



# Lancashire Central BREEAM Pre-Assessment

July 2022

Application for Outline Planning Permission

On behalf of Maple Grove Developments and Lancashire County Council



# LANCASHIRE CENTRAL

## BREEAM Pre-assessment Planning Application

March 2022



# QUALITY ASSURANCE

## ACCOUNTABILITY FOR THIS DOCUMENT

**Prepared by:** Gracie Schooling  
**Position:** Project and Sustainability Assistant  
**Date:** 14/01/2022

**Signed\*:** G.Schooling  
\*Alternatively may be approved electronically through document management system or email correspondence

**Reviewed by:** Maxine Goodey  
**Position:** Sustainability Director  
**Date:** 28/03/22

**Signed\*:** M. Goodey  
\*Alternatively may be approved electronically through document management system or email correspondence

## VERSION CONTROL

All revision and amendments to this document are to be recorded in this section.

REF	DATE	DETAILS	AUTHORISED
V1.	28/03/22	<i>For comment</i>	MG
V2	17/05/22	<i>Changes made</i>	GS
V3	21/06/22	<i>Changes made from comments</i>	GS

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# 1. INTRODUCTION

Introduction & about us



# 1. INTRODUCTION

Coreus Projects Ltd were instructed by Waterman Infrastructure and Environment Ltd to complete a BREEAM Pre-assessment on behalf of Maple Grove Developments and Lancashire County Council (**“the Applicant”**) in support of an outline planning application for the development of a new major mixed-use employment scheme at Lancashire Central.

The application seeks outline planning application for a maximum quantum of 160,000sqm of flexible employment and commercial floorspace and up to 116 new residential dwellings.

## BRE CLASSIFICATION

In order to understand the achievability of BREEAM Very Good for each use type within the masterplan: a high-level strategy analysing a variety of use types and scope methodologies have been undertaken;

- 1x BREEAM UK New Construction Fully Fitted Healthcare methodology to cover health centre, gym, creche use types.
- 1x BREEAM UK New Construction Shell & Core, Industrial methodology to cover warehouse storage and distribution.
- 1x BREEAM UK New Construction Shell Only, Retail methodology to cover a shops and food & beverage use types.

The development will be reviewed and the number, as well as type and scope, of assessments will be agreed for each phase/ building following BRE classifications.

The healthcare methodology has been used to provide high level confidence in the achievement of BREEAM Very Good for the creche and gym use types.

They follow similar scopes and therefore criteria with healthcare centres, which are the most challenging use types out of the three.

## SUMMARY OF PROGRESS

A full review of the design and the information submitted alongside the planning application has been undertaken.

The project team, including the client and assessor/AP, have met throughout the early RIBA stages to discuss the targets set within this report; with early stage and building level requirements highlighted to the team.

The outcome of the project team meetings and design information given has been used to inform this report which provides a variety of strategies that can achieve BREEAM Very Good rating in line with Core Policy 27 of the Central Lancashire adopted core strategy.



## ABOUT COREUS PROJECTS LTD

Coreus Projects is a professional construction consultancy who offer cost, project and development management advice to clients across the UK. Founded in late 2018 with the mission to help clients build legacies for their projects.

This report has been undertaken by Coreus Project's appointed BREEAM Assessor/Accredited Professional, Maxine Goodey.

## RESULTS SUMMARY

### Healthcare – Health Centre, Gym & Creche

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BENCHMARK SCORE: **55%**

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CURRENT SCORE: **60.3%**

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### Industrial – Warehouse Storage or Distribution

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BENCHMARK SCORE: **55%**

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CURRENT SCORE: **60.1%**

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### Retail – Shops and Food and Beverage Outlets

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BENCHMARK SCORE: **55%**

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CURRENT SCORE: **58.1%**

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**Minimum standards** for the required '**Very Good**' rating have been met by the current proposals and commitments. These minimum standards are detailed in **section 3**.

The current targeted score lies above the threshold for **BREEAM 'Very Good'** for both assessment types.

Potential credits have been highlighted within this report to ensure that during technical design and construction any risk of non-compliance against the target scores are reduced.

### THE PROJECT'S SUSTAINABILITY BRIEF:

- Achieving BREEAM 'Very Good'
- Working towards Carbon Neutral through EV charging points and renewables energy installation
- Biodiversity net gain across the development, quantified by the Envirotech report.
- Meeting or exceeding greenfield surface water run off rates
- Compiled by a BREEAM AP

## 2. BREEAM

Methodology, Assessment, Process &  
Stages



## 2. BREEAM

### ABOUT BREEAM

BREEAM addresses the impact of buildings across a range of issues, grouped under the headings of:

- + Management
- + Energy
- + Transport
- + Water
- + Materials
- + Waste
- + Land Use & Ecology
- + Pollution
- + Innovation

The BREEAM rating benchmarks for projects assessed using the 2018 version of BREEAM UK New Construction are as follows:

BREEAM RATING:	% SCORE
Outstanding	≥85
Excellent	≥70
Very good	≥55
Good	≥45
Pass	≥30
Unclassified	<30

### ASSESSMENT PROCESS

There are typically four stages within the BREEAM Assessment process, as detailed as follows:

#### 1. PRE-ASSESSMENT:

Stakeholders have met with the BREEAM Assessor/AP to establish a robust strategy to ensure the required BREEAM rating is achievable. Targets are set at this stage based on information available and reasonable assumptions. Throughout this process consultation with the stakeholders has been undertaken to identify early-stage actions required.

#### 2. DESIGN STAGE ASSESSMENT:

The project team have provided evidence to prove that the targeted credits have been incorporated into the design. Evidence to date has been verified by the BREEAM assessor. A submission will be made to the BRE for Interim Certification once all evidence has been received.

#### 3. POST-CONSTRUCTION STAGE ASSESSMENT:

Built information will have to be provided in order to confirm design proposals and commitments made have achieved the targeted credits and rating. The BREEAM assessor will also undertake a site inspection. A submission will be made to the BRE for Final Certification.

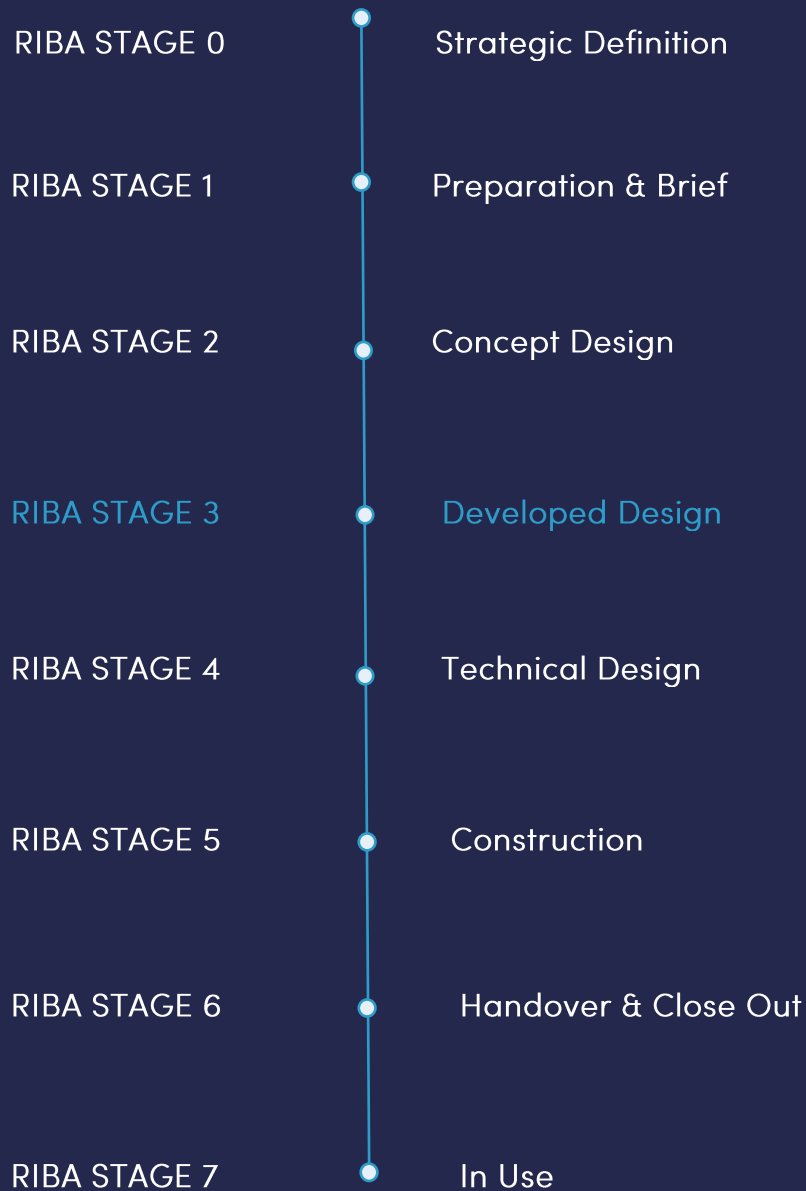
#### 4. POST OCCUPANCY STAGE ASSESSMENT:

An assessment of the monitoring and reporting processes will be carried out after full occupation of the building within 12-24 months. This will confirm that post-construction stage commitments, made in accordance with the targeted aftercare and monitoring and performance credits, have been met.



# BREEAM STAGES

Several credit issues refer to the RIBA stages as outlined below. The project team must demonstrate compliance at the set RIBA stages:



Further details on credit issues and criteria impacted by actions taken at RIBA Stages are highlighted within section 5 of this report.

### 3. MINIMUM STANDARDS

Criteria to meet BREEAM 'Very Good'



### 3. MINIMUM STANDARDS

In addition to the BREEAM benchmark of 55% there are several minimum standards that must be met in order to achieve the required 'Very Good' rating for each assessment. The minimum standards have been summarised in Table 2 for all building types. Further details on the credit criteria associated with the minimum standards can be found in Appendix A of this report.

Please note that the project team must refer to the full standards found within the technical manual BREEAM UK New Construction to ensure compliance is achieved.

It should be noted that this project is assumed to meet the minimum standards for **BREEAM 'Very Good'**.

**Table 2: BREEAM Minimum Standards**

Credit Ref	Credit Criteria	Minimum Standards
Man 04 Commissioning and handover	Ensure that a commissioning and test schedule has been developed and followed	1 credit
Man 04 Commissioning and handover	Ensure that a building user guide has been completed in accordance with the requirements	Criterion 11
Ene 02 Energy Monitoring	Install energy metering and monitoring systems.	1 credit
Wat 01 Water Consumption	A 12.5% improvement has been made over the baseline consumption levels.	1 credit
Wat 02: Water Monitoring	Specification of a water meter on the mains water supply to each building.	Criterion 1 only
Mat 03: Responsible Sourcing	All timber and timber-based products in the project is legally harvested and traded timber	Criterion 1 only

# 4. PRE ASSESSMENT SUMMARY

Scoring & Rating



## 4. PRE ASSESSMENT SUMMARY

The full pre-assessment credit matrix is provided in Appendix A which details the requirements for assessments types: Healthcare, Retail and Industrial. Table 3, 4 and 5 below provides a summary of the predicted score and rating and the performance against each environmental section.

### PROJECT TEAM

**Client:** Maple Grove Developments and Lancashire County Council

**Architect:** Fletcher Rae

**M&E Engineer:** Ridge & Partners

**Contractor:** TBC

**Cost Consultants:** Rex Proctor & Partners

**Acoustician:** Waterman

**Drainage Engineer:** Waterman

**Transport Engineer:** Waterman

**Ecology:** Envirotech

**BREEAM Consultants:** Coreus Projects Limited

### PRE-ASSESSMENT SUMMARY

**Table 3: Summary of Fully Fitted Healthcare BREEAM UK 2018 New Construction assessment to cover Health Centre, Gym & Creche.**

The outcome of the Pre-assessment confirms the following predicted scores. These are dependent on full consultation with the design team as well as final building level designs for each use type;

TOTAL SCORE:		60.3%		RATING:		VERY GOOD	
Environmental Section	No. credits available	No. credits Achieved	% credits achieved	Section Weighting	Section Score		
Management	21	17	80.95%	11.00%	8.90%		
Health & Wellbeing	18	11	61.11%	14.00%	8.55%		
Energy	23	12	52.17%	16.00%	8.34%		
Transport	12	9	75.00%	10.00%	7.50%		
Water	9	7	77.78%	7.00%	5.44%		
Materials	14	4	28.57%	15.00%	4.28%		
Waste	9	7	77.78%	6.00%	4.66%		
Land Use & Ecology	13	6	46.15%	13.00%	6.00%		
Pollution	12	10	83.33%	8.00%	6.66%		
Innovation	10	0	0.00%	10.00%	0.00%		

**Table 4: Summary of shell and core, Industrial BREEAM UK 2018 New Construction covering Distribution and warehouses**

The outcome of the Pre-assessment confirms the following predicted scores. These are dependent on full consultation with the design team as well as final building level designs for each use type;

TOTAL SCORE:		60.1%		RATING:		VERY GOOD	
Environmental Section	No. credits available	No. credits Achieved	% credits achieved	Section Weighting	Section Score		
Management	18	14	77.78%	11.00%	8.55%		
Health & Wellbeing	10	7	70.00%	8.00%	5.60%		
Energy	21	10	47.62%	14.00%	6.66%		
Transport	12	9	75.00%	11.50%	8.62%		
Water	9	7	77.78%	7.00%	5.44%		
Materials	14	4	28.57%	17.50%	5.00%		
Waste	9	7	77.78%	7.00%	5.44%		
Land Use & Ecology	13	7	53.85%	15.00%	8.07%		
Pollution	12	9	75.00%	9.00%	6.75%		
Innovation	10	0	0.00%	10.00%	0.00%		

**Table 5: Summary of shell only, Retail BREEAM UK 2018 New Construction covering shops and food & beverage use types**

The outcome of the Pre-assessment confirms the following predicted scores. These are dependent on full consultation with the design team as well as final building level designs for each use type;

TOTAL SCORE:		58.1%		RATING:		VERY GOOD	
Environmental Section	No. credits available	No. credits Achieved	% credits achieved	Section Weighting	Section Score		
Management	15	11	73.33%	12.00%	8.80%		
Health & Wellbeing	8	5	62.50%	7.00%	4.37%		
Energy	13	6	46.15%	9.50%	4.38%		
Transport	12	9	75.00%	14.50%	10.87%		
Water	3	3	100.00%	2.00%	2.00%		
Materials	14	4	28.57%	22.00%	6.28%		
Waste	9	7	77.78%	8.00%	6.22%		
Land Use & Ecology	13	7	53.85%	19.00%	10.23%		
Pollution	6	5	83.33%	6.00%	5.00%		
Innovation	10	0	0.00%	10.00%	0.00%		

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## 6. CONCLUSION

With recommendations



## 6. CONCLUSION

A full review of the Parameter Plans, Illustrative Masterplan, together with the information submitted alongside the planning application has been undertaken. The outcome of the project team meetings and review of the design information to date has been used to inform the proposed BREEAM strategy which confirms an approach that will be taken at the building level and/or phases that will meet a BREEAM Very Good rating, in line with Core Policy 27.

The proposed units have been assessed using the BREEAM UK New Construction 2018 scheme as follows;

- + Health Centre, gym & leisure use types (E: d, e & f) assessed using the Healthcare fully fitted methodology to provide high level strategies to meet a BREEAM Very Good rating with a score of 60.3%.
- + Warehousing & distribution units use types (B2) assessed using the Industrial shell & core methodology and is predicted to meet a BREEAM Very Good rating with a score of 60.1%.
- + Shops and food & beverage use types (E: a,b & suis generis) assessed using the Retail shell only methodology and is predicted to meet a BREEAM Very Good rating with a score of 58.1%.

Further information and evidence will be required to maintain these scores during building and/or phase level design. Dependent on project programs the number of assessments and therefore certifications per use class is likely to vary and no fixed number or timescales for certification should be imposed at this stage.

The project team is committed to maintaining this rating throughout the remaining stages of the project to ensure a BREEAM Very Good rating is achieved with a score of at least 55%.



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# APPENDIX A

Credit Matrix



Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
<b>BREEAM SCORING AND RATING</b>			Target: 60.10% Very Good			Target: 58.10% Very Good			Target: 60.30% Very Good				
<b>Management</b>													
<b>Man 01: Project brief and design: Stakeholder consultation (Project Delivery Planning)</b>	<p>A clear sustainability brief is developed prior to RIBA stage 2 setting out requirements, sustainability objectives, timescales and budgets, list of consultees and appointments required, constraints of the project i.e., technical, legal, physical, environmental. Note that this report forms part of the sustainability brief as it clearly outlines the sustainability objectives, timescales these need to be met, list of consultees and appointments and some of the constraints of the site.</p> <p>Project delivery stakeholders should meet prior to RIBA Stage 2 (concept design) to identify roles, responsibilities, and contributions for key phases of project deliver in accordance with criterion 3 a-k as detailed in the manual.</p> <p>The project team should demonstrate how the project delivery stakeholders have influenced or changed the initial design brief; project execution plan; quality plan, communication strategy and concept design. Note that this report has been completed and updated during RIBA Stage 1 and 2. Any changes in targets seen in the Information Request Schedules demonstrates a influence or change this process has had on the concept design.</p>	<b>RIBA Stage 2</b>	1	1	0	1	1	0	1	1	0	<b>Project team</b>	
<b>Man 01: Project brief and design: Stakeholder consultation (Third Party)</b>	<p>All relevant third-party stakeholders have been consulted in accordance with the BRE's minimum consultation content.</p> <p>The design team demonstrate how their contributions have influenced or changed the brief and concept design. A statement of community involvement has been provided covering applicable elements of the minimum consultation content as detailed in the technical manual. The report details where changes have been made to the initial proposals in light of third-party consultation/ feedback including increasing landscaping/ green spaces.</p> <p>Before completion of RIBA Stage 4 consultation feedback is provided and received by all relevant parties.</p> <p><b>For Healthcare use type only</b></p> <p>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 a method to assess the design quality of buildings.</p>	<b>RIBA Stage 1</b>	1	1	0	1	1	0	1	1	0	<b>Communications Consultant</b>	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
<b>Man 01: Project brief and design: Pre-requisite</b> (BREEAM Advisory Professional credits)	The project team, including the client, formally agree strategic performance targets and project performance objectives early in the design process.	<b>RIBA Stage 1-2</b>	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	<b>BREEAM AP</b>	
<b>Man 01: Project brief and design- BREEAM AP</b> (Concept Design)	Involve a BREEAM AP in the project at an appropriate time and level to: <ul style="list-style-type: none"> <li>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.</li> <li>Monitor progress against the performance targets agreed, throughout all stages after their appointment where decisions critically impact BREEAM performance.</li> <li>Proactively identify risks and opportunities related to the achievement of the targets agreed</li> <li>Provide feedback to the project team as appropriate, to support them in taking corrective actions and achieving their agreed performance targets.</li> <li>Monitor and, where relevant, coordinate the generation of appropriate evidence by the project team.</li> </ul>	<b>RIBA Stage 1</b>	1	1	0	1	1	0	1	1	0	<b>BREEAM AP</b>	
<b>Man 01 Project brief and design – BREEAM AP</b> (Developed Design)	The pre-requisite and first BREEAM AP credit must be achieved. Involve the BREEAM AP in the project at an appropriate time and level to: <ul style="list-style-type: none"> <li>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.</li> <li>Monitor progress against the performance targets agreed, throughout all stages where decisions critically impact the specification and tendering process and the BREEAM performance.</li> <li>Proactively identify risks and opportunities related to the achievement of the targets agreed</li> <li>Provide feedback to the project team as appropriate, to support them in taking corrective actions and achieving their agreed performance targets.</li> <li>Monitor and, where relevant, coordinate the generation of appropriate evidence by the project team.</li> </ul>	<b>RIBA Stage 1</b>	1	1	0	1	1	0	1	1	0	<b>BREEAM AP</b>	
<b>Man 02: Life cycle cost and service life planning</b>	An outline elemental life cycle cost (LCC) plan has been carried out at RIBA Stage 2 by a competent person together with any design option appraisals in line with 'Standardised method of life cycle costing for construction procurement' PD 156865:2008. The element plan:	<b>RIBA Stage 2</b>	2	0	2	2	0	2	2	0	2	<b>Cost Consultants</b>	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
(Elemental Life Cycle Cost LCC)	<ul style="list-style-type: none"> <li>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);</li> <li>Includes service life, maintenance and operation cost estimates.</li> </ul> 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												
Man 02: Life cycle cost and service life planning (Component Level LCC Plan)	A component level LCC plan has been developed by a competent person 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): <ul style="list-style-type: none"> <li>Envelope, e.g. cladding, windows, or roofing</li> <li>Services, e.g. heat source, cooling source, or controls</li> <li>Finishes, e.g. walls, floors or ceilings</li> <li>External spaces, e.g. alternative hard landscaping, boundary protection</li> </ul> Demonstrate using appropriate examples provided by the design team, how the component level LCC plan has been used to influence building systems design and specification to minimise life cycle costs and maximise critical value.	RIBA Stage 4	1	0	1	1	0	1	1	0	1	Cost Consultants	
Man 02 Life cycle cost and service life planning (Capital Cost Reporting)	Report the capital cost for building works in pounds per square metre of gross internal area (£k/m <sup>2</sup> ). <b>Note:</b> The capital cost for the building includes the expenses related to the initial construction of the building: <ul style="list-style-type: none"> <li>Construction, including preparatory works, materials, equipment and labour</li> <li>Site management</li> <li>Construction financing</li> <li>Insurance and taxes during construction</li> <li>Inspection and testing</li> </ul> Costs relating to land procurement, clearance, design, statutory approvals and post occupancy aftercare should not be included	-	1	1	0	1	1	0	1	1	0	Cost Consultants	
Man 03: Responsible construction practices – Pre-requisite (Timber Procurement)	All timber and timber-based products must be 'legally harvested and traded timber'	-	Pre-requisite	Pre-requisite	Pre-requisite	Pre-requisite	Pre-requisite	Pre-requisite	Pre-requisite	Pre-requisite	Pre-requisite	Contractor	
Man 03 – For Healthcare NHS buildings only Pre-requisite	To award any of the available credits for under Man 03, any party who at any stage manages the construction site (e.g. the principal contractor, the demolition contractor) operates an Environmental Management System (EMS).	-	N/A	N/A	N/A	N/A	N/A	N/A	Pre-requisite	Pre-requisite	Pre-requisite	Contractor	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
(Environmental Management)													
Man 03: Responsible construction practice (Environmental Management)	<p>All parties who at any stage manage the construction site operates an environmental management system (EMS) covering their main operations. The EMS must be either:</p> <ul style="list-style-type: none"> <li>• Third party certified, to ISO 14001/EMAS or equivalent standard; or</li> <li>• Have a structure that follows BS 8555:2016 and have an appropriate structure, reached phase four of the implementation stage, 'implementation and operation of the environmental management system', and has completed phase audits one to four, as defined in BS 8555.</li> </ul> <p>All parties who at any point manage the construction site implements best practice pollution prevention policies and procedures on-site in accordance with Pollution Prevention Guidelines, Working at construction and demolition-sites: PPG61.</p>	-	1	1	0	1	1	0	1	1	0	Contractor	
Man 03: Responsible construction practices (Pre-requisite – BREEAM AP)	The client and the contractor formally agree performance targets.	-	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Contractor	
Man 03: Responsible construction practices (BREEAM AP)	<p>Involve a BREEAM AP in the project at an appropriate time and level to:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Monitor construction progress against the performance targets agreed, throughout all stages where decisions critically impact BREEAM performance.</li> <li>• Proactively identify risks and opportunities related to the procurement and construction process and the achievement of the targets agreed.</li> <li>• Provide feedback to the constructors and the project team as appropriate, to support them in taking corrective actions and achieving their agreed performance targets.</li> <li>• Monitor and, where relevant, coordinate the generation of appropriate evidence by the project team and the provision to the assessor.</li> </ul>	-	1	1	0	1	1	0	1	1	0	BREEAM AP	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
<b>Man 03: Responsible construction practices (Considerate construction)</b>	The main contractor will ensure the minimum number of actions are undertaken from the BREEAM Table 4.1 in order to achieve one credit, PLUS an additional six items from the table. Refer to technical manual SD5078: BREEAM New Construction 2018 3.0 or contact the appointed BREEAM Assessor for further details.	-	2	2	0	2	2	0	2	2	0	<b>Contractor</b>	Where the contractor signs up to CCS and exceeds a score of 35 with 7 in each category this can be used as evidence to sign off issues listed in Table 4.1



Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
<b>Man 04 Commissioning and handover</b>	<p>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.</p> <p>The schedule identifies the appropriate standards for all commissioning activities to be conducted, where applicable, in accordance with:</p> <ul style="list-style-type: none"> <li>- Current Building Regulations</li> <li>- BSRIA guidelines<sup>1</sup></li> <li>- CIBSE guidelines<sup>2</sup></li> <li>- Other appropriate standards</li> </ul> <p>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.</p> <p>Where a building management system (BMS) is specified:</p> <ul style="list-style-type: none"> <li>- Carry out commissioning of air and water systems when all control devices are installed, wired and functional</li> <li>- Include physical measurements of room temperatures, off-coil temperatures and other key parameters, as appropriate, in commissioning results</li> <li>- The BMS or controls installation should be running in auto with satisfactory internal conditions prior to handover</li> <li>- All BMS schematics and graphics (if BMS is present) are fully installed and functional to user interface prior to handover</li> <li>- Fully train the occupier or facilities team in the operation of the system.</li> </ul> <p>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.</p> <p>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.</p> <p>During the design stage, the client or the principal contractor appoints an appropriate project team member, provided they are not involved in the general installation works for the building services systems, with responsibility for:</p> <ul style="list-style-type: none"> <li>- Undertaking design reviews and giving advice on suitability for ease of commissioning.</li> <li>- Providing commissioning management input to construction programming and during installation stages.</li> </ul>	-	4	3	1	1	0	1	4	3	1	<b>Contractor</b>	Potential credit assigned across the assessments is the requirement for thermographic survey.



Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
	<ul style="list-style-type: none"> <li>- Management of commissioning, performance testing and handover or post-handover stages.</li> </ul> <p>For buildings with complex building services and systems, this role needs to be carried out by a specialist commissioning manager 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.</p> <p>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</p> <p>Prior to handover, develop two building user guides (see Methodology) for the following users:</p> <ul style="list-style-type: none"> <li>- A non-technical user guide for distribution to the building occupiers.</li> <li>- A technical user guide for the premises facilities managers.</li> </ul> <p>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.</p> <p>Prepare two training schedules timed appropriately around handover and proposed occupation plans for the following users:</p> <ul style="list-style-type: none"> <li>- A non-technical training schedule for the building occupiers.</li> <li>- A technical training schedule for the premises facilities managers.</li> </ul>												
Man 05: Aftercare	<p><b>Provide aftercare support to the building occupiers through having in place operational infrastructure and resources. This includes as a minimum:</b></p> <p><b>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:</b></p> <ul style="list-style-type: none"> <li>- Introduce the aftercare support available, including the content of the building user guide (where it exists) and training schedule.</li> <li>- Present key information about features of the building including the design intent and how to use the building to ensure it operates as efficiently and effectively as possible.</li> <li>- On-site facilities management training including:</li> <li>- a walkabout of the building</li> </ul> <p><b>AND</b></p> <p><b>Introduction to and familiarisation with the building systems, their controls and how to operate them in accordance with the design intent and operational demands.</b></p>		N/A	N/A	N/A	N/A	N/A	N/A	3	3	0	Contractor/ Developer	



Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
	<p>is to highlight any improvements or interventions that need to be made and to inform operational processes.</p> <p>An independent party (see Definitions) carries out the POE covering:</p> <ul style="list-style-type: none"> <li>- A review of the design intent and construction process (review of design, procurement, construction, and handover processes).</li> <li>- Feedback from a wide range of building users including facilities management on the design and environmental conditions of the building covering: <ul style="list-style-type: none"> <li>- Internal environmental conditions (light, noise, temperature, air quality)</li> <li>- Control, operation, and maintenance</li> <li>- Facilities and amenities</li> <li>- Access and layout</li> <li>- Energy and water consumption</li> <li>- Other relevant issues, where appropriate</li> </ul> </li> </ul> <p>The independent party provides a report with lessons learned to the client and building occupiers.</p> <p>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 above. For post construction evidence of the appointment of the independent party and schedule of responsibilities which fulfils the BREEAM criteria are acceptable to demonstrate compliance.</p>												
<b>Health and Wellbeing</b>													
Hea 01 Visual Comfort (Control of glare from sunlight)	<p>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.</p> <p>Where risk has been identified within a relevant building area, a glare control strategy is used to design out the potential for glare.</p> <p>The glare control strategy does not increase energy consumption used for lighting. This is achieved by:</p> <ul style="list-style-type: none"> <li>- Maximising daylight levels in all weather, cloudy or sunny AND</li> <li>- Ensuring the use or location of shading does not conflict with the operation of lighting control systems.</li> </ul>		N/A	N/A	N/A	N/A	N/A	N/A	1	1	0	Architect	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
Hea 01: Visual comfort (Daylighting)	<p><b>For retail only</b> 35% of sales areas to achieve a point daylight factor of 2% or more AND All other occupied areas to achieve.</p> <ul style="list-style-type: none"> <li>An average daylight factor of 2%, with 80% of areas to comply OR EITHER</li> <li>A uniformity ratio of 0.3 AND</li> <li>The room depth and view of sky criterion is met</li> </ul> <p><b>For Industrial only</b> Industrial with office spaces to achieve.</p> <ul style="list-style-type: none"> <li>An average daylight factor of 2%, with 80% of areas to comply <b>OR EITHER</b></li> <li>A uniformity ratio of 0.3 <b>AND</b></li> <li>The room depth and view of sky criterion is met.</li> </ul> <p><b>For Healthcare only</b> Staff and public areas &amp; Occupied patient's areas (dayrooms, wards) &amp; consulting rooms to achieve;</p> <ul style="list-style-type: none"> <li>An average daylight factor of 2% (staff &amp; public areas) &amp; 3% (occupied patient's areas (dayrooms, wards &amp; consulting rooms), with 80% of areas to comply <b>OR EITHER</b></li> <li>A uniformity ratio of 0.3 <b>AND</b></li> <li>The room depth and view of sky criterion is met.</li> </ul>	-	1	0	1	1	0	1	2	0	2	Architect	
Hea 01: Visual comfort (View out)	<p>Where 95% of the floor area in areas occupied for 30 minutes or more is within 8m of a wall which has a window or permanent opening with an window or opening is greater than 20% of the surrounding wall area. Where the room depth is greater than 8m, the percentage of window or opening must instead be the same as, or greater than, the values in Table 1.0 BS8206: Part 2. The view out must be a view of a landscape or buildings (rather than just the sky) at seated eye level (1.2–1.3m) within the relevant building areas and should ideally be through an external window. A view into an internal courtyard or atrium will comply provided the distance from the opening to the back wall of the courtyard or atrium is at least 10m.</p> <p><b>For Healthcare only</b> <b>Patient-occupied spaces, e.g. wards and dayrooms</b> For relevant building areas PLUS the distance between the wall with the window or opening and nearest external solid object (e.g. buildings, screens, walls or fences) is ≥ 10m.</p>	-	1	0	1	1	0	1	1	0	1	Architect	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
Hea 01: Visual comfort (Internal and external lighting levels, zoning and control)	<p><b>Internal Lighting</b></p> <p>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 20121 and any other relevant industry standard. Internal lighting should be appropriate to the tasks undertaken, accounting for building user concentration and comfort levels.</p> <p>For areas where computer screens are extensively used, the lighting design complies with CIBSE Lighting Guide 72 sections 2.4, 2.13 to 2.15, 2.20, and 6.10 to 6.20. This gives recommendations highlighting:</p> <ul style="list-style-type: none"> <li>Limits to the luminance of the luminaires to avoid screen reflections. (Manufacturers' data for the luminaires should be sought to confirm this.</li> <li>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.</li> <li>Recommendations for direct lighting, ceiling illuminance, and average wall illuminance.</li> </ul> <p><b>External Lighting</b></p> <p>All external lighting located within the construction zone is designed to provide illuminance levels that enable users to perform outdoor visual tasks efficiently and accurately, especially during the night. To demonstrate this, external lighting provided is specified in accordance with BS 5489-1:2013 Lighting of roads and public amenity areas3 and BS EN 12464-2:2014 Light and lighting - Lighting of workplaces - Part 2: Outdoor workplaces.</p> <p><b>Zoning and Occupant Control</b></p> <p>Internal lighting is zoned to allow for occupant control. Zoning is in accordance with the criteria below for relevant areas present within the building:</p> <ul style="list-style-type: none"> <li>In office areas, zones of no more than four workplaces</li> <li>Workstations adjacent to windows or atria and other building areas separately zoned and controlled</li> <li>Whiteboard or display screen</li> </ul>	-	1	1	0	1	1 (External Only)	0	1	1	0	M&E	
Hea 02: Indoor Air Quality (Indoor Air Quality Plan)	<p>A site-specific indoor air quality plan has been produced and implemented in accordance with the guidance. 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:</p> <ul style="list-style-type: none"> <li>Removal of contaminant sources</li> </ul>		Pre-req	Pre-req	Pre-req	N/A	N/A	N/A	Pre-req	Pre-req	Pre-req	Contractor	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
	<ul style="list-style-type: none"> <li>- Dilution and control of contaminant sources: Where present, consideration is given to the air quality requirements of specialist areas such as laboratories</li> <li>- Procedures for pre-occupancy flush out</li> <li>- Third party testing and analysis</li> <li>- Maintaining good indoor air quality in-use.</li> </ul>												
<b>Hea 02: Indoor Air Quality (Ventilation)</b>	<p>The building has been designed to minimise the indoor concentration and recirculation of pollutants in the building as follows:</p> <ul style="list-style-type: none"> <li>- Provide fresh air into the building in accordance with the criteria of the relevant standard for ventilation</li> <li>- Ventilation pathways are designed to minimise the ingress and build-up of air pollutants inside the building</li> <li>- Where present, HVAC systems must incorporate suitable filtration to minimise external air pollution, as defined in BS EN 16798-3:20171. The specified filters should achieve supply air classification of at least SUP 2.</li> <li>- Areas of the building subject to large and unpredictable or variable occupancy patterns have carbon dioxide (CO<sub>2</sub>) or air quality sensors specified and: <ul style="list-style-type: none"> <li>• In mechanically ventilated buildings or spaces: sensors are linked to the mechanical ventilation system and provide demand-controlled ventilation to the space</li> <li>• In naturally ventilated buildings or spaces: sensors either have the ability to alert the building owner or manager when CO<sub>2</sub> 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</li> </ul> </li> <li>- 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 AM102.</li> </ul>		1	0	1	N/A	N/A	N/A	1	0	1	M&E	
<b>Hea 02: Indoor Air Quality (Emissions from construction products)</b>	<p>One credit</p> <p>Three out of the five product types meet the emission limits, testing requirements and any additional requirements. 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.</p> <p>Two credits</p> <p>All of the product types listed meet the emission limits, testing requirements and any additional requirements.</p>		N/A	N/A	N/A	N/A	N/A	N/A	2	1	1	Architect	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
<b>Hea 02: Indoor Air Quality (Post-construction indoor air quality measurement)</b>	<p>The formaldehyde concentration in indoor air is measured post construction (but pre-occupancy) and does not exceed 100µg/m<sup>3</sup> averaged over 30 minutes (World Health Organization guidelines for indoor air quality: Selected pollutants, 201013).</p> <p>The formaldehyde sampling and analysis is performed in accordance with ISO 16000-214 and ISO 16000-315.</p> <p>The total volatile organic compound (TVOC) concentration in indoor air is measured post construction (but pre-occupancy) and does not exceed 500µg/m<sup>3</sup>over 8 hours.</p> <p>The TVOC sampling and analysis is performed in accordance with ISO 16000-516 and ISO 16000-617 or ISO 16017-118.</p> <p>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.</p> <p>The measured concentration levels of formaldehyde (µg/m<sup>3</sup>) and TVOC (µg/m<sup>3</sup>) are reported, via the BREEAM Scoring and Reporting Tool.</p>		N/A	N/A	N/A	N/A	N/A	N/A	1	1	0	M&E	
<b>Hea 04: Thermal Comfort (Thermal Modelling)</b>	<p>Thermal modelling has been carried out using software in accordance with CIBSE AM111 Building Energy and Performance Modelling.</p> <p>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).</p> <p>The modelling demonstrates that:</p> <ul style="list-style-type: none"> <li>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<sup>2</sup>, Table 1.5; or other appropriate industry standard (where this sets a higher or more appropriate requirement or level for the building type); or the thermal environment in occupied spaces meet the Category B requirements for PPD, PMV and local discomfort set out in Table A.1 of Annex A of ISO 7730:2005.</li> <li>For naturally ventilated buildings: <ul style="list-style-type: none"> <li>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).</li> <li>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<sup>3</sup> or CIBSE TM59: Design methodology for the assessment of overheating risk in homes<sup>4</sup>.</li> </ul> </li> </ul>		1	1	0	N/A	N/A	N/A	1	1	0	M&E	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
	For air-conditioned buildings, the PMV (predicted mean vote) and PPD (predicted percentage of dissatisfied) indices based on the above modelling are reported via the BREEAM assessment scoring and reporting tool.												
<b>Hea 04: Thermal Comfort (Design for future thermal comfort)</b>	<p>Thermal modelling criteria above has been achieved.</p> <p>The thermal modelling demonstrates that the relevant requirements set out in criterion 3 are achieved for a projected climate change environment.</p> <p>Where the 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 above</p> <p>For air-conditioned buildings, the PMV and PPD indices based on the above modelling are reported via the BREEAM assessment scoring and reporting tool.</p>		1	1	0	N/A	N/A	N/A	1	1	0	Ridge	
<b>Hea 04: Thermal Comfort (Thermal Zoning and controls)</b>	<p>Thermal modelling criteria has been achieved</p> <p>The thermal modelling analysis (criteria1 to 4) has informed the temperature control strategy for the building and its users.</p> <p>The strategy for proposed heating or cooling systems demonstrates that it has addressed the following:</p> <ul style="list-style-type: none"> <li>- 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.</li> <li>- 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: <ul style="list-style-type: none"> <li>• User knowledge of building services.</li> <li>• Occupancy type, patterns, and room functions (and therefore appropriate level of control required).</li> <li>• 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.</li> <li>• 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).</li> </ul> </li> </ul>		N/A	N/A	N/A	N/A	N/A	N/A	1	1	0	M&E	



Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
	<ul style="list-style-type: none"> <li>- 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.</li> </ul> <p>The need or otherwise for an accessible building user actuated manual override for any automatic systems.</p>												
Hea 05: Acoustic performance	<p>The use types meet the appropriate acoustic standards as follows.</p> <p><b>For Retail and Industrial only</b></p> <ul style="list-style-type: none"> <li>• Achieve indoor ambient noise levels that comply with the design ranges given in Section 7 of BS 8233:2014.</li> <li>• A programme of pre-completion acoustic testing is carried out by a compliant test body in accordance with the acoustic testing and measurement procedures outlined in the Methodology section of this BREEAM Issue</li> </ul> <p>OR</p> <p>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 including Sound Insulation, Indoor ambient noise level, room acoustics, setting out the performance requirements for each and the testing regime required.</p> <p><b>For Healthcare only</b></p> <ul style="list-style-type: none"> <li>• The indoor ambient noise requirements for noise intrusion from external sources in Table 1 of HTM 08-01 are not exceeded. The values for internal noise from mechanical and electrical services in Table 2 of HTM 08-01 are not exceeded.</li> <li>• A programme of pre-completion acoustic testing is carried out by a compliant test body in accordance with the Section 7 of HTM 08-01:Acoustics.</li> </ul> <p>OR</p> <p>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 including Sound Insulation, Indoor ambient noise level, room acoustics, setting out the performance requirements for each and the testing regime required</p>	-	1	1	0	1	1	0	3	3	0	Acoustician	

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			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
Hea 06: Safety	<p>Suitably Qualified Security Specialist (SQSS) conducts an evidence-based Security Needs Assessment (SNA) during or prior to RIBA Stage 2. 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.</p> <p>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</p> <p>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.</p>	RIBA Stage 2	1	1	0	1	1	0	1	1	0	Architect	
Hea 07 Safe and Healthy Surroundings (Safe access)	<p>Dedicated and safe cycle paths are provided from the site entrance to any cycle storage and connect to off-site cycle paths where applicable.</p> <p>Dedicated and safe footpaths are provided on and around the site providing suitable links for the following:</p> <ul style="list-style-type: none"> <li>The site entrance to the building entrance</li> <li>Car parks (where present) to the building entrance</li> <li>The building to outdoor space</li> <li>Connecting to off-site paths where applicable.</li> </ul> <p>Pedestrian drop-off areas are designed off, or adjoining to, the access road and should provide direct access to other footpaths.</p> <p>Where vehicle delivery access and drop-off areas form part of the assessed development, the following apply:</p> <ul style="list-style-type: none"> <li>Delivery areas are not accessed through general parking areas and do not cross or share the following: <ul style="list-style-type: none"> <li>pedestrian and cyclist paths</li> <li>outside amenity areas accessible to building users and general public.</li> </ul> </li> </ul> <p>There is a dedicated parking or waiting area for goods vehicles with appropriate separation from the manoeuvring area and staff and visitor car parking.</p> <p>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.</p>	RIBA Stage 1-2	1	1	0	1	1	0	1	1	0	Architect/ Landscape Architect	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
<b>Hea 07 Safe and Healthy Surroundings (Outside Space)</b>	There is an outside space providing building users with an external amenity area. The area must be designated and non-smoking.	<b>RIBA Stage 1-2</b>	1	1	0	1	1	0	1	1	0	<b>Architect/ Landscape Architect</b>	
<b>Energy</b>													
<b>Ene 01: Reduction of energy use and carbon emissions</b>	Calculate the Energy Performance Ratio for Non-Domestic Refurbishment (EPR <sub>NDR</sub> ) and compare with the benchmarks set by the BRE.	<b>RIBA Stage 2</b>	9	3	0	9	3	0	9	5	0	<b>M&amp;E</b>	
<b>Ene 01: Reduction of energy use and carbon emissions (Prediction of operation energy consumption)</b>	Involve relevant members of the design team in an energy design workshop focusing on operational energy performance. Undertake additional energy modelling during the design and post-construction stage to generate predicted operational energy consumption figures Report predicted energy consumption targets by end use, design assumptions and input data (with justifications). 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	<b>RIBA Stage 2</b>	4	4	0	4	4	0	4	0	0	<b>M&amp;E</b>	
<b>Ene 02: Energy Monitoring</b>	All major energy consuming systems separately metered and monitored using a BMS (or with pulsed output to enable connection to future BMS for building less than 1000sqm) Separate sub-metering of tenanted areas or relevant function areas		2	2	0	N/A	N/A	N/A	2	2	0	<b>M&amp;E</b>	
<b>Ene 03: External lighting</b>	The building has been designed to operate without the need for external lighting (which includes on the building, signs and at entrances). <b>OR alternatively, where the building does have external lighting, one credit can be awarded as follows:</b> The average initial luminous efficacy of the external light fittings within the construction zone is not less than 70 luminaire lumens per circuit Watt. All external light fittings are automatically controlled for prevention of operation during daylight hours and presence detection in areas of intermittent pedestrian traffic.	<b>N/A</b>	1	1	0	1	1	0	1	1	0	<b>M&amp;E</b>	Note that the criteria apply to both new and existing external lighting within the construction zone.

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
<b>Ene 04.1: Low carbon design (Passive design)</b>	<p>Thermal modelling must be undertaken to demonstrate that the building design can deliver appropriate thermal comfort levels in occupied spaces. This can be completed based on a typical notional layout and equipment specification for the particular building type (i.e. office.) can be used to demonstrate compliance.</p> <p>An analysis is carried out during RIBA stage 2 to identify opportunities for the implementation of passive design solutions that reduce demands for energy consuming building services.</p> <p>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.</p> <p>Quantify the reduced total energy demand and carbon dioxide (CO<sub>2</sub>-eq) emissions resulting from the passive design measure</p>	<b>RIBA Stage 2</b>	1	1	0	1	1	0	1	1	0	<b>M&amp;E</b>	
<b>Ene 04.1: Low carbon design (Free cooling)</b>	<p>Include a free cooling analysis in the passive design analysis carried out as detailed above.</p> <p>Identify opportunities for the implementation of free cooling solutions.</p> <p>The building is naturally ventilated or uses any combination of the free cooling strategies listed in Free cooling analysis.</p>	<b>RIBA Stage 2</b>	1	0	0	1	0	0	1	0	0	<b>M&amp;E</b>	
<b>Ene 04.1: Low carbon design (Feasibility Study)</b>	<p>An energy specialist completes a feasibility study by the end of Concept Design – RIBA stage 2.</p> <p>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.</p> <p>Specify local LZC technologies for the building or development in line with the feasibility study recommendations.</p> <p>Quantify the reduced regulated carbon dioxide (CO<sub>2</sub>-eq) emissions resulting from the feasibility study.</p>	<b>RIBA Stage 2</b>	1	1	0	1	1	0	1	1	0	<b>M&amp;E</b>	
<b>Ene 06: Energy efficient transportation systems</b>	<p>One credit (Energy Consumption)</p> <p>For specified lifts, escalators or moving walks (transportation types):</p> <ul style="list-style-type: none"> <li>- Analyse the transportation demand and usage patterns for the building to determine the optimum number and size of lifts, escalators or moving walks</li> <li>- Calculate the energy consumption in accordance with BS EN ISO 25745 Part 21 or Part 32 for one of the following: <ul style="list-style-type: none"> <li>• At least two options for each transportation type (e.g. for lifts, hydraulic, traction or machine room-less (MRL)) OR</li> <li>• At least two options considering different system arrangements and control strategies.</li> </ul> </li> </ul>		2	2	0	N/A	N/A	N/A	2	2	0	<b>M&amp;E</b>	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
	<ul style="list-style-type: none"> <li>- Consider the use of regenerative drives, subject to the requirements in Regenerative drives</li> <li>- Specify the transportation system with the lowest energy consumption.</li> </ul> <p>One credit (Lifts) Specify the following three energy efficient features for each lift:</p> <ul style="list-style-type: none"> <li>- A standby condition for off-peak periods</li> <li>- The lift car lighting and display lighting provides an average luminous efficacy across all fittings in the car of &gt; 70 luminaire lumens per circuit Watt</li> <li>- Use of a drive controller capable of variable speed, variable-voltage, and variable-frequency (VVVF) control of the drive motor.</li> </ul> <p>Specify regenerative drives where their use is demonstrated to save energy.</p>												
<b>Ene 08 Energy efficient equipment</b>	Identify the buildings unregulated energy consuming loads and the systems/processes that use a significant proportion of the unregulated energy. Demonstrate a reduction in unregulated consumption with efficient measures.		N/A	N/A	N/A	N/A	N/A	N/A	2	0	2	M&E	
<b>Transport</b>													
<b>Tra 01: Sustainable Transport Solutions</b>	<p>During the feasibility and design stages, a travel plan will be developed based on a site-specific travel assessment or statement. The site-specific travel assessment or statement will cover as a minimum:</p> <ul style="list-style-type: none"> <li>• Existing travel patterns and opinions of existing building or site users towards cycling and walking, identifying constraints and opportunities, if relevant.</li> <li>• Travel patterns and transport impact of future building users</li> <li>• Current local environment for walkers and cyclists (accounting for visitors who may be accompanied by young children)</li> <li>• Reporting of the number and type of existing accessible amenities, within 500m of the site</li> <li>• Disabled access (accounting for varying levels of disability and visual impairment)</li> <li>• Calculation of the existing public transport Accessibility Index (AI).</li> <li>• Current facilities for cyclists</li> </ul> <p>The travel plan will include proposals to increase or improve sustainable modes of transport and movement of people and goods during the building's operation and use.</p>	<b>RIBA Stage 2-4</b>	2	2	0	2	2	0	2	2	0	<b>Transport Consultant</b>	



Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
Tra 02: Sustainable Transport Measures	<p>Credits are awarded according to the projects Accessibility Index, and the total number of points achieved for the implementation of specific measures. Based upon the project proposals it is expected the following measures will be undertaken:</p> <p>Provide a public transport information system in a publicly accessible area, to allow building users access to up-to-date information on the available public transport and transport infrastructure. This may include signposting to public transport, cycling, walking infrastructure or local amenities.</p> <p>Provide electric recharging stations of a minimum of 3kW for at least 10% of the total car parking capacity for the development.</p> <p>Set up a car sharing group or facility to facilitate and encourage building users to car share. Raise awareness of the sharing scheme with marketing and communication materials. Provide priority spaces for car sharers for at least 5% of the total car parking capacity for the development. Locate priority parking spaces nearest the development entrance used by the sharing scheme participants.</p> <p>During preparation of the brief, the design team consults with the local authority (LA) on the state of the local cycling network and public accessible pedestrian routes, to focus on whichever the LA deems most relevant to the project, and how to improve it. Agree and implement one proposition chosen with the local authority. The proposition supported by the development is additional to existing local plans and has a significant impact on the local cycling network or on pedestrian routes open to the public.</p> <p>At least 3 existing accessible amenities within 500m are present including food outlet, access to cash, access to outdoor space, recreation or leisure facility, publicly available postal facility, community facility etc.</p> <p>Enhanced amenities could be claimed for the Gym/ Healthcare Centre &amp; Retail provision (would need to be provided as part of the first set of works- considered risk credit so not targeted at this stage)</p> <p>Install compliant cycle storage spaces as follows;</p> <ul style="list-style-type: none"> <li>- Retail units: 1 in 10 staff and 1 in 20 public car parking spaces or for small retail 4 spaces total.</li> <li>- Industrial units: 1 in 10 staff</li> <li>- Healthcare: 1 in 10 staff and 1 in 2 consulting rooms or 10 beds</li> </ul> <p>Install at least 2 compliant cyclist facilities for users; showers, changing facilities, lockers and drying spaces. <b>Contact your assessor for further information.</b></p>	-	10	7	0	10	7	0	10	7	0	Project Team	
Water													
Wat 01: Water Consumption	Use the standard Wat 01 method to compare the water consumption (litres/person/day) for the assessed building against a baseline performance. Where it is not possible to use the standard method, complete the assessment using the		5	3	0	N/A	N/A	N/A	5	3	0	Architect	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
	<p>alternative Wat 01 method. In order to achieve 4 out of the 5 credits the following should be specified where applicable.</p> <p>WC = 3.75 effective flush volume to 3 effective flushes</p> <p>Wash hand basin = 5 litres/min to 4litres/min</p> <p>Showers = 6 litres/min to 5litres/min</p> <p>Kitchen tap: Kitchenette = 6 litres/min to 5 litres/min</p> <p>Domestic dishwasher= 12 litres/cycle to 11 litres/cycle</p>												
<b>Wat 02: Water monitoring</b>	<p>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.</p> <p>For each meter (main and sub):</p> <p>Install a pulsed or other open protocol communication output <b>AND</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.</p>	-	1	1	0	1	1	0	1	1	0	M&E	



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			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
<b>Wat 03: Water leak detection</b>	<p>Install a leak detection system capable of detecting a major water leak: On the utilities water supply within the buildings, to detect any major leaks within the buildings</p> <p><b>AND</b> Between the buildings and the utilities water supply, to detect any major leaks between the utilities supply and the buildings under assessment. The leak detection system is:</p> <ul style="list-style-type: none"> <li>• A permanent automated water leak detection system that alerts the building occupants to the leak OR an inbuilt automated diagnostic procedure for detecting leaks</li> <li>• 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</li> <li>• Able to identify different flow and therefore leakage rates, e.g. continuous, high or low level, over set time periods. Although high and low level leakage rates are not specified, the leak detection equipment installed must have the flexibility to distinguish between different flow rates to enable it to be programmed to suit the building type and owner's or occupier's usage patterns.</li> <li>• Programmable to suit the owner's or occupier's water consumption criteria</li> <li>• Where applicable, designed to avoid false alarms caused by normal operation of large water-consuming plant such as chillers.</li> </ul> <p>Where there is physically no space for a leak detection system between the utilities water meter and the building, alternative solutions can be used, provided that a major leak can still be detected.</p> <p>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.</p>	-	2	2	0	1	1	0	2	2	0	<b>M&amp;E</b>	
<b>Wat 04 Water efficient equipment</b>	<p>Identify all water demands from uses other than those listed under Wat 01 Water consumption: Calculation of water efficiency performance 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.</p> <p>Identify systems or processes to reduce the relevant water demand, and establish, through either good practice design or specification, a demonstrable reduction in the total water demand of the building.</p>	-	1	1	0	1	1	0	1	1	0	<b>Landscape architect</b>	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
<b>Materials</b>													
<b>Mat 01: Environmental Impacts from construction products – Building life cycle assessment (LCA) (Superstructure)</b>	<p><b>Superstructure – Up to 6 credits</b> <b>Comparison with the BREEAM LCA benchmark during Concept Design</b> During the Concept Design, demonstrate the environmental performance of the building as follows:</p> <ul style="list-style-type: none"> <li>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).</li> <li>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 specification)</li> </ul> <p><b>Comparison with the BREEAM LCA benchmark during Technical Design</b> During Technical Design, demonstrate the environmental performance of the building as follows:</p> <ul style="list-style-type: none"> <li>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).</li> <li>Submit the Mat 01/02 Results Submission Tool to BRE at the end of Technical Design.</li> </ul> <p><b>Option appraisal during Concept Design</b> Achieve the concept design LCA benchmark comparison as detailed above. During Concept Design, identify opportunities for reducing environmental impacts as follows:</p> <ul style="list-style-type: none"> <li>Carry out building LCA options appraisal of 2 to 4 significantly different superstructure design options (applicable to the Concept Design stage, see Methodology).</li> <li>Use a building LCA tool that is recognised by BREEAM (as suitable for assessing superstructure during Concept Design) according to the methodology (see Methodology).</li> <li>For each design option, fulfil the same functional requirements specified by the client and all statutory requirements (to ensure functional equivalency).</li> <li>Integrate the LCA options appraisal activity within the wider design decision-making process. Record this in an options appraisal summary document.</li> <li>Record the following in the Mat 01/02 Results Submission Tool: The differences between the design options; the design option selected by the client to be progressed beyond Concept Design; the reasons for selecting it and the reasons for not selecting the other design options.</li> <li>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).</li> </ul> <p><b>Options appraisal during Technical Design</b> During Technical Design identify opportunities for reducing environmental impacts as follows:</p> <ul style="list-style-type: none"> <li>Carry out building LCA options appraisal of 2 to 3 significantly different superstructure design options (based on the selected Concept Design option and as applicable to the Technical Design stage, see Methodology).</li> <li>Use a building LCA tool that is recognised by BREEAM (as suitable for assessing superstructure during Technical Design) according to the methodology (see Methodology).</li> </ul>	-	7	0	0	7	0	0	7	0	0	LCA Assessor / Architect/ M&E	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
	<ul style="list-style-type: none"> <li>As criteria 4.c to 4.e. Where an options appraisal summary document was produced during Concept Design, update it to include the Technical Design options.</li> </ul>												
<b>Mat 02 Environmental impacts from construction products – Environmental product declarations (EPD)</b>	<p>Specify construction products with EPD that achieve a total EPD points score of at least 20, as per the methodology provided by the BRE. Contact your BREEAM assessor for further information or refer to the technical manual SD5078 BREEAM UK New Construction 2018 v3.0.</p> <p>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.</p>	-	1	0	0	1	0	0	1	0	0	Contractor	
<b>Mat 03: Responsible sourcing of materials (Timber Procurement)</b>	<p>100% of timber and timber-based products used on the project are 'Legal' and 'Sustainable' as per the UK Government's Timber Procurement Policy (TPP)</p>	-	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Contractor	
<b>Mat 03: Responsible Sourcing (Enabling sustainable procurement)</b>	<p>A sustainable procurement plan must be used by the design team to guide specification towards sustainable construction products. The plan must:</p> <ul style="list-style-type: none"> <li>Be in place before Concept Design.</li> <li>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.</li> <li>Include a requirement for assessing the potential to procure construction products locally. There must be a policy to procure construction products locally where possible.</li> <li>Include details of procedures in place to check and verify the effective implementation of the sustainable procurement plan.</li> </ul> <p>In addition, if the plan is applied to several sites or adopted at an organisational level it must:</p> <p>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 20400:20171.</p>	<b>RIBA Stage 2</b>	1	1	0	1	1	0	1	1	0	Contractor	

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			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential														
<b>Mat 03: Responsible Sourcing (Measuring responsible sourcing)</b>	<p>Materials used in the construction of the building must be responsibly sourced in line with the BREEAM tier system, Points are awarded to each material depending on what tier of responsible sourcing they fit into. 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 below;</p> <table border="1"> <thead> <tr> <th>BREEAM Credits</th> <th>Mat 03 Minimum scope</th> <th>% of tier points achieved</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Superstructure</td> <td>≥ 10%</td> </tr> <tr> <td>2</td> <td>As above plus</td> <td>≥ 20%</td> </tr> <tr> <td>3</td> <td>-Internal finishes -Substructure and hard landscaping</td> <td>≥ 30%</td> </tr> </tbody> </table>	BREEAM Credits	Mat 03 Minimum scope	% of tier points achieved	1	Superstructure	≥ 10%	2	As above plus	≥ 20%	3	-Internal finishes -Substructure and hard landscaping	≥ 30%	-	3	1	1	3	1	1	3	1	1	Contractor	
BREEAM Credits	Mat 03 Minimum scope	% of tier points achieved																							
1	Superstructure	≥ 10%																							
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3	-Internal finishes -Substructure and hard landscaping	≥ 30%																							
<b>Mat 05: Designing for durability and resilience</b>	<p><b>Protecting vulnerable parts of the building from damage</b></p> <p>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:</p> <ul style="list-style-type: none"> <li>Negative impacts of high user numbers in relevant areas of the building (e.g. corridors, lifts, stairs, doors etc.).</li> <li>Damage from any vehicle or trolley movements within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas.</li> <li>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.</li> <li>Potential malicious damage to building materials and finishes, in public and common areas where appropriate.</li> </ul> <p><b>Protecting exposed parts of the building from material degradation</b></p> <p>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:</p> <ul style="list-style-type: none"> <li>The element or product achieving an appropriate quality or durability standard or design guide. If none are available, use BS 7543:20151 as the default appropriate standard.</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>A detailed assessment of the element's resilience when exposed to the applicable material degradation and environmental factors.</li> </ul>	-	1	1	0	1	1	0	1	1	0	Architect													

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	<p>Include convenient access to the roof and façade for cost-effective cleaning, replacement and repair in the building's design.</p> <p>Design the roof and façade to prevent water damage, ingress and detrimental ponding.</p> <p>Refer to the BREEAM UK New Construction 2018 manual SD5078 – issue 3.0 for further information.</p>												
<b>Mat 06: Material efficiency</b>	<p>Opportunities have been identified to optimise the use of materials in the building design, procurement, construction, maintenance and end of life by the design/construction team in consultation with relevant parties at each of the following RIBA stages:</p> <ul style="list-style-type: none"> <li>• Preparation and brief</li> <li>• Concept Design</li> <li>• Developed Design</li> <li>• Technical Design</li> <li>• Construction</li> </ul> <p>Develop and record the implementation of material efficiency, during:</p> <ul style="list-style-type: none"> <li>• Developed Design</li> <li>• Technical Design</li> <li>• Construction</li> </ul> <p>Report the targets and actual material efficiencies achieved.</p> <p>*** Use principles set out in Parts 1 and 2 of the BS 8895 Series of standards and provides examples of how material efficiency can be considered at each work stage.</p>	-	1	1	0	1	1	0	1	1	0	Architect	
<b>Waste</b>													
<b>Wst 01: Project Waste Management: Construction resource efficiency (Pre-demolition audit)</b>	<p>The client shall ensure that a pre-demolition audit of all existing buildings, structures or hard surfaces being considered for demolition. This must be used to determine whether refurbishment or reuse is feasible and, in the case of demolition, to maximise the recovery of material.</p> <p>The requirements for carrying out an appropriate pre-refurbishment audit are</p> <ol style="list-style-type: none"> <li>The audit should be carried out at the RIBA stage 2 prior to strip-out or demolition works in order to use the audit results to guide the design, consideration of materials that can be reused, and to set targets for waste management and ensure all contractors are engaged in the process of maximising high-grade reuse and recycling opportunities.</li> <li>The audit should be carried out by a competent person who is independent of the project, has appropriate knowledge of buildings, waste and options for the reuse and recycling of different waste streams</li> <li>Engage all contractors in the process of maximising high-grade reuse and recycling opportunities</li> </ol>	<b>RIBA Stage 2</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Contractor	

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			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential														
	<p>The audit must be referenced in the resource management plan and cover:</p> <ul style="list-style-type: none"> <li>a. Identification and quantification of the key materials where present on the project</li> <li>b. Potential applications and any related issues for the reuse and recycling of the key materials in accordance with the waste hierarchy.</li> <li>c. Opportunities for reuse and recycling within the same development</li> <li>d. Identification of local reprocessors or recyclers for recycling of materials</li> <li>e. Identification of overall recycling targets where appropriate</li> <li>f. Identification of reuse targets where appropriate</li> <li>g. Identification of overall landfill diversion rate for all key materials.</li> </ul> <p>The contractor should 3 compare actual waste arisings and waste management routes used with those forecast and investigate significant deviations from planned targets.</p>																								
Wst 01: Project Waste Management: Construction resource efficiency (Resource efficiency)	<p>Where a resource management plan has been developed in accordance with the definition provided in the BREEAM UK New Construction 2018 SD 5078 issue 3.0 manual covering non-hazardous waste related to on-site construction and off-site manufacture or fabrication (including demolition and excavation waste), accurate date records on waste arising and waste management routes.</p> <p>Where construction waste (on and off site) is lower than the following waste benchmarks per 100m<sup>2</sup> gross internal floor area:</p> <table border="1"> <thead> <tr> <th>BREEAM credits</th> <th>M<sup>3</sup></th> <th>Tonnage</th> </tr> </thead> <tbody> <tr> <td>1 credit</td> <td>≤ 13.3</td> <td>≤ 11.1</td> </tr> <tr> <td>2 credits</td> <td>≤ 7.5</td> <td>≤ 6.5</td> </tr> <tr> <td>3 credits</td> <td>≤ 3.4</td> <td>≤ 3.2</td> </tr> </tbody> </table>	BREEAM credits	M <sup>3</sup>	Tonnage	1 credit	≤ 13.3	≤ 11.1	2 credits	≤ 7.5	≤ 6.5	3 credits	≤ 3.4	≤ 3.2	-	3	2	0	3	2	0	3	2	0	Contractor	
BREEAM credits	M <sup>3</sup>	Tonnage																							
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2 credits	≤ 7.5	≤ 6.5																							
3 credits	≤ 3.4	≤ 3.2																							
Wst 01: Project Waste Management: Construction resource efficiency (Resource efficiency)	<p>The following percentages of non-hazardous construction and demolition waste generated by the project have been diverted from landfill:</p> <table border="1"> <thead> <tr> <th>BREEAM Credits</th> <th>Type of Waste</th> <th>Volume</th> <th>Tonnage</th> </tr> </thead> <tbody> <tr> <td rowspan="2">1 Credit</td> <td>Construction</td> <td>85%</td> <td>90%</td> </tr> <tr> <td>Demo</td> <td>90%</td> <td>95%</td> </tr> </tbody> </table> <p>Sort waste materials into separate key waste groups as per the BRE guidance (refer to BREEAM UK New Construction 2018 SD 5078 issue 3.0 manual) , either on-site or through a licensed contractor for recovery.</p>	BREEAM Credits	Type of Waste	Volume	Tonnage	1 Credit	Construction	85%	90%	Demo	90%	95%	-	1	1	0	1	1	0	1	1	0	Contractor		
BREEAM Credits	Type of Waste	Volume	Tonnage																						
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Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
<b>Wst 02: Use of Recycled and Sustainably Sourced Aggregates</b>	<p><b>Pre-requisite</b> If demolition occurs on site, to encourage the reuse of site-won material on site, complete a pre-demolition audit of any existing buildings, structures or hard surfaces in accordance with Wst 01 Construction waste management.</p> <p><b>For 1 credit</b> Identify all aggregate uses and types on the project Determine the quantity in tonnes for each identified use and aggregate type. Identify the region in which the aggregate source is located. Calculate the distance in kilometres travelled by all aggregates by transport type. Enter the information into the BREEAM Wst 02 calculator to calculate the Project Sustainable Aggregate points. The corresponding number of BREEAM credits will be awarded as determined by the tool.</p>	-	1	0	0	1	0	0	1	0	0	<b>Contractor</b>	
<b>Wst 03: Operational waste</b>	<p>Dedicated space(s) is provided for the segregation and storage of operational recyclable waste volumes generated by the assessed building/unit, its occupant(s) and activities. This space must be:</p> <ol style="list-style-type: none"> <li>Clearly labelled, to assist with segregation, storage, and collection of the recyclable waste streams</li> <li>Accessible to building occupants / facilities operators for the deposit of materials and collections by waste management contractors</li> <li>Of a capacity appropriate to the building type, size, number of units (if relevant) and predicted volumes of waste that will arise from daily/weekly operational activities and occupancy rates.</li> </ol> <p>Minimum storage space provision unless justification can be provided. 1. At least 2m<sup>2</sup> per 1000m<sup>2</sup> of net floor area for buildings &lt; 5000m<sup>2</sup>. 2. A minimum of 10m<sup>2</sup> for buildings ≥5000m<sup>2</sup> 3. An additional 2m<sup>2</sup> per 1000m<sup>2</sup> of net floor area where catering is provided (with an additional minimum of 10m<sup>2</sup> for buildings ≥ 5000m<sup>2</sup>).</p> <p>Where there is consistent generation in volume of the appropriate operational waste streams is likely to exist, e.g. large amounts of packaging or compostable waste generated by the building's use and operation, the following facilities are provided:</p> <ol style="list-style-type: none"> <li>Static waste compactor(s) or baler(s); situated in a service area or dedicated waste management space.</li> <li>Vessel(s) for composting suitable organic waste resulting from the building's daily operation and use OR adequate space(s) for storing segregated food waste and compostable organic material prior to collection and delivery to an alternative composting facility.</li> <li>Where organic waste is to be stored / composted on site, a water outlet is provided adjacent to or within the facility for cleaning and hygiene purposes</li> </ol>	-	1	1	0	1	1	0	1	1	0	<b>Architect</b>	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
	<p><b>For Retail only (retail parks or shopping centres)</b></p> <p>For shopping centres and retail parks there must be adequate space to cater for each tenant and their potential recyclable waste volumes. Tenants that occupy a large proportion of the centre, i.e. 'flagship tenants', must have their own dedicated compliant facilities. For smaller non-flagship tenant units, compliant central or common facilities on site or dedicated spaces for individual units will meet the assessment criteria for this BREEAM issue.</p> <p><b>For Healthcare only</b></p> <p>The specified or installed operational waste facilities are compliant with the relevant NHS guidelines for that part of the UK. In addition to the standard criteria, the waste facilities are compliant with the relevant NHS guidelines for that part of the UK.</p>												
<b>Wst 05 Adaption to Climate Change</b>	<p>Conduct a climate change adaptation strategy appraisal using;</p> <p>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:</p> <ul style="list-style-type: none"> <li>• Hazard Identification</li> <li>• Hazard assessment</li> <li>• Risk estimation</li> <li>• Risk Evaluation</li> <li>• Risk Management</li> </ul> <p>BREEAM definition of Structural and fabric resilience is the ability of a structure to withstand an increased burden of weather/increase pressure/hazards associated with climate change. Examples of increased pressures or hazards to be considered include the impacts of climate change and extreme weather events.</p>	<b>RIBA Stage 2</b>	1	1	0	1	1	0	1	1	0	<b>Design team</b>	For further information on the methodology to undertake this please contact your BREEAM assessor.



Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
<b>Wst 06: Functional adaptability (Recommendations)</b>	<p>Provide a copy of the study to explore the ease of disassembly and the functional adaptation potential of different design scenarios by the end of Concept Design.</p> <p>The study must consider the following as a minimum:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• Versatility: The degree of adaptability of the internal environment to accommodate changes in working practices.</li> <li>• Adaptability: The potential of the building ventilation strategy to adapt to future building occupant needs and climatic scenarios.</li> <li>• Convertibility: The degree of adaptability of the internal physical space and external shell to accommodate changes of in-use.</li> <li>• Expandability: The potential for the building to be extended, horizontally or vertically.</li> <li>• 'Refurbishment potential': The potential for major refurbishment, including replacing the façade.</li> </ul>	<b>RIBA Stage 2</b>	1	1	0	1	1	0	1	1	0	<b>Design team</b>	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
<b>Wst 06: Functional adaptability (Implementation)</b>	<p>Provide an update, during Technical Design, on:</p> <ol style="list-style-type: none"> <li>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.</li> <li>Changes to the recommendations and solutions during the development of the Technical Design.</li> </ol> <p>The implementation will be specific to the building and scope of the project, but information should be made available to the assessor covering:</p> <ul style="list-style-type: none"> <li>Options for multiple building uses and area functions based on design details, e.g. modularity.</li> <li>Routes and methods for major plant replacement, e.g. networks and connections have flexibility and capacity for expansion.</li> <li>Accessibility for local plant and service distribution routes, e.g. detailed information on building conduits and connections infrastructure.</li> <li>The potential for the building to be extended, horizontally or vertically.</li> </ul> <p>Produce a building adaptability and disassembly guide to communicate the characteristics allowing functional adaptability and disassembly to prospective tenants.</p> <p>The guide can be in the form of an analogue document, or an Asset Information Model from the Building Information Model (BIM) created in accordance with PAS 1192 Part 2-2013 and PAS 1192 Part 3-2014. See the new ISO 20887 for information on what the guide could include.</p>	<b>RIBA Stage 4</b>	1	1	0	1	1	0	1	1	0	<b>Design team</b>	
<b>Land Use &amp; Ecology</b>													
<b>LE 01 Site Selection (Previously occupied land)</b>	<p>At least 75% of the proposed development's footprint is on an area of land which has previously been occupied.</p> <p>The design drawings, report or site photographs must confirm the following:</p> <ul style="list-style-type: none"> <li>Type and duration of previous land use;</li> <li>Area (m<sup>2</sup>) of previous land use;</li> <li>Proposed site plan showing location and footprint (m<sup>2</sup>) of proposed development and temporary works.</li> </ul>	-	1	0	0	1	0	0	1	0	0	<b>Architect</b>	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
LE 01 Site Selection (Contaminated land)	<p>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:</p> <ul style="list-style-type: none"> <li>The degree of contamination</li> <li>The contaminant sources or types</li> <li>The options for remediating sources of contamination which present an unacceptable risk.</li> </ul> <p>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.</p> <p>Asbestos can only be considered as a contaminant if it is found within the ground</p>	-	1	0	0	1	0	0	1	0	0	Environmental consultant	
LE 02 Identifying and Understanding the Risks and Opportunities for the Project (Pre-requisite)	<p>The client or contractor confirms compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site</p>	All stages	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Contractor	
LE 02 Identifying and Understanding the Risks and Opportunities for the Project (Survey and Evaluation)	<p>A Suitably Qualified Ecologist (SQE) carries out a survey and evaluation for the site early enough to influence site preparation works, layout and, where necessary, strategic planning decisions (typically Preparation and brief stage- RIBA Stage 1).</p> <p>The SQE's survey and evaluation determines the site's ecological baseline, including:</p> <ul style="list-style-type: none"> <li>Current and potential ecological value and condition of the site and related areas within the Zone of Influence.</li> <li>Direct and indirect risks to current ecological value from the project.</li> <li>Capacity and feasibility for enhancement of the site's ecological value and, where relevant, areas within the Zone of Influence.</li> </ul> <p>Recommendations and data collected from the survey and evaluation are shared with appropriate project team members to influence decisions made for activities during site preparation, design and construction works, which can support ecological features.</p>	RIBA Stage 1	1	1	0	1	1	0	1	1	0	Ecologist	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
<b>LE 02 Identifying and Understanding the Risks and Opportunities for the Project</b> (Determining the ecological outcomes for the site)	<p>Survey and evaluation have been achieved</p> <p>During Concept Design, the project team liaise and collaborate with representative stakeholders to identify and consider the ecological outcome for the sites (appropriate to the scale and type of development) for the project.</p> <p>When determining the ecological outcome for the site, this must involve the identification, appraisal and selection of specific solutions and measures sufficiently early to influence key project planning decisions.</p> <p>This must be done in accordance with the following hierarchy of action:</p> <ul style="list-style-type: none"> <li>• avoidance</li> <li>• protection</li> <li>• reduction or limitation of negative impacts</li> <li>• on site compensation and,</li> <li>• enhancement, considering the capacity and feasibility within the site, or where viable, off-site</li> </ul>	<b>RIBA Stage 1/2</b>	1	1	0	1	1	0	1	1	0	<b>Ecologist</b>	
<b>LE03 Managing Negative Impacts on Ecology</b> (Pre-Requisite)	Achieve at both credits under LE 02.	<b>RIBA Stage 1/2</b>	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	<b>Ecologist</b>	
<b>LE03 Managing Negative Impacts on Ecology</b> (Planning and measures on site)	<p>Further planning to avoid and manage negative ecological impacts on-site is carried out early enough to influence the concept design and design brief as well as site preparation planning (typically Concept Design stage).</p> <p>On-site measures for managing negative ecological impacts during site preparation and construction are implemented in-practice (e.g. mitigation measures to protect existing ecological features).</p> <p>The above points are based on input from the project team in collaboration with representative stakeholders and data collated as part of the 'Determining ecological outcomes' in LE 02 Ecological risks and opportunities.</p> <p>Refer to the BREEAM UK New Construction 2018 manual SD5078 – issue 3.0 for further information.</p>	<b>RIBA Stage 2</b>	1	1	0	1	1	0	1	1	0	<b>Ecologist</b>	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
LE03 Managing Negative Impacts on Ecology (Managing negative impacts)	<p>Negative impacts from site preparation and construction works are managed according to the mitigation hierarchy in line with the SQE's recommendations;</p> <p><b>For 2 credits</b></p> <p>No overall loss of ecological value has occurred</p> <p><b>For 1 credit</b></p> <p>The loss of ecological value has been minimised</p>	RIBA Stage 2-4	2	0	0	2	0	0	2	0	0	Ecologist	
LE 04 Ecological change and enhancement (Pre-Requisite)	Negative impacts from site preparation and construction works have been managed according to the mitigation hierarchy, in line with the SQE's recommendations and the loss of ecological value has been minimised	RIBA Stage 2-4	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Ecologist	
LE 04 Ecological change and enhancement (Ecological enhancement)	<p>Measures have been implemented that enhance ecological value, which are based on input from the project team and SQE in collaboration with representative stakeholders and data collated as part of the 'Determining ecological outcomes' in LE 02. Measures are implemented in the following order:</p> <ol style="list-style-type: none"> <li>On site, and where this is not feasible,</li> <li>Off site within the Zone of Influence.</li> </ol> <p>Data collated are analysed and where potentially valuable, provided to the local environmental records centres nearest to, or relevant for, the site.</p>	RIBA Stage 2	1	1	0	1	1	0	1	1	0	Ecologist	
LE 04 Ecological change and enhancement (Change and enhancement of ecology)	Up to three credits are awarded based on the change in ecological value occurring as a result of the project. This must be calculated in accordance with the process set out in GN36 - BREEAM, CEEQUAL and HQM Ecology Calculation Methodology – Route 2.	RIBA Stage 2-4	3	1	0	3	1	0	3	1	0	Ecologist	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
LE 05 Long term ecology management and maintenance (Pre-requisite)	<p>The client or contractor has confirmed that compliance is being monitored against all relevant UK, EU and international standards relating to the ecology of the site. The following must be achieved:</p> <ul style="list-style-type: none"> <li>Negative impacts from site preparation and construction works have been managed according to the mitigation hierarchy, in line with the SQE's recommendations and the loss of ecological value has been minimised.</li> </ul> <p>AND</p> <ul style="list-style-type: none"> <li>At least one credit under LE 04 for 'Change and Enhancement of Ecology' has been awarded.</li> </ul>	RIBA Stage 2	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Pre-req	Ecologist	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
LE 05 Long term ecology management and maintenance (Management and maintenance throughout the project)	<p>Measures have been implemented to manage and maintain ecology throughout the project. These measures are based on input from the project team in collaboration with representative stakeholders and data collated as part of the 'Determining ecological outcomes' in LE 02. To ensure the optimal ecological outcomes agreed in LE 02 are met in-practice, these measures must monitor and review the effectiveness of the mitigation and enhancement measures in place for LE 03 &amp; LE 04 to ensure they are implemented.</p> <p>A section on Ecology and Biodiversity has been included as part of the tenant or building owner information supplied, to inform the owner or occupant of local ecological features, value and biodiversity on or near the site. This should include detailed management and maintenance plans as required by landscape and asset managers as well as relevant parts of the handover information for occupiers written in a format that encourages understanding and supportive behaviours.</p>	RIBA Stage 2-6	1	1	0	1	1	0	1	1	0	Ecologist/ Contractor	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
LE 05 Long term ecology management and maintenance (Landscape and ecology management plan)	<p>A Landscape and Ecology Management Plan, or equivalent, has been developed in accordance with BS 42020:2013 Section 11.11 covering at least the first five years after project completion as a minimum and including:</p> <ul style="list-style-type: none"> <li>• Actions and responsibilities of relevant individuals prior to handover</li> <li>• The ecological value and condition of the site at handover and how this is expected to develop and change over time</li> <li>• Identification of opportunities for ongoing alignment with activities beyond the development project, which support the aims of BREEAM's Strategic Ecology Framework</li> <li>• Identification and guidance to trigger appropriate remedial actions to address previously unforeseen impacts</li> <li>• Clearly defined and allocated roles and responsibilities for delivering the plan</li> </ul> <p>The landscape and management plan or similar will be updated to support maintenance of the ecological value of the site</p>	RIBA Stage 2-6	1	1	0	1	1	0	1	1	0	Ecologist	
<b>Pollution</b>													
Pol 01: Impact of refrigerants	<p>Three Credits</p> <p>No refrigerant use within the installed plant or systems.</p> <p>Where refrigerants are installed;</p> <p>Pre-requisite</p> <p>All systems with electric compressors comply with the requirements of BS EN 378:20161 (parts 2 and 3). Refrigeration systems containing ammonia comply with the Institute of Refrigeration Ammonia Refrigeration Systems code of practice2.site</p> <p>Two credits</p> <p>The direct effect life cycle CO<sub>2</sub> equivalent emissions (DELCO) of ≤100 CO<sub>2</sub>-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</p>		3	2	1	N/A	N/A	N/A	3	2	1	M&E	



Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
	<p>calculation. To calculate the DELC, refer to the relevant definitions in Methodology and Additional information.</p> <p>OR</p> <p>All refrigerants used have a global warming potential (GWP) ≤10.</p> <p>OR</p> <p>One credit</p> <p>Systems using refrigerants have a DELC of ≤1000kgCO<sub>2</sub>-eq/kW cooling and heating capacity.</p> <p>One credit – Leak detection</p> <p>All systems are hermetically sealed or only use environmentally benign refrigerants (see Leak detection and Hermetically sealed systems).</p> <p>OR</p> <p>Where the systems are not hermetically sealed:</p> <p>Systems have:</p> <ul style="list-style-type: none"> <li>- A permanent automated refrigerant leak detection system, that is robust and tested, and capable of continuously monitoring for leaks OR</li> <li>- An inbuilt automated diagnostic procedure for detecting leakage is enabled.</li> </ul> <p>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).</p>												
<b>Pol 02: Local air quality</b>	<p>All heating and hot water is supplied by non-combustion systems. For example, only powered by electricity.</p> <p>OR alternatively.</p> <p>Emissions from all installed combustion plant that provide space heating and domestic hot water do not exceed the levels set.</p> <p>NOTE: Electric heating achieves 2 credits by default</p>		2	2	0	N/A	N/A	N/A	2	2	0	M&E	
<b>Pol 03 Flood and surface water management</b>  (Flood risk)	<p>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.</p>	-	2	2	0	2	2	0	2	2	0	Drainage Consultants	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
<p><b>Pol 03 Flood and surface water management</b></p> <p>(Surface water run-off)</p>	<p><b>Pre-requisite</b></p> <p>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 must be followed (these are detailed below), with justification given by the appropriate consultant where water can leave the site.</p> <p>When specifying and designing surface water run-off management, the appropriate consultant must follow the priority levels listed below (noting that level 1 has the highest priority). Justification must be provided for each level which does not contribute to managing surface water run-off. This has been set so the most appropriate water management solutions are used, prioritising water use in the development and infiltration over discharge. This is so that the volume of water that leaves the site is limited as far as practicable.</p> <ul style="list-style-type: none"> <li>• Priority Level 1 Water is collected for use in the development (e.g. rainwater harvesting)</li> <li>• Priority Level 2 Water is infiltrated into the ground</li> <li>• Priority Level 3 Water is discharged to surface water body</li> <li>• Priority Level 4 Water is discharged to the drainage system</li> <li>• Priority Level 5 Water is discharged to a combined sewer</li> </ul> <p><b>One credit – Surface water run- off rate</b></p> <p>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 pre-developed site. This should comply at the 1-year and 100-year return period events.</p> <p>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.</p> <p>Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified Sustainable Drainage Systems (SuDS) are in place.</p> <p>Calculations include an allowance for climate change. This should be made in accordance with <b>current best practice planning guidance</b>.</p> <p><b>One credit – Surface water run-off – volume</b></p> <p>Flooding of property will not occur in the event of local drainage system failure (caused either by extreme rainfall or a lack of maintenance); <b>AND</b></p> <p><b>EITHER</b></p> <p>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</p>	<p>RIBA Stage 2</p>	2	2	0	2	2	0	2	2	0	Drainage Consultants	



Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
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<p><b>Pol 03 Flood and surface water management</b></p> <p><b>(Minimising watercourse pollution)</b></p>	<p>There is no discharge from the developed site for rainfall up to 5 mm (confirmed by the appropriate consultant).</p> <p>Areas with a low risk source of watercourse pollution, an appropriate level of pollution prevention treatment is provided, using appropriate SuDS techniques.</p> <p>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.</p> <p>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.</p> <p>All water pollution prevention systems have been designed and installed in accordance with the recommendations of documents such as the SuDS manual and other relevant industry best practice. They must be bespoke solutions taking account of the specific site requirements and natural or man-made environment of and surrounding the site.</p> <p>A comprehensive and up to date drainage plan of the site will be made available for the building or site occupiers.</p> <p>Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS must be in place.</p> <p>All external storage and delivery areas are designed and detailed in accordance with the current best practice planning guidance.</p>	<p><b>RIBA Stage 3-4</b></p>	1	0	0	1	0	0	1	0	0	<p><b>Drainage Consultants</b></p>	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
<b>Pol 04: Reduction of night light pollution</b>	<p>Where external lighting pollution has been eliminated through effective design that removes the need for external lighting without adversely affecting the safety and security of the site and its users.</p> <p>OR alternatively, where the building does have external lighting, one credit can be awarded as follows:</p> <p>The external lighting strategy has been designed in compliance with Table 2 (and its accompanying notes) of the ILP Guidance notes for the reduction of obtrusive light, 2011.</p> <p>All external lighting (except for safety and security lighting) can be automatically switched off between 23:00 and 07:00.</p> <p>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's Guidance notes.</p> <p>Illuminated advertisements, where specified, must be designed in compliance with ILE Technical Report 5 – The Brightness of Illuminated Advertisements.</p>	-	1	1	0	1	1	0	1	1	0	<b>M&amp;E</b>	
<b>Pol 05: Reduction of noise pollution</b>	<p>There are no noise-sensitive areas within the assessed building or within 800 m radius of the assessed site.</p> <p>OR</p> <p>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 4142:20141 is commissioned. Noise levels must be measured or determined for:</p> <ul style="list-style-type: none"> <li>- Existing background noise levels: <ul style="list-style-type: none"> <li>• At the nearest or most exposed noise-sensitive development to the proposed assessed site</li> <li>• including existing plant on a building, where the assessed development is an extension to the building</li> </ul> </li> <li>- Noise rating level from the assessed building.</li> </ul> <p>The noise impact assessment must be carried out by a suitably qualified acoustic consultant.</p> <p>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.</p>		1	1	0	N/A	N/A	N/A	1	1	0	<b>Acoustician</b>	

Credit Ref	Criteria	Action	Credits –Industrial (B2)			Credits – Retail E (a & b & Suis Generis) Previous A1, A3, A4, A5			Credits – Healthcare/ Gym/ Creche E (d, e & f) Previous D1 & D2			Responsibility	Comments
			Shell & Core (to account for the likely office spaces)			Shell Only			Fully Fitted				
			Available	Targeted	Potential	Available	Targeted	Potential	Available	Targeted	Potential		
	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.												
<b>Exemplary Level</b>													
<b>Man 03: Responsible construction practices (Considerate contractors)</b>	The main contractor will ensure that all actions are undertaken from the BREEAM Table 4.1. Refer to technical manual SD5078: BREEAM New Construction 2018 3.0 or contact the appointed BREEAM Assessor for further details	-	1	0	1	1	0	1	1	0	1	<b>Contractor</b>	
<b>Hea 01: Visual comfort (Daylighting)</b>	An average daylight factor of 3%, with 80% of areas to comply AND Where used, a minimum point daylight factor of 1.2% OR 2.1% for spaces with glazed roofs such as atria. The uniformity ratio, view of sky or room depth criterion are met where they are used to demonstrate compliance.  OR 80% of the qualifying areas comply with the average daylight illuminance of at least 300 lux for 2650 hours per year or more AND at least 90lux for 2650 hours per year or more for the minimum daylight illuminance at the worst lit point	-	1	0	0	1	0	0	1	0	0	-	
<b>Hea 06: Security</b>	A compliant risk based security rating scheme has been used. The performance against the scheme has been confirmed by independent assessment and verification.	-	1	0	0	1	0	0	1	0	0	-	
<b>Mat 01: Environmental Impacts from construction products – Building life cycle assessment (LCA) (LCA and LCC alignment)</b>	Achieve Elemental LCC plan and Component Level LCC options appraisal credits (see Man 02) Include design options appraised during Concept Design in Man 02 Life cycle cost and service life planning: 2 The elemental LCC plan: . Include the design options appraised Technical Design in the 'Component level LCC option appraisal' (in Man 02 Life cycle cost and service life planning). Integrate the aligned LCA and LCC options appraisal activity within the wider design decision-making process. Record this in an options appraisal summary document including the relevant cost information from the 'elemental LCC plan' and 'Component level LCC option appraisal'.	-	1	0	0	1	0	0	1	0	0	-	

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<b>Mat 01 Environmental Impacts from construction products – Building life cycle assessment (LCA) (Third party verification)</b>	<p>A suitably qualified third party either carries out the building LCA work or verifies the building LCA work (if by others), and produces a report describing how they have checked the building LCA work accurately represent the designs under consideration during Concept Design and Technical Design with reference to the requirements of all credits.</p> <p>For each LCA option, itemise in the report the checks made by the suitably qualified third party including, as a minimum, the quality requirements detailed in table 9.4 of the technical manual SD5078 BREEAM UK New Construction 2018 v3.0.</p> <p>Include details of the suitably qualified third party's relevant skills and experience and a declaration of their third party independence from the project client and design team in the report.</p>	-	1	0	0	1	0	0	1	0	0	-																					
<b>Wst 01: Construction site waste management</b>	<p>Non-hazardous construction waste generated, excluding demolition and excavation waste, is less than or equal to the resource efficiency benchmarks below:</p> <table border="1"> <thead> <tr> <th>BREEAM credits</th> <th>m<sup>3</sup></th> <th>Tonnage</th> </tr> </thead> <tbody> <tr> <td>Exemplary level</td> <td>≤ 1.6</td> <td>≤1.9</td> </tr> </tbody> </table> <p><b>AND</b></p> <p>The following percentages of non-hazardous construction and demolition waste generated by the project have been diverted from landfill:</p> <table border="1"> <thead> <tr> <th>BREEAM Credits</th> <th>Type of Waste</th> <th>Volume</th> <th>Tonnage</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Exemplary</td> <td>Non-demo</td> <td>85%</td> <td>90%</td> </tr> <tr> <td>Demo</td> <td>85%</td> <td>95%</td> </tr> <tr> <td>Excavation</td> <td>95%</td> <td>95%</td> </tr> </tbody> </table> <p><b>AND</b></p> <p>All key waste groups for diversion from landfill are covered in the RMP as detailed in the BREEAM UK New Construction 2018 SD5078 – Issue 3.0.</p> <p><b>AND</b></p> <p>Waste data obtained from licensed external waste contractors is reliable and verifiable, by using data from EA/SEPA/EA Wales/NIEA Waste Return Forms or from a PAS 402:2013 compliant company</p>	BREEAM credits	m <sup>3</sup>	Tonnage	Exemplary level	≤ 1.6	≤1.9	BREEAM Credits	Type of Waste	Volume	Tonnage	Exemplary	Non-demo	85%	90%	Demo	85%	95%	Excavation	95%	95%	-	1	0	0	1	0	0	1	0	0	-	
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<b>Wst 02 Use of recycled and sustainably sourced aggregates</b>	The Project Sustainable Aggregate Points score meets or exceeds the exemplary level performance benchmark as detailed in BREEAM UK New Construction 2018 SD5078 – Issue 3.0.	-	1	0	0	1	0	0	1	0	0	-	
<b>LE 02 Ecological risks and opportunities</b>	Achieve the 'Determining ecological outcomes' AND Wider sustainability related activities and potential ecosystem service benefits are considered as part of determining the optimal ecological outcomes for the site. AND Achieve the credits of the assessment issues outlined below: <ul style="list-style-type: none"> <li>• Hea 07 Safe and healthy surroundings - Both credits</li> <li>• Pol 03 Flood and surface water management - Achieve credits for 'Surface water run-off' and 'Minimising watercourse pollution'</li> <li>• Pol 05 Reduction of noise pollution</li> </ul>	-	1	0	0	1	0	0	1	0	0	-	
<b>LE 04 Ecological change and enhancement</b>	The change in ecological value calculated under criterion 6 above confirms significant net gain has been achieved as set out in GN36 - BREEAM, CEEQUAL and HQM Ecology Calculation Methodology	-	1	0	0	1	0	0	1	0	0	-	