 within the BREEAM criteria for the relevant Building Group, is provided.</td><td>3</td></tr><tr><td colspan="2">Alternative transport measures</td></tr><tr><td>Implement one site-specific improvement measure, not covered by the options already listed in this issue, in line with the recommendations of the travel plan. Submit these for review by BRE.</td><td>1 - 3</td></tr></table>	– At least three existing accessible amenities are present, see Table 7.6 on page 179, where relevant for a Building Group.		Enhanced amenities: – Ensure a minimum of one new accessible amenity is provided.	2	Ensure more than one new accessible amenity, in accordance with Table 7.6 within the BREEAM criteria for the relevant Building Group, is provided.	3	Alternative transport measures		Implement one site-specific improvement measure, not covered by the options already listed in this issue, in line with the recommendations of the travel plan. Submit these for review by BRE.	1 - 3								
– At least three existing accessible amenities are present, see Table 7.6 on page 179, where relevant for a Building Group.																			
Enhanced amenities: – Ensure a minimum of one new accessible amenity is provided.	2																		
Ensure more than one new accessible amenity, in accordance with Table 7.6 within the BREEAM criteria for the relevant Building Group, is provided.	3																		
Alternative transport measures																			
Implement one site-specific improvement measure, not covered by the options already listed in this issue, in line with the recommendations of the travel plan. Submit these for review by BRE.	1 - 3																		
Water																			
Wat 01 (M), (Me), (Mo) Water consumption  Mandatory: – One credit for Good and above. – Two credits for Outstanding.	Up to five credits: Where evidence provided demonstrates that water consumption has been reduced to the following levels compared against the baseline building model: <table><tr><th>% Improvement</th><th>No. of BREEAM Credits</th></tr><tr><td>12.5%</td><td>1</td></tr><tr><td>25%</td><td>2</td></tr><tr><td>40%</td><td>3</td></tr><tr><td>50%</td><td>4</td></tr><tr><td>55%</td><td>5</td></tr><tr><td>65%</td><td>Exemplary performance</td></tr></table>	% Improvement	No. of BREEAM Credits	12.5%	1	25%	2	40%	3	50%	4	55%	5	65%	Exemplary performance	5	3	Five credits applicable to assessment type Three credits targeted ACTION REQUIRED AT STAGE 4 Specification of sanitary appliances to achieve at least three credits. See below for suggested flow rates. Design team to provide flow rates for Assessor to check using Wat 01 calculator tool. – WCs - 3.75 l/effective flush volume – Urinals - 1.5 l/bowl/hr – Taps - 5 l/min – Showers - 6 l/min – Baths - 140 l – Dishwashers - suggested flow rate can be provided if specified – Washing machines - suggested flow rate can be provided if specified	MEP & Architect
% Improvement	No. of BREEAM Credits																		
12.5%	1																		
25%	2																		
40%	3																		
50%	4																		
55%	5																		
65%	Exemplary performance																		
Wat 02 (M), (Me), (Mo) Water monitoring  Mandatory: Criterion 1 only for Good and above.	One credit: – Where evidence provided demonstrates that a water meter with a pulsed output will be installed on the mains supply to each building/unit. – Water-consuming plant or building areas, consuming 10% or more of the building’s total water demand, need to be fitted with either sub meters or have water monitoring equipment integral to the plant or area. (Not applicable to Shell Only Assessments). – Each meter (main and sub) must have a pulsed output to enable connection to a Building Management System (BMS) for the monitoring of water consumption. – If the site on which the building is located has an existing BMS, managed by the same occupier/owner (as the new building), the pulsed water meter(s) for the new building must be connected to the existing BMS. Additionally for those pursuing a post occupancy stage certification: – 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.	1	1	ACTION REQUIRED AT STAGE 4 Requirements to be included within the Employer's Requirements MEP documentation and drawings. Metering strategy to be confirmed prior to issue.	MEP														

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Wat 03 Water leak detection	First credit - Leak detection system: Where evidence provided demonstrates that a leak detection system which is capable of detecting a major water leak on the mains water supply within the building and between the building and the utilities water meter is provided.	1	1	ACTION REQUIRED AT STAGE 4 Requirements to be included within the Employer's Requirements MEP documentation and drawings.	MEP
	Second credit - Flow control devices: Where evidence provided demonstrates that flow control devices that regulate the supply of water to each WC area/facility according to demand are installed (and therefore minimise water leaks and wastage from sanitary fittings)	1	1	ACTION REQUIRED AT STAGE 4 Requirements to be included within the Employer's Requirements MEP documentation and drawings.	MEP
Wat 04 Water efficient equipment	First credit The design team has identified all unregulated water demands that could be realistically mitigated or reduced. System(s) or processes have been identified to reduce the unregulated water demand, and demonstrate, through either good practice design or specification, a meaningful reduction in the total water demand of the building. Unregulated water uses include (but are not limited to): - Swimming pools - Recreational hot tubs and hydrotherapy pools - Equipment used for irrigation - Vehicle wash equipment - Project-specific industrial processes - Water filtration and treatment processes - Building services (e.g. cooling towers and humidification systems) Credit is not applicable and will be filtered out where there is no water demand from uses other than domestic scale and sanitary use components.	0	0	Credit not applicable to assessment type Assumed no unregulated water sources at the scheme.	Landscape Architect
Materials					
Mat 01 Environmental impacts from construction products - Building life cycle assessment (LCA)	One - six credits:: LCA superstructure Up to six credits are available for development of a building LCA on of the superstructure design using either the BREEAM Simplified Building LCA tool or a Compliant LCA tool during concept design stage. - Carry out building LCA options appraisal of 2 to 4 significantly different superstructure design options throughout the design development, using a building LCA tool that is recognised by BREEAM - Submit to BRE at concept design stage <u>prior to planning submission.</u> - Submit updated LCA assessment to BRE at technical design stage. One credit LCA substructure 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).	7	6 (+1)	Seven credits applicable to assessment type 6 credits targeted ACTION REQUIRED NOW LCA assessment to be undertaken prior to submission of planning permission. LCA to be submitted to BRE and assessed at the developed design stage LCA of substructure identified as a potential credit and to be completed if possible	Architect / Structural Engineer / Civil Engineer / QS

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member												
		Available	Targeted (Potential)														
	Exemplary level criteria One credit – Core building services options appraisal during concept design Carry out building LCA options appraisal of at least 3 significantly different core building services design options, using a building LCA tool that is recognised by BREEAM One credit – LCA and LCC alignment – Achieve Elemental LCC plan and Component Level LCC options appraisal credits include design options appraised as part of the LCA within the Elemental and Component LCC models. – 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’.	3	0	First credit: Credit not currently targeted Second credit: Credit not currently targeted Third credit: Credit not currently targeted	Architect / Structural Engineer / Civil Engineer / QS												
Mat 02 Environmental impacts from construction products - Environmental Product Declarations (EPD)	One credit: Where evidence provided demonstrates the designs features construction products with EPD that achieve a total EPD points score of at least 20, according to the BRE calculation methodology.	1	0	Credit not currently targeted. This is a new credit and it is impossible to confirm the feasibility of achieving this credit therefore it is not targeted.	Architect												
Mat 03 (M), (Me), (Mo) Responsible sourcing of construction products  Mandatory: Criterion 1 sustainable timber sourcing for all ratings	Pre-requisite All timber and timber based products used on the project are ‘legally harvested and traded timber’ First credit: Enabling sustainable procurement Where evidence provided demonstrates that a sustainability procurement plan is in place at by the concept design stage and is used by the design team to guide specification towards sustainable construction products.	1	1	ACTION REQUIRED NOW Requirements to be included within the Employer's Requirements documentation. Contractor will be required to develop suitable reporting. Project team will be required to develop a sustainable procurement plan now for use throughout the project.	Architect & Contractor												
	<table><tr><th>RSM credits</th><th>% of available RSM points achieved</th><th>MAT03 Scope</th></tr><tr><td>1</td><td>≥ 10%</td><td>Superstructure</td></tr><tr><td>2</td><td>≥ 20%</td><td>As above, plus – Internal finishes </td></tr><tr><td>3</td><td>≥ 30%</td><td>As above, plus – Internal finishes – Substructure and hard landscaping </td></tr></table>	RSM credits	% of available RSM points achieved	MAT03 Scope	1	≥ 10%	Superstructure	2	≥ 20%	As above, plus – Internal finishes	3	≥ 30%	As above, plus – Internal finishes – Substructure and hard landscaping	3	1	Three credits applicable to assessment type One credit targeted ACTION REQUIRED AT STAGE 4 Requirements to be included within the Employer's Requirements documentation. Contractor will be required to develop suitable reporting.	Architect
	RSM credits	% of available RSM points achieved	MAT03 Scope														
1	≥ 10%	Superstructure															
2	≥ 20%	As above, plus – Internal finishes															
3	≥ 30%	As above, plus – Internal finishes – Substructure and hard landscaping															
Exemplary credit: Where evidence provided demonstrates that at least 50% of the available RSM points are achieved. Scope also includes core building services.	1	0	Credit not currently targeted. Unlikely to achieve all credits with specification. ACTION REQUIRED AT STAGE 4 Requirements to be included within the Employer's Requirements documentation. Contractor will be required to develop suitable reporting.	Architect													

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Mat 05 Designing for durability and resilience	One credit: PART A: Protecting vulnerable parts of the building from damage - 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: - Negative impacts of high user numbers in relevant areas of the building (e.g. corridors, lifts, stairs, doors etc.). - Damage from any vehicle or trolley movements within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas. - 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. - Potential malicious damage to building materials and finishes, in public and common areas where appropriate. PART B: Protecting exposed parts of the building from material degradation - 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: - The element or product achieving an appropriate quality or durability standard or design guide OR - A detailed assessment of the element's resilience when exposed to the applicable material degradation and environmental factors. - Include convenient access to the roof and façade for cost-effective cleaning, replacement and repair in the building's design. - Design the roof and façade to prevent water damage, ingress and detrimental ponding.	1	1	ACTION REQUIRED NOW Consideration for wear and damage to be made in addition to consideration for where (and how) protection measures will be included. Environmental degradation assessment to be undertaken to identify how materials will be likely to be impacted by environmental hazards.	Architect
Mat 06 Material efficiency	One credit: 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 - Preparation and brief - Concept design - Developed design - Technical design - Construction Develop and record the implementation of material efficiency - Developed design - Technical design - Construction	1	1	ACTION REQUIRED NOW Stages 3, 4 to be completed by team. Stage 5, 6 to be included within Employer's Requirements documentation.	Architect
Waste					
Wst 01 (Mo) Construction waste management  Mandatory:	One credit - Pre-demolition audit Complete a pre-demolition audit of any existing buildings, structures or hard surfaces being considered for demolition. This must be used to determine whether refurbishment or reuse is feasible and, in the case of demolition, to maximise the recovery of material for subsequent high grade or value applications. The audit must cover the content of Pre-demolition audit scope: - Be carried out at Concept Design stage (RIBA Stage 2) by a competent person prior to strip-out or demolition works - Guide the design, consider materials for reuse and set targets for waste management	4	3	Pre-demolition audit: Credit targeted Construction resource efficiency: Three credits applicable to assessment type Two credits targeted	Contractor

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member																								
		Available	Targeted (Potential)																										
One credit for Outstanding	- Engage all contractors in the process of maximising high grade reuse and recycling opportunities - Compare actual waste arisings and waste management routes used with those forecast and investigate significant deviations from planned targets. Three credits - Construction resource efficiency: - Where a Resource Management Plan (RMP) has been developed covering the non-hazardous waste related to on-site construction and dedicated off-site manufacture or fabrication. - In addition, evidence provided demonstrates that non-hazardous construction waste (excluding demolition and excavation waste) generated by the building's design and construction meets or exceeds the following resource efficiency benchmarks: <table><tr><th>BREEAM Credits</th><th colspan="2">Amount of waste generated per 100m² (gross internal floor area)</th></tr><tr><td></td><th>m³</th><th></th></tr><tr><td>One credit</td><td>≤ 13.3</td><td>≤ 11.1</td></tr><tr><td>Two credits</td><td>≤ 7.5</td><td>≤ 6.5</td></tr><tr><td>Three credits</td><td>≤ 3.4</td><td>≤ 3.2</td></tr><tr><td>Exemplary level</td><td>≤ 1.6</td><td>≤ 1.9</td></tr></table>	BREEAM Credits	Amount of waste generated per 100m ² (gross internal floor area)			m ³		One credit	≤ 13.3	≤ 11.1	Two credits	≤ 7.5	≤ 6.5	Three credits	≤ 3.4	≤ 3.2	Exemplary level	≤ 1.6	≤ 1.9			Exemplary credit: Credit not currently targeted ACTION REQUIRED NOW Any demolition for the site must be accompanied with a pre-demolition survey of the demolished buildings/hard landscaping. The low waste benchmark levels will be required within the Employer's Requirements documentation. These requirements can also identify that the diversion from landfill targets must be achieved.							
	BREEAM Credits	Amount of waste generated per 100m ² (gross internal floor area)																											
	m ³																												
One credit	≤ 13.3	≤ 11.1																											
Two credits	≤ 7.5	≤ 6.5																											
Three credits	≤ 3.4	≤ 3.2																											
Exemplary level	≤ 1.6	≤ 1.9																											
	Fifth credit - Diversion of resources from landfill: Where evidence provided demonstrates that the following percentages of non-hazardous construction and demolition waste (where applicable) generated by the project have been diverted from landfill: <table><tr><th>BREEAM credits</th><th>Type of Waste</th><th>Volume</th><th>Tonnage</th></tr><tr><td rowspan="3">One credit</td><td>Non-demolition</td><td>70%</td><td>80%</td></tr><tr><td>Demolition</td><td>80%</td><td>90%</td></tr><tr><td>Excavation</td><td>N/A</td><td>N/A</td></tr><tr><td rowspan="3">Exemplary level</td><td>Non-demolition</td><td>85%</td><td>90%</td></tr><tr><td>Demolition</td><td>85%</td><td>95%</td></tr><tr><td>Excavation</td><td>95%</td><td>95%</td></tr></table>	BREEAM credits	Type of Waste	Volume	Tonnage	One credit	Non-demolition	70%	80%	Demolition	80%	90%	Excavation	N/A	N/A	Exemplary level	Non-demolition	85%	90%	Demolition	85%	95%	Excavation	95%	95%	1	1	As identified above, requirements to achieve these levels of diversion from landfill will be required to be included with Employer's Requirements documentation.	Contractor
BREEAM credits	Type of Waste	Volume	Tonnage																										
One credit	Non-demolition	70%	80%																										
	Demolition	80%	90%																										
	Excavation	N/A	N/A																										
Exemplary level	Non-demolition	85%	90%																										
	Demolition	85%	95%																										
	Excavation	95%	95%																										
Wst 02	Pre-requisite If demolition occurs on site, to encourage the reuse of site-won material on site, complete a pre-demolition audit of any existing buildings, structures or hard surfaces in accordance with Wst01 requirements.	1	0	Credit not currently targeted	Civil / Structural Engineer																								

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member						
		Available	Targeted (Potential)								
Use of recycled and sustainably sourced aggregates	One credit: Project sustainable aggregate points Where evidence provided identifies amounts of aggregate used for the project, the types of aggregate, its source (location) and the transport type. This information is used to calculate the Sustainable Aggregate points score. Credits are scored as follows: <table><tr><th>Project Sustainable Aggregate Credits</th><th>Project Sustainable Aggregate points</th></tr><tr><td>1</td><td>3.5–6.0</td></tr><tr><td>1 exemplary performance credit</td><td>> 6.0</td></tr></table> The calculation is based on the following aggregate uses: – Engineered fill – Concrete coarse aggregate – Concrete fine aggregate – Asphalt aggregate – Granular bedding for pipes – Granular bedding for hard landscape products – Hydraulically bound materials	Project Sustainable Aggregate Credits	Project Sustainable Aggregate points	1	3.5–6.0	1 exemplary performance credit	> 6.0			Calculations required to identify the total amount of aggregate required for the project and the levels of recycled aggregate required to achieve compliance with the BREEAM criteria. It is anticipated that there is opportunity to achieve the standard level criteria, but due to the location, potentially not the exemplar level credit. This will only be confirmed during Construction therefore it cannot be confirmed at the current stage.	
	Project Sustainable Aggregate Credits	Project Sustainable Aggregate points									
	1	3.5–6.0									
1 exemplary performance credit	> 6.0										
	Exemplary level criteria: As above	1	0	Credit not currently targeted	Civil / Structural Engineer						
Wst 03 (M_e) (M_o) Operational waste  Mandatory: – One credit for Excellent and above	One credit: Where evidence provided demonstrates that there is dedicated space(s) to cater for the segregation and storage of operational recyclable waste volumes generated by the assessed building/unit, its occupant(s) and activities. The dedicated space(s) must be: – Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams – Accessible to building occupants / facilities operators for the deposit of materials and collections by waste management contractors – Of a capacity appropriate to the building type, size, number of units (if relevant) and predicted volumes of waste that will arise from daily/weekly operational activities and occupancy rates. – The specified/installed operational waste facilities are compliant with the relevant NHS guidelines for that part of the UK. Where the consistent generation in volume of the appropriate operational waste streams is likely to exist, e.g. large amounts of packaging or compostable waste generated by the building’s use and operation, the following facilities must be provided as part of its waste management strategy: – Static waste compactor(s) or baler(s); situated in a service area or dedicated waste management space. – Vessel(s) for composting suitable organic waste resulting from the building’s daily operation and use OR adequate space(s) for storing segregated food waste and compostable organic material prior to collection and delivery to an alternative composting facility. – Where organic waste is to be stored/ composted on site, a water outlet is provided adjacent to or within the facility for cleaning and hygiene purposes.	1	1	A waste storage area of sufficient footprint area is required to be provided. This will have specific areas for recyclable waste and general waste and will be required to comply with the area requirements of the BREEAM criteria.	Architect						

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Wst 04 Speculative floor and ceiling finishes	One credit For tenanted areas (where the future occupant is not known), prior to full fit-out works, carpets, other floor finishes and ceiling finishes have been installed in a show area only. In a building developed for a specific occupant, that occupant has selected (or agreed to) the specified floor and ceiling finishes.	0	0	Credit not applicable to assessment type This credit is only applicable for Offices assessments	
Wst 05 Adaptation to climate change	One credit - Structural and fabric resilience: Where evidence provided demonstrates that a climate change adaptation strategy appraisal for structural and fabric resilience has been conducted by the end of Concept design (RIBA Stage 2) covering hazard identification and assessment, risk estimation, evaluation and management. Appraisal to identify & evaluate impact on the building over its life cycle from expected extreme weather conditions arising from climate change and, where feasible, mitigate against these impacts ID hazards taking into account the following: structural stability, robustness, weather proofing and detailing, material durability, health and safety of occupants, impact on building contents and business continuity	1	0	Credit not currently targeted. Spatial restrictions are likely to preclude inclusion of changes to fulfil the criteria. ACTION REQUIRED NOW A climate change adaptation plan is required to be developed. This plan and report are required to be concluded at RIBA Stage 2. As a result of this, the reporting against the requirements need to be commenced now.	Architect & Structural Engineer
	Exemplary credit: A holistic approach to the design and construction of the current building's life cycle, to mitigate against the impacts of climate change, is represented by the achievement of these criteria. In addition to achieving the first credit above, the following must also be achieved: - Hea 04 - Thermal comfort: Project team demonstrate how the building has been adapted, or designed to be easily adapted in future using passive design solutions - Ene 01 - Reduction in energy use and carbon emissions At least 6 credits in this issue have been achieved - Ene 04 - Low carbon design Passive design analysis credit has been achieved - Wat 01 - Water consumption Minimum of three credits in this issue have been achieved - Mat 05 - Designing for durability and resilience Building elements incorporate appropriate design and specification measures to limit material degradation due to environmental factors - Pol 03 Surface water run off Flood risk- A minimum of one credit has been achieved. Surface water run off- Two credits have been achieved.	1	0	Credit not currently targeted This credit is not currently targeted as it is unclear whether all credits will be achieved.	Architect & Structural Engineer
Wst 06 Design for disassembly and adaptability	One credit - Design for disassembly and functional adaptability - recommendations Where evidence provided demonstrates that the design team conducts a study to explore the ease of disassembly and the functional adaptation potential of different design scenarios. Recommendations are required to be developed at the concept design stage.	1	1	ACTION REQUIRED NOW A functional adaptability report is required for the project that identifies how the development can be adapted for future use. The report should be undertaken now.	Architect

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member								
		Available	Targeted (Potential)										
	One credit - Disassembly and functional adaptability – implementation Provide an update, during Technical Design, on: - 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. - Changes to the recommendations and solutions during the development of the Technical Design. Produce a building adaptability and disassembly guide to communicate the characteristics allowing functional adaptability and disassembly to prospective tenants.	1	1	Anticipated that the report recommendations can be incorporated into the design.									
Land Use and Ecology													
LE 01 Site selection	First credit - Previously occupied land: Where evidence is provided to demonstrate that at least 75% of the proposed development’s footprint is on an area of land which has previously been developed for use by industrial, commercial or domestic purposes in the last 50 years.	1	1	ACTION REQUIRED NOW Site Investigation reports to be provided that identify that the project has been at least 75% by areas previously developed.	Architect								
	Second credit - Contaminated land: Where evidence provided demonstrates that the site is significantly contaminated as confirmed by a contaminated land specialist’s site investigation, risk assessment and appraisal. The client or principal contractor must confirm that remediation of the site will be carried out in accordance with the remediation strategy and its implementation plan.	1	0	Credit not currently targeted ACTION REQUIRED NOW Site Ground Investigation Report and Contamination report to identify the level of contamination at the site and the remediation required/undertaken. It is not currently anticipated that there will be suitable levels of contamination on the site.	Contamination Specialist								
LE 02 Identifying and understanding the risks and opportunities for the project	Pre-requisite - Assessment route selection An assessment route for the project has been determined using BREEAM Guidance Note GN34 BREEAM Ecological Risk Evaluation Checklist. The client or contractor confirms compliance will be and is monitored against all relevant UK and EU or international legislation relating to the ecology of the site. Up to two credits Depending on the route for compliance taken the following number of credits are available.	2	1	Survey and evaluation: Credit targeted	Ecologist								
				Determining ecological outcomes: Credit targeted									
				ACTION REQUIRED NOW Route 1 approach to be implemented. Project team to liaise with Assessor and ensure appropriate discussions & reviews are completed.									
				The assessed site can be appropriately assessed without appointing an Ecologist.									
	<table><tr><td></td><td>Project team member route (Route 1)</td><td>Ecologist route (Route 2)</td></tr><tr><td>Survey and evaluation</td><td>1 credit</td><td>1 credit</td></tr><tr><td>Determining the ecological outcomes for the site</td><td></td><td>1 credit</td></tr></table>		Project team member route (Route 1)	Ecologist route (Route 2)	Survey and evaluation	1 credit	1 credit	Determining the ecological outcomes for the site		1 credit			
	Project team member route (Route 1)	Ecologist route (Route 2)											
Survey and evaluation	1 credit	1 credit											
Determining the ecological outcomes for the site		1 credit											
	Survey and evaluation Route 1 Completion of the BREEAM Ecological Risk Evaluation Checklist indicates Assessment route 1 can be used as the assessment Route 2												

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member									
		Available	Targeted (Potential)											
	- An appropriate individual is appointed at a project stage that ensures early involvement in site configuration and, where necessary, can influence strategic planning decisions. - Prior to the completion of the preparation and brief, an appropriate level of survey and evaluation: - For sites where complex ecological systems are likely to be present) has been carried out to determine the ecological baseline of the site, taking account of the zone of influence to establish: - Current and potential ecological value and condition of the site, and related areas within the zone of influence. - Direct and indirect risks to current ecological value - Capacity and feasibility for enhancement of the ecological value of the site and, where relevant, areas within the zone of influence. - Data are collated and shared with project team to inform the site preparation, design or construction works. Determining the ecological outcomes for the site (Routes 1 and 2) - Survey and evaluation criteria (criteria 3–6 above) relevant to the chosen route have been achieved. - During Concept Design, the project team liaise and collaborate with representative stakeholders to identify and consider ecological outcome for the sites (appropriate to the scale and type of development) for the project. - When determining the ecological outcome for the site, this must involve the identification, appraisal and selection of specific solutions and measures sufficiently early to influence key project planning decisions. This must be done in accordance with the following hierarchy of action: - avoidance - protection - reduction or limitation of negative impacts - on site compensation and, - enhancement, considering the capacity and feasibility within the site, or where viable, off-site. - Following this the optimal ecological outcome for the site is selected after liaising with representative stakeholders and the project team.													
	Exemplary level criteria Determine the ecological outcomes for the site (sustainability-related activities) When determining the optimal ecological outcome for the site consider, in addition to those outlined above, the wider site sustainability-related activities and the potential for ecosystem service related benefits.	1	0	Credit not currently targeted										
LE 03 Managing negative impacts on ecology	Pre-requisite – Identification and understanding the risks and opportunities for the site - The client or contractor has confirmed that compliance is monitored against all relevant UK, and EU or International legislation relating to the ecology of the site - LE02 has been achieved <table><tr><td></td><td>Project team member route (Route 1)</td><td>Ecologist Route (Route 2)</td></tr><tr><td>Planning, liaison and implementation</td><td>1 credit</td><td>1 credit</td></tr><tr><td>Managing negative impacts of the project (limitation or compensation)</td><td>1 credit</td><td>1 or 2 credits</td></tr></table> One credit – Planning, liaison, implementation and data - Roles and responsibilities have been clearly defined, allocated and implemented to support successful delivery of project outcomes at an early enough stage to influence the concept design or design brief. - Site preparation and construction works have been planned for and are implemented at an early project stage to optimise benefits and outputs.		Project team member route (Route 1)	Ecologist Route (Route 2)	Planning, liaison and implementation	1 credit	1 credit	Managing negative impacts of the project (limitation or compensation)	1 credit	1 or 2 credits	3	2	Planning, liaison and implementation: Credit targeted Managing negative impacts: Two credits applicable to assessment type One credit targeted ACTION REQUIRED NOW Route 1 approach to be implemented. Project team to liaise with Assessor and ensure appropriate discussions & reviews are completed. The assessed site can be appropriately assessed without appointing an Ecologist.	Ecologist
	Project team member route (Route 1)	Ecologist Route (Route 2)												
Planning, liaison and implementation	1 credit	1 credit												
Managing negative impacts of the project (limitation or compensation)	1 credit	1 or 2 credits												

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member									
		Available	Targeted (Potential)											
	Up to three credits - Enhancement of ecology Credits are awarded on a scale of 1 to 3, based on the calculation of the change in ecological value occurring as a result of the project. This must be calculated in accordance with the process set out in either GN 35 - BREEAM, CEEQUAL, HQM Ecology Assessment Issues – Route 1 or GN 36 - BREEAM, CEEQUAL, HQM Ecology Assessment Issues													
LE 05 Long term ecology management and maintenance	Pre-requisite - Roles and responsibilities, implementation, statutory obligations - 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. - Where pursued, LE 04 has been achieved, including the following specific aims of this issue: - Roles and responsibilities have been clearly defined, allocated and implemented to support successful delivery of project outcomes. - Site preparation and construction works have been planned for and implemented at a stage that is sufficiently early in the project to optimise benefits and outputs. Up to two credits are available depending on the route selected. One credit - Planning, liaison, data, monitoring and review management and maintenance <table><tr><td></td><td>Project team member route (Route 1)</td><td>Ecologist route (Route 2)</td></tr><tr><td>Liaison, monitoring implementation and evolving management and maintenance solutions</td><td>1 credit</td><td>1 credit</td></tr><tr><td>Landscape and habitat management plan</td><td></td><td>1 credit</td></tr></table> One credit - Planning, liaison, data, monitoring and review management and maintenance - The project team liaise and collaborate with representative stakeholders, taking into consideration data collated and shared, on solutions and measures implemented to: - monitor and review implementation and the effectiveness - develop and review management and maintenance solutions, actions or measures. - In support of the above and to help ensure their continued relevance over the period of the project the following should be considered: - Monitoring and reporting of on the ecological outcomes for site implemented at the design and construction stage - Monitoring and reporting of outcomes and successes from the project - Arrangements for the ongoing management of landscape and habitat connected to the project (on and, where relevant, off site) - Maintaining the ecological value of the site and its relationship or connection to its zone of influence - Maintaining the site in line with the any sustainability linked activities, e.g. ecosystems benefits (LE 02). - Remedial or other management actions are carried out which relate to those identified in LE 02, LE 03 and LE 04. - As part of the tenant or building owner information supplied, include a section on Ecology and Biodiversity to inform the owner or occupant of local ecological features, value and biodiversity on or near the site.		Project team member route (Route 1)	Ecologist route (Route 2)	Liaison, monitoring implementation and evolving management and maintenance solutions	1 credit	1 credit	Landscape and habitat management plan		1 credit	1	1	Planning, liaison, data, monitoring and review: Credit not applicable to assessment type Landscape and ecology management plan: ACTION REQUIRED NOW Route 1 approach to be implemented. Project team to liaise with Assessor and ensure appropriate discussions & reviews are completed. The assessed site can be appropriately assessed without appointing an Ecologist.	Ecologist & Contractor
	Project team member route (Route 1)	Ecologist route (Route 2)												
Liaison, monitoring implementation and evolving management and maintenance solutions	1 credit	1 credit												
Landscape and habitat management plan		1 credit												

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	One credit - Landscape and ecology management plan (or similar) development - Landscape and ecology management plan, or similar, is developed in accordance with BS 42020:2013(210) covering as a minimum the first five years after project completion and includes: - Actions and responsibilities, prior to handover, to give to relevant individuals - The ecological value and condition of the site over the development life. - Identification of opportunities for ongoing alignment with activities external to the development project and which supports the aims of BREEAM's Strategic Ecology Framework - Identification and guidance s to trigger appropriate remedial actions to address previously unforeseen impacts - Clearly defined and allocated roles and responsibilities. - The landscape and management plan or similar is updated as appropriate to support maintenance of the ecological value of the site.				
Pollution					
Pol 01 Impact of refrigerants	Pre-requisite: All systems (with electronic compressors) must comply with the requirements of BS EN 378:2008, and where refrigeration systems containing ammonia are installed, they must comply with the Institute of Refrigeration Ammonia Refrigeration Systems Code of Practice. Three credits: No refrigerant Where evidence provided demonstrates that the building does not require the use of refrigerant within its building services or plant. Two credits: DELC Where evidence provided demonstrates that the systems specified using refrigerants have Direct Effect Life Cycle CO₂ equivalent emissions (DELC CO_{2e}) of ≤100 kgCO_{2e}/kW cooling/heating capacity. OR Where air-conditioning or refrigeration systems are installed the refrigerants used have a Global Warming Potential (GWP) ≤10. One credit: Where evidence provided demonstrates that the systems using refrigerants have Direct Effect Life Cycle CO₂ equivalent emissions of (DELC CO_{2e}) of ≤1000 kgCO_{2e}/kW cooling/heating capacity.	2	0	No refrigerant use credits: Credits not applicable to assessment type DELC credit(s): Two credits applicable to assessment type Credits not currently targeted as the specified cooling approach will employ refrigerants which do not achieve any credits. ACTION REQUIRED AT STAGE 4 To be included within the Employer's Requirements Preliminaries and MEP documentation.	MEP
	One credit: Refrigerant leak detection Where evidence provided demonstrates that the systems using refrigerants have a permanent automated refrigerant leak detection system installed, capable of automatically isolating and containing the remaining refrigerant(s) charge in response to a leak detection incident.	1	0	Credit not currently targeted specified cooling approach does not lend itself to leak detection systems. ACTION REQUIRED AT STAGE 4 To be included within the Employer's Requirements Preliminaries and MEP documentation.	MEP
Pol 02 Local air quality	Up to two credits: All heating and hot water is supplied by non-combustion systems. For example, only powered by electricity	2	0	Two potential credits	MEP

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	OR alternatively; 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 within the BREEAM Criteria document. 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 within the BREEAM. Emissions from all installed combustion plant that provide space heating and domestic hot water are required to not exceed the levels set in Table 1.21 and Table 1.22 within the BREEAM criteria.			ACTION REQUIRED AT STAGE 4 To be included within the Employer's Requirements Preliminaries and MEP documentation. Current specification use of gas boilers to provide some of the DHW load will preclude achieving the credit.	
Pol 03 Surface water run off	Pre-requisite An appropriate consultant is appointed to carry out and demonstrate the development's compliance with all criteria. Part 1: Flood resilience (Up to Two credits) Two credits - Low flood risk: 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. These sources include: - Fluvial (rivers) - Tidal - Surface water: sheet run-off from adjacent land (urban or rural) - Groundwater: most common in low-lying areas underlain by permeable rock (aquifers) - Sewers: combined, foul or surface water sewers - Reservoirs, canals and other artificial sources One credit - Medium/high flood risk: Where evidence provided demonstrates that the assessed development is located in a zone defined as having a medium or high annual probability of flooding AND the ground level of the building, car parking and access is at least 600mm above the design flood level of the flood zone for the site's location OR the final design of the building and the wider site reflects the recommendations made by an appropriate consultant in accordance with the hierarchy approach outlined in section 5 of BS 8533:2017	2	2	ACTION REQUIRED NOW Flood Risk Assessment to be provided/commissioned that identifies the site's flood risk. It is currently anticipated that there is a low flood risk at the site. Reference to the EA's flood risk maps identifies an indicative low flood risk at the site.	Drainage Consultant
	Part 2: Surface water run-off Pre-requisite: Surface water run-off design solutions must be bespoke, i.e. they must take account of the specific site requirements and natural or man-made environment of and surrounding the site. The priority levels detailed in the Methodology must be followed, with justification given by the appropriate consultant where water is allowed to leave the site. First credit: 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, including allowance for climate change. Additionally relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SUDs are in place. Second credit:	2	2	First credit: Credit targeted Second credit: Due to no increase in hard surfacing the surface water runoff rate and runoff volume are likely to be achieved by default.	Drainage Consultant

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	Where evidence provided demonstrates that the consultant has confirmed that there is no risk of flooding of property in the event of a local drainage system failure, AND EITHER - 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, including an allowance for climate change. - Any additional predicted volume of run-off for the 100-year 6-hour event must be prevented from leaving the site by using infiltration or other Surface Drainage System (SUDs) techniques OR (only where criterion no. 9 or 10 for this credit cannot be achieved) - 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. - The post development peak rate of run-off is reduced to a limiting discharge. The limiting discharge is defined as the highest flow rate from the following options: - The pre-development one-year peak flow rate - The mean annual flow rate (Qbar) - 2L/s/ha.				
	Part 3: Minimising watercourse pollution One credit: Where evidence provided demonstrates that the following water course pollution prevention measures are covered: - Appropriate Consultant confirms that there will be no discharge from the developed site for rainfall up to 5mm. - Specification of Sustainable Drainage Systems (SUDs) or source control systems such as permeable surfaces or infiltration trenches - Specification of oil/petrol separators (or equivalent system) in surface water drainage systems, where there is a high risk of contamination or spillage of substances - Chemical or liquid gas storage areas have a means of containment fitted to the site drainage system - All water pollution prevention systems have been designed and installed in accordance with the recommendations of documents such as the SUDS manual and other relevant industry best practice. They must be bespoke solutions taking account of the specific site requirements and natural or man-made environment of and surrounding the site. - A comprehensive and up-to-date drainage plan of the site will be made available for the building/site occupiers. - Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SUDS must be in place. - All external storage and delivery areas are designed and detailed in accordance with the current best practice planning guidance	1	0	Credit not currently targeted This credit is not likely to be achieved as there are unlikely to be soakaways dealing with rainwater events.	Drainage Consultant
Pol 04 Reduction in night time light pollution	One credit: Where evidence provided demonstrates that the lighting system has been designed in accordance with the following requirements: - The external lighting strategy has been designed in compliance with Table 2 (and its accompanying notes) of the ILE Guidance notes for the reduction of obtrusive light, 2011. - All external lighting (except for safety and security lighting) can be automatically switched off between 2300hrs and 0700hrs. This can be achieved by providing a timer for all external lighting set to the appropriate hours. - If safety or security lighting is provided and will be used between 2300hrs and 0700hrs, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 2 of the ILE's Guidance notes, for example by using an automatic switch to reduce the lighting levels at 2300 or earlier. - Illuminated advertisements, where specified, must be designed in compliance with ILE Technical Report 5 - The Brightness of Illuminated Advertisements.	1	1	INCLUDE WITHIN ER DOCUMENTATION This requirement can be incorporated into the project's employer's requirements (MEP) documentation to require the contractor to achieve.	MEP

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Pol 05 Reduction of noise pollution	One credit: Where evidence provided demonstrates that there is either no noise-sensitive areas or buildings within 800m radius of the assessed development OR Where there are or will be noise-sensitive areas or buildings within 800m radius of the assessed development a noise impact assessment in compliance with BS 4142:2014 has been carried out and the following noise levels measured/determined: - Existing background noise levels at the nearest or most exposed noise-sensitive development to the proposed development or at a location where background condition can be argued to be similar. - The noise level from the proposed site/building, as measured in the locality of the nearest or most exposed noise-sensitive development is a difference no greater than +5dB during the day (07:00 to 23:00) and +3dB at night (23:00 to 07:00).	1	1	Noise Impact assessment to be undertaken for the site identifying that building services noise will be limited in line with background noise levels.	Acoustician
Innovation					
Exemplary credits summary	Exemplary credits Up to a maximum of ten credits are available: Where the building demonstrates exemplary performance by meeting defined exemplary level performance criteria in one or more of following BREEAM assessment issues: - Man 03 Responsible construction practices - Hea 01 Visual comfort - Hea 02 Indoor air quality - Hea 06 Security - Ene 01 Reduction of energy use and carbon emissions - Wat 01 Water consumption - Mat 01 Environmental impacts from construction products - Building life cycle assessment (LCA) - Mat 03 Responsible sourcing of construction products - Wst 01 Construction waste management - Wst 02 Use of recycled and sustainably sourced aggregates - Wst 05 Adaptation to climate change - Le 02 Identifying and understanding the risks and opportunities for the project - Le 04 Change and enhancement of ecological value One innovation credit can be awarded for each individual BREEAM issue exemplary performance level complied with. Approved Innovations 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.	10	1	The following exemplary level credits have included in the BREEAM target strategy: - MAN03 Responsible construction practices	Contractor & Architect

7. Appendix C: Credit Weightings BREEAM 2018

The weightings for the associated credits depending on the assessment route are shown in Table D1 below.

Section	Section Weighting			No. of credits available	Value of Each Credit
	Fully-fitted	Shell only	Shell and core	Fully-Fitted	
Management	11.0%	12.0%	11.0%	21	0.52%
Health and Wellbeing	14.0%	7.0%	8.0%	16	0.88%
Energy	16.0%	9.5%	14.0%	21	0.76%
Transport	10.0%	14.5%	11.5.0%	12	0.83%
Water	7.0%	2.0%	7.0%	8	0.88%
Materials	15.0%	22.0%	17.5%	14	1.07%
Waste	6.0%	8.0%	7.0%	10	0.60%
Land Use and Ecology	13.0%	19.0%	15.0%	13	1.00%
Pollution	8.0%	6.0%	9.0%	12	0.67%
Innovation	10.0%	10.0%	10.0%	19	1.00%

Table D1: BREEAM Credit Weightings



ELLIOT RAWSTRONE
SENIOR SUSTAINABILITY CONSULTANT

+44 161 672 7139
elliotrawstrone@hoarelea.com

HOARELEA.COM

Royal Exchange
Manchester
M2 7FL
England

