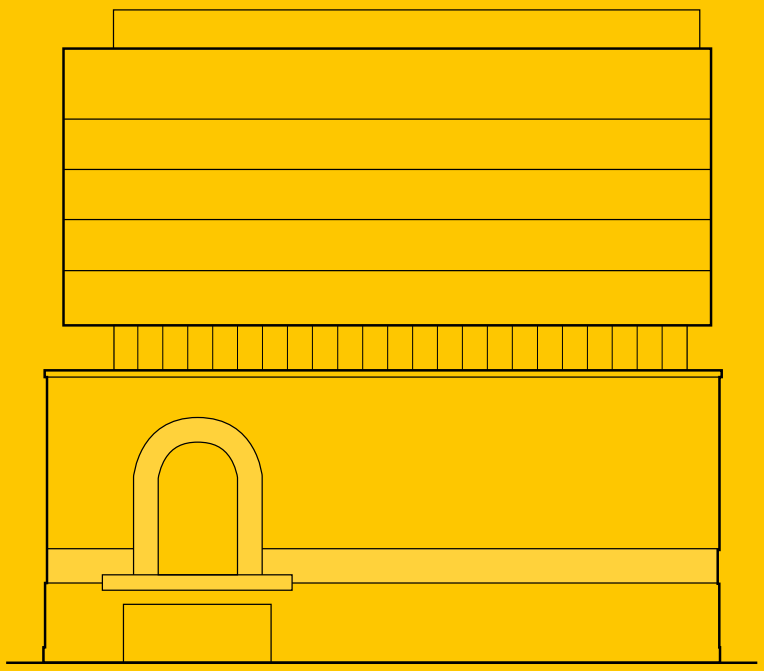


SAVILLE THEATRE

135 SHAFTESBURY AVENUE

THEATRE: BREEAM NC
PRE-ASSESSMENT

HOARE LEA

Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
01	26/01/2024	Issue for Comment	C. Mooney	T. Brown	G. Jones
02	31/01/2024	Updated from issue feedback	C. Mooney	C. Dutton	G. Jones

Project number: 2325236
Document reference: REP-2325236-5A-CM-20240125-THEATRE NC BREEAM V6 PRE ASSESSMENT-Rev02.docx

BREEAM Audit box

BRE registration number	TBC
Licensed assessor	Tim Whitehouse
Assessor support	-
BREEAM scheme	New Construction Other Buildings (Non-Residential)
BREEAM scheme version	V6
Assessment stage	Pre-Assessment
Technical manual version	SD5078 Issue 3.0
Tier code (internal use only)	Tier 3

BREEAM Credit filtering box

Building type and sub-group	Other, Assembly and leisure - Theatre, music or concert hall
Building floor area	TBC
Designed to be untreated?	No
Building services (heating)	Wet system
Building services (cooling)	Air-conditioning
Commercial cold storage systems	No
Transportation systems	Yes
Laboratory (type, area and size)	No laboratories
Fume cupboards / containment devices	No
Unregulated water uses	No
External areas?	No
Statutory requirements impacting outdoor space?	Yes
Unregulated energy load	Yes
Post occupancy ENE01 credits targeted?	Yes

Contents.

1. Executive summary

This report provides an indicative BREEAM V6 New Construction pre-assessment for the proposed Saville Theatre, at Shaftsbury Avenue.

The development falls under the BREEAM New Construction Other Buildings (Non-Residential) category and a Fully fitted assessment has been conducted. The proposed development is targeting a BREEAM 'Excellent' rating as a minimum.

The current anticipated baseline score is 77.52%, equivalent to a BREEAM 'Excellent' rating, with a difference between the minimum required score for a BREEAM 'Excellent' rating of 70% of 9.57%.

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 92.16%, equivalent to a BREEAM 'Outstanding' rating with a difference of 4.33% 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.

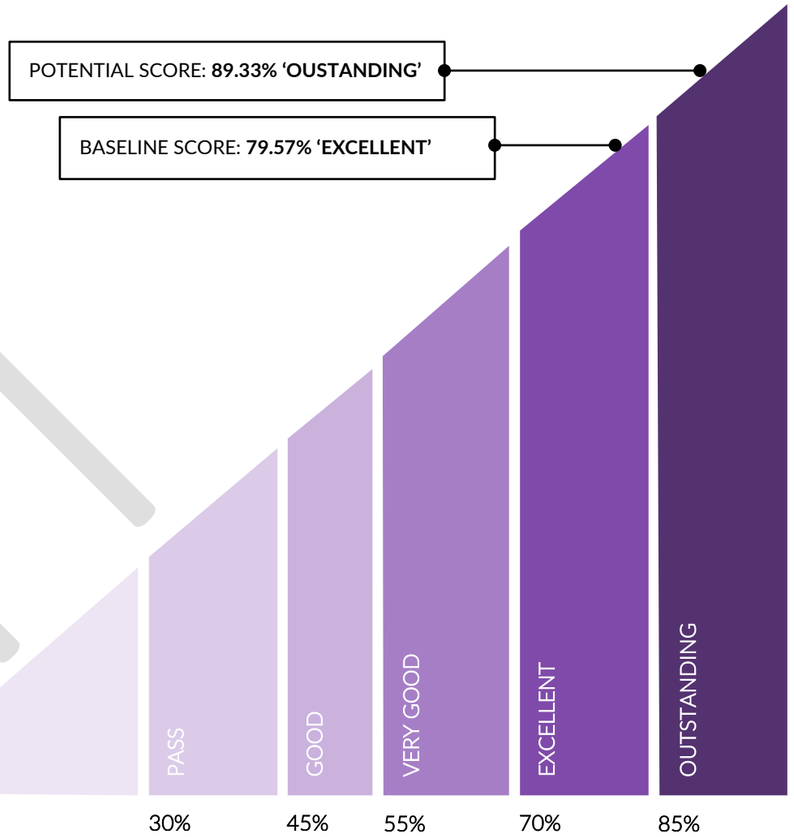


Figure 1: BREEAM 2018 Scale and Anticipated Performance Scores.

2. BREEAM Pre-Assessment

2.1 Introduction

This report relates to the proposed Saville Theatre, Shaftsbury Avenue . It is recommended the building should be registered under the BREEAM NC V6 scheme and assessed using the New Construction Other Buildings (Non-Residential) 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 'Excellent' rating as a minimum.

This is one of three reports which make up the BREEAM assessment for the full development at Shaftsbury Avenue. The theatre is a three-storey extension below ground. The assessment also includes the existing below-ground level floors and ground floor level which will be used solely for the theatre's reception area.

The Development also includes a refurbishment (RFO 2014) of the existing upper floors which will become a hotel use-type. An extension will also be completed to the upper floors of the hotel and will be assessed under a new construction scheme (V6).

2.2 Initial Pre-Assessment

This draft pre-assessment has been carried out independently by a qualified BREEAM assessor prior to a review 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. Credits currently included in the credit score should be reviewed by the design team, and each team member is expected to provide feedback regarding credits under their responsibility, identifying any relevant issues. Once comments have been raised by the project team, the report and the predicted scores will be updated.

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: 77.52% equivalent to a BREEAM 'Excellent' rating.
- Potential score / rating: 92.16% equivalent to a BREEAM 'Outstanding' rating.

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

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

- HEA01-03 View Out
- ENE01 Reduction of Energy and CO2
- ENE08 Energy Efficient Equipment
- TRA02 Sustainable Transport Measures
- WAT01 Water Consumption
- WAT03-02 Flow Control Devices
- MAT01 Building Life Cycle assessment
- WST02-01 Project Aggregates Points
- WST06 Disassembly - Implementation
- LE03 Planning Liaison and Implementation
- POL03 Surface Water Run-off Volume

All mandatory and minimum standards for the BREEAM 'Excellent' rating have been included within the assessment strategy for the potential score.

Refer to Appendix B for detailed credit requirements.

2.3 Project Team Members

Table 1: Project Team Members.

Discipline	Organisation	Abbreviation
Architect	Spparc	S
Building Services Consultant	Hoare Lea	HL MEP
BREEAM Assessor	Hoare Lea	HL AP
Client	YC Saville Theatre Ltd	YCST
Cost Management	G&T	G&T
Daylight Sunlight Consultant	Point 2	P2
Ecologist	RSP	RSP
Project Manager	Opera	O
Structural Engineer	Pell Frischmann	PF
Transport Consultant	Momentum	M

3. Summary Score Sheet

The summary table below highlights the list of targeted credits for the current BREEAM NC V6 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	+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	2	+2
	Hea 02: Indoor air quality	4	3	+1
	Hea 04: Thermal comfort	3	3	-
	Hea 05: Acoustic performance	3	3	-
	Hea 06: Security	1	1	-
	Hea 07 Safe and healthy surroundings	1	1	-
Energy	Ene 01: Reduction of energy use and carbon emissions (M_e) (M_o)	13	8	+2
	Ene 02: Energy monitoring (M) (M_e) (M_o)	2	2	-
	Ene 03: External lighting	1	1	-
	Ene 04: Low carbon design	3	0	+2
	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	2	2	-
Transport	Tra 01: Transport assessment and travel plan	2	2	-
	Tra 02: Sustainable transport measures	10	5	+2
Water	Wat 01: Water consumption (M_v) (M_e) (M_o)	5	3	+1
	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
	Mat 02: Environmental impacts from construction products	1	1	-
	Mat 03: Responsible sourcing of construction products (M_v) (M_e) (M_o)	4	3	-
	Mat 05: Designing for durability and resilience	1	1	-
	Mat 06: Material efficiency	1	1	-
Waste	Wst 01: Construction waste management (M_o)	4	4	-
	Wst 02: Use of recycled and sustainably sourced aggregates	1	0	+1
	Wst 03: Operational waste (M_e), (M_o)	1	1	-
	Wst 04 Speculative finishes	-	-	-
	Wst 05: Adaptation to climate change	1	1	-
	Wst 06: Design for disassembly and adaptability	2	1	+1
Land Use and Ecology	LE 01: Site Selection	2	2	-
	LE 02: Identifying and understanding the risks and opportunities for the project	2	2	-
	LE 03: Managing negative impacts on ecology	3	2	+1
	LE 04: Change and enhancement of ecological value	4	2	+1
	LE 05: Long term ecology management and maintenance	2	1	-
Pollution	Pol 01: Impact of refrigerants	3	2	+1
	Pol 02: Local air quality	2	2	-
	Pol 03: Flood and surface water management	5	4	+1
	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	17	2	-
	Targeted weighted score rating:	77.52%, 'Excellent'		
	Potential weighted score rating:	92.16%, 'Outstanding'		

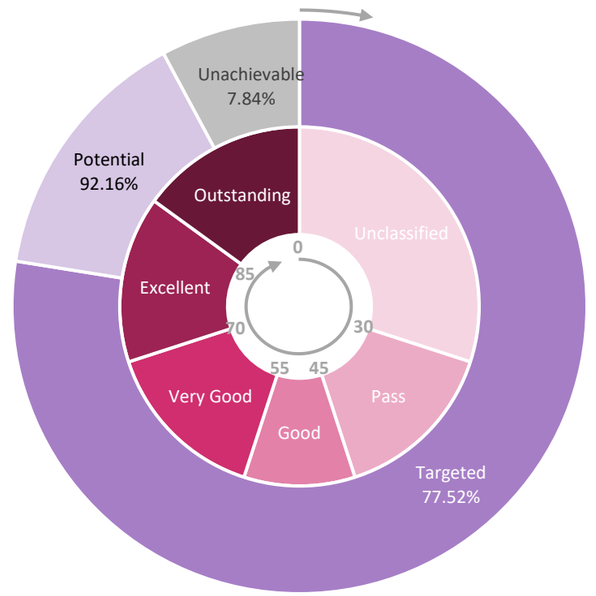
4. Conclusion

Based upon an initial credit review independent of the project design team, it is anticipated that the Proposed Development could achieve a score of 77.52%, equivalent to a BREEAM 'Excellent' rating.

Additional potential credits have also been identified which, if targeted, could results in a higher BREEAM performance score and rating; 92.16%, equivalent to a BREEAM 'Outstanding'. The potential credits include the following credit issues:

- HEA01-03 View Out
- ENE01 Reduction of Energy and CO_2
- ENE08 Energy Efficient Equipment
- TRA02 Sustainable Transport Measures
- WAT01 Water Consumption
- WAT03-02 Flow Control Devices
- MAT01 Building Life Cycle assessment
- WST02-01 Project Aggregates Points
- WST06 Disassembely - Implementation
- LE03 Planning Liason and Implementation
- POL03 Surface Water Run-off Volume

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.



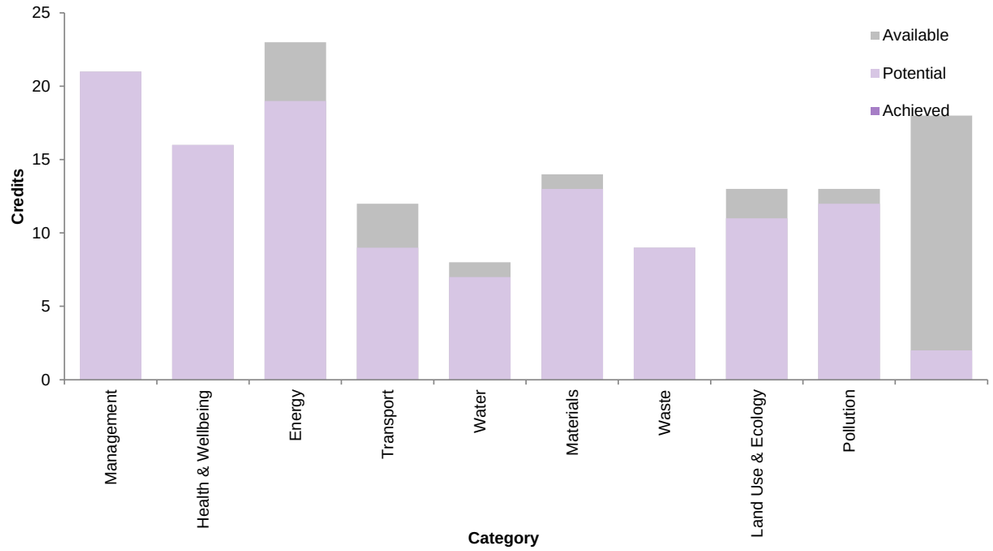


Figure 2: BREEAM Performance Summary and Targeted Credits.

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:

Table 3: BREEAM 2018 Early Action Credits (RIBA Stage 1) (green- targeted including potential; grey- not targeted or not applicable)

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. – Third Credit: Sustainability champion to be appointed to facilitate the setting and achievement of BREEAM performance targets for the project by Stage 2.	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.
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
LE 04 Enhancing site ecology LE 05 Long term impact on biodiversity	The ecologist must be appointed by RIBA Stage 1 to carry out initial surveys, and subsequently provide recommendations in a report at RIBA Stage 2.	Ecologist

5.2 Concept design stage

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

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 Engineer
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

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	0 (+1)		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	0 (+1)		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	1		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	1		Project Manager
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		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:	1	1		Client & Cost Consultant

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	– 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.				
	Fourth credit - Capital cost reporting: Where evidence provided demonstrates reporting of the capital cost for the building in pounds per square metre (£/m^2) via the BREEAM Assessment Scoring and Reporting tool, Assessment Issue Scoring tab, Management section.	1	1		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		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		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.
	
	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 (e.g. 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
		2	2	Third credit:
				Credit targeted
				
				Fourth credit:
				Credit targeted
					Client & Contractor

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	– 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: An additional exemplary level credit is available for achieving all requirements within Table 4.1 (identified above)	1	1		
	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	Fifth credit: Credit targeted Sixth credit: Credit targeted	Client & Contractor
Man 04 (M_v), (M_e), (M_o)	First credit - Commissioning and testing schedule and responsibilities:	1	1		Contractor

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Commissioning and handover ⚠ Mandatory: – One credit (commissioning test schedule and responsibilities) and criterion 11 (Building User Guide for Very Good and above	– 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				
	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		Contractor
	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		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 mangers, timed appropriately around handover and proposed occupation plans in addition to training for building occupiers (non-technical building users).	1	1		Contractor
Man 05 (M_e), (M_o) Aftercare ⚠ Mandatory: – One credit (commissioning implementation) for Excellent – One credit (commissioning implementation) for Outstanding	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. 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.	1	1		Client Occupant Contractor

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	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		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 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.	1	1		Client Occupant Contractor
Health and Wellbeing					
Hea 01 Visual comfort	First credit - Control of glare from sunlight	1	1		Architect & Occupant

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	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.				
	Second and third credits – 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. Courts, Industrial, Prison buildings and all Other building types: one credit – Cells and custody cells: 1.5%, 80% area – Internal association or atrium area: 3.0%, 80% area – Patient care spaces: 3.0%, 80% area – Teaching, lecture and seminar spaces: 2.0%, 80% area – All occupied spaces, unless indicated in Hea 01 Visual comfort: 2.0%, 80% area	1	0 (+1)	Potential target only	Architect & Daylight Consultant
	Fourth 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.	1	0 (+1)	Potential target only	Architect
	Fifth 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 light and lighting - Lighting of work places - Part 2: Outdoor work places. Lighting should be zoned as follows: – Auditoria: zoning of seating areas, circulation space and lectern area – Dining, restaurant, café areas: separate zoning of servery and seating/dining areas – Bar areas: separate zoning of bar and seating areas – Areas used for teaching, seminar or lecture purposes have lighting controls provided in accordance with CIBSE Lighting Guide 5	1	1		MEP
	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.	2	0	Daylight credit: Credit not currently targeted Artificial light credit: Credit not currently targeted	Architect & Daylight Consultant

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	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.				
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.	-	-		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. 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 CO_2 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.	1	1		Architect & MEP

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	– In naturally ventilated spaces, the sensors either have the ability to alert the building owner/manager when CO_2 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				
	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 (+1)	Second credit: Credit targeted Third credit: Potential credit only	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/ m^3over 8 hours. In accordance with ISO 16000-5 and ISO 16000-6 or ISO 16017-1 Formaldehyde Does not exceed 100 µg/ m^3 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	1	1		
	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.	1	0		

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	– 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.				
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		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		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		MEP
Hea 05 Acoustic performance	BUILDINGS EXCEPT MULTI-RESIDENTIAL Three credits: Up to three credits can be awarded where the following criteria is met: The building meets the appropriate acoustic performance standards and testing requirements defined in the checklists and tables section which defines criteria for the acoustic principles of: – Sound insulation – Indoor ambient noise level – Reverberation times.	3	3	Sound Insulation: Credit targeted. Indoor Ambient Noise Levels: Credit targeted. Reverberation Times: Credit targeted.	Acoustician & Architect
Hea 06 Security	One credit - Security of site and building:	1	1		Architect

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	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.				
	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	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.
	– There is a dedicated parking or waiting area for goods vehicles with appropriate separation from the manoeuvring area and staff and visitor car parking.
	– Parking and turning areas are designed for simple manoeuvring according to the type of delivery vehicle likely to access the site, thus avoiding the need for repeated shunting.
	
	Second credit - Outside space
	There is an outside space providing building users with an external amenity area.
	
	The space must be of an appropriate size to provide enough amenity for the predicted number of building users during coffee or lunch breaks to gather, socialise, relax and connect with the natural environment. The space is predominantly intended for building staff, but can be used by other building users where relevant and beneficial to the building users.
	The outside space must:
	– Be an outdoor landscaped area, for example a garden, balcony or terrace; the majority of the space should be open to the sky
	– Have appropriate seating areas and be non-smoking,
	– Be located to ensure it is accessible to all building users and avoids areas that will have disturbances from sources of noise (e.g. building services, car parks, busy roads, delivery areas etc.).
		1	1	Second credit:
				Credit not applicable to assessment type
					Architect

Energy					
Ene 01 (M_e) (M_o) Reduction of carbon emissions Mandatory:	Up to nine credits: Where evidence provided demonstrates an improvement in the energy efficiency of the building's fabric and services and therefore achieves lower building operational related CO_2 emissions. The number of credits achieved is determined by comparing the Energy Performance Ratio for New Construction (EPR_{NC}) with the benchmarks in the table below.	9	4 (+2)	Nine credits applicable to assessment type Six credits targeted One additional potential credit	MEP / Sustainability

<table>
<tr><th>Issue</th><th>Credit Requirements</th><th>Credits
Available</th><th>Credits
Targeted (Potential)</th><th>Comments / Actions</th><th>Responsible Team Member</th></tr>
<tr><td>– Four credits for Excellent
– Six credits (energy performance) and 4 credits (energy modelling and reporting) for Outstanding</td><td>
<table>
<tr><th colspan="2"></th><th colspan="2">Minimum Standards</th></tr>
<tr><th>BREEAM credits</th><th>EPR_{NC}</th><th>Rating</th><th>Minimum Requirements</th></tr>
<tr><td>1</td><td>0.1</td><td rowspan="3">-</td><td rowspan="3">Requires a performance improvement progressively better than the relevant national building regulations compliant standard</td></tr>
<tr><td>2</td><td>0.2</td></tr>
<tr><td>3</td><td>0.3</td></tr>
<tr><td>4</td><td>0.4</td><td rowspan="2">Excellent</td><td rowspan="2">Requires 4 credits to be achieved (equivalent to an EPR_{NC} of at least 0.4).</td></tr>
<tr><td>5</td><td>0.5</td></tr>
<tr><td>6</td><td>0.6</td><td rowspan="4">Outstanding</td><td rowspan="4">Requires 6 credits to be achieved (equivalent to an EPR_{NC} of at least 0.6) and 4 credits for Energy modelling and reporting.</td></tr>
<tr><td>7</td><td>0.7</td></tr>
<tr><td>8</td><td>0.8</td></tr>
<tr><td>9</td><td>0.9</td></tr>
</table>
</td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>Four credits - Prediction of operational energy consumption
Pre-requisite
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.</td><td>4</td><td>4</td><td></td><td>MEP / Sustainability</td></tr>
<tr><td></td><td>Exemplary level criteria
Up to two credits - Beyond zero net regulated carbon
The building achieves an EPR NC ≥ 0.9 and zero net regulated CO_2 emissions.

Energy generation from on-site and near-site LZC sources is sufficient to offset carbon emissions from regulated energy use plus a percentage of emissions from unregulated energy use. Credits are achieved based on the percentage of additional emissions from unregulated energy that are offset by LZC 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 LZC sources
<table>
<tr><th>Exemplary performance credits</th><th>Equivalent % criteria</th></tr>
<tr><td>1</td><td>10%</td></tr>
</table>
</td><td>3</td><td>0</td><td>Beyond Zero Regulated Carbon:
Credits not applicable to assessment type

Carbon Negative:
Three credits applicable to assessment type
Credits not currently targeted</td><td>MEP / Sustainability</td></tr>
</table>

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	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.	0	0	Credits not applicable to assessment type	MEP / Sustainability
Ene 02 (M), (M_e), (M_o) Energy monitoring Mandatory: One credit for Very Good and above.	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 > 1000m^2 are metered using an appropriate energy monitoring and management system and systems in smaller buildings are metered either with an energy monitoring and 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).	1	1		MEP
	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		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		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 (+1)		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		MEP / Sustainability

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	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	0 (+1)		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). 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 (CO_2 eq.) over the course of its operational life.	0	0	First credit: Credit not applicable to assessment type Second credit: Credit not applicable to assessment type	MEP
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		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	MEP
Ene 07	One credit - Design specification	0	0	Design specification credit: Credit not applicable to assessment type	MEP

<table>
<tr><th rowspan="2">Issue</th><th rowspan="2">Credit Requirements</th><th colspan="2">Credits</th><th rowspan="2">Comments / Actions</th><th rowspan="2">Responsible Team Member</th></tr>
<tr><th>Available</th><th>Targeted (Potential)</th></tr>
<tr><td>Energy efficient laboratory systems</td><td>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 m^3/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.</td><td></td><td></td><td>Best practice measures credits:
Credit not applicable to assessment type</td><td></td></tr>
<tr><td>Ene 08
Energy efficient equipment</td><td>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><tr><td>B</td><td>Laundry facilities with commercial-sized appliances</td><td>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.</td></tr></table></td><td>2</td><td>2</td><td>Two credits applicable to assessment type
Two credits targeted</td><td>MEP</td></tr>
</table>

Issue	Credit Requirements			Credits Available	Credits Targeted (Potential)	Comments / Actions	Responsible Team Member
	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) 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.			2	2		Transport Consultant & Architect

<table>
<tr><th rowspan="2">Issue</th><th rowspan="2">Credit Requirements</th><th colspan="2">Credits</th><th rowspan="2">Comments / Actions</th><th rowspan="2">Responsible Team Member</th></tr>
<tr><th>Available</th><th>Targeted (Potential)</th></tr>
<tr><td></td><td>– 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.</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Tra 02
Sustainable transport measures</td><td>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
AI < 25</th><th>Points
25 ≤ AI < 40 (urban centres)</th><th>Points
AI of ≥ 40 (metropolitan centre locations)</th><th>Credits</th></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>
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<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>
Sustainability Transport Measures:
<table>
<tr><th>Public transport measures</th><th>Points</th></tr>
<tr><td colspan="2">Public transport measures</td></tr>
<tr><td>– 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</td><td>1</td></tr>
<tr><td>– 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;</td><td>2</td></tr>
<tr><td>– 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.</td><td>3</td></tr>
<tr><td>– Provide a dedicated service, such as a bus route or service</td><td>3</td></tr>
<tr><td>– 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.</td><td>1</td></tr>
</table></td><td>10</td><td>5
(+2)</td><td>Ten credits applicable to assessment type
Four credits targeted
Two additional potential credits</td><td>Transport Consultant & Architect</td></tr>
</table>

Issue	Credit Requirements	Credits Available	Credits Targeted (Potential)	Comments / Actions	Responsible Team Member
	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: – At least three existing accessible amenities are present, see Table 7.6 on page 179, where relevant for a Building Group. — 1				
	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), (M_e), (M_o) Water consumption	Up to five credits: Where evidence provided demonstrates that water consumption has been reduced to the following levels compared against the baseline building model:	6	3 (+1)	Five credits applicable to assessment type Three credits targeted One additional potential credit	MEP & Architect

<table>
<tr><th rowspan="2">Issue</th><th rowspan="2">Credit Requirements</th><th colspan="2">Credits</th><th rowspan="2">Comments / Actions</th><th rowspan="2">Responsible Team Member</th></tr>
<tr><th>Available</th><th>Targeted (Potential)</th></tr>
<tr><td>Mandatory:
– One credit for Good and above.
– Two credits for Outstanding.</td><td><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></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Wat 02 (M), (M_e), (M_o)
Water monitoring

Mandatory:
Criterion 1 only for Good and above.</td><td>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.</td><td>1</td><td>1</td><td></td><td>MEP</td></tr>
<tr><td rowspan="2">Wat 03
Water leak detection</td><td>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.</td><td>1</td><td>1</td><td></td><td>MEP</td></tr>
<tr><td>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)</td><td>1</td><td>1</td><td>Potential target only</td><td>MEP</td></tr>
<tr><td>Wat 04
Water efficient equipment</td><td>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)</td><td>0</td><td></td><td>Credit not applicable to assessment type</td><td>Landscape Architect</td></tr>
</table>

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	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.				
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 prior to planning submission. – 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	5 (+1)	Seven credits applicable to assessment type Five credits targeted One additional potential credit	Architect / Structural Engineer / Civil Engineer / QS
	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	1		Architect
Mat 03 (M), (M_e), (M_o) 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		Architect & Contractor
	Up to three credits: Where evidence provided demonstrates the available responsible sourcing of materials (RSM) can be awarded where the applicable building materials are responsibility sourced in accordance with the BREEAM methodology.	3	2	Three credits applicable to assessment type Two credits targeted	Architect

<table>
<tr><th rowspan="2">Issue</th><th rowspan="2">Credit Requirements</th><th colspan="2">Credits</th><th rowspan="2">Comments / Actions</th><th rowspan="2">Responsible Team Member</th></tr>
<tr><th>Available</th><th>Targeted (Potential)</th></tr>
<tr><td></td><td>
<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 rowspan="2">As above, plus
– Internal finishes
– Substructure and hard landscaping</td></tr>
<tr><td>3</td><td>≥ 30%</td></tr>
</table>
</td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>Exemplary credit:
Where evidence provided demonstrates that at least 50% of the available RSM points are achieved. Scope also includes core building services.</td><td>1</td><td>0</td><td>Credit not currently targeted</td><td>Architect</td></tr>
<tr><td>Mat 05
Designing for durability and resilience</td><td>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.</td><td>1</td><td>1</td><td></td><td>Architect</td></tr>
<tr><td>Mat 06
Material efficiency</td><td>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</td><td>1</td><td>1</td><td></td><td>Architect</td></tr>
</table>

<table>
<tr><th rowspan="2">Issue</th><th rowspan="2">Credit Requirements</th><th colspan="2">Credits</th><th rowspan="2">Comments / Actions</th><th rowspan="2">Responsible Team Member</th></tr>
<tr><th>Available</th><th>Targeted (Potential)</th></tr>
<tr><td></td><td>– Technical design
– Construction</td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="6">Waste</td></tr>
<tr><td>Wst 01 (M_o)
Construction waste management
⚠
Mandatory:
One credit for Outstanding</td><td>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
– 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 rowspan="2">BREEAM Credits</th><th colspan="2">Amount of waste generated per 100m² (gross internal floor area)</th></tr><tr><th>m^3</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></td><td>4</td><td>3</td><td>Pre-demolition audit:
Credit not applicable to assessment type as there is no demolition required

Construction resource efficiency:
Credits targeted

Exemplary credit:
Credit not currently targeted</td><td>Contractor</td></tr>
<tr><td></td><td>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></table></td><td>1</td><td>1</td><td></td><td>Contractor</td></tr>
</table>

<table>
<tr><th>Issue</th><th>Credit Requirements</th><th colspan="2">Credits</th><th>Comments / Actions</th><th>Responsible Team Member</th></tr>
<tr><th></th><th></th><th>Available</th><th>Targeted (Potential)</th><th></th><th></th></tr>
<tr><td></td><td>
<table>
<tr><td>Exemplary level</td><td>Non-demolition</td><td>85%</td><td>90%</td></tr>
<tr><td></td><td>Demolition</td><td>85%</td><td>95%</td></tr>
<tr><td></td><td>Excavation</td><td>95%</td><td>95%</td></tr>
</table>
</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Wst 02
Use of recycled and sustainably sourced aggregates</td><td>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.

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</td><td>1</td><td>0
(+1)</td><td>Potential target only</td><td>Civil / Structural Engineer</td></tr>
<tr><td></td><td>Exemplary level criteria:
As above</td><td>1</td><td>0</td><td>Credit not currently targeted</td><td>Civil / Structural Engineer</td></tr>
<tr><td>Wst 03 (M_e) (M_o)
Operational waste
⚠
Mandatory:
– One credit for Excellent and above</td><td>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.</td><td>1</td><td>1</td><td></td><td>Architect</td></tr>
</table>

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	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.				
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	
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	1		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	1		Architect & Structural Engineer

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
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		Architect & Structural Engineer
	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	0 (+1)	Potential target only	Architect & Structural Engineer
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		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	1		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. **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** – 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:	2	2	Survey and evaluation: Credit targeted Determining ecological outcomes: Credit not currently targeted	Ecologist

	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

<table>
<tr><th rowspan="2">Issue</th><th rowspan="2">Credit Requirements</th><th colspan="2">Credits</th><th rowspan="2">Comments / Actions</th><th rowspan="2">Responsible Team Member</th></tr>
<tr><th>Available</th><th>Targeted (Potential)</th></tr>
<tr><td></td><td>– 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.</td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>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.</td><td>1</td><td>0</td><td>Credit not currently targeted</td><td></td></tr>
<tr><td>LE 03
Managing negative impacts on ecology</td><td>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><th></th><th>Project team member route (Route 1)</th><th>Ecologist Route (Route 2)</th></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.
– The project team liaising and collaborating with representative stakeholders, taking into consideration data collated and shared, have implemented solutions, and measures have been selected</td><td>3</td><td>2
(+1)</td><td>Planning, liaison and implementation:
Potential target only

Managing negative impacts:</td><td>Ecologist</td></tr>
</table>

<table>
<tr><th rowspan="2">Issue</th><th rowspan="2">Credit Requirements</th><th colspan="2">Credits</th><th rowspan="2">Comments / Actions</th><th rowspan="2">Responsible Team Member</th></tr>
<tr><th>Available</th><th>Targeted (Potential)</th></tr>
<tr><td></td><td>Up to two credits – Managing negative impacts of the project
Route 1 (one credit)
Negative impacts from site preparation and construction works have been managed according to the hierarchy and no net impact has resulted.

Route 2 (up to two credits)
Negative impacts from site preparation and construction works have been managed according to the hierarchy:

For sites where complex ecological systems are likely to be present) and either:
– No overall loss of ecological value has occurred (2 credits) OR,

– The loss of ecological value has been limited as far as possible (1 credit)</td><td></td><td></td><td></td><td></td></tr>
<tr><td>LE 04
Change and enhancement of ecological value</td><td>Pre-requisite - Identifying and understanding the risks and opportunities for the project
– LE 03 has been achieved. Including the following, specific to the 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.

– The client or contractor confirms compliance is monitored against all relevant UK, EU or international legislation relating to the ecology of the site.

<table><tr><th></th><th>Project team member route (Route 1)</th><th>Ecologist route (Route 2)</th></tr><tr><td>Liaison, implementation and data</td><td>N/A</td><td>1 credit</td></tr><tr><td>Enhancement of ecology</td><td>1 credit</td><td>up to 3 credits</td></tr></table>
Route 1
One credit - Enhancement of ecology
– The project team liaising and collaborating with representative stakeholders, taking into consideration data collated and shared, have implemented solutions and measures based on recommendations from recognised ‘local’ ecological expertise, specialist input and guidance to inform the adoption of locally relevant ecological solutions and measures which enhance the site.
– Data collated is provided to the local environmental records centres nearest to, or relevant for, the site.

Route 2
One credit - Liaison, implementation and data collation
– The project team liaising and collaborating with representative stakeholders, taking into consideration data collated and shared, have implemented the solutions and measures selected in a way that enhances ecological value in the following order:
– On site, and where this is not feasible,
– Off site within the zone of influence.

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,</td><td>4</td><td>2
(+1)</td><td>Route 1 - Enhancement of ecology:
Credit not applicable to assessment type

Route 2 - Liaison, implementation and data collection:
Route 2 - Enhancement of ecology:
Three credits applicable to assessment type
Credits not currently targeted</td><td>Ecologist & Contractor</td></tr>
</table>

<table>
<tr><th>Issue</th><th>Credit Requirements</th><th colspan="2">Credits</th><th>Comments / Actions</th><th>Responsible Team Member</th></tr>
<tr><th></th><th></th><th>Available</th><th>Targeted (Potential)</th><th></th><th></th></tr>
<tr><td></td><td>CEEQUAL, HQM Ecology Assessment Issues – Route 1 or GN 36 - BREEAM, CEEQUAL, HQM Ecology Assessment Issues</td><td></td><td></td><td></td><td></td></tr>
<tr><td>LE 05
Long term ecology management and maintenance</td><td>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><th></th><th>Project team member route (Route 1)</th><th>Ecologist route (Route 2)</th></tr><tr><td>Liaison, monitoring implementation and evolving management and maintenance solutions</td><td rowspan="2">1 credit</td><td>1 credit</td></tr><tr><td>Landscape and habitat management plan</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.

One credit - Landscape and ecology management plan (or similar) development</td><td>2</td><td>1</td><td>Planning, liaison, data, monitoring and review:

Landscape and ecology management plan:
Credit not currently targeted</td><td>Ecologist & Contractor</td></tr>
</table>

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	– 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 CO_2 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 CO_2 equivalent emissions of (DELC CO_{2e}) of ≤1000 $kgCO_{2e}$/kW cooling/heating capacity.	3	1 (+1)	No refrigerant use credits: Three credits applicable to assessment type DELC credit(s):	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	1	Credit targeted	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 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.	2	2		MEP

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	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.				
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		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: 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	2	1 (+1)	First credit: Credit targeted Second credit: Potential target only	Drainage Consultant

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

	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	1		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		MEP
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	1	1		Acoustician

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	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 must be at least 5dB lower than background noise levels during day and night.				
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 – 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 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	2	The following exemplary level credits have included in the BREEAM target strategy: MAN03-06 Considerate Construction WST05 Responding to Climate Change The following exemplary level credits have included in the BREEAM potential strategy: MAN03-06 Considerate Construction WST05 Responding to Climate Change	Contractor & Architect

7. Appendix C: Credit Weightings BREEAM V6

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%	23	0.7%
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%	9	0.67%
Land Use and Ecology	13.0%	19.0%	15.0%	13	1%
Pollution	8.0%	6.0%	9.0%	12	0.67%
Innovation	10.0%	10.0%	10.0%	10	1.00%

Table D1: BREEAM Credit Weightings

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