

**FOR:
SHINFIELD PARK, READING**

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**A PROJECT FOR:
WRENBRIDGE (FRELD READING) LLP**

**ISSUE:
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EXECUTIVE SUMMARY

1. MBA Consulting Engineers have been appointed by Wrenbridge (FRELD Reading) LLP, as licensed BREEAM assessors, to carry out a preliminary assessment in support of the full detailed planning application for the proposed development known as Shinfield Park, Shinfield Road, Reading, RG2 9FW.
2. The planning application proposes:
“Redevelopment of site for flexible employment use (Use Class E(g)(ii)- (iii)/B2/B8) together with associated servicing areas, parking, landscaping and other associated works.”
3. MBA Consulting Engineers have undertaken a pre-assessment exercise under the BREEAM New Construction (NC) V6.1 methodology for Shell & Core buildings to establish a feasible BREEAM strategy, and identify the credits and rating level considered to be achievable for the proposed development.
4. The presented BREEAM strategy demonstrates that the feasible BREEAM score for the proposed development is in excess of 70%, which is equivalent to a BREEAM ‘Excellent’ rating. The projected BREEAM rating is considered suitable for the development based on the proposed design and information which is available at the time of the planning submission.

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1.2 ASSESSMENT DETAILS

1. MBA has coordinated with the design team and verified the credits targeted are appropriate for this development.

BREEAM Scheme Version	BREEAM UK New Construction, Industrial, Shell and Core
Technical Manual Version	SD5078 BREEAM UK New Construction Issue V6.1
Assessor Name	Amy Sutherland
AP Name	Amy Sutherland
Assessor Organisation	MBA Consulting Engineers Ltd.

Table 1 – Assessment details

2. A licensed BREEAM Assessor has a deep level of understanding and competency in the scheme for which they are licensed and monitored by BRE Global Ltd. Their role is to manage the formal assessment process and apply for certification of that assessment on behalf of the client. In doing so they will confirm the appropriate scheme, apply the relevant scheme criteria and liaise with the client and relevant stakeholders to facilitate an assessment. Only BRE Global Ltd licensed assessors can offer, register, undertake and apply for certification of assessment.
3. A BREEAM Advisory Professional (BREEAM AP) has specialist skills in sustainability and environmental design combined with a high level of competence and understanding in BREEAM and its assessment process. The BREEAM AP is one type of ‘sustainability champion’ defined and recognised in BREEAM. The BREEAM AP uses their expertise to assist clients and project teams by facilitating cross-project consideration and collaboration on solutions to scheme compliance, target setting and performance monitoring. A BREEAM AP cannot undertake a BREEAM assessment and apply for certification, unless they are also a licensed BREEAM assessor in the relevant scheme.
4. BREEAM is an environmental assessment tool widely used, in the UK and increasingly throughout Europe, to assess the environmental performance of buildings (new and existing) by rewarding those designs that take positive and evidential steps to reduce their environmental impacts.
5. MBA has prepared this pre-assessment report to accompany the planning application and provide a breakdown of the commitments required in order to achieve a target BREEAM ‘Excellent’ rating. It is not intended to be a live document to track the current design, but simply to capture a suitable means to meet the requirements of the proposed scheme at the time of issue.

2.0 RATING AND SCORING

2.1 BREEAM RATING METHODOLOGY

1. A BREEAM assessment is sub-divided into 9 issues covering a wide variety of aspects that may affect the sustainability of the development. Each of these environmental categories is given a different percentage weighting, established by their relative environmental impact. This assessment is to be undertaken using the BREEAM V6.1 New Construction Methodology, and the building has been assessed as a shell and core scheme. The scope of the developer's specification will be the method by which the final building is assessed.
2. The section description and their relative percentage rating for this type of project are given below:

SECTION	CREDITS AVAILABLE	SECTION WEIGHTING
Management	18	11.00%
Health & Wellbeing	10	8.00%
Energy	21	14.00%
Transport	12	11.50%
Water	8	7.00%
Materials	14	17.50%
Waste	10	7.00%
Land Use & Ecology	13	15.00%
Pollution	12	9.00%
Total	118	100.00%

Table 2 – BREEAM Issue categories & weighting

3. The BREEAM rating is calculated based on a total percentage score achieved by the development. Additionally, to ensure that certain key environmental criteria are included with the design, BREEAM requires that a selection of defined 'minimum standard' credits are achieved for each rating level.
4. Assuming the appropriate mandatory criteria are achieved, developments are awarded a rating within one of the bands shown below based upon the overall percentage score achieved.

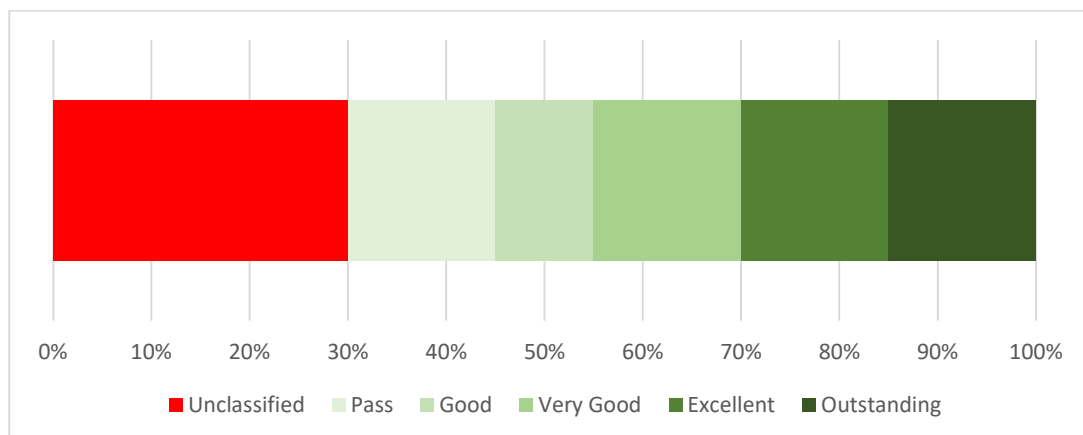


Figure 2 – BREEAM Rating Bands

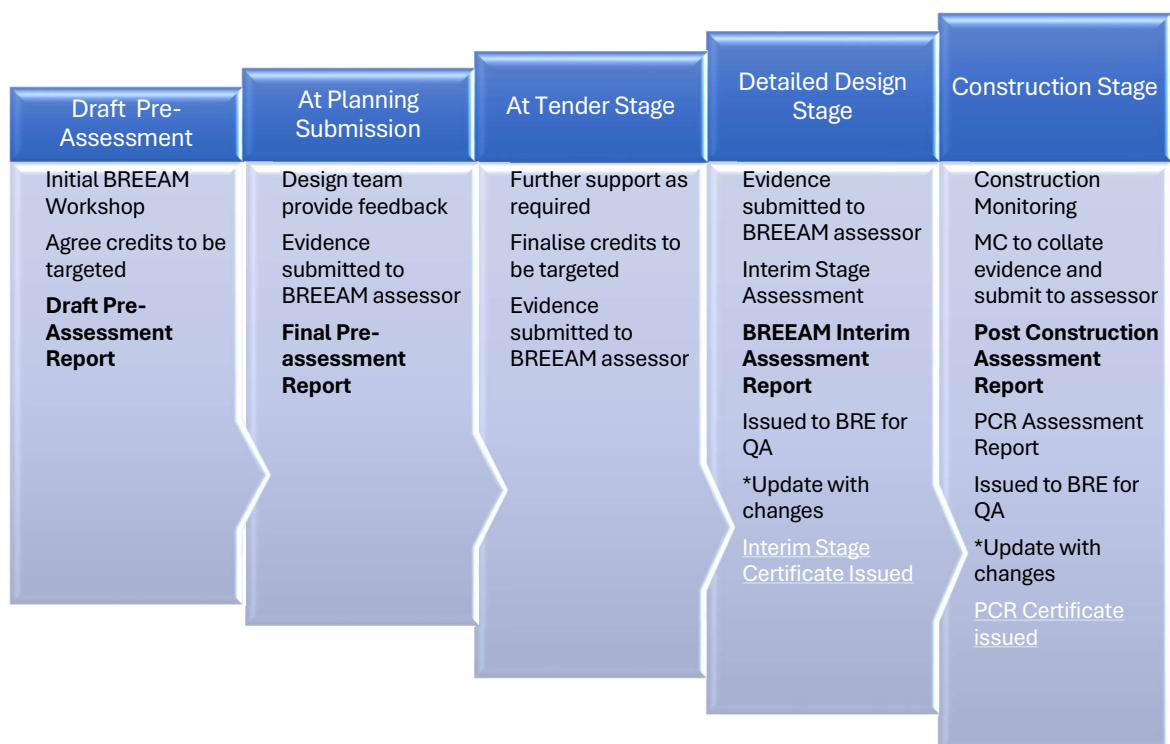
5. The bands selected for each score are intended to reward buildings which fall broadly into the following:

- Outstanding – less than top 1% (innovator)
 - Excellent – top 10% (best practice)
 - Very Good – top 25% (advanced good practice)
 - Good – top 50% (intermediate good practice)
 - Pass – top 75% (standard good practice)
6. To maintain a flexible system BREEAM adopts a ‘balanced score-card’ approach to the assessment and rating of building performance. This means that, to achieve a particular level of performance the majority of BREEAM credits can be traded, i.e. non-compliance in one area can be off-set through compliance in another to achieve the target BREEAM rating.
7. However, to ensure that performance against fundamental environmental issues is not overlooked in pursuit of a particular rating, BREEAM sets minimum standards of performance in key areas e.g. energy, water, waste etc. It is important to bear in mind that these are minimum acceptable levels of performance and, in that respect they should not necessarily be viewed as levels that are representative of best practice for a particular BREEAM rating band.

3.0 BREEAM ASSESSMENT PROCESS

1. The BREEAM assessment process is split into three main stages; pre-assessment, design stage assessment and post construction review. The pre-assessment stage allows the design team to ascertain the likely BREEAM score and rating a development can achieve and to provide a strategy for the credits to be targeted and to support the later stages of the assessment process. The design stage assessment builds on the pre assessment strategy and is undertaken just before tender and or work begins on site. At this stage the design should be sufficiently detailed to demonstrate that all of the targeted credit requirements have been fulfilled.
2. Following completion of the design stage the assessment can be submitted to the BRE for interim certification. During construction the site and building materials must be monitored closely by the contractor so that at completion, a full report can be compiled, supported by a final site visit. At this point all evidence is again assessed and if sufficient, a Post-Construction certificate will be issued.
3. The figure below summarises the typical assessment process:

Figure 3 – BREEAM Assessment Process Summary



4.0 BREEAM STRATEGY

1. The targeted credits, score and rating are confirmed in the BREEAM UK New Construction V6.1 calculator tool output presented within Appendix A.

CATEGORY	AVAILABLE	TARGETED	%CREDITS ACHIEVED	SECTION WEIGHTING	SECTION SCORE
Management	18	17	94.44	0.11	10.4
Health & Wellbeing	10	6	60.00	0.08	4.8
Energy	21	15	71.43	0.14	10.0
Transport	12	6	50.00	0.115	5.8
Water	8	6	75.00	0.07	5.3
Materials	14	11	78.57	0.175	13.8
Waste	10	8	80.00	0.07	5.6
Land Use & Ecology	13	9	69.23	0.15	10.4
Pollution	12	10	83.33	0.09	7.5
					76.42%

Table 3 – Summary of performance by BREEAM category

APPENDIX A – BREEAM TRACKER

Credit Information				Rating	Targeted	Targeted +Potential	Achieved					Items complete
Credits Available	Credits Targeted	Potential Credit	Credits not targeted	Percentage	76.42%	89.28%	0.00%					Action Needed by Planning Application
				Credit Issue	Title	Mandatory Credits	Aim	Summary of criteria	Comments and Actions	Expected Evidence at Design Stage	Responsible	Actions Required by
				For full details of credit compliance requirements, refer to the BREEAM 2018 Scheme Document (manual), which takes precedence to this document								

18	17	1	0	Management								
4	1		0	Man 01 (4 credits)	Project brief and design - <u>Project delivery planning</u>	N/A	To optimise final building design through recognising and encouraging an integrated design process and robust stakeholder engagement.	1 credit: <u>Prior to completion of RIBA Stage 2</u> - Identify stakeholder roles, responsibilities and contributions and prepare and undertake consultation.	A sustainability (BREEAM) workshop to be organised and the following to be documented prior to completion of Stage 2: Initial Project Brief, Project Execution Plan, Communication Strategy.	Project Directory Meet minutes Project Execution Plan Communication Strategy	Project Manager	RIBA Stage 1
	0	1	0		Project brief and design - <u>Stakeholder consultation (interested parties)</u>			1 credit: <u>Prior to completion of RIBA Stage 2</u> - Undertake consultation and demonstrate stakeholders' contributions. <u>Prior to completion of RIBA Stage 4</u> - consultation feedback is given to all relevant parties.	Project Manager to appoint a planning consultant to develop a consultation plan and organise public consultation at Stage 2. BREEAM Minimum consultation context must be included in consultation.	Consultation report Results from public consultation Examples of how the contributions changed the initial design	Project Manager	RIBA Stage 1
	1		0		Project brief and design - <u>BREEAM AP (Concept Design)</u>			1 credit: BREEAM AP appointment <u>no later than RIBA Stage 1</u> . BREEAM performance targets are formally agreed.	BREEAM AP to be appointed at Stage 1.	AP Stage 1 Report	Project Manager	RIBA Stage 1
	1		0		Project brief and design - <u>BREEAM AP (Developed Design)</u>			1 credit: Achieve 'project brief and design - BREEAM AP (Concept Design)' + monitor progress against the agreed BREEAM performance targets.	BREEAM AP to be appointed for Stage 3-4.	AP Stage 3-4 Report	Project Manager	RIBA Stage 3
4	2		0	Man 02 (4 credits)	Life cycle cost and service life planning - <u>Elemental life cycle cost</u>	N/A	To promote the business case for sustainable buildings and to deliver whole life value by encouraging the use of life cycle costing to improve design, specification, through-life maintenance and operation.	2 credits: <u>At RIBA Stage 2</u> - An elemental life cycle cost (LCC) analysis by a competent person.	Confirm if credit will be pursued, and appoint cost consultant to undertake BREEAM LCC by Stage 2.	Elemental LCC report	Cost consultant	RIBA Stage 2
	1		0		Life cycle cost and service life planning - <u>Component level life options appraisal</u>			1 credit: <u>At RIBA Stage 4</u> - a component level LCC analysis. The results of the analysis and consideration of LCC have been implemented.	Cost Consultant to undertake component level life options appraisal by Stage 4	Component LCC report	Cost consultant	RIBA Stage 4
	1		0		Life cycle cost and service life planning - <u>Capital cost reporting</u>			1 credit: Report the capital cost for the building in pounds per m².	Cost Consultant to report capital cost by Stage 4.	Letter of confirmation	Cost consultant	RIBA Stage 4
6	-	-	-	Man 03 (6 credits + 1 Exemplary)	Responsible construction practices - <u>Prerequisite</u>	Excellent: Minimum 1 credit in responsible construction management <i>Outstanding:</i> Minimum 2 credits in responsible construction management	To recognise and encourage construction sites which are managed in an environmentally and socially considerate, responsible and accountable manner.	Prerequisite: All timber to be 'legally harvested and traded timber'.	Environmental Consiltant to include the following requirements in tender for Main Contractor - Only use legally harvested and traded timber	Letter of confirmation OR employers requirements	Environmental Consultant	RIBA Stage 4
	1		0		Responsible construction practices - <u>Environmental management</u>			1 credit: All parties who at any stage manage construction site operate a qualifying EMS and practice pollution prevention policies and procedures.	Environmental Consultant to include the following requirements in tender to Principal and Demolition Contractors: - Operate an EMS - Implement best practice pollution prevention policies and procedures on site in accordance with Working at construction and demolition sites: PPG6, Pollution Prevention Guidelines.	ISO 14001 cert PPG6 examples OR employers requirements	Environmental Consultant	RIBA Stage 4
	1		0		Responsible construction practices - <u>BREEAM AP (Site)</u>			1 credit: Establish formally agreed performance targets and appoint a BREEAM AP to consult and monitor progress during construction.	Environmental Consultant to include the following requirements in tender for Main Contractor - Appoint a BREEAM AP for Stage 5	AP Report OR employers requirements	Environmental Consultant	RIBA Stage 4
	2		0		Responsible construction practices - <u>Responsible construction management</u>			1 credit: achieve 9 required responsible construction management items listed in the BREEAM manual. 2 credits: achieve 6 more listed items in addition to the 9 required items.	Environmental Consultant to include the following requirements in tender for Main Contractor - Meet the targeted Responsible Construction Management requirements	CCS report OR employers requirements	Environmental Consultant	RIBA Stage 4
	1		0		Responsible construction practices - <u>Monitoring of construction site impacts</u>			Appoint an individual to monitor, record, report & target: Energy and water consumption	Environmental Consultant to include the following requirements in tender for Main Contractor - Monitor, record report and target: • Energy and water consumption • Transport of construction materials and waste	Monitoring spreadsheet OR employers requirements	Environmental Consultant	RIBA Stage 4
	1		0		Responsible construction practices - <u>Monitoring of construction site impacts</u>			Appoint an individual to monitor, record, report & target: Transport of construction materials & waste	as above	OR employers requirements	Environmental Consultant	RIBA Stage 4
4	1		0	Man 04 (4 credits)	Commissioning and handover - <u>Commissioning - testing schedule and responsibilities</u>	Very Good, Excellent & Outstanding: Criterion 11 for two building user guides + Minimum 1 credit in commissioning test schedule and responsibilities.	To encourage a properly planned handover and commissioning process that reflects the needs of the building occupants.	1 credit: Commissioning programme, roles and responsibilities	Commissioning manager to be appointed during the design stage. Principal contractor to account for the commissioning and testing programme, responsibilities and criteria within their budget and the main programme of works; and to allow the required time to complete all commissioning and testing activities prior to handover.	Employers Requirements	Contractor	RIBA Stage 3
	1		0		Commissioning and handover - <u>Commissioning - Design and Preparation</u>			1 credit: In addition to achieving credit for 'commissioning - testing schedule and responsibilities', commissioning manager appointed during design stage to undertake design reviews, provide commissioning management and performance testing input .	Project Manager to appoint a commissioning manager during the design stage.	Employers Requirements	Project Manager	RIBA Stage 4
	1		0		Commissioning and handover - <u>Testing and inspecting building fabric</u>			1 credit: In addition to achieving credit for 'commissioning - testing schedule and responsibilities', conduct thermographic survey and/or airtightness test and inspection and rectify defects.	Environmental Consultant to include requirement for Main Contractor tender to commission Thermographic Survey and Air Tightness test. Rectify any defects identified prior to practical completion.	Employers Requirements	Environmental Consultant	RIBA Stage 4
	1		0		Commissioning and handover - <u>Handover</u>			1 credit: Building User Guide and building occupiers/premises managers training schedule	Environmental Consultant to include requirement for Main Contractor tender to provide 2x Building User Guides (BUGs) and two training schedules for the building occupiers and premises facilities managers. All relevant Consultants to contribute to BUGs.	Employers Requirements	Environmental Consultant	RIBA Stage 4
MAN sub totals				11.0%								

Pass 30% / Good 45% / Very Good 55% / Excellent 70% / Outstanding 85%

Credit Information				Rating	Targeted	Targeted +Potential	Achieved						Items complete
Credits Available	Credits Targeted	Potential Credit	Credits not targeted	Percentage	76.42%	89.28%	0.00%						Action Needed by Planning Application
				Credit Issue	Title	Mandatory Credits	Aim	Summary of criteria	Comments and Actions	Expected Evidence at Design Stage	Responsible	Actions Required by	
				For full details of credit compliance requirements, refer to the BREEAM 2018 Scheme Document (manual), which takes precedence to this document									

10	6	1	3	Health & Wellbeing								
3	0		1	Hea 01 (Building type dependent with max 5 + 1 Exemplary)	Visual comfort - <u>Daylighting</u>	N/A	To encourage best practice in visual performance and comfort by ensuring daylighting, artificial lighting and occupant controls are considered. Note: No. of credits will differ as per building types.	1-2 credits: Achieve specified average DF or annual illuminance requirement - building type dependent	Environmental Designers to confirm the feasibility of daylight credits.	Daylight report	Environmental Consultant	RIBA Stage 4
	1		0		Visual comfort - <u>View Out</u>			1 credit: Achieve view out requirements	Environmental Designers and Architect to confirm the feasibility of view out credit.	Drawings to confirm room depth Window to wall ratio calculations	Environmental Consultant / Design Architects	RIBA Stage 4
	1		0		Visual comfort - <u>Internal and external lighting levels, zoning and control</u>			1 credit: Develop external lighting design based on BS5489-1:2013+ BS EN 12464-2:2014	Lighting Designer to design external lighting to meet this credit requirements.	Specification Internal and External lighting drawings	MEP	RIBA Stage 4
1	-	-	-	Hea 02 (1 credit)	Indoor air quality - <u>Indoor Air Quality (IAQ) plan</u>	N/A	To encourage and support healthy internal environments with good indoor air quality.	Prerequisite: Develop and implement site specific IAQ plan as per Guidance Note GN06.	MEP Engineers to include IAQ plan in their scope.	IAQP	Environmental Consultant	RIBA Stage 2
	0		1		Indoor air quality - <u>Ventilation</u>			1 credit: Provide fresh air into the building in accordance with the criteria of the relevant standard for ventilation.	MEP Engineers to develop the ventilation strategy based on relevant standards.	Drawings Specification	MEP	RIBA Stage 2
2	1		0	Hea 04 (2 credits)	Thermal comfort - <u>Thermal modelling</u>	N/A	To ensure the building is capable of providing an appropriate level of thermal comfort.	1 credit: Thermal modelling as per CIBSE AM11, to demonstrate compliance with CIBSE Guide A or CIBSE TM52/TM59 .	Environmental Designers to undertake thermal modelling for typical climate conditions throughout the design process and develop final model for Stage 4.	Thermal modelling report	Environmental Consultant	RIBA Stage 4
	1		0		Thermal comfort - <u>Design for future thermal comfort</u>			1 credit: Achieve 'Thermal comfort - Thermal modelling' and show pathway for thermal comfort compliance based on projected climate change environment.	MEP Engineers to undertake thermal modelling for projected climate conditions throughout the design process and develop final model for Stage 4.			RIBA Stage 4
1	0	1	0	Hea 05 (Building type dependent with max 4)	Acoustic performance - <u>Acoustic performance</u>	N/A	To ensure the building is capable of providing an appropriate acoustic environment to provide comfort for building users.	1 credit: Achieve the internal indoor ambient noise level standards.	Client to appoint acoustic consultant to assess the likelihood of achieving this credit.	Acoustician's report	Acoustician	RIBA Stage 2 (Appointment of Acoustician by RIBA Stage 2. Testing can be carried out at later date)
1	0		1	Hea 06 (1 credit + 1 Exemplary)	Security - <u>Security of site and building</u>	N/A	To encourage the planning and implementation of effective measures that provide an appropriate level of security to the building and site.	1 credit: Security Needs Assessment by a suitably qualified security specialist latest by RIBA Stage 2.	Architect/Client to consult with a suitably qualified security specialist before end of RIBA stage 2	Security Specialists report Confirmation that recommendations will be implemented	Design Architects / Client	RIBA Stage 2
2	1		0	Hea 07 (2 credits)	Safety and healthy surroundings - <u>Safe access</u>	N/A	To encourage the provision of safe access around the site and outdoor space that enhances the wellbeing of building users.	1 credit: Develop foot- and cycle-paths, drop off and parking areas to provide safe access to building users.	Architect to develop foot- and cycle-paths, drop-off, delivery and parking areas to ensure safe access.	Access drawings showing foot and cycle paths Vehicle swept paths drawings	Design Architects	RIBA Stage 2
	1		0		Safety and healthy surroundings - <u>Outside space</u>			1 credit: Include outside space providing building users with an external amenity area.	Architect to include suitably size outdoor amenity space. This must be non smoking.	Drawings showing external areas Confirmation of non-smoking and appropriate seating		RIBA Stage 2
HEA sub totals				8.0%								

Pass 30% / Good 45% / Very Good 55% / Excellent 70% / Outstanding 85%

Credit Information				Targeted	Targeted +Potential	Achieved					Items complete
Rating				EXCELLENT	OUTSTANDING	UNCLASSIFIED					Action Needed by Planning Application
Percentage				76.42%	89.28%	0.00%					
Credit Issue				Title	Mandatory Credits	Aim	Summary of criteria	Comments and Actions	Expected Evidence at Design Stage	Responsible	Actions Required by
For full details of credit compliance requirements, refer to the BREEAM 2018 Scheme Document (manual), which takes precedence to this document											

21	15	2	6	Energy								
13	4	2	3	Ene 01 (13 credits + up to 5 Exemplary credits)	Reduction of energy use and carbon emissions - <u>Energy performance</u>	<u>Excellent:</u> minimum 4 credits in Energy Performance or Operational Energy <u>Outstanding:</u> minimum 6 credits in Energy performance + minimum 4 credits in Energy modelling and reporting	To minimise operational energy demand, primary energy consumption and CO ₂ emissions. Info needed: i. Building floor area (m ²) ii. Notional building energy demand (MJ/m ²) iii. Actual building energy demand (MJ/m ²) iv. Notional building energy consumption (kWh/m ²) v. Actual building energy consumption (kWh/m ²) vi. Target Emission Rate (kgCO ₂ /m ²) vii. Building Emission Rate (kgCO ₂ /m ²)	Up to 9 credits: Calculate an Energy Performance Ratio for New Constructions (EPR _{NC}) using BREEAM's Ene 01 calculator for: 1 credit: EPR _{NC} = 0.1 4 credits: EPR _{NC} = 0.4 = <u>Excellent</u> . 6 credits: EPR _{NC} = 0.6 = <u>Outstanding</u> . 9 credits: EPR _{NC} = 0.90 AND zero net regulated CO ₂ emissions	Environmental Consultant to undertake early stage energy modelling to understand the likely credits to be achieved in this issue	BRUKLS	Environmental Consultant	RIBA Stage 2
	4	0	0		Reduction of energy use and carbon emissions - <u>Prediction of operational energy consumption</u>			4 credits: Organise a design discussion focusing on operational energy use during Stage 2 and develop/report additional operational energy use assessment during design and post-construction stages.	Environmental Consultant to organise operational energy use workshop during Stage 2 and develop assessment.			POE report Discussion evidence
2	1		0	Ene 02 (Building type dependent with max 2)	Energy monitoring - <u>Sub-metering of end-use categories</u>	<u>Very Good, Excellent & Outstanding:</u> Minimum 1 credit in sub-metering of end-use categories	To encourage the installation of energy sub-metering to facilitate the monitoring of operational energy consumption. To enable managers and consultants post-handover to compare actual performance with targets in order to inform ongoing management and help in reducing the performance gap.	1 credit: Energy metering systems for 90% of the estimated annual energy consumption of each fuel separated by end-use categories.	MEP Engineer to include BREEAM requirements for energy monitoring into their specification.	MEP	Drawings Specification	RIBA Stage 4
	1		0		Energy monitoring - <u>Sub-metering of high energy load and tenancy areas</u>			1 credit: Separate energy sub-metering for each separate tenanted unit or floor plate within the assessed development with an accessible EMS or meters with pulsed or other open protocol communication outputs.	MEP Engineer to include BREEAM requirements for energy monitoring into their specification.			RIBA Stage 4
1	1		0	Ene 03 (1 credit)	External lighting	N/A	To reduce energy consumption through the specification of energy efficient light fittings for external areas of the development.	1 credit: No external lighting, or energy-efficient external lighting with less than 70 luminaire lumens per circuit watt, automated daylight control and presence detection in areas with intermittent pedestrian traffic.	Client to appoint lighting designer/consultant for efficient exterior lighting design.		Client / Lighting Designer	RIBA Stage 3
3	1		0	Ene 04 (3 credits)	Low carbon design - <u>Passive design analysis</u>	N/A	To encourage the adoption of design measures, which reduce building energy consumption and associated carbon emissions and minimise reliance on active building services systems.	1 credit: Achieve Hea 04 criterion 1, assess and adopt passive design solutions analysis at RIBA Stage 2 and quantify reduced energy metrics.	Environmental Consultant to analyse passive design measures at RIBA stage 2.	Environmental Consultant	Passive design measures report	RIBA Stage 2
			1		Low carbon design - <u>Free cooling</u>			1 credit: Achieve "Low carbon design - Free cooling" credit and assess/adopt free cooling strategies.	Not targeted.			RIBA Stage 2
	1		0		Low carbon design - <u>Low and zero carbon technologies</u>			1 credit: Conduct feasibility study at RIBA Stage 2, adopt suitable technologies and quantify reduced CO2 emissions resulting from study.	Environmental Consultant to conduct a feasibility study at RIBA stage 2.			LZCT report
2	1		0	Ene 06 (3 credits)	Energy efficient transportation systems - <u>Energy consumption</u>	N/A	To encourage the specification of energy efficient transportation systems within buildings.	1 credit: Analysis of transport demand, usage and energy use of lifts, escalators, etc.	Client to appoint a transport consultant to undertake a demand analysis for the lifts	Lift Consultant	Lift transport analysis Comparison of two lifts Confirmation that lowest energy consuming lift is specified	RIBA Stage 2
	1		0		Energy efficient transportation systems - <u>Energy efficient features</u>			Up to 2 credits: Achieve 'Energy efficient transportation systems - Energy consumption' and specify lifts (1 credit) and/or escalators (1 credit) meeting efficiency requirements.	Client to appoint a transport consultant to undertake an energy analysis for the lifts			Specification
ENE sub totals				14.0%								

12	6	4	2	Transport								
2	2		0	Tra 01 (2 credits)	Transport assessment and travel plan	N/A	To reward awareness of existing local transport and identify improvements to make it more sustainable.	2 credits: Develop a travel plan during feasibility and design stages based on site specific travel assessment to improve sustainable modes of transport and movement.	Client to appoint a transport consultant to undertake public transport assessment. Important to note that the options listed in the 'travel plan' note in the BREEAM Tra 01 Methodology section must be included in the travel plan.	Travel Plan Transport Statement Confirmation that travel plan will be implemented Timetables Routes to bus stops AI Calculation / Tra 01 Calculator Tool	Client	RIBA Stage 2
				Tra 02 (10 credits)	Sustainable transport measures - <u>Prerequisite</u>	N/A	To maximise the potential for local public, private and active transport through provision of sustainable transport measures appropriate to the site.	Prerequisite: Achieve Transport assessment and travel plan credit.	Client to appoint a transport consultant to undertake public transport assessment. Important to note that the options listed in the 'travel plan' note in the BREEAM Tra 01 Methodology section must be included in the travel plan.	As above	Client	RIBA Stage 2
Sustainable transport measures - <u>Transport options implementation</u>	Up to 10 credits: Adopt sustainable, private and active transport measures as listed in the credit guidance.	Transport consultant & Environmental Consultant to review and recommend sustainable transport measures for adoption by the architect.	Drawings to confirm the specification of sustainable transport measures		Transport Consultant / Environmental Consultant			RIBA Stage 2				
TRA sub totals				11.5%								

				Targeted	Targeted +Potential	Achieved						Items complete	
Credit Information				Rating	EXCELLENT	OUTSTANDING	UNCLASSIFIED						Action Needed by Planning Application
Credits Available	Credits Targeted	Potential Credit	Credits not targeted	Percentage	76.42%	89.28%	0.00%						
				Credit Issue	Title	Mandatory Credits	Aim	Summary of criteria	Comments and Actions	Expected Evidence at Design Stage	Responsible	Actions Required by	
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8	6	1	1	Water								
5	3	1	1	Wat 01 (5 credits + 1 Exemplary)	Water consumption	<u>Good, Very good & Excellent:</u> Minimum 1 credit <u>Outstanding:</u> Minimum 2 credits.	To reduce the consumption of potable water for sanitary use in new buildings through the use of water efficient components and water recycling systems.	Up to 5 credits: Improvement over baseline case: 1 credit: 12.5%, 2 credits: 25%, 3 credits: 40%, 4 credits: 50%, 5 credits: 55%.	MEP Engineer to assess the number of credits that will be feasible. Architect to specify fittings. Architect to specify fitting based on the prescribed flow rates & flush volumes.	Sanitaryware schedule Drawings Manufacturers datasheets Wat 01 Calculator Tool	Architect	RIBA Stage 2
1	1		0	Wat 02 (1 credit)	Water monitoring	<u>Good, Very good, Excellent & Outstanding:</u> Minimum criterion 1	To reduce the consumption of potable water in new buildings through the effective management and monitoring of water consumption.	Specifying a water meter, with pulsed output, on the mains water supply to each building (including borehole or other source). Water-consuming plant or building areas, (with 10% or more of the total water demand) fitted with sub meters or water monitoring equipment.	MEP Engineer to include BREEAM requirements for water monitoring into their specification.	Drawings Specification	MEP	RIBA Stage 3/4
2	1		0	Wat 03 (2 credits)	Water leak detection - <u>Leak detection system</u>	N/A	To reduce the consumption of potable water in new buildings through minimising wastage due to water leaks.	1 credit: A compliant leak detection system is specified or installed on the building's water supply.	MEP Engineer to include BREEAM requirements for leak detection into their specification.	Drawings Specification	MEP	RIBA Stage 4
	1		0		Water leak detection - <u>Flow control devices</u>			1 credit: Flow control devices are fitted to each WC area/facility to regulate water supply according to demand.	MEP Engineer to incorporate required flow control devices into their specification.	Drawings Specification		RIBA Stage 4
WAT sub totals				7.0%								

14	11	1	2	Materials								
7	4		2	Mat 01 (7 credits + 3 exemplary)	Environmental impacts from construction products - Building life cycle assessment (LCA) - <u>Superstructure</u>	N/A	To reduce the burden on the environment from construction products by recognising and encouraging measures to optimise construction product consumption efficiency and the selection of products with a low environmental impact (including embodied carbon), over the life cycle of the building.	Up to 6 credits: Conduct and submit superstructure LCA comparison with BREEAM benchmark during Stage 2, and/or Stage 4 and compare 2 to 4 significantly different superstructure design options during Stage 2 and/or Stage 4 to identify opportunities reducing environmental impacts and justify decisions for adopted designs.	Client to appoint specialist for Life Cycle Assessment (LCA) for superstructure and relevant design options during Stage 2.	Mat 01 Calculator Tool LCA Report	Client	Before planning
	1		0		Environmental impacts from construction products - Building life cycle assessment (LCA) - <u>Substructure and hard landscaping options appraisal during Concept Design</u>			1 credit: Assess option appraisal criteria for superstructure during Stage 2 and carry out building LCA options appraisal for a total of at least 6 significantly different substructure or hard landscaping design options (at least two of each category is required).	Client to appoint specialist for Life Cycle Assessment (LCA) for both substructure and hard landscaping and relevant design options during Stage 2.	Mat 01 Calculator Tool LCA Report	Client	RIBA Stage 2
1	1		0	Mat 02 (1 credit)	Environmental impacts from construction products - Environmental Product Declarations (EPD)	N/A	To encourage availability of robust and comparable data on the impacts of construction products through the provision of EPD.	1 credit: Achieve total EPD points score of at least 20 according to the methodology described in the credit by selecting materials with EPDs.	Architect to identify and specify materials with compliant EPDs.	List of specified products with EPDs ZIP folder of valid EPDs	Design Architects	RIBA Stage 4
4	-	-	-	Mat 03 (4 credits + 1 Exemplary)	Responsible sourcing of construction products - <u>Prerequisite</u>	<u>All rating levels:</u> Minimum Criterion 1	To facilitate the selection of products that involve lower levels of negative environmental, economic and social impact across their supply chain including extraction, processing and manufacture.	Pre-requisite: All timber used on the project is sourced in accordance with the UK Government's Timber Procurement Policy.	Compliant timber products must be specified throughout the project.	List of timber suppliers FSC certificates	Client	RIBA Stage 4
	1		0		Responsible sourcing of construction products - <u>Enabling Sustainable procurement</u>			1 credit: Materials must be procured in accordance with a documented sustainable procurement plan put in place before Concept Design.	A sustainable procurement plan must be adopted before Concept Design.	Sustainable procurement plan	Client	RIBA Stage 1
	2	1	0		Responsible sourcing of construction products - <u>Measuring responsible sourcing</u>			Based on the achieved Responsible Sourcing of Materials (RSM) points: 1 credit: RSM point => 10% (superstructure only) 2 credits: RSM point >= 20% (superstructure, internal finishes and substructure + landscaping.) 3 credits: RSM point >= 30% (superstructure, internal finishes and substructure + landscaping.)	Responsibly sourced materials to be specified as per the credit requirements.	Completed Mat 03 Calculator Tool Responsible Sourcing Certificates	Client	RIBA Stage 4
1	1		0	Mat 05 (1 credit)	Designing for durability and resilience	N/A	To reduce the need to repair and replace materials resulting from damage to exposed elements of the building and landscape.	1 credit: Protect vulnerable parts of the building from damage and exposed parts of the building from material degradation.	Architect to consider appropriate robustness measures and cost consultant to allow for their additional cost.	Drawings showing protection measures Completed risk assesments	Design Architects & Cost consultant	RIBA Stage 4
1	1		0	Mat 06 (1 credit)	Material efficiency	N/A	To avoid unnecessary materials use arising from over specification without compromising structural stability, durability or the service life of the building.	1 credit: Set targets, implement and record measures <u>at each RIBA stage</u> to optimise the use of materials in building design, procurement, construction, maintenance and end of life.	Architect to ensure that building materials are optimised at each stage, with input from Structural & MEP	Report fotr each of the stages	Design Architects	RIBA Stage 1
MAT sub totals				17.5%								

Pass 30% / Good 45% / Very Good 55% / Excellent 70% / Outstanding 85%

Credit Information				Rating	Targeted	Targeted +Potential	Achieved					Items complete
Credits Available	Credits Targeted	Potential Credit	Credits not targeted	Percentage	EXCELLENT	OUTSTANDING	UNCLASSIFIED					Action Needed by Planning Application
				Credit Issue	Title	Mandatory Credits	Aim	Summary of criteria	Comments and Actions	Expected Evidence at Design Stage	Responsible	Actions Required by
				For full details of credit compliance requirements, refer to the BREEAM 2018 Scheme Document (manual), which takes precedence to this document								

10	8	2	0	Waste								
5	1		0	Wst 01 (5 credits + 1 Exemplary)	Construction waste management - <u>Pre-demolition audit</u>	<u>Outstanding:</u> Minimum 1 credit	To reduce construction waste by encouraging reuse, recovery and best practice waste management practices to minimise waste going to landfill.	1 credit: Complete a pre-demolition audit during Stage 2 for opportunities to reuse and minimise waste, and reference it in the RMP.	Pre-demolition audit to be conducted during Stage 2 and findings to be incorporated into the resource management plan.	pre-demolition audit	Client	RIBA Stage 2
	2	1	0		Construction waste management - <u>Construction resource efficiency</u>			Up to 3 credits: RMP + the amount of non-hazardous on-site/off-site construction waste (m³/100m² or tonnes/100m²) generated: 1 credit: 13.3 / 11.1, 2 credits: 7.5 / 6.5, 3 credits: 3.4 / 3.2.	Client to set targets at Stages 2&3 and include in Contractor tender.	Sit waste maangement plan with targets and actual waste arisings	Client	RIBA Stage 4
	1		0		Construction waste management - <u>Diversion of resources from landfill</u>			1 credit: Divert from landfill (volume or tonnage) Demolition = 80%/90% Non-demolition = 70%/ 80%.	Client to set targets at Stages 2&3 and include in Contractor tender.		Client	RIBA Stage 4
1	0	1	0	Wst 02 (1 credit + 1 Exemplary)	Use of recycled and sustainably sourced aggregates	N/A	To encourage the use of more sustainably sourced aggregates, encourage reuse where appropriate and avoid waste and pollution arising from disposal of demolition and other forms of waste.	Prerequisite: Achieve Wst-01-1 by completing pre-demolition audit. 1 credit: Identify all aggregate uses, types and quantities and regionally source sustainable aggregates to calculate Sustainable Aggregate Points.	Architect/Structural engineer to confirm whether aggregates can be sourced locally. Client to include targets in contractor tender	Wst 02 proforma condiming aggregate us, type and quantitiy	Structural Engineer	RIBA Stage 2
1	1		0	Wst 03 (1 credit)	Operational waste	<u>Excellent & Outstanding:</u> Minimum 1 credit	To encourage the recycling of operational waste through the provision of dedicated storage facilities and space.	Clearly labelled, accessible, dedicated space for segregation and storage of operational recyclable waste and static waste compactor(s) or baler(s), composting (if applicable).	Confirm the size of waste management areas and need for static waste compactor and composter with specialist, dedicate space in plans.	Drawings of storage area Confirmation of labeling and access	Design Architects	RIBA Stage 4
1	1		0	Wst 05 (1 credit + 1 exemplary)	Adaptation to climate change	N/A	To minimise the future need of carrying out works to adapt the building to take account of more extreme weather changes resulting from climate change and changing weather patterns.	1 credit: Climate change adaptation strategy appraisal including risk assessment for resiliency of structural, fabric, building services and renewables installations <u>RIBA Stage 2</u> .	Design team led by the architect to produce climate change adaptation strategy appraisal for building services, renewables, structural and fabric resiliency at RIBA Stage 2.	Risk assessment	Design Architects	RIBA Stage 2
2	1		0	Wst 06 (2 credits)	Design for disassembly and adaptability - <u>Recommendations</u>	N/A	To avoid unnecessary materials use, cost and disruption arising from the need for future adaptation works as a result of changing functional demands and to maximise the ability to reclaim and reuse materials at final demolition in line with the principles of a circular economy.	1 credit: Conduct a study to explore the ease of disassembly and functional adaptation potential of different design scenarios by <u>RIBA Stage 2</u> and develop recommendations.	Design team led by Architect to develop building adaptation options at RIBA Stage 2.	Report	Design Architects	RIBA Stage 2
	1		0		Design for disassembly and adaptability - <u>Implementation</u>			1 credit: Achieve 'Design for disassembly and adaptability - Recommendations,' update the study during <u>RIBA Stage 4</u> to include revised and adopted recommendations and produce a guide for tenants.	Design team led by Architect to update the building adaptation study and develop guide for tenants.	Report		RIBA Stage 4
WST sub totals				7.0%								

13	9	0	3	Land Use & Ecology								
2	1		0	LE 01 (2 credits)	Site selection - <u>Previously occupied land</u>	N/A	To encourage the use of previously occupied or contaminated land and avoid land which has not been previously disturbed.	1 credit: 75% footprint on previously developed land.	Client to commission site contamination surveys. If already undertaken then to forward site survey to MEP/Civil/Structural engineer to confirm whether the land is contaminated from previous reports	existing and proposed site plans	Client	RIBA Stage 1
	0		1		Site selection - <u>Contaminated land</u>			1 credit: Contaminated land investigation by a contaminated land specialist and remediation.		Contaminated land report confirming significant contamination		RIBA Stage 1
2	-	-	-	LE 02 (Up to 2 credits + 1 Exemplary)	Ecological risks and opportunities - <u>Statutory obligations - Prerequisite</u>	N/A	To determine the ecological baseline and zone of influence of the site and identify risks and opportunities for achieving optimum outcomes.	Prerequisite: Identify assessment methodology using GN34 and commit to monitor compliance against all relevant legislation relating to ecology.	Client to appoint Suitably Qualified Ecologist at RIBA stage 1 and carry out a Preliminary Ecological Assessment (PEA).	Ecology report GN40 LE03/04 Calculator Tool	Client	RIBA Stage 1
	1		0		Ecological risks and opportunities - <u>Survey and evaluation</u>			1 credit: Establish ecological baseline and capacity and feasibility for enhancement of the ecological value for the project.				
	1		0		Ecological risks and opportunities - <u>Determining the ecological outcomes</u>			1 credit: Achieve Survey and evaluation requirements, and select optimal ecological outcome for the site after liaising with representative stakeholders and the project team.				
2	-	-	-	LE 03 (Up to 3 credits)	Managing impacts on ecology - Ecological risks and opportunities - <u>Prerequisite</u>	N/A	To avoid, or limit as far as possible, negative impacts on the ecology of the site and its zone of influence arising as a result of the project.	Prerequisite: Achieve L02 'Survey and evaluation and Determining ecological outcomes' criteria	Client to appoint Suitably Qualified Ecologist at RIBA stage 1 to guide through the design team on how to maximise the ecological value of the site. Client to appoint Suitably Qualified Ecologist at RIBA stage 1.	Ecology report GN40 LE03/04 Calculator Tool	Client	RIBA Stage 1
	1		0		Managing impacts on ecology - <u>Planning and measures on-site</u>			1 credit: Roles and responsibilities are clearly defined during Stage 2 through liaison with representative stakeholders and works on site have been developed accordingly.				
	1		0		Managing impacts on ecology - <u>Managing negative impacts</u>			1 credit: Change in site ecological value is minimised to the extent possible. 2 credits: No overall loss of ecological value.				
4	-	-	-	LE 04 (Up to 4 credits)	Ecological change and enhancement - managing negative impacts on ecology - <u>Prerequisite</u>	N/A	To enhance the ecological value of the site and areas within its zone of influence in support of local, regional and national priorities.	Prerequisite: Achieve L03 for managing negative impacts on ecology and commit to monitor compliance against all relevant ecology legislations.	Client to appoint Suitably Qualified Ecologist at RIBA stage 1 to guide through the design team on how to maximise the ecological value of the site. Client to appoint Suitably Qualified Ecologist at RIBA stage 1.	Ecology report GN40 LE03/04 Calculator Tool	Client	RIBA Stage 1
	1		0		Ecological change and enhancement - <u>Ecological enhancement</u>			1 credit (available only if an SQE has been appointed): Coordination with representative stakeholders and available data.				
	1		2		Ecological change and enhancement - <u>Change and enhancement of ecology</u>			Up to 3 credits: Credits are awarded based on change of ecological value.				
2	-	-	-	LE 05 (Up to 2 credits)	Long term ecological management and maintenance - <u>Prerequisite</u>	N/A	To secure ongoing monitoring, management and maintenance of the site and, its habitats ecological features to ensure intended outcomes are realised for the long term.	Prerequisite: Monitor compliance with all relevant national and international standards related to ecology + LE 04 is achieved including role distribution and site preparation planning.	Environmental Consultant to include the requirement in the BREEAM Preliminaries. Design team to maximise the ecological outcome within the project site. Client to include a section on Ecology and Biodiversity as part of the tenant information. Ecologist to develop a long term habitat management plan.	Ecology report GN40 LE03/04 Calculator Tool Landscape Management Plan Confirmation that recommendations will be implemented	Environmental Consultant	RIBA Stage 4
	1		0		Long term ecological management and maintenance - <u>Management and maintenance throughout the project</u>			If a qualified ecologist has been appointed: 1 credit: Put in place applicable review, monitoring, information sharing and maintenance measures to ensure long term success of ecological strategies.				RIBA Stage 4
	1		0		Long term ecological management and maintenance - <u>Landscape and ecology management plan</u>			1 credit: Landscape and ecology management plan in accordance with BS42020:2013 covering at least first five years after completion. If no qualified ecologist appointed, project can earn only 1 credit for meeting requirements of BOTH credits above.				RIBA Stage 4
LE sub totals				15%								

Pass 30% / Good 45% / Very Good 55% / Excellent 70% / Outstanding 85%

Credit Information				Rating	Targeted	Targeted +Potential	Achieved					Items complete
Credits Available	Credits Targeted	Potential Credit	Credits not targeted	Percentage	76.42%	89.28%	0.00%					Action Needed by Planning Application
				Credit Issue	Title	Mandatory Credits	Aim	Summary of criteria	Comments and Actions	Expected Evidence at Design Stage	Responsible	Actions Required by
				For full details of credit compliance requirements, refer to the BREEAM 2018 Scheme Document (manual), which takes precedence to this document								

12	10	1	1	Pollution								
3				Pol 01 (3 credits)	Impact of refrigerants - <u>No refrigerant use</u>	N/A	To reduce the level of greenhouse gas emissions arising from the leakage of refrigerants from building systems.	3 credits: Use no refrigerants.	MEP Engineer to explore the feasibility of not using any refrigerants in the project.	Letter of confirmation	MEP	RIBA Stage 2
	1	1	0		Impact of refrigerants - <u>Impact of refrigerant</u>			Pre-requisite: All systems comply with the requirements of BS EN 378:2016 (parts 2 and 3) and if applicable, IRARSCP. 2 credits: Refrigerants have Direct Effect Life Cycle CO ₂ equivalent. emissions (DELCCO _{2e}) of ≤100 kgCO _{2e} /kW cooling/heating capacity OR GWP ≤ 10. OR 1 credit: Refrigerants have Direct Effect Life Cycle CO ₂ equivalent emissions (DELCCO _{2e}) of ≤1000 kgCO _{2e} /kW cooling/heating capacity.	If project uses refrigerants, MEP engineer to specify compliant refrigerants.	Letter of confirmation Completed Pol 01 Calculator Tool		RIBA Stage 2
			1		Impact of refrigerants - <u>Leak detection</u>			1 credit: Use hermetically sealed or environmentally benign refrigerants, OR install leak detection system & automatic response to reduce leak.	If project uses refrigerants, MEP engineer to specify robust leak detection systems and response mechanisms.	Specification Drawings		RIBA Stage 2
2	2		0	Pol 02 (2 credits)	Local air quality	N/A	To contribute to a reduction in local air pollution through the use of low emission combustion appliances in the building.	Up to 2 credits based on project location, type of heating equipment and NO ₂ , VOC and PM emission rates for combustion systems (if any).	MEP Engineer to explore the feasibility of this credit.	Specification Drawings	MEP	RIBA Stage 2
5	-	-	-	Pol 03 (5 credits)	Flood and surface water management - <u>Prerequisite</u>	N/A	To avoid, reduce and delay the discharge of rainfall to public sewers and watercourses, thereby minimising the risk and impact of localised flooding on-site and off-site, watercourse pollution and other environmental damage.	Prerequisite: An appropriate consultant must be appointed to carry out and demonstrate compliance.	Appointed Civil/Structural Engineer to produce a FRA and to advise on SUDS.	Flood Risk Assessment Drainage Plans Run off calculations SUDS description	Civil Engineer / Structural Engineer	RIBA Stage 1
	2		0		Flood and surface water management - <u>Flood resilience</u>			2 credits: Site specific FRA confirming low risk zone. OR 1 credit: FRA confirms medium or high risk zone yet outside of functional floodplain. Increase the resilience and resistance to flooding by raising ground floor levels or reflecting measures in BS8533:2017.				
	1		0		Surface water run-off - <u>Surface water run-off rate</u>			Pre-requisite: run-off design solutions must be bespoke and justified for the specific site. 1 credit: Peak rate of run-off is 30% less than the pre-developed site also accounting for climate change, with long term maintenance in place.				
	1		0		Surface water run-off - <u>Surface water run-off volume</u>			1 credit: Flooding will not occur if local drainage system fails AND SuDS techniques are adopted to limit run-off volume to pre-developed levels.				
	1		0		Surface water run-off - <u>Minimising watercourse pollution</u>			1 credit: SuDS or source control systems with no discharge from site for rainfall up to 5mm and containment of pollution sources.				
1	1		0	Pol 04 (1 credit)	Reduction of night time light pollution	N/A	To ensure that external lighting is concentrated in the appropriate areas and that upward lighting is minimised, thereby reducing unnecessary light pollution, energy consumption and nuisance to neighbouring properties.	1 credit: EITHER eliminate external lighting without adversely affecting safety and security, OR design external lighting in line with ILP Guidance Notes for the reduction of obtrusive light, 2011 and include required control measures for external lighting.	Client to appoint specialist for external lighting specification.	Specification Drawings	Client	RIBA Stage 2
1	1		0	Pol 05 (1 credit)	Reduction of noise pollution	N/A	To reduce the likelihood of noise arising from fixed installations on the new development affecting nearby noise-sensitive buildings.	1 credit: EITHER there are no noise-sensitive areas or buildings within 800m radius OR noise impact assessment in compliance with BS 4142:2014 by a suitably qualified acoustician, along with necessary remediations.	Client to appoint acoustic consultant to explore the feasibility of this credit.	Acousticians report	Client	RIBA Stage 1
POL sub totals					9.0%							