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BREEAM UK New Construction 2018 Pre-Assessment Estimator Report Rev0

Al-Sunnah Mosque,
Winterford Road,
Cheetham Hill,
Manchester

18 December 2023



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- Appendix A** RIBA and BREEAM Timeline
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1. Introduction

This BREEAM UK New Construction (NC) 2018 Pre-Assessment Estimator (PAE) report has been prepared to support the planning application for the proposed redevelopment of Al-Sunnah Mosque, Winterford Road, Manchester.

The existing site is currently occupied by the current Mosque along with associated hard and soft landscaped areas.

Proposals are for the demolition of the existing Mosque, and the construction of a new Mosque.

Manchester City Council

Policy DM 1 Development Management

For new commercial developments to demonstrate best practice which will include the application of the BREEAM (Building Research Establishment Environmental Assessment Method) standards. By 2019 provisions similar to the Code for Sustainable Homes will also apply to all new non-domestic buildings.

Guide to Development in Manchester

An Environmental Standards Statement should be submitted with your application, which addresses sustainability ratings and the provision of renewable energy within the development. This should include a BREEAM pre-assessment rating through the submission of a pre-estimator report which should demonstrate that a rating level of at least **Very Good** would be achieved.

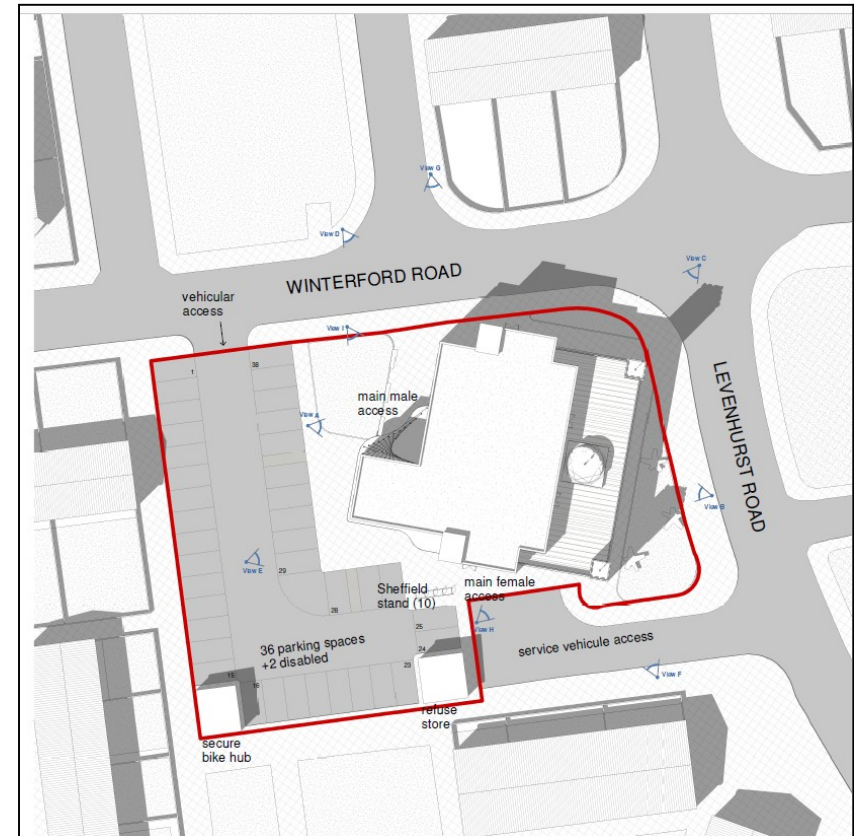


Figure 1 - Proposed Site Layout



2. BREEAM UK New Construction 2018 - Overview

BREEAM is a performance based assessment method and certification scheme for new non residential buildings. The main aim of BREEAM is to mitigate the life cycle impacts of new buildings on the environment in a robust and cost-effective manner.

The BREEAM UK NC scheme can be used to assess the environmental life cycle impacts of new non-domestic buildings at the design and construction stages.

Under BREEAM NC there are nine categories of sustainable design, within which are a number of sub-categories. Credits are awarded where evidence can be provided to demonstrate compliance with the criteria in the sub-categories. There are also additional credits available for innovation where, the building goes beyond best practice in terms of a particular aspect of sustainability.

The credits are then converted into a percentage 'points' total and this determines the BREEAM rating achieved.

As previously detailed, Manchester Council require a BREEAM 'Very Good' rating, for which a minimum of 55% must be achieved.

Minimum Standards

There are certain sub-categories within the BREEAM UK NC where minimum standards must be met. These are dependent upon the rating of BREEAM to be achieved, and include:

- Reduction of Energy Use
- Energy Monitoring
- Responsible Sourcing of Materials
- Water Consumption
- Water Monitoring



Optional Elements

There are certain optional elements of the assessment where the required evidence includes supporting reports and calculations. It is worth bearing in mind that if the credits in these categories are needed to increase the overall point's total, additional consultant fees may be required.

RIBA Stages

It is important to note that within certain categories, BREEAM stipulates the RIBA stage by which the criteria should be addressed. This needs to be reflected in the evidence. For reference, a copy of the BREEAM and RIBA timeline is provided in **Appendix A**.

Scope of BREEAM UK New Construction 2018

Assessment Types

Under BREEAM UK NC 2018, the assessment can be carried out as follows:

- Shell only
- Shell and core
- Fully fitted

In general, if a building is assessed under BREEAM UK NC as 'shell' or 'shell and core', the BREEAM certificate will reflect this.

To bring the building to 'fully fitted' standard (and to subsequently achieve 'full' BREEAM certification), a BREEAM Refurbishment and Fit-Out assessment is needed.

In this instance the PAE is based on a 'fully fitted' assessment.

3. BREEAM Pre-Assessment Report

A BREEAM Pre-Assessment Report is provided in **Appendix B**.

By carrying out a PAE at an early stage, BREEAM can be given the earliest possible consideration by the Design Team. As such, many of the 'early RIBA Stage' credits can be given priority, as well as giving the Design Team the time to factor in the credits which will provide real benefits to the building and building users.

Currently, based on the proposals, and on our experience of what credits may be feasibly achieved for a site and proposals of this nature, the score is shown as 59.35%.

This Pre-Assessment is an early guide in the BREEAM assessment process and is based on a number of assumptions. A more detailed PAE (or Initial Feasibility Assessment) should be prepared as early on the Design Process as possible in order to take into account comments from the team and to refine the BREEAM strategy.

BREEAM Rating			
	Credits available	Credits targeted	Target score
Man	21.0	14.0	7.33%
Hea	17.0	11.0	9.05%
Ene	23.0	10.0	6.95%
Tra	12.0	5.0	4.16%
Wat	9.0	8.0	6.22%
Mat	14.0	4.0	4.28%
Wst	9.0	5.0	3.33%
LE	13.0	12.0	12.00%
Pol	12.0	9.0	6.00%
Inn	10.0	0.0	0.00%
Total	140.0	78.0	59.35%
Rating	-	-	Very Good

Figure 1 – Potential BREEAM Rating



Appendices



BREEAM UK New Construction 2018 scheme assessment timeline

The assessment timeline tables included in the summary page of each category in the UK New Construction 2018 scheme manual have been reproduced in this Guidance Note. The timeline has been produced to assist with optimising project sustainability performance. It outlines at which stage credits should be addressed and ideally when these should be considered by the design team, planner, contractors, owners, occupiers and other members of the project team to achieve the highest possible BREEAM rating at the minimum cost. It demonstrates that where BREEAM advice is taken on too late within the design and construction phases a number of BREEAM credits may not be achieved or only at additional cost or disruption.

			Plan of Work						
Sub credits			Strategic Definition	Preparation and Brief	Concept Design	Developed Design	Technical Design	Construction	Handover and Close Out
Management									
Man 01	Project brief and design	Project delivery planning							
		Stakeholder consultation							
		BREEAM Advisory Professional			Maximise project performance	Maximise project performance			
Man 02	Life cycle cost and service life planning	Life cycle cost			Elemental LCC		Component level LCC options appraisal		
		Capital cost reporting							
Man 03	Responsible construction practices	Environmental management							
		BREEAM Advisory Professional							
		Responsible construction management							
		Monitoring of construction site impacts							

	Design/management influence
	Design/client decision
	Design/management changes at a high cost
	No further changes can be made
	RIBA stage stipulated within BREEAM criteria

Man 04	Commissioning and handover	Commissioning - testing schedule and responsibilities							
		Handover							
Man 05	Aftercare								
Health and Wellbeing									
Hea 01	Visual comfort								
Hea 02	Indoor air quality				Indoor air quality plan				
Hea 04	Thermal comfort								
Hea 05	Acoustic performance				Acoustician appointment				
Hea 06	Security								
Hea 07	Safe and healthy surroundings								
Energy									
Ene 01	Reduction of energy use and carbon emissions								
Ene 02	Energy monitoring								
Ene 03	External lighting								
Ene 04	Low carbon design	Passive design			Passive design analysis				
		Low and zero carbon technologies			Feasibility study				
Ene 05	Energy efficient cold storage	Refrigeration energy consumption			Strategy for design and installation				
Ene 06	Energy efficient transportation systems								

	Design/management influence
	Design/client decision
	Design/management changes at a high cost
	No further changes can be made
	RIBA stage stipulated within BREEAM criteria

Ene 07	Energy efficient laboratory systems	Design specification			Client engagement				
Ene 08	Energy efficient equipment								
Transport									
Tra 01	Transport assessment and travel plan			Travel plan					
Tra 02	Sustainable transport measures			Consultation with local authority (option 6 only)					
Water									
Wat 01	Water consumption								
Wat 02	Water monitoring								
Wat 03	Water leak detection								
Wat 04	Water efficient equipment								
Materials									
Mat 01	Environmental impacts from construction products - Building life cycle assessment				Building LCA submission		Building LCA submission		
Mat 02	Environmental impacts from construction products							Installation of certified products	
Mat 03	Responsible sourcing of materials	Sustainable procurement plan		Sustainable procurement plan	Review sustainable procurement plan	Review sustainable procurement plan			
Mat 05	Designing for durability and resilience								
Mat 06	Material efficiency			Stage actions	Stage actions	Stage actions	Stage actions	Stage actions	

	Design/management influence
	Design/client decision
	Design/management changes at a high cost
	No further changes can be made
	RIBA stage stipulated within BREEAM criteria

Waste									
Wst 01	Construction waste management				Pre-demolition audit				
Wst 02	Use of recycled and sustainably sourced aggregates								
Wst 03	Operational waste								
Wst 04	Speculative finishes								
Wst 05	Adaptation to climate change				Climate adaptation strategy appraisal		Update on climate adaptation strategy appraisal		
Wst 06	Design for disassembly and adaptability	Design for disassembly and functional adaptability			Disassembly and functional adaptation study				
		Disassembly and functional adaptability – implementation							
Land Use and Ecology									
LE 01	Site selection	Previously occupied land							
		Contaminated land							
LE 02	Identifying and understanding the risks and opportunities for the site	Survey and evaluation							
		Determining the site wide outcomes							
LE 03	Managing negative impacts on ecology								
LE 04	Enhancing site ecology								
LE 05	Long term ecology management and maintenance								

	Design/management influence
	Design/client decision
	Design/management changes at a high cost
	No further changes can be made
	RIBA stage stipulated within BREEAM criteria

Pollution									
Pol 01	Impact of refrigerants								
Pol 02	Local air quality								
Pol 03	Flood and surface water management								
Pol 04	Reduction of night time light pollution								
Pol 05	Reduction of noise pollution								

	Design/management influence
	Design/client decision
	Design/management changes at a high cost
	No further changes can be made
	RIBA stage stipulated within BREEAM criteria



 BASEENERGY	Credits Targeted	Criteria Overview - see BREEAM Technical Manual for full details	Design Stage	Comments / Roles and Responsibilities
			Evidence Requirements	
			Outstanding	
			Incomplete	
Complete				
Management				
MAN 01 Project Design and Brief				
Project Delivery Planning	1	1 Prior to completion of the Concept Design, the project delivery stakeholders meet to identify and define for each key phase of project delivery: 1.a Roles; 1.b Responsibilities 1.c Contributions. 2 Consider each one of the following items when defining roles, responsibilities and contributions for each key phase of the project: 2.a End user requirements; 2.b Aims of the design and design strategy; 2.c Particular installation and construction requirements or limitations 2.d Occupiers' budget and technical expertise in maintaining any proposed systems; 2.e Maintainability and adaptability of the proposals 2.f Operational energy; 2.g Requirements for the production of project and end user documentation 2.h Requirements for commissioning, training and aftercare support. Where the building occupants are not known, the list of considerations above still applies. The appropriate project delivery stakeholder considers each item, based on likely scenarios of building occupancy. 3 The project team demonstrates how the project delivery stakeholders' contributions and the consultation process outcomes influence the following: 3.a Initial Project Brief; 3.b Project Execution Plan; 3.c Communication Strategy; 3.d Concept Design.	– Meetings minutes, communication records, formal notes of conversations and other statements reporting on discussions related to performance targets and maximising performance – Risks and opportunities documentation.	Design Team to provide evidence ensuring that all criteria has been covered
Stakeholder consultation (interested parties)	1	4 Prior to completion of the Concept Design, the design team consult with all interested parties on matters that cover the minimum consultation content 5 Demonstrate how the stakeholder contributions and consultation exercise outcomes influence the Initial Project Brief and Concept Design. 6 Prior to completion of the detailed design (RIBA Stage 4, Technical Design or equivalent), all interested parties give and receive consultation feedback. Additionally for Education, Healthcare, Law courts and Major transportation hub building types only: 7 An independent party carries out the consultation exercise. The Design Quality Indicator (DQI) and the Achieving Excellence Design Evaluation Toolkit (AEDET) could be used as methods to assess the design quality of buildings.	– Meetings minutes, communication records, formal notes of conversations and other statements reporting on discussions related to performance targets and maximising performance – Risks and opportunities documentation. – A list of the stakeholders consulted. 4.6 - Consultation plan setting out the process and scope of the consultation.	
Prerequisite for BREEAM Advisory Professional credits (Concept and Developed Design)		8 The project team, including the client, formally agree strategic performance targets early in the design process (with the support of the BREEAM AP where appointed).		Credits not sought
BREEAM AP (Concept Design)	0	9 Involve a BREEAM AP in the project at an appropriate time and level to: 9.a Work with the project team, including the client, to consider the links between BREEAM issues and assist them in maximising the project's overall performance against BREEAM, from their appointment and throughout Concept Design. 9.b Monitor progress against the performance targets agreed under criterion 8 above throughout all stages after their appointment where decisions critically impact BREEAM performance. 9.c Proactively identify risks and opportunities related to the achievement of the targets agreed under criterion 8 above 9.d Provide feedback to the project team as appropriate, to support them in taking corrective actions and achieving their agreed performance targets. 9.e Monitor and, where relevant, coordinate the generation of appropriate evidence by the project team.		
BREEAM AP (Developed Design)	0	10 Criteria 8 and 9 above are achieved. 11 Involve the BREEAM AP in the project at an appropriate time and level to: 11.a Work with the project team, including the client, to consider the links between BREEAM issues and to assist them in maximising the project's overall performance against BREEAM throughout Developed Design. 11.b Monitor progress against the performance targets agreed under criterion 8 above throughout all stages where decisions critically impact the specification and tendering process and the BREEAM performance. 11.c Proactively identify risks and opportunities related to the achievement of the targets agreed under criterion 8 above 11.d Provide feedback to the project team as appropriate, to support them in taking corrective actions and achieving their agreed performance targets. 11.e Monitor and, where relevant, coordinate the generation of appropriate evidence by the project team.		
MAN 02 Life Cycle Cost and Service Life Planning				

Elemental life cycle cost (LCC)	0	1 A competent person carries out an outline, entire asset LCC plan at Process Stage 2 (equivalent to Concept Design - RIBA Stage 2) together with any design options appraisals in line with 'Standardised method of life cycle costing for construction procurement' PD 156865: 2008(6). 2 The elemental LCC plan: 2.a Provides an indication of future replacement costs over a period of analysis as required by the client (e.g. 20, 30, 50 or 60 years); 2.b Includes service life, maintenance and operation cost estimates. The study period should ideally be agreed by the client, in line with the design life expectancy of the building. However, where the life expectancy of the building is not yet formally agreed (due to being at very early design stages), the default design life of 60 years should be used for modelling purposes (in line with the UK default). 3 Demonstrate, using appropriate examples provided by the design team, how the elemental LCC plan has been used to influence building and systems design and specification to minimise life cycle costs and maximise critical value.	Elemental LCC plan.	Credits not sought
Component level LCC options appraisal	0	4 A competent person develops a component level LCC options appraisal by the end of Process Stage 4 (equivalent to Technical Design – RIBA Stage 4) in line with PD 156865: 2008. The component level LCC includes (where present): 4.a Envelope, e.g. cladding, windows, or roofing 4.b Services, e.g. heat source, cooling source, or controls 4.c Finishes, e.g. walls, floors or ceilings 4.d External spaces, e.g. alternative hard landscaping, boundary protection. The Component level LCC option appraisal should review all of the above component types (where present). However, you do not need to consider every single example cited under each component; only a selection of those most likely to draw valued comparisons. This is to ensure that a wide range of options are considered and help focus the analysis on components which would benefit the most from appraisal. 5 Demonstrate, using appropriate examples provided by the design team, how the component level LCC options appraisal has been used to influence building and systems design and specification to minimise life cycle costs and maximise critical value.	Component level LCC options appraisal plan.	
Capital cost reporting	1	6 Report the capital cost for the building in pounds per square metre of gross internal floor area (£/m²) as part of the submission to BRE.	Predicted capital costs	The capital cost for the building includes the expenses related to the initial construction of the building: – Construction, including preparatory works, materials, equipment and labour – Site management – Construction financing – Insurance and taxes during construction – Inspection and testing Costs related to land procurement, clearance, design, statutory approvals and post occupancy aftercare are not included.
MAN 03 Responsible Construction Practices				
Prerequisite - Legally harvested and traded timber		1. All timber and timber-based products used during the construction process of the project are legally harvested and traded timber	Letter of Commitment	Main Contractor
Environmental management	1	All parties who at any stage manage the construction site (e.g. the principal contractor, the demolition contractor) operate an EMS covering their main operations. The EMS must: 3.a Be third party certified, to ISO 14001: 2015[10], EMAS (EU Eco-Management and Audit Scheme) or equivalent standard; OR 3.b In compliance with BS 8555: 2016[11] have: 3.b.i Appropriate structure 3.b.ii Reached implementation stage phase four 'implementation and operation of the environmental management system' 3.b.iii Completed defined phase audits one to four 4 All parties who at any point manage the construction site (e.g. the principal contractor, the demolition contractor) implement best practice pollution prevention policies and procedures on site in accordance with Working at construction and demolition sites: PPG6, Pollution Prevention Guidelines	Copy of ISO14001	
Prerequisite for BREEAM Advisory Professional credit		5 The client and the contractor formally agree performance targets.	Letter of Commitment	Credits not sought
BREEAM AP (site)	0	6 Involve a BREEAM AP in the project at an appropriate time and level to: 6.a Work with the project team, including the client, to consider the links between BREEAM issues and assist them in achieving and, if possible going beyond the design intent, to maximise the project's performance against the agreed performance targets throughout the Construction, Handover and Close Out stages. 6.b Monitor construction progress against the performance targets agreed under criterion above throughout all stages where decisions critically impact BREEAM performance. 6.c Proactively identify risks and opportunities related to the procurement and construction process and the achievement of the targets agreed under criterion 5 above 6.d Provide feedback to the constructors and the project team as appropriate, to support them in taking corrective actions and achieving their agreed performance targets. 6.e Monitor and, where relevant, coordinate the generation of appropriate evidence by the project team and the provision to the assessor.		

Responsible construction management	2	7.8.9 - See table on next tab	- Company's policy and procedure documents (including environmental management, pollution prevention, security) - Construction logistics plan - Responsibility matrix - Training records - Photographic evidence - Records of communication with the neighbouring community (e.g. letters, newsletters and campaigns) - Contracts or formal agreements - Reporting documents and logs - Reporting procedures - Records of improvements and of no complaints - Lessons learned	Main Contractor - see Man 03 Tab
Prerequisite - Monitoring of construction site impacts		10 Assign responsibility to an individual for monitoring, recording and reporting energy use, water consumption and transportation data (where measured) resulting from all on-site construction processes (and dedicated off-site manufacturing) throughout the build programme. To ensure the robust collection of information, this individual must have the appropriate authority and responsibility to request and access the data required. Where appointed, the BREEAM AP could perform this role.	Letter of Commitment	Main Contractor
Monitoring of construction site impacts Utility Consumption	1	Energy consumption 11 Achieve criterion 10. 12 Set targets for the site energy consumption in kWh (and where relevant, litres of fuel used) as a result of the use of construction plant, equipment (mobile and fixed) and site accommodation. 13 Monitor and record data for the energy consumption described in criterion 12. 14 Report the total carbon dioxide emissions (total kgCO ₂ /project value) from the construction process via BREEAM Projects (for the purposes of potential future BREEAM performance benchmarking). Water consumption 15 Achieve criterion 10. 16 Set targets for the potable water consumption (m ³) arising from the use of construction plant, equipment (mobile and fixed) and site accommodation. 17 Monitor and record data for the potable water consumption described in criterion 16. 18 Use the collated data to report the total net water consumption (m ³), i.e. consumption minus any recycled water use from the construction process via BREEAM Projects (for the purposes of potential future BREEAM performance benchmarking).	Letter of Commitment	Main Contractor Tools for monitoring and targeting construction site impacts BRE's online environmental reporting tool, SMARTWaste, enables users to capture, monitor and target a project's on-site energy consumption and produce a CO ₂ footprint, water consumption and responsible sourcing of timber, transportation and CCS data can also be collected. The system can be used as a tool to help meet the criteria of this issue and as a source of evidence for demonstrating compliance. It is available through the SMARTWaste membership scheme by developing tailor-made versions of SMARTWaste. More details on the tool and membership are available at www.smartwaste.co.uk .
Monitoring of construction site impacts Transportation of construction materials and waste		19 Achieve criterion 10. 20 Set targets for transportation movements and impacts resulting from delivery of the majority of construction materials to site and construction waste from site. As a minimum cover: 20.a transportation of materials from the point of supply to the building site, including any transport, intermediate storage and point of supply. Monitor as a minimum: 20.a.i Materials used in major building elements [i.e. those defined in BREEAM issue Mat 01 Environmental Impacts from construction products - Building life cycle assessment (LCA) on page 222]. 20.a.ii Ground works and landscaping materials. 20.b transportation of construction waste from the construction gate to waste disposal processing or recovery centre gate. This monitoring must cover the construction waste groups outlined in the project's resource management plan. 21 Monitor and record data for the transportation movements as described in criterion 20 above. 22 Using the collated data, report separately for materials and waste, the total transport-related carbon dioxide emissions (kgCO ₂ -eq), plus total distance travelled (km) via BREEAM Projects (for the purposes of potential future BREEAM performance benchmarking).	Letter of Commitment	
MAN 04 Commissioning and Handover				
Commissioning - testing schedule and responsibilities	1	1 Prepare a schedule of commissioning and testing. The schedule identifies and includes a suitable timescale for commissioning and re-commissioning of all complex and non-complex building services and control systems and for testing and inspecting building fabric. 2 The schedule identifies the appropriate standards for all commissioning activities to be conducted, where applicable, in accordance with: 2.a Current Building Regulations 2.b BSRIA guidelines(16) 2.c CIBSE guidelines(17) 2.d Other appropriate standards Exclude from the assessment any process or manufacture-related equipment specified as part of the project. However, include such equipment in cases where they form an integral part of the building HVAC services, such as some heat recovery systems. 3 Where a building management system (BMS) is specified: 3.a Carry out commissioning of air and water systems when all control devices are installed, wired and functional 3.b Include physical measurements of room temperatures, off-call temperatures and other key parameters, as appropriate, in commissioning results 3.c The BMS or controls installation should be running in auto with satisfactory internal conditions prior to handover 3.d All BMS schematics and graphics (if BMS is present) are fully installed and functional to user interface prior to handover 3.e Fully train the occupier or facilities team in the operation of the system 4 Appoint an appropriate project team member to monitor and programme pre-commissioning, commissioning and testing. Where necessary include re-commissioning activities on behalf of the client. 5 The principal contractor accounts for the commissioning and testing programme, responsibilities and criteria within their budget and the main programme of works. Allow the required time to complete all commissioning and testing activities prior to handover	Schedule of commissioning and testing Letter of Commitment Main Contractors programme	Main Contractor / M&E

Commissioning - design and preparation	1	6 Achieve criteria 1 to 5. 7 During the design stage, the client or the principal contractor appoints an appropriate project team member (see criterion 4), provided they are not involved in the general installation works for the building services systems, with responsibility for: 7.a Undertaking design reviews and giving advice on suitability for ease of commissioning. 7.b Providing commissioning management input to construction programming and during installation stages. 7.c Management of commissioning, performance testing and handover or post-handover stages. For buildings with complex building services and systems, this role needs to be carried out by a specialist commissioning manager	Letter of Commitment	Main Contractor / M&E
Testing and inspecting building fabric	1	8 Achieve criteria 1 to 5. 9 Complete post-construction testing and inspection to quality-assure the integrity of the building fabric, including continuity of insulation, avoidance of thermal bridging and air leakage paths (this is through airtightness testing and a thermographic survey). A suitably qualified professional undertakes the survey and testing in accordance with the appropriate standard. 10 Rectify any defects identified during post-construction testing and inspection prior to building handover and close out. Any remedial work must meet the required performance characteristics for the building or element as defined at the design stage	Letter of Commitment Appointment letter	Thermographic Survey
Handover	1	11 Prior to handover, develop two building user guides for the following users: 11.a A non-technical user guide for distribution to the building occupiers. 11.b A technical user guide for the premises facilities managers. A draft copy is developed and discussed with users first (where the building occupants are known) to ensure the guide is most appropriate and useful to potential users. 12 Prepare two training schedules timed appropriately around handover and proposed occupation plans for the following users: 12.a A non-technical training schedule for the building occupiers. 12.b A technical training schedule for the premises facilities managers.	Letter of Commitment	- Overview of the building and its environmental strategy, e.g. energy, water or waste efficiency policy or strategy, and how users should engage with and deliver the policy or strategy. - Provision of, and access to, shared facilities. - Safety and emergency information or instructions. - Building-related operational procedures specific to building type or operation, e.g. laboratories. - Building-related incident reporting and feedback arrangements. - Provision of and access to transportation facilities, e.g. public transport, cyclist facilities, pedestrian routes etc
MAN 05 Aftercare				
Aftercare support	1	1 Provide aftercare support to the building occupiers through having in place operational infrastructure and resources. This includes as a minimum: 1.a A meeting between the aftercare support team or individual, and the building occupier or management team (prior to initial occupation, or as soon as possible thereafter) to: 1.a.i Introduce the aftercare support available, including the content of the building user guide (where it exists) and training schedule. 1.a.ii Present key information on the building including the design intent and how to use the building to ensure it operates as efficiently and effectively as possible. 1.b On-site facilities management training including: 1.b.i a walkabout of the building AND 1.b.ii introduction to and familiarisation with the building systems, their controls and how to operate them in accordance with the design intent and operational demands. 1.c Provide initial aftercare support for at least the first month of building occupation, e.g. weekly attendance on-site, to support building users and management (the level of frequency will depend on the complexity of the building and building operations). 1.d Provide longer term aftercare support for occupiers for at least the first 12 months from occupation, e.g. a helpline, nominated individual or other appropriate system to support building users and management. 2 Establish operational infrastructure and resources to coordinate the collection and monitoring of energy and water consumption data for a minimum of 12 months, once the building is substantially occupied. This facilitates analysis of discrepancies between actual and predicted performance, with a view to adjusting systems and user behaviours accordingly.	Letter of commitment	Main Contractor

Commissioning - implementation	1	3 Complete the following commissioning activities over a minimum 12-month period, once the building becomes substantially occupied: 3.a Complex systems: The specialist commissioning manager will: 3.a.i Identify changes made by the owner or operator that might have caused impaired or improved performance 3.a.ii Test all building services under full load conditions, i.e. heating equipment in mid-winter, cooling and ventilation equipment in mid-summer and under part load conditions (spring and autumn). 3.a.iii Where applicable, carry out testing during periods of extreme (high or low) occupancy. 3.a.iv Interview building occupants (where they are affected by the complex services) to identify problems or concerns regarding the effectiveness of the systems. 3.a.v Produce monthly reports comparing sub-metered energy performance to the predicted one 3.a.vi Identify inefficiencies and areas in need of improvement. 3.a.vii Re-commission systems (following any work needed to serve revised loads), and incorporate any revisions in operating procedures into the operations and maintenance (O&M) manuals. 3.b Simple systems (naturally ventilated): The external consultant, aftercare team or facilities manager will: 3.b.i Review thermal comfort, ventilation, and lighting, at three, six and nine month intervals after initial occupation, either by measurement or occupant feedback. 3.b.ii Identify deficiencies and areas in need of improvement. 3.b.iii Re-commission systems and incorporate any relevant revisions in operating procedures into the O&M manuals.	Letter of Commitment	Main Contractor
Post-occupancy evaluation (POE)	1	4 The client or building occupier commits to carry out a POE exercise (see Definitions on the next page) one year after the building is substantially occupied. This gains comprehensive in-use performance feedback (see criterion 5.b.v below) and identifies gaps between design intent and in-use performance. The aim is to highlight any improvements or interventions that need to be made and to inform operational processes. 5 An independent party carries out the POE covering: 5.a A review of the design intent and construction process (review of design, procurement, construction and handover processes). 5.b Feedback from a wide range of building users including facilities management on the design and environmental conditions of the building covering: 5.b.i Internal environmental conditions (light, noise, temperature, air quality) 5.b.ii Control, operation and maintenance 5.b.iii Facilities and amenities 5.b.iv Access and layout 5.b.v Energy and water consumption (see criterion 2 and Methodology below) 5.b.vi Other relevant issues, where appropriate (see Definitions on the next page) 6 The independent party provides a report with lessons learned to the client and building occupiers. 7 The client or building occupier commits funds to pay for the POE in advance. This requires an independent party to be appointed to carry out the POE as described in criterion 5. Evidence of the appointment of the independent party and schedule of responsibilities which fulfils the BREEM criteria are acceptable to demonstrate compliance.	Evidence that the relevant mechanism(s) and procedures are in place and there is a commitment to use them.	Highfurlong School
Sub-Total	14			
Weighted Sub-Total	7.32			

Health and Wellbeing				
HEA 01 Visual Comfort				
Control of glare from sunlight	1	1 Identify areas at risk of glare using a glare control assessment. The glare control assessment also justifies any areas deemed not at risk of glare. 2 A glare control strategy designs out potential glare in all relevant building areas where risk has been identified. This should be achieved through building form and layout or building design measures. 3 The glare control strategy does not increase energy consumption used for lighting. This is achieved by: 3.a Maximising daylight levels in all weather, cloudy or sunny AND 3.b Ensuring the use or location of shading does not conflict with the operation of lighting control systems.	Design drawings: Compliant shading measures for meeting glare control criteria can include: - building integrated measures (e.g. overhangs or fins) - occupant-controlled devices such as opaque Venetian or close-weave fabric blinds (where the openness factor of blinds is 1% or less, and where the fabric light transmittance value is < 0.1 (10%)) - external shading or brise soleil, - or a combination of the above. Glare control must provide shading from both high level summer and low level winter sun. Design studies can be used to demonstrate the sunlight is prevented from reaching the eyes of building occupants, or the computer screens they are using, during occupied hours. Curtains (where used without other forms of shading) do not meet the criteria for the glare control credit. This is because they do not provide sufficient control to optimise daylight in to the space. A such, the use of curtains to control glare is likely to cause occupants to rely more on artificial lighting.	Architect

Daylighting	0	4 Daylighting criteria have been met using either of the following options: 4.a The relevant building areas meet good practice daylight factors and other criteria as outlined in Table 5.1 and Table 5.2 of the BREEAM Manual OR 4.b The relevant building areas meet good practice average and minimum point daylight illuminance criteria as outlined in Table 5.3 of the BREEAM Manual	Daylighting calculations.	
View out (one credit all buildings, two credits healthcare buildings with inpatient areas)	0	95% of the floor area in 95% of spaces for each relevant building area provides an adequate view out (see Adequate view out on page 84). 6 In addition, the building type criteria (prosin, multi-res, healthcare with in patient) in Table 5.6 of the BREEAM manual are applicable to view out criteria.	Design Drawings	Credits not sought
Internal and external lighting levels, zoning and control	1	Internal lighting 7 Internal lighting in all relevant areas of the building is designed to provide illuminance (lux) levels and colouring rendering index in accordance with the SLL Code for Lighting 2012 (32) and any other relevant industry standard. Internal lighting should be appropriate to the tasks undertaken, accounting for building user concentration and comfort levels. 8 For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 7 (33) sections 2.4, 2.13 to 2.15, 2.20, and 6.10 to 6.20. This gives recommendations highlighting: 8.a Limits to the luminance of the luminaires to avoid screen reflections. (Manufacturers' data for the luminaires should be sought to confirm this.) 8.b Any area where a surface is used to reflect light in to a space, such as uplighting, the recommendations refer to the luminance of the lit ceiling rather than the luminaire; a design team calculation is usually required to demonstrate this. 8.c Recommendations for direct lighting, ceiling illuminance, and average wall illuminance. External lighting 9 All external lighting located within the construction zone is specified in accordance with BS 5489-1:2013 Code for the practice for the design of road lighting, Lighting of roads and public amenity areas (34) and BS EN 12464-2:2014 (35) Light and lighting - Lighting of work places - Part 2: Outdoor work places. External lighting should provide illuminance levels that enable users to perform outdoor visual tasks efficiently and accurately, especially during the night. 10 Where no external light fittings are specified (either separate from or mounted on the external building façade or roof), the criteria relating to external lighting do not apply and the credit can be awarded on the basis of compliance with criteria 7 – 8.c above Zoning and occupant control 11 Internal lighting is zoned to allow for occupant control. Zoning is in accordance with the criteria below for relevant areas present within the building: 11.a In office areas, zones of no more than four workplaces 11.b Workstations adjacent to windows or atria and other building areas separately zoned and controlled 11.c Seminar and lecture rooms: zoned for presentation and audience areas 11.d Library spaces: separate zoning of stacks, reading and counter areas	Letter of Commitment Design drawings Relevant section/clauses of the building specification or contract	M&E
HEA 02 Indoor Air Quality				
Prerequisite - Indoor air quality (IAQ) plan		1 A site-specific indoor air quality plan has been produced and implemented in accordance with the guidance in Guidance Note GN06. The plan must be produced no later than the end of Concept Design. The objective of the plan is to facilitate a process that leads to design, specification and installation decisions and actions that minimise indoor air pollution during occupation of the building. The indoor air quality plan must consider the following: 1.a Removal of contaminant sources 1.b Dilution and control of contaminant sources: 1.b.i Where present, consideration is given to the air quality requirements of specialist areas such as laboratories 1.c Procedures for pre-occupancy flush out 1.d Third party testing and analysis	Copy of the indoor air quality plan	

Ventilation	0	2 The building has been designed to minimise the indoor concentration and recirculation of pollutants in the building as follows: 2.a Provide fresh air into the building in accordance with the criteria of the relevant standard for ventilation 2.b Ventilation pathways are designed to minimise the ingress and build-up of air pollutants inside the building (see Methodology on page 94) 2.c Where present, HVAC systems must incorporate suitable filtration to minimise external air pollution, as defined in BS EN 16798-3:2017(45). The specified filters should achieve supply air classification of at least SUP 2. 2.d Areas of the building subject to large and unpredictable or variable occupancy patterns have carbon dioxide (CO₂) or air quality sensors specified and: 2.d.i In mechanically ventilated buildings or spaces: sensors are linked to the mechanical ventilation system and provide demand-controlled ventilation to the space 2.d.ii In naturally ventilated buildings or spaces: sensors either have the ability to alert the building owner or manager when CO₂ levels exceed the recommended set point, or are linked to controls with the ability to adjust the quantity of fresh air, i.e. automatic opening windows or roof vents 2.e 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 (46) .	Relevant section/clauses of the building specification Design drawings Formal letter from the design team with details of the ventilation strategy and calculations/results from appropriate software modelling tool(s) Manufacturers'/suppliers' literature	Credits not sought
Up to two credits - Emissions from construction products	0	One credit 3 Three out of the five product types meet the emission limits, testing requirements and any additional requirements listed in Table 5.11 (see tab). Where wood-based products are not one of three selected product types, all wood-based products used for internal fixtures and fittings must be tested and classified as formaldehyde E1 class as a minimum. Two Credits 4 All of the product types listed meet the emission limits, testing requirements and any additional requirements listed in Table 5.11 (see tab) .	Evidence and details of all products used	
Post-construction indoor air quality measurement	0	5 The formaldehyde concentration in indoor air is measured post construction (but pre-occupancy) and does not exceed 100µg/m³ averaged over 30 minutes (World Health Organization guidelines for indoor air quality: Selected pollutants, 2010) 6 The formaldehyde sampling and analysis is performed in accordance with ISO 16000-2 and ISO 16000-3 7 The total volatile organic compound (TVOC) concentration in indoor air is measured post construction (but pre-occupancy) and does not exceed 500µg/m³ over 8 hours. 8 The TVOC sampling and analysis is performed in accordance with ISO 16000-5 and ISO 16000-6 or ISO 16017-1 9 Where levels are found to exceed these limits, the project team confirms the measures that have, or will be, undertaken in accordance with the IAQ plan, to reduce the TVOC and formaldehyde levels to within the above limits. 10 The measured concentration levels of formaldehyde (µg/m³) and TVOC (µg/m³) are reported, via the BREEAM Scoring and Reporting Tool.	Letter of Commitment Relevant section/clauses of the building specification or contract	
HEA 03 Safe Containment in Laboratories				
No longer assessed under UK NC 2018				
HEA 04 Thermal Comfort				
Thermal modelling	1	1 Thermal modelling has been carried out using software in accordance with CIBSE AM11(78) Building Energy and Performance Modelling. 2 The software used to carry out the simulation at the detailed design stage provides full dynamic thermal analysis. For smaller and more basic building designs with less complex heating or cooling systems, an alternative less complex means of analysis may be appropriate (such methodologies must still be in accordance with CIBSE AM11). 3 The modelling demonstrates that: 3.a For air-conditioned buildings, summer and winter operative temperature ranges in occupied spaces are in accordance with the criteria set out in CIBSE Guide A Environmental design(79), Table 1.5; or other appropriate industry standard (where this sets a higher or more appropriate requirement or level for the building type). 3.b For naturally ventilated buildings: 3.b.i Winter operative temperature ranges in occupied spaces are in accordance with the criteria set out in CIBSE Guide A Environmental design, Table 1.5. Or other appropriate industry standard (where this sets a higher or more appropriate requirement or level for the building type). 3.b.ii The building is designed to limit the risk of overheating, in accordance with the adaptive comfort methodology outlined in either of the following standards as appropriate; CIBSE TM52: The limits of thermal comfort: avoiding overheating in European buildings(80) or CIBSE TM59: Design methodology for the assessment of overheating risk in homes 4 For air-conditioned buildings, the PMV (predicted mean vote) and PPD (predicted percentage of dissatisfied) indices based on the above modelling are reported via the BREEAM assessment scoring and reporting too	Relevant section/clauses of the building specification Or Contract or correspondence (e.g. letter, email or meeting minutes) from the design team AND Thermal modelling results AND TOR data from the design team	

Design for future thermal comfort	1	5 Criteria 1 to 4 are achieved. 6 The thermal modelling demonstrates that the relevant requirements set out in criterion 3 on the previous page are achieved for a projected climate change environment. 7 Where criterion 6 above is not met, the project team demonstrates how the building has been adapted, or designed to be easily adapted in future using passive design solutions in order to subsequently meet the requirements under criterion 6 above. 8 For air-conditioned buildings, the PMV and PPD indices based on the above modelling are reported via the BREEAM assessment scoring and reporting tool.	Results from the Thermal Model showing compliance with climate change	M&E
Thermal zoning and controls	1	9 Criteria 1 to 4 above are achieved. 10 The thermal modelling analysis (criteria 1 on the previous page to 4 above) has informed the temperature control strategy for the building and its users. 11 The strategy for proposed heating or cooling systems demonstrates that it has addressed the following: 11.a Zones within the building, and how the building services could efficiently and appropriately heat or cool these areas. For example consider the different requirements for the central core of a building compared with the external perimeter adjacent to the windows. 11.b The degree of occupant control required for these zones. This is based on discussions with the end user (or alternatively building type or use specific design guidance, case studies, feedback) and considers: 11.b.i User knowledge of building services. 11.b.ii Occupancy type, patterns and room functions (and therefore appropriate level of control required). 11.b.iii How the user is likely to operate or interact with the systems, e.g. are they likely to open windows, access thermostatic radiator valves (TRV) on radiators, change air-conditioning settings etc. 11.b.iv The user expectations (this may differ in the summer and winter) and degree of individual control (i.e. obtaining the balance between occupant preferences, for example some occupants like fresh air and others dislike draughts). 11.c How the proposed systems will interact with each other (where there is more than one system) and how this may affect the thermal comfort of the building occupants. 11.d The need or otherwise for an accessible building user actuated manual override for any automatic systems.	Thermal comfort strategy highlighting the points that have been considered and decisions taken accordingly Relevant section/clauses of the building specification or contract Design drawings	
HEA 05 Acoustic Performance				
Up to three credits - Acoustic performance	3	For all building types, except Residential institutions (short term and long term stay), which have four credits available below. 1 The building meets the appropriate acoustic performance standards and testing requirements defined in the relevant table below. These tables define criteria for the acoustic principles of: 1.a Sound insulation 1.b Indoor ambient noise level 1.c Room acoustics. OR 2 A suitably qualified acoustician (SQA) is appointed to define a bespoke set of performance requirements for all function areas in the building. The bespoke performance requirements use the three acoustic principles defined in criterion Hea 05 Acoustic performance - Criterion 1 above, setting out the performance requirements for each and the testing regime required.	Letter of commitment to confirm the intent to: Meet the relevant sound insulation performance levels Use a compliant test body to complete testing	Pre-Completion Acoustic Testing Required
HEA 06 Safety and Security				
Security of site and building	1	1 A Suitably Qualified Security Specialist (SQSS) conducts an evidence-based Security Needs Assessment (SNA) during or prior to Concept Design (RIBA Stage 2 or equivalent). The purpose of the SNA will be to identify attributes of the proposal, site and surroundings which may influence the approach to security for the development. 2 The SQSS develops a set of security controls and recommendations for incorporation into the proposals. Those controls and recommendations shall directly relate to the threats and assets identified in the preceding SNA. 3 The controls and recommendations shall be incorporated into proposals and implemented in the as-built development. Any deviation from those controls and recommendations shall be justified and agreed with the SQSS.	SQSS SNA	ALO / SQSS
HEA 07 Safe and healthy surroundings				
Safe access	1	Where external site areas form part of the assessed development the following apply: 1 Dedicated and safe cycle paths are provided from the site entrance to any cycle storage, and connect to offsite cycle paths where applicable. 2 Dedicated and safe footpaths are provided on and around the site providing suitable links for the following: 2.a The site entrance to the building entrance 2.b Car parks (where present) to the building entrance 2.c The building to outdoor space 2.d Connecting to off-site paths where applicable. 3 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: 4 Delivery areas are not accessed through general parking areas and do not cross or share the following: 4.a pedestrian and cyclist paths 4.b outside amenity areas accessible to building users and general public. 5 There is a dedicated parking or waiting area for goods vehicles with appropriate separation from the manoeuvring area and staff and visitor car parking. 6 Parking and turning areas are designed for simple manoeuvring according to the type of delivery vehicle likely to access the site, thus avoiding the need for repeated shunting.	Design drawings Relevant sections of the specification highlighting all necessary compliant features and dimensions.	Architect

Outside space	1	7 There is an outside space providing building users with an external amenity area.	Design drawings	
Sub-Total	11			
Weighted Sub-Total	9.04			

Energy				
ENE 01 Reduction of energy use and carbon emissions				
Up to nine credits - Energy performance	3	1 Calculate an Energy Performance Ratio for New Construction (EPR NC).	SBEM	M&E Base can provide quotation for SBEM if required
Four credits - Prediction of operational energy consumption		Credits not sought		
Prerequisite				
2 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	0	3 Undertake additional energy modelling during the design and post-construction stage to generate predicted operational energy consumption figures (see Prediction of operational energy consumption on page 132). 4 Report predicted energy consumption targets by end use, design assumptions and input data (with justifications). 5 Carry out a risk assessment to highlight any significant design, technical, and process risks that should be monitored and managed throughout the construction and commissioning process.	Predicted energy consumption values, design assumptions, input data and risk assessments reported as detailed in the Energy Prediction and Post occupancy guidance available from the BREEAM website. Confirmation of suitably qualified energy modeller's qualifications and experience.	
Ene 02 Energy monitoring				
Sub-metering of end-use categories	1	1 Install energy metering systems so that at least 90% of the estimated annual energy consumption of each fuel is assigned to the end-use categories (see Methodology on the facing page). 2 Meter the energy consumption in buildings according to the total useful floor area: 2.a If the area is greater than 1,000m², by end-use category with an appropriate energy monitoring and management system. 2.b If the area is less than 1,000m², use either: 2.b.i an energy monitoring and management system or 2.b.ii separate accessible energy sub-meters with pulsed or other open protocol communication outputs, for future connection to an energy monitoring and management system 3 Building users can identify the energy consuming end uses, for example through labelling or data outputs.	Design Drawings Specification	M&E
Sub-metering of high energy load and tenancy areas	1	4 Monitor a significant majority of the energy supply with: 4.a An accessible energy monitoring and management system for: 4.a.i tenanted areas or 4.a.ii relevant function areas or departments in single occupancy buildings. OR 4.b Separate accessible energy sub-meters with pulsed or other open protocol communication outputs for future connection to an energy monitoring and management system for: 4.b.i tenanted areas or 4.b.ii relevant function areas or departments in single occupancy buildings.	Design Drawings Specification	
ENE 03 External Lighting				
External lighting	1	1 No external lighting (which includes lighting on the building, at entrances and signs). OR 2 External light fittings within the construction zone with: 2.a Average initial luminous efficacy of not less than 70 luminaire lumens per circuit Watt 2.b Automatic control to prevent operation during daylight hours 2.c Presence detection in areas of intermittent pedestrian traffic.	Design Drawings Specification	M&E
ENE 04 Low Carbon Design				

Passive design Passive design analysis	0	1 Achieve the first credit Hea 04 Thermal comfort: One credit - Thermal modelling on page 102 to demonstrate that the building design delivers appropriate thermal comfort levels in occupied spaces. 2 The project team analyses the proposed building design and development during Concept Design to identify opportunities for the implementation of passive design measures 3 Implement passive design measures to reduce the total heating, cooling, mechanical ventilation, lighting loads and energy consumption in line with the passive design analysis findings. 4 Quantify the reduced total energy demand and carbon dioxide (CO ₂ -eq) emissions resulting from the passive design measures.	4 Results from the dynamic simulation model demonstrating the reduced demand and CO ₂ -eq emissions from the specified passive design measures.	Credits not sought
Free cooling	0	5 Achieve the passive design analysis credit. 6 Include a free cooling analysis in the passive design analysis carried out under criterion 2. 7 Identify opportunities for the implementation of free cooling solutions. 8 The building is naturally ventilated or uses any combination of the free cooling strategies	8 Results from a dynamic simulation model and other used methods demonstrating that the free cooling strategy can meet the building's cooling demand	
Low and zero carbon technologies	0	An energy specialist completes a feasibility study (by the end of Concept Design). 10 Establish the most appropriate recognised local (on-site or near-site) low and zero carbon (LZC) energy sources for the building or development based on the feasibility study. 11 Specify local LZC technologies for the building or development in line with the feasibility study recommendations. 12 Quantify the reduced regulated carbon dioxide (CO ₂ -eq) emissions resulting from the feasibility study..	The feasibility study report. 12 Results from a dynamic simulation model demonstrating reductions in CO ₂ -eq emissions from the specified low and zero carbon technology.	

ENE 05 Energy Efficient Cold Storage

Refrigeration energy consumption	0	1 Design, install and commission the refrigeration system: 1.a In accordance with the Code of Conduct for carbon reduction in the refrigeration retail sector(124) (see Additional information on page 161) and BS EN 378-2:2016(125). 1.b Using robust and tested refrigeration systems or components included on the Enhanced Capital Allowance (ECA) Energy Technology Product List (ETPL)(126) or an equivalent list (see Components on the ECA Energy Technology Product List on the next page for a list of components). 2 Commission the refrigeration plant in compliance with the commissioning criteria in BREEAM issue Man 04 Commissioning and handover.	Details of the refrigeration system, its controls and components	Credits not sought
Indirect greenhouse gas emissions	0	3 Achieve criteria 1 and 2. 4 Demonstrate a saving in indirect greenhouse gas emissions (CO ₂ -eq) from the installed refrigeration system over the course of its operational life.	Evidence of reduced consumption of CO ₂	

ENE 06 Energy Efficient Transportation Systems

Energy consumption	1	1 For specified lifts, escalators or moving walks (transportation types): 1.a Analyse the transportation demand and usage patterns for the building to determine the optimum number and size of lifts, escalators or moving walks 1.b Calculate the energy consumption in accordance with BS EN ISO 25745 Part 2[131] or Part 3[132]for one of the following: 1.b.i At least two systems for each transportation type OR 1.b.ii At least two arrangements of systems with 'fit for purpose' system strategies. For example for lift systems, different options could be hydraulic, traction or machine room-less lift (MRL) 1.c Consider the use of regenerative drives, subject to the requirements in Regenerative drives on the next page 1.d Specify the transportation system with the lowest energy consumption.	Professional report / study of transportation analysis	Lift manufacturer / supplier can usually assist with this
Up to two credits - Energy efficient features	1	2 Achieve criterion 1 above. One credit - Lifts 3 Specify the following three energy efficient features for each lift: 3.a A standby condition for off-peak periods 3.b The lift car lighting and display lighting provides an average luminous efficacy across all fittings in the car of > 70 luminaire lumens per circuit Watt 3.c Use of a drive controller capable of variable speed, variable-voltage, and variable-frequency (VVVF) control of the drive motor. 4 Specify regenerative drives where their use is demonstrated to save energy. One credit - Escalators or moving walks 5 Specify at least one of the following for each escalator or moving walk: 5.a A load-sensing device that synchronises motor output to passenger demand through a variable speed drive OR 5.b A passenger-sensing device for automated operation (auto walk), so the escalator operates in auto start mode when there is no passenger demand.	Relevant section/clauses of the building specification or contract Manufacturers products details Formal letter of commitment from the system(s) manufacturer/supplier	
ENE 07 Energy Efficient Laboratory Systems				
ENE 08 Energy Efficient Equipment				
Energy efficient equipment specification	2	1 Identify the building's unregulated energy consuming loads. Estimate their contribution to the total annual unregulated energy consumption of the building, assuming a typical or standard specification. 2 Identify the systems or processes that use a significant proportion of the total annual unregulated energy consumption of the building. 3 Demonstrate a meaningful reduction in the total annual unregulated energy consumption of the building. Table 6.5 of the BREEAM Manual lists some examples of significant contributors to unregulated energy consumption, and the associated criteria. If additional significant contributors, not listed in the table, will be specified, the design team should justify how a meaningful reduction will be achieved for these contributors.	Relevant section/clauses of the building specification or contract Manufacturers produce details (if available) Letter of commitment confirming compliance with the relevant standards	
Sub-Total	10			
Weighted Sub-Total	6.95			

Transport				
TRA 01 Transport Assessment and Travel Plan				
Travel plan	2	1 During the feasibility and design stages, develop a travel plan based on a site-specific travel assessment or statement. 2 The site-specific travel assessment or statement covers as a minimum: 2.a Existing travel patterns and opinions of existing building or site users towards cycling and walking, identifying constraints and opportunities, if relevant 2.b Travel patterns and transport impact of future building users 2.c Current local environment for walkers and cyclists (accounting for visitors who may be accompanied by young children) 2.d Reporting of the number and type of existing accessible amenities, see Table 7.1 below, within 500m of the site 2.e Disabled access (accounting for varying levels of disability and visual impairment) 2.f Calculation of the existing public transport Accessibility Index (AI), see Methodology on the next page 2.g Current facilities for cyclists 3 The travel plan includes proposals to increase or improve sustainable modes of transport and movement of people and goods during the building's operation and use. 4 If the occupier is known, involve them in the development of the travel plan. 5 Demonstrate that the travel plan will be implemented post construction and be supported by the building's management in operation.	Travel plan	Travel Consultant
TRA 02 Sustainable Transport Measures				
Prerequisite	1 Achieve the Tra 01 Transport assessment and travel plan as a prerequisite			

Transport options implementation	3	2 Identify the sustainable transport measures, see Table 7.4 of the BREEAM Manual . 3 Award credits according to the existing Accessible Index (AI) of the project, and the total number of points achieved for the options implemented, see Table 7.3 of the BREEAM Manual.	Scale map highlighting the location of the building and all public transport nodes in proximity of the building AND amenities Timetables for each service at each public transport node considered. The calculated Accessibility Index for the building. Plans showing cycle storage and compliant facilities	Travel Consultant
Sub-Total	5			
Weighted Sub-Total	4.17			

Water				
WAT 01 Water Consumption				
Water consumption	4	Up to five credits can be awarded based upon the water consumption (litres/person/day) of WCs; urinals; taps (to wash hand basins; kitchen and waste disposal); showers; baths; dishwashers & washing machines (domestic & commercial scale). The provision of greywater/rainwater recycling is also accounted for. The water consumption for the building is assessed using the Wat 01 calculator and credits awarded as follows: One credit = 12.5% improvement, Two credits = 25% improvement, Three credits = 40% improvement, Four credits = 50% improvement, Five credits = 55% improvement.	Completed copy of the BREEAM Wat 01 calculator AND Relevant section/clauses of the building specification/ design drawings confirming technical details of: 1. Sanitary components 2. Rainwater and greywater collection system OR where detailed documentary evidence is not available at this stage, Completed BREEAM Wat 01 calculator	Architect / M&E 50% improvement over baseline required
WAT 02 Water Monitoring				
Water meter	1	1 Specify a water meter on the mains water supply to each building. This includes instances where water is supplied via a borehole or other private source. 2 For water-consuming plant or building areas consuming 10% or more of the building's total water demand: 2.a Fit easily accessible sub-meters OR 2.b Install water monitoring equipment integral to the plant or area. 3 For each meter (main and sub): 3.a Install a pulsed or other open protocol communication output AND 3.b Connect it to an appropriate utility monitoring and management system, e.g. a building management system (BMS), for the monitoring of water consumption. If there is no BMS system in operation at Post- Construction stage, award credits provided that the system used enables connection when the BMS becomes operational. 4 In buildings with swimming pools, or large water tanks and aquariums, fit separate sub-meters on the water supply of the above and any associated changing facilities (toilets, showers etc.) irrespective of their water consumption levels. 5 In buildings containing laboratories, fit a separate water meter on the water supply to any process or cooling loop for 'plumbed-in' laboratory process equipment, irrespective of their water consumption levels. Additionally for those pursuing a post occupancy stage certification: 6 The water monitoring strategy used enables the identification of all water consumption for sanitary uses as assessed under Wat 01 (litres/person/day), if a post occupancy stage certification is sought.	Building specification Design drawings	M&E
WAT 03 Water Leak Detection and Prevention				
Leak detection (1-2)	1	1 Install a leak detection system capable of detecting a major water leak: 1.a On the utilities water supply within the buildings, to detect any major leaks within the buildings AND 1.b Between the buildings and the utilities water supply, to detect any major leaks between the utilities supply and the buildings under assessment. 2 The leak detection system is: 2.a A permanent automated water leak detection system that alerts the building occupants to the leak OR an inbuilt automated diagnostic procedure for detecting leaks 2.b Activated when the flow of water passing through the water meter or data logger is at a flow rate above a pre-set maximum for a pre-set period of time. This usually involves installing a system which detects higher than normal flow rates at meters or sub-meters. It does not necessarily require a system that directly detects water leakage along part or the whole length of the water supply system 2.c Able to identify different flow and therefore leakage rates, e.g. continuous, high or low level, over set time periods. Although high and low level leakage rates are not specified, the leak detection equipment installed must have the flexibility to distinguish between different	Relevant section/clauses of the building specification or contract Design drawings detailing position and specification of systems	M&E

Flow control devices (3)	1	3 Install flow control devices that regulate the water supply to each WC area or sanitary facility according to demand, in order to minimise undetected wastage and leaks from sanitary fittings and supply pipework.	Manufacturers product details (if available)	
WAT 04 Water Efficient Equipment No Minimum Standards				
Water efficient equipment	1	1 Identify all water demands from uses that could be realistically mitigated or reduced. Where there is no water demand from uses other than domestic-scale, sanitary use components in the building, this issue is not applicable. 2 Identify systems or processes to reduce the relevant water demand (criterion 1 above), and establish, through either good practice design or specification, a demonstrable reduction in the total water demand of the building.	Building specification Design drawings Manufacturers product details	M&E
Sub-Total	8			
Weighted Sub-Total	6.22			

Materials				
MAT 01 Environmental impacts from construction products - Building life cycle assessment (LCA)				
Up to six credits – Superstructure (all building types)	0	Comparison with the BREEAM benchmark during Concept Design (office, industrial and retail buildings only) Superstructure 1 During the Concept Design, demonstrate the environmental performance of the building as follows: 1.a Carry out a building LCA on of the superstructure design using either the BREEAM Simplified Building LCA tool or an IMPACT Compliant LCA tool according to the methodology (see Methodology on page 225). 1.b Submit the Mat 01/02 Results Submission Tool to BRE at the end of Concept Design, and before planning permission is applied for (that includes external material or product specifications). Comparison with the BREEAM benchmark during Technical Design (office, industrial and retail buildings only) 2 During Technical Design, demonstrate the environmental performance of the building as follows: 2.a As criterion 1.a 2.b Submit the Mat 01/02 Results Submission Tool to BRE at the end of Technical Design. Where a project has not achieved criterion 1 , criterion 2 may still be achieved. Option appraisal during Concept Design (all building types) 3 For office, industrial and retail building types, achieve criterion 1 (except where Notes 1.0 1.1 and 1.2 on the previous page apply). 4 During Concept Design, identify opportunities for reducing environmental impacts as follows: 4.a Carry out building LCA options appraisal of 2 to 4 significantly different superstructure design options (applicable to the Concept Design stage). 4.b Use a building LCA tool that is recognised by BREEAM (as suitable for assessing superstructure during Concept Design) according to the methodology 4.c For each design option, fulfil the same functional requirements specified by the client and all statutory requirements (to ensure functional equivalence).	1-2 – The Mat 01/02 Results Submission Tool 3-4 As criteria 1 to 2 – The options appraisal summary document – Evidence that the LCA options appraisal summary document has been received by the design team and client (meeting minutes, letter of acknowledgement) – Evidence of how the LCA design options have informed the design decision-making process (e.g. meeting minutes, documented design development showing how the LCA options have affected the design).	Credits not sought
Substructure and hard landscaping options appraisal during Concept Design (all building types)	0	6 Criteria 3 and 4 are achieved. 7 During Concept Design identify opportunities for reducing environmental impacts as follows: 7.a Carry out building LCA options appraisal of a combined total of at least six significantly different substructure or hard landscaping design options (at least two shall be substructure and at least two shall be hard landscaping) 6 Criteria 3 and 4 are achieved. 7 During Concept Design identify opportunities for reducing environmental impacts as follows: 7.a Carry out building LCA options appraisal of a combined total of at least six significantly different substructure or hard landscaping design options (at least two shall be substructure and at least two shall be hard landscaping)	6-7 – As criteria 3 to 4. – The LCA options appraisal summary document includes substructure and hard landscaping according to the criteria.	
Mat 02 Environmental impacts from construction products - Environmental Product Declarations (EPD)				

Specification of products with a recognised environmental product declaration (EPD)	0	1 Specify construction products with EPD that achieve a total EPD points score of at least 20. 2 Enter the details of each EPD into the Mat 01/02 Results Submission Tool, including the material category classification. The Mat 01/02 Results Submission Tool will verify the EPD points score and credit award.	Specification Copies of EPD certificates Design drawings	Credits not sought
Mat 03 Responsible sourcing of construction products				
Prerequisite - Legally harvested and traded timber		1 All timber and timber-based products used on the project are legally harvested and traded timber as per the UK Government's Timber Procurement Policy (TPP) Compliance with criterion 1 is a minimum requirement for achieving any BREEAM rating. There are no prerequisite requirements for other materials	Evidence of level of responsible sourcing achieved for each construction product. For example, certificates.	
Enabling sustainable procurement	1	2 A sustainable procurement plan must be used by the design team to guide specification towards sustainable construction products. The plan must: 2.a Be in place before Concept Design. 2.b Include sustainability aims, objectives and strategic targets to guide procurement activities. Note: targets do not need to be achieved for the credit to be awarded but justification must be provided for targets that are not achieved. 2.c Include a requirement for assessing the potential to procure construction products locally. There must be a policy to procure construction products locally where possible. 2.d Include details of procedures in place to check and verify the effective implementation of the sustainable procurement plan. In addition, if the plan is applied to several sites or adopted at an organisational level it must: 2.e Identify the risks and opportunities of procurement against a broad range of social, environmental and economic issues following the process set out in BS ISO 20400:2017	Copy of sustainable procurement plan	Main Contractor
Up to three credits - Measuring responsible sourcing	1	3 Use the Mat 03 calculator tool and methodology to determine the number of credits achieved for the construction products specified or procured. Credits are awarded in proportion to the scope of the assessment and the number of points achieved, as set out in Table 9.10 of the BREEAM Manual	Design plan and specification confirming: 1. The building elements. 2.Details of the materials specification for each element A copy of the output from the BREEAM Mat 03 calculator Evidence of level of responsible sourcing achieved for each construction product. For example, certificates.	Architect
MAT 04 Insulation				
No longer assessed under UK NC 2018				
Mat 05 Designing for durability and resilience				
Protecting vulnerable parts of the building from damage	1	1 Protection measures are incorporated into the building's design and construction to reduce damage to the building's fabric or materials in case of accidental or malicious damage occurring. These measures must provide protection against: 1.a Negative impacts of high user numbers in relevant areas of the building (e.g. corridors, lifts, stairs, doors etc.). 1.b Damage from any vehicle or trolley movements within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas. 1.c External building fabric damage by a vehicle. Protection where parking or manoeuvring areas are within 1 metre of the building façade and where delivery areas or routes are within 2 metres of the façade, i.e. specifying bollards or protection rails. 1.d Potential malicious damage to building materials and finishes, in public and common areas where appropriate.	Design drawings illustrating vulnerable areas/parts of the building. Building specification confirming the durability measures specified.	Architect
Protecting exposed parts of the building from material degradation		2 Key exposed building elements have been designed and specified to limit long and short term degradation due to environmental factors. This can be demonstrated through one of the following: 2.a The element or product achieving an appropriate quality or durability standard or design guide, see Table 9.14 of the BREEAM Manual. If none are available, use BS 7543:2015(172) as the default appropriate standard OR 2.b A detailed assessment of the element's resilience when exposed to the applicable material degradation and environmental factors. 3 Include convenient access to the roof and façade for cost-effective cleaning, replacement and repair in the building's design. 4 Design the roof and façade to prevent water damage, ingress and detrimental ponding	Design drawings illustrating exposed parts of the building Building specification confirming the durability measures specified.	
MAT 06 Material Efficiency				

Material efficiency	1	1 At the Preparation and Brief and Concept Design stages, set targets and report on opportunities and methods to optimise the use of materials. These must be done for each of the following stages. See Table 9.15 below: 1.a Preparation and Brief 1.b Concept Design 1.c Developed Design 1.d Technical Design 1.e Construction. 2 Develop and record the implementation of material efficiency, see Table 9.15 of the BREEAM Manual, during: 2.a Developed Design 2.b Technical Design 2.c Construction. 3 Report the targets and actual material efficiencies achieved.	Material efficiency report / specification	Architect
Sub-Total	4			
Weighted Sub-Total	4.28			

Waste				
WST 01 Construction Waste Management				
Up to three credits - Construction resource efficiency	2	Prepare a compliant Resource Management Plan (RMP) covering: 3.a Non-hazardous waste materials (from on-site construction and dedicated off-site manufacture or fabrication, see Definitions on page 261), including demolition and excavation waste 3.b Accurate data records on waste arisings and waste management routes. 4 Meet or improve upon the benchmarks in Table 10.1 for non-hazardous construction waste, excluding demolition and excavation waste. Amount of waste generated per 100m² (gross internal floor area) One credit ≤ 13.3 m³ (actual, not bulk volume)) ≤ 11.1 tonnes Two credits ≤ 7.5 ≤ 6.5 Three credits ≤ 3.4 ≤ 3.2	A copy of the Resource Management Plan	Main Contractor
Diversion of resources from landfill	1	5 Meet, where applicable, the diversion from landfill benchmarks in Table 10.2 for non-hazardous construction waste and demolition and excavation waste generated. Non-demolition 70% volume 80% tonnage Demolition 80% volume 90% tonnage Excavation N/A 6 Sort waste materials into separate key waste groups as per Table 10.3 of the BREEAM Manual, either on-site or through a licensed contractor for recovery.		
Wst 02 Use of recycled and sustainably sourced aggregates				
Prerequisite		1 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	Pre-demolition Audit	Credits not sought
Project Sustainable Aggregate Points	0	2 Identify all aggregate uses and types on the project 3 Determine the quantity in tonnes for each identified use and aggregate type. 4 Identify the region in which the aggregate source is located. 5 Calculate the distance in kilometres travelled by all aggregates by transport type. 6 Enter the information into the BREEAM Wst 02 calculator to calculate the Project Sustainable Aggregate points. 1 credit is 3.5-6 Project Sustainable Aggregate points	Building specification A completed copy of the Wst 02 calculator Documentary evidence supporting the data used to complete the Calculator tool.	
WST 03 Operational Waste				

Operational waste	1	1 Provide a dedicated space for the segregation and storage of operational recyclable waste generated. The space is: 1.a Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams 1.b Accessible to building occupants or facilities operators for the deposit of materials and collections by waste management contractors 1.c Of a capacity appropriate to the building type, size, number of units (if relevant) and predicted volumes of waste that will arise from daily or weekly operational activities and occupancy rates. 2 For consistent and large amounts of operational waste generated, provide: 2.a Static waste compactors or balers; situated in a service area or dedicated waste management space 2.b Vessels for composting suitable organic waste OR adequate spaces for storing segregated food waste and compostable organic material for collection and delivery to an alternative composting facility 2.c A water outlet provided adjacent to or within the facility for cleaning and hygiene purposes where organic waste is to be stored or composted on site.	Design drawings Building specification or contract confirming provision and scope of dedicated facilities. Project team meeting minutes / letter confirming likely building waste streams and indicative volumes.	Architect
Wst 04 Speculative finishes (Offices only) NA				
WST 05 Adaptation to Climate Change				
Resilience of structure, fabric, building services and renewables installation	0	1 Conduct a climate change adaptation strategy appraisal using: 1.a A systematic risk assessment to identify the impact of expected extreme weather conditions arising from climate change on the building over its projected life cycle. The assessment covers the installation of building services and renewable systems, as well as structural and fabric resilience aspects and includes. 1.a.i Hazard identification 1.a.ii Hazard assessment 1.a.iii Risk estimation 1.a.iv Risk evaluation 1.a.v Risk management. 2 Develop recommendations or solutions based on the climate change adaptation strategy appraisal, before or during Concept Design, that aim to mitigate the identified impact. 3 Provide an update during Technical Design demonstrating how the recommendations or solutions proposed at Concept Design have been implemented where practical and cost effective. Omissions have been justified in writing by the assessor.	Climate change adaptation strategy appraisal	Credits not sought
Wst 06 Design for disassembly and adaptability				
One credit - Design for disassembly and functional adaptability - recommendations	1	1 Conduct a study to explore the ease of disassembly and the functional adaptation potential of different design scenarios by the end of Concept Design. 2 Develop recommendations or solutions (see Methodology below) based on the study (criterion 1 above), during or prior to Concept Design, that aim to enable and facilitate disassembly and functional adaptation.	Design for disassembly and functional adaptability study	Functional adaptation strategy study The study must consider the following as a minimum: – Feasibility: The likelihood to contain multiple or alternative building uses, area functions and different tenancies over the expected life cycle, e.g. related to the structural design of the building. – Accessibility: Design aspects that facilitate the replacement of all major plant within the life of the building, e.g. panels in floors and walls that can be removed without affecting the structure, providing lifting beams and hoists. Accessibility also involves access to local services, such as local power, data infrastructure etc. – Veratility: The degree of adaptability of the internal environment to
One credit - Disassembly and functional adaptability – implementation	0	3 Achieve criteria 1 and 2 4 Provide an update, during Technical Design, on: 4.a How the recommendations or solutions proposed by Concept Design have been implemented where practical and cost effective. Omissions have been justified in writing to the assessor. 4.b Changes to the recommendations and solutions during the development of the Technical Design. 5 Produce a building adaptability and disassembly guide to communicate the characteristics allowing functional adaptability and disassembly to prospective tenants.	Update through minutes / specifications Building adaptability and disassembly guide	Credit not sought
Sub-Total	5			
Weighted Sub-Total	3.33			

Land Use and Ecology
LE 01 Site Selection

Previously occupied land	1	1 At least 75% of the proposed development's footprint is on an area of land which has previously been occupied	Design drawings (including existing site plan), report or site photographs confirming: 1.Type and duration of previous land use. 2. Area (m2) of previous land use. Proposed site plan showing; 3.Location and footprint (m2) of proposed development and temporary works.	
Contaminated land (2-3)	0	2 A contaminated land professional's site investigation, risk assessment and appraisal has deemed land within the site to be affected by contamination. The site investigation, risk assessment and appraisal have identified: 2.a The degree of contamination 2.b The contaminant sources or types 2.c The options for remediating sources of contamination which present an unacceptable risk. 3 The client or principal contractor confirms that remediation of the site will be carried out in accordance with the remediation strategy and its implementation plan as recommended by the contaminated land professional	A copy of the specialist's land contamination report. Design drawings (including existing site plan) showing contaminated areas and areas to be remediated in relation to any proposed development A letter from the principal contractor or remediation contractor confirming: 1.The remediation strategy for the site. 2. Summary details of the implementation plan. If a contractor has not yet been appointed, a letter from the client, or their representative confirming that the appointed contractor will undertake necessary remediation works to mitigate the risks identified in the specialist report.	
LE 02 Identifying and understanding the risks and opportunities for the project				
LE 02 Ecological risks and opportunities	2	Credits based on Comprehensive Route		BREEAM Ecology Report based on Comprehensive Route
LE03 Minimising impact on existing site ecology				
LE 03 Managing impacts on ecology	3	Credits based on Comprehensive Route		BREEAM Ecology Report based on Comprehensive Route
LE 04 Ecological change and enhancement				
LE 04 Ecological change and enhancement	4	4	4	BREEAM Ecology Report based on Comprehensive Route
LE 05 Long term ecology management and maintenance				

LE 05 Long term ecology management and maintenance	2			BREEAM Ecology Report based on Comprehensive Route
Sub-Total	12			
Weighted Sub-Total	12.00			

Pollution				
POL 01 Impact of Refrigerants				
Prerequisite - where the building does use refrigerants, the three credits can be awarded as follows:		All systems with electric compressors comply with the requirements of BS EN 378:2016(211) (parts 2 and 3). Refrigeration systems containing ammonia comply with the Institute of Refrigeration Ammonia Refrigeration Systems code of practice(212)		
Up to 2 credits - Impact of refrigerant	2	Two credits 3 The direct effect life cycle CO ₂ equivalent emissions (DEL _C) of ≤100 CO ₂ -eq/kW. For systems which provide cooling and heating, the worst performing output based on the lower of kW cooling output and kW heating output is used to complete the calculation. To calculate the DEL _C , refer to the relevant definitions in Methodology on the next page and Additional information on page 325. OR 4 All refrigerants used have a global warming potential (GWP) ≤10. OR One credit 5 Systems using refrigerants have a DEL _C of ≤1000kgCO ₂ -eq/kW cooling and heating capacity.	Statement of assurance that leak detection systems are fitted, and design plans showing where these are located.	
Leak detection	0	6 All systems are hermetically sealed or only use environmentally benign refrigerants (see Leak detection on page 323 and Hermetically sealed systems on page 324). OR 7 Where the systems are not hermetically sealed: 7.a Systems have: 7.a.i A permanent automated refrigerant leak detection system, that is robust and tested, and capable of continuously monitoring for leaks. OR 7.a.ii An inbuilt automated diagnostic procedure for detecting leakage is enabled 7.b In the event of a leak, the system must be capable of automatically responding and managing the remaining refrigerant charge to limit loss of refrigerant (see Automatic isolation and containment of refrigerant on page 325).	Statement of assurance that leak detection systems are fitted, and design plans showing where these are located.	
POL 02 Local Air Quality				
Local air quality	0	1 All heating and hot water is supplied by non-combustion systems. For example, only powered by electricity. OR alternatively; 2 Emissions from all installed combustion plant that provide space heating and domestic hot water do not exceed the levels set in Table 12.4 and Table 12.5 below of the BREEAM Manual .	Building specification Manufacturer's product details Calculations from the project team	Credits not sought
POL 03 Flood and surface water management				
Prerequisite		1 An appropriate consultant is appointed to carry out and demonstrate the development's compliance with all criteria.	Confirmation from Consultant	

Up to two credits - Flood resilience	2	Two credits - Low flood risk 2 A site-specific flood risk assessment (FRA) confirms the development is in a flood zone that is defined as having a low annual probability of flooding. The FRA takes all current and future sources of flooding into consideration One credit - Medium or high flood risk 3 A site-specific FRA confirms the development is in a flood zone that is defined as having a medium or high annual probability of flooding and is not in a functional floodplain. The FRA must take all current and future sources of flooding into consideration . 4 To increase the resilience and resistance of the development to flooding, one of the following must be achieved: 4.a The ground level of the building and access to both the building and the site, are designed (or zoned) so they are at least 600 mm above the design flood level of the site's flood zone (see 600mm threshold on page 336). 4.b The final design of the building and the wider site reflects the recommendations made by an appropriate consultant in accordance with the hierarchy of measures outlined in section 6 of BS 9832:2017.	Flood risk assessment Design drawings Where appropriate, correspondence from the appropriate statutory body confirming reduced annual probability of flooding due to existing flood defences.	Flood Risk / Drainage Engineer
Prerequisite		5 Surface water run-off design solutions must be bespoke, i.e. they must take account of the specific site requirements and natural or man-made environment of and surrounding the site. The priority levels detailed in the Methodology must be followed, with justification given by the appropriate consultant where water is allowed to leave the site.		
One credit - Surface Water Run-Off - Rate	1	6 For brownfield sites, drainage measures are specified so that the peak rate of run-off from the site to the watercourses (natural or municipal) shows a 30% improvement for the developed site compared with the predeveloped site. This should comply at the 1-year and 100-year return period events. 7 For Greenfield sites, drainage measures are specified so that the peak rate of run-off from the site to the watercourses (natural or municipal) is no greater for the developed site than it was for the pre-development site. This should comply at the 1-year and 100-year return period events. 8 Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified Sustainable Drainage Systems (SuDS) are in place.		
One credit - Surface Water Run-Off - Volume	1	One credit - Surface Water Run-Off - Volume 10 Flooding of property will not occur in the event of local drainage system failure (caused either by extreme rainfall or a lack of maintenance); AND EITHER 11 Drainage design measures are specified so that the post-development run-off volume, over the development lifetime, is no greater than it would have been prior to the assessed site's development. This must be for the 100-year 6-hour event, including an allowance for climate change (see criterion 15). 12 Any additional predicted volume of run-off for this event is prevented from leaving the site by using infiltration or other SuDS techniques. OR (only where criteria 11 and 12 cannot be achieved): 13 Justification from the appropriate consultant indicating why the above criteria cannot be achieved, i.e. where infiltration or other SuDS techniques are not technically viable options. 14 Drainage design measures are specified so that the post-development peak rate of run-off is reduced to the limiting discharge. The limiting discharge is defined as the highest flow rate from the following options: 14.a The pre-development one-year peak flow rate 14.b The mean annual flow rate (Qbar) 14.c 2L/s/ha. For the one-year peak flow rate, the one-year return period event criterion applies. 15 Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS are in place. 16 For either option, above calculations must include an allowance for climate change; this should be made in accordance with current best practice planning guidance.	Calculation results for the pre-and post development peak rate of run-off SuDS Report Information showing the proposed drainage solution, system failure flood flow routes, potential flood ponding levels and ground floor levels Calculation results for the pre- and post development volume of run-off Calculation of the 5mm rainfall event from the relevant areas	Flood Risk / Drainage Engineer
One credit - Minimising watercourse pollution	1	17 There is no discharge from the developed site for rainfall up to 5 mm (confirmed by the appropriate consultant). 18 Areas with a low risk source of watercourse pollution, an appropriate level of pollution prevention treatment is provided, using appropriate SuDS techniques. 19 Areas with a high risk of contamination or spillage of substances, such as petrol and oil, have separators (or an equivalent system) are installed in surface water drainage systems. 20 Chemical or liquid gas storage areas have a means of containment fitted to the site drainage system (i.e. shut-off valves). This is to prevent the escape of chemicals to natural watercourses in the event of a spillage or bunding failure. 21 All water pollution prevention systems have been designed and installed in accordance with the recommendations of documents such as the SuDS manual+A208 and other relevant industry best practice. They must be bespoke solutions taking account of the specific site requirements and natural or man-made environment of and surrounding the site. 22 A comprehensive and up to date drainage plan of the site will be made available for the building or site occupiers. 23 Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS must be in place. 24 All external storage and delivery areas are designed and detailed in accordance with the current best practice planning guidance.		
POL 04 Reduction of Night Time Light Pollution				
Reduction of night time light pollution	1	1 External lighting pollution has been eliminated through effective design that removes the need for external lighting. This does not adversely affect the safety and security of the site and its users. OR alternatively, where the building does have external lighting, one credit can be awarded as follows: 2 The external lighting strategy has been designed in compliance with Table 2 (and its accompanying notes) of the Institution of Lighting Professionals (ILP) Guidance notes for the reduction of obtrusive light, 2011 3 All external lighting (except for safety and security lighting) can be automatically switched off between 23:00 and 07:00. 4 If safety or security lighting is provided and will be used between 23:00 and 07:00, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 2 of the ILP guidance notes. 5 Illuminated advertisements are designed in compliance with ILP PLG05 The Brightness of Illuminated Advertisements, where specified, must be designed in compliance with ILE Technical Report 5 – The Brightness of Illuminated Advertisements.	Design drawings Specification	M&E
Pol 05 Reduction of noise pollution				

Reduction of noise pollution	1	One credit 1 There are no noise-sensitive areas within the assessed building or within 800 m radius of the assessed site. OR 2 Where there are noise-sensitive areas within the assessed building or noise-sensitive areas within 800 m radius of the assessed site, a noise impact assessment compliant with BS 4142:2014(227) is commissioned. Noise levels must be measured or determined for: 2.a Existing background noise levels: 2.a.i at the nearest or most exposed noise-sensitive development to the proposed assessed site 2.a.ii including existing plant on a building, where the assessed development is an extension to the building 2.b Noise rating level from the assessed building. 3 The noise impact assessment must be carried out by a suitably qualified acoustic consultant. 4 The noise level from the assessed building, as measured in the locality of the nearest or most exposed noise sensitive development, must be at least 5dB lower than the background noise throughout the day and night. 5 If the noise sources from the assessed building are greater than the levels described in criterion 4, measures have been installed to attenuate the noise at its source to a level where it will comply with the criterion	Design drawings highlighting: 1. All existing and proposed noise-sensitive buildings local to, and within, the site boundary 2. Proposed sources of noise from the new development 3. Distance (m) from these buildings to the assessed development. The acoustician's report, acoustician's qualifications and professional status.	Acoustician
Sub-Total	9			
Weighted Sub-Total	5.99			

[illegible]

