



400 Longwater Avenue, Reading
Oxford Properties

BREEAM 2014 New Construction
Pre-Assessment Report

Rev. D
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Audit Sheet

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1.0 Executive Summary

This report provides an indicative BREEAM 2014 New Construction pre-assessment for the proposed 400 Longwater Avenue development.

The development falls under the “Office” category and a ‘full fitted’ pre-assessment has been conducted. It is understood that the client is targeting a BREEAM ‘Excellent’ rating.

The current anticipated baseline score is 71.1% which is equivalent to an ‘Excellent’ rating, exceeding the minimum required score of 70% by 1.1%. However, a number of potential credits have also been identified which could result in the building achieving a potential score of 82.2% which is equivalent to an ‘Excellent’ rating with a margin of 12.2%.

A margin of at least 3 – 5% is recommended above the minimum required score to ensure that the targeted rating is achieved at the post construction stage.

Figure 1.1 summarises the current anticipated and potential score relative to the minimum required score for each BREEAM rating threshold.

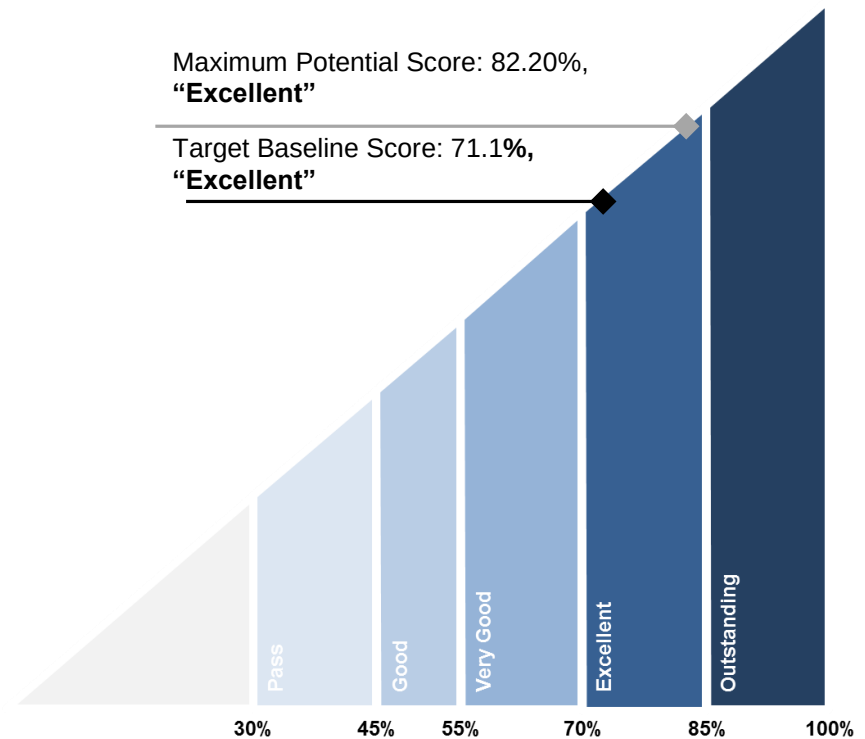


Figure 1.1 BREEAM 2014 Scale and Pre-Assessment Score.

2.0 BREEAM Pre-Assessment

2.1 Introduction

This report relates to the proposed 400 Longwater Avenue development. The building would be registered under the BREEAM 2014 New Construction Scheme and will be assessed using the “Office – General office” criteria. The building is to be fitted out to a Cat A and therefore will be assessed through a fully fitted assessment. The building will be targeting a BREEAM ‘Excellent’ rating as a minimum. The assessment approach (see section 6.4) is to be agreed with the design team.

2.2 Initial Pre-Assessment

This pre-assessment has been carried out independently by a qualified BREEAM assessor prior to a review by the project design team. Once comments and queries have been raised by the project team, the report and the predicted scores will be updated.

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

- Baseline score / rating: 71.1% equivalent to ‘Excellent’
- Potential score / rating: 82.2% equivalent to ‘Excellent’

The potentials credits have been identified beyond the targeted score credits to increase the margin beyond ‘Excellent’ for the targeted score.

Kindly refer to Appendix A for specific credit requirements.

3.0 Summary Score Sheet

The summary table below highlights the list of targeted credits for the current BREEAM 2014 pre-assessment. Mandatory credits to achieve a “Very Good” rating and above are highlighted by **(M)**. Additional mandatory credits for an ‘Excellent’ or ‘Outstanding’ rating are highlighted by **(M_e)** and **(M_o)** respectively. Exemplary (innovation) credits are written in brackets i.e. (+1).

Category	Issue	Available	Credits Targeted	Potential
Management	Man 01: Project Brief and design	4	4	-
	Man 02: Lifecycle Cost and Service Life Planning	4	3	+1
	Man 03: Responsible Construction Practices (M_e) , (M_o)	6	6	-
	Man 04: Commissioning and Handover (M_e) , (M_o)	4	4	-
	Man 05: Aftercare	3	3	-
Health & Wellbeing	Hea 01: Visual Comfort	4	2	+1
	Hea 02: Indoor Air Quality	5	4	-
	Hea 04: Thermal Comfort	3	2	+1
	Hea 05: Acoustic Performance	3	2	+1
	Hea 06: Safety and Security	2	2	-
Energy	Ene 01: Reduction of CO ₂ Emissions (M_e)	12	5	+2
	Ene 02: Energy Monitoring (M)	2	2	-
	Ene 03: External Lighting	1	1	-
	Ene 04: Low Carbon Design	3	1	+1
	Ene 06: Energy Efficient Transportation Systems	3	3	-
	Ene 08: Energy Efficient Equipment	2	0	-
Transport	Tra 01: Public Transport Accessibility	3	1	-
	Tra 02: Proximity to Amenities	1	0	-
	Tra 03: Cyclist Facilities	2	2	-
	Tra 04: Maximum Car Parking Capacity	2	1	-
	Tra 05: Travel Plan	1	1	-

Table 3.1: BREEAM Target Summary.

Category	Issue	Available	Credits Targeted	Potential
Water	Wat 01: Water Consumption (M)	5	3	+1
	Wat 02: Water Monitoring (M)	1	1	-
	Wat 03: Water Leak Detection and Prevention	2	2	-
	Wat 04: Water Efficient Equipment	1	1	-
Materials	Mat 01: Life Cycle Impacts	5	3	+1
	Mat 02: Hard Landscaping and Boundary Protection	1	1	-
	Mat 03: Responsible Sourcing of Materials (M)	4	2	+1
	Mat 04: Insulation	1	1	-
	Mat 05: Designing for Durability and Resilience	1	1	-
	Mat 06: Material Efficiency	1	0	+1
Waste	Wst 01: Construction Waste Management (M_c)	4	3	-
	Wst 02: Recycled Aggregates	1	0	-
	Wst 03: Operational Waste (M_e), (M_o)	1	1	-
	Wst 04: Speculative Floor and Ceiling Finishes	1	0	-
	Wst 05: Adaptation to Climate Change	1	1	-
	Wst 06: Functional Adaptability	1	1	-
Land Use and Ecology	LE 01: Site Selection	2	0	-
	LE 02: Ecological Value of Site and Protection of Ecological Features	2	2	-
	LE 03: Minimising Impact on Existing Site Ecology (M)	2	2	-
	LE 04: Enhancing Site Ecology	2	2	-
	LE 05: Long Term Impact on Biodiversity	2	2	-
Pollution	Pol 01: Impact of Refrigerants	3	1	+1
	Pol 02: NO _x Emissions	3	3	-
	Pol 03: Surface Water Run-off	5	2	-
	Pol 04: Reduction of Night-time Light Pollution	1	1	-
	Pol 05: Noise Attenuation	1	1	-
Innovation	Inn 01: Approved Innovation and Exemplary Level Credits	10	1	+1
	Weighted Score: Rating:		71.10% 'Excellent'	82.20% 'Excellent'

Table 3.1 (Continued): BREEAM Target Summary.

4.0 Conclusion

Based upon an initial credit selection independent of the project design team, it is anticipated that the Proposed Development could achieve a score of 71.1% which is equivalent to a BREEAM 'Excellent' rating.

A pool of additional potential credits has also been identified which if confirmed could potentially result in an enhanced BREEAM performance score and rating; that is, 82.2%, 'Excellent'.

Figure 4.1 outlines how the Proposed Development scores in each category. It also outlines where potential credits could be targeted to increase the margin.

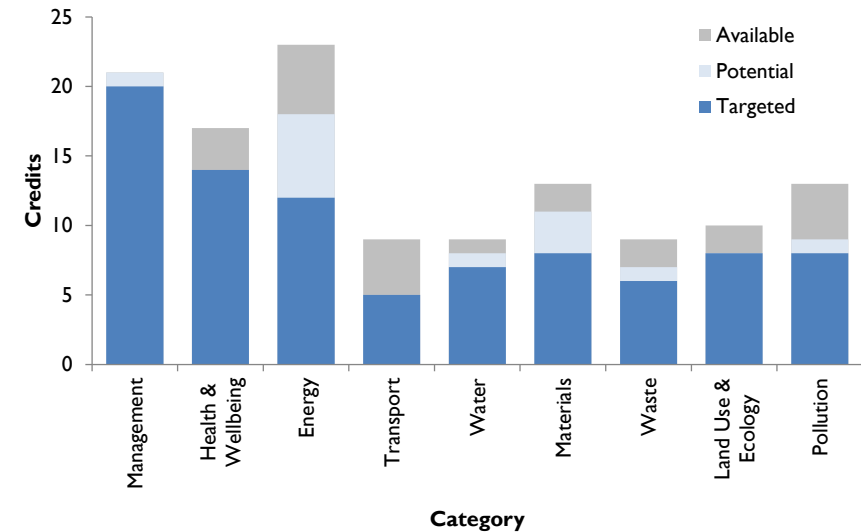


Figure 4.1 Targeted BREEAM Credits.

5.0 Appendix A: Detailed Credit Assessment

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Man 01 Project Brief and Design	1st Credit: Where evidence provided demonstrates that from RIBA stage 2 (Design Brief) or equivalent the client, building occupier, design team and contractor have met and are involved in contributing to the decision making process for the project. As a minimum this includes meeting to identify and define their roles, responsibilities and contributions during the following phases; 1) Design, 2) Construction, 3) Commissioning and handover and 4) Occupation i.e. up to and including Stage L (Post practical completion). Evidence also needs to be provided which demonstrates that there is a schedule of training identified for relevant building occupiers/premises manager (based appropriately around handover and proposed occupation plans).	1	1		Project Manager
	2nd Credit: Where evidence provided demonstrates that prior to the completion of the Concept Design stage, all relevant third party stakeholders have been consulted by the design team and this covers the minimum consultation content (including but not limited to functionality, impacts on local community, inclusive and accessible design). The impact this consultation has had on the Project Brief and Concept Design must be demonstrated and consultation feedback has been given to all relevant parties	1	1		Project Manager
	3rd Credit: Where evidence provided demonstrates that a Sustainability Champion has been appointed to facilitate the setting and achievement of BREEAM performance target(s) for the project and evidence shows that the designed BREEAM performance target(s) has been contractually agreed and demonstrably achieved by project design.	1	1	Note: This does not form part of the BREEAM assessor's standard scope of works and would need to be an additional appointment by the Client or Contractor.	Project Manager

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	4th Credit: Where evidence provided demonstrates that the 3 rd credit is achieved and a Sustainability Champion is appointed to monitor progress against the agreed BREEAM performance target(s). This is done by attending key project/design team meetings during the Concept Design, Developed Design and Technical Design stages, reporting to the client during, and prior to, completion of each stage.	1	1	Note: This does not form part of the BREEAM assessor's standard scope of works and would need to be an additional appointment by the Client or Contractor.	Project Manager
Man 02 Life Cycle Impacts	1st and 2nd Credit: Where evidence provided demonstrates that an elemental Life Cycle Cost (LCC) analysis has been carried out based on the proposals developed during Process Stage 2 (concept design/RIBA Stage 2) or equivalent. The LCC analysis shows an outline LCC plan for the project, appraising a range of options based on multiple cash flow scenarios e.g. 20, 30, 50+ years and a fabric and servicing strategy for the project outlining services component and fit-out options over a 15-year period	2	2	LCC analysis at Stage 2. Advised by Gardiner that it is not included in their scope.	Client + Cost Consultant
	3rd Credit: Where evidence provided demonstrates that a component level LCC plan has been developed by end of Process Stage 4 (RIBA Stage 4) including the following component types: - Envelope: e.g. cladding, windows, and/or roofing - Services: e.g. heat source cooling source, and/or controls - Finishes: e.g. walls, floors and/or ceilings - External spaces Demonstrate using appropriate examples provided by the design team, how the component level LCC plan has been used to influence building and systems design/specification to minimise life cycle costs and maximise critical value.	1	1		
	4th Credit: Where evidence provided demonstrates reporting of the capital cost for the building in pounds per square metre (£/m ²) via the BREEAM Assessment Scoring and Reporting tool, Assessment Issue Scoring tab, Management section.	1	- (+1)	This credit is currently not assumed; however, a potential additional credit is assumed for an 'Outstanding' rating. Note this is a new BREEAM 2014 credit issue.	

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Man 03 (M) Responsible Construction Practices  Mandatory: 1 credit (considerate construction) for Excellent and above	Pre-Requisite All timber and timber based products used on the project is 'legally' harvested and traded timber 1st Credit: Evidence which demonstrates that the principal contractor operates an environmental management system (EMS) covering main operations e.g. third party certified to ISO 14001/EMAS or equivalent standard or have a structure that is in compliance with BS 8555-2003 and has reached stage 4 of implementation stage. Evidence that the principal contractor implements best practice pollution policies and procedures on-site in accordance with Pollution Prevention Guidelines	1	1	Man 03: To be passed onto the Contractor in the pre-lims.	Client + Contractor
	2nd Credit: Evidence which demonstrates that a Sustainability Champion is appointed to monitor the project to ensure ongoing compliance with relevant sustainability performance/process criteria. The defined BREEAM performance target forms a requirement of the principal contractor's contract and to achieve this credit in final post construction phase of assessment, the BREEAM-related performance target must be demonstrably achieved by the project.	1	1	Note: This does not form part of the BREEAM assessor's standard scope of works and would need to be an additional appointment by the Client or Contractor.	
	3rd and 4th Credit: Where evidence provided demonstrates the contractor achieves 'compliance' with the criteria of a compliant considerate construction scheme (CCS score of at least 25). Where evidence provided demonstrates the contractor significantly exceeds 'compliance' with the criteria of the scheme (CCS score of at least 35). Exemplary Credit: Where evidence provided demonstrates the contractor achieves 'compliance' with the criteria of a compliant considerate construction scheme (CCS score of at least 40).	2	2 +1	Including an innovation credit; that is, a minimum CCS score of 40.	
	5th and 6th Credit Where evidence provided demonstrates the responsibility has been assigned to an individual for monitoring, recording and reporting energy use, water consumption and transport data from all on-site construction processes throughout the build programme.	2	2		

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Man 04 Commissioning and Handover	1st Credit: Where evidence provided demonstrates a schedule of commissioning and testing that identifies and includes a suitable timescale for commissioning and re-commissioning of all complex and non-complex building services and control systems and testing and inspecting building fabric, and that all commissioning is done in accordance with current Building Regulations, BSRIA and CIBSE guidelines. An appropriate project team member(s) is appointed to monitor and programme pre-commissioning, testing, and where necessary, re-commissioning on behalf of the client The principal contractor accounts for the commissioning and testing programmes, responsibilities and criteria within their budget and main programme of works, allowing for sufficient time to complete commissioning and testing prior to handover.	1	1	Man 04: To be passed onto the Contractor in the pre-lims.	Contractor
	2nd Credit: Where evidence provided demonstrates a specialist commissioning manager is appointed during the design stage	1	1		
	3rd Credit: Where credit 1 is achieved and evidence provided demonstrates that the integrity of the building fabric is quality assured through compliant post construction testing and inspection. Any defects identified in the thermographic survey or airtightness testing reports are rectified prior to building handover and close out.	1	1		
	4th Credit: Where evidence provided demonstrates that Building User Guides are provided and are appropriate to all users of the building (general users including staff and if applicable residents, as well as the non-technical facilities management team/building manager) and that a training schedule is prepared for building occupiers/premises managers, timed appropriately around handover and proposed occupation plans	1	1		

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member																			
		Available	Targeted (Potential)																					
Hea 01 Visual Comfort	1st Credit - Glare Control: Where evidence provided demonstrates that the potential for disabling glare has been designed out of all relevant building areas either through building layout and/or building design. In additional, a glare control strategy should be developed in tandem with the lighting strategy to ensure that glare is minimised whilst avoiding potential conflict with the lighting control systems, therefore avoiding higher than expected energy consumption.	1	(1)	Identified with Architect as potentially difficult to achieve. Therefore included as potential credit.	Architect																			
	2nd Credit – Average daylighting: Where evidence provided demonstrates that the relevant building areas meet good practice daylighting criteria as follows: <table border="1"><thead><tr><th>Area Type</th><th>Credits</th><th>Average Daylight Factor Required</th><th>Minimum area (m2) to comply</th><th>Other requirements</th></tr></thead><tbody><tr><td>Internal Association or atrium areas</td><td rowspan="2">1</td><td>3%</td><td>80%</td><td>Uniformity ratio of at least 0.7 or Point daylight factors of 2.1% or more</td></tr><tr><td>Other occupied areas</td><td>2%</td><td>80%</td><td>EITHER (a) OR {(b) and (c)} in Table – 11</td></tr></tbody></table> Alternatively compliance can be demonstrated by: <table border="1"><thead><tr><th>Area Type</th><th>Credits</th><th>Minimum area (m2) to comply</th><th>Average Daylight Illuminance (averaged over entire space)</th><th>Minimum daylight illuminance at worst lit point</th></tr></thead><tbody></tbody></table>	Area Type	Credits	Average Daylight Factor Required	Minimum area (m2) to comply	Other requirements	Internal Association or atrium areas	1	3%	80%	Uniformity ratio of at least 0.7 or Point daylight factors of 2.1% or more	Other occupied areas	2%	80%	EITHER (a) OR {(b) and (c)} in Table – 11	Area Type	Credits	Minimum area (m2) to comply	Average Daylight Illuminance (averaged over entire space)	Minimum daylight illuminance at worst lit point	1	1	Daylighting Assessment would be required to demonstrate compliance. Could be undertaken any time up to the final Design Stage Assessment report. However, need to ensure it is able to be achieved. Architect advised that spaces are well daylight, therefore reasonable to assume 1 credit could be targeted.	Architect + Daylight Consultant
	Area Type	Credits	Average Daylight Factor Required	Minimum area (m2) to comply	Other requirements																			
Internal Association or atrium areas	1	3%	80%	Uniformity ratio of at least 0.7 or Point daylight factors of 2.1% or more																				
Other occupied areas		2%	80%	EITHER (a) OR {(b) and (c)} in Table – 11																				
Area Type	Credits	Minimum area (m2) to comply	Average Daylight Illuminance (averaged over entire space)	Minimum daylight illuminance at worst lit point																				

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Issue	Credit Requirements					Credits		Comments / Actions	Responsible Team Member
						Available	Targeted (Potential)		
	All occupied areas	1	80%	At least 300 lux for 2000 hours per year or more	At least 90 lux for 2000 hours per year or more				
3rd Credit - View Out: Where evidence provided demonstrates that 95% of floor areas in relevant building areas are within 7m of a wall which has a window or permanent opening that provides an adequate view out. The window/opening must be ≥20% of the surrounding wall area. Compliance can be demonstrated at greater than 7m depth if window area is greater than following:						1	1	Architect advised areas of glazing are suitable to target this credit.	Architect
Depth of room from external wall (max.) (m)		Percentage of window wall as seen from inside (min.) (%)							
<8		20							
>8<11		25							
>11<14		30							
>14		35							

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	4th Credit - Lighting Levels and Controls: Where evidence provided demonstrates that internal and external lighting is designed in accordance with the required standard. - All fluorescent and compact fluorescent lamps are fitted with high frequency ballasts. - Internal lighting in all relevant areas of the building is designed to provide an illuminance (lux) level appropriate to the tasks undertaken. This can be demonstrated through a lighting design strategy that provides illuminance levels in accordance with the SLL Code for Lighting 2012 and any other relevant industry standard. - For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 7 sections 3.3, 4.6, 4.7, 4.8 and 4.9. - For external areas, lighting provided is specified in accordance with BS 5489-1:2013 Lighting of roads and public amenity areas3BS 5489-1:2013 Lighting of roads and public amenity areas, Code of Practice for the design of road lighting, BSI, 2013 and BS EN 12464-2:2014. Lighting should be zoned as follows: - Workstations adjacent to windows/atria and other building areas separately zoned and controlled - Dining, restaurant, café areas: separate zoning of servery and seating/dining areas - Retail: separate zoning of display and counter areas - Bar areas: separate zoning of bar and seating areas - Auditoria: zoning of seating areas, circulation space and lectern area	1	1		MEP
	Exemplary Credit: Where evidence is provided which demonstrates that the exemplary level requirements are achieved, as outlined below: - All building types (multi storey buildings) - at least 80% of the floor area achieved point daylight factors of greater than 1.2% OR 2.1% for spaces with glazed roofs such as atria. Daylight factor of greater than 3% is achieved over greater than 80% of the floor space. - All building types (single storey buildings) - at least 80% of the floor area achieved point daylight factors of greater than 1.6% OR 2.8% for spaces with glazed roofs such as atria. Daylight factor of greater than 4% is achieved over greater than 80% of the floor space.	1	0	This credit is currently not assumed.	

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Hea 02 Indoor Air Quality	1st Credit: Where evidence provided demonstrates that an indoor air quality plan has been produced.	1	1		MEP + IAQ specialist
	2nd Credit: For air-conditioned and mixed-mode buildings: the building's air intakes and exhausts are over 10m apart to minimise recirculation and intakes are over 20m from sources of external pollution. In addition, the building must be designed to provide fresh air and minimise internal pollutants (and ingress of external polluted air into the building) in accordance with the criteria of the relevant standard for ventilation. Areas of the building subject to large and unpredictable or variable occupancy patterns have CO ₂ or air quality sensors specified and: - In mechanically ventilated spaces, the sensor(s) are linked to the mechanical ventilation system and provide demand-controlled ventilation to the space. - In naturally ventilated spaces, the sensors either have the ability to alert the building owner/manager when CO₂ levels exceed the recommended set point, or are linked to controls with the ability to adjust the quantity of fresh air, i.e. automatic opening windows/roof vents.	1	1		MEP
	3rd Credit: Where evidence provided demonstrates that <u>the indoor air quality plan has been developed</u> and all decorative paints and varnishes meet the emission requirements with regards to VOCs.	1	1		Architect + Contractor

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	4th Credit: Where evidence provided demonstrates that <u>the indoor air quality plan has been developed</u> and that formaldehyde concentration level is measured post construction (but pre-occupancy) and is found to be less than or equal to 100µg/m³. The total volatile organic compound (TVOC) concentration is measured post construction (but pre-occupancy) and found to be less than 300µg/m³ over 8 hours, in line with the Building Regulation requirements. 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.	1	1	.	Architect + Contractor
	5th Credit: Where evidence provided demonstrates the building ventilation strategy is designed to be flexible and adaptable to potential building occupant needs and climatic scenarios through designs capable of providing fresh air entirely via a natural ventilation strategy, demonstrated via either of the following: - The openable window area in each occupied space is equivalent to 5% of the gross internal floor area of that room/floor plate. OR - The design demonstrates that the natural ventilation strategy provides adequate cross flow of air to maintain required thermal comfort conditions and ventilation rates. This is demonstrated using ventilation design tool types recommended by CIBSE AM10 For a strategy which does not rely on openable windows, or which has occupied spaces with a plan depth greater than 15m, the design must demonstrate that the ventilation strategy can provide adequate cross flow of air to maintain the required thermal comfort conditions and ventilation rates. The natural ventilation strategy must be capable of providing at least two levels of user-control on the supply of fresh air to the occupied space, as follows; - Higher level: higher rates of ventilation achievable to remove short-term odours and/or prevent summertime overheating. - Lower level: adequate levels of draught-free fresh air to meet the need for good indoor air quality throughout the year, sufficient for the occupancy load and the internal pollution loads of the space. Any opening mechanisms must be easily accessible and provide adequate user-control over air flow rates to avoid draughts.	1	0	This credit is currently not assumed as it is expected that the building will not be able to be naturally ventilated.	Architect + MEP

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		Available	Targeted (Potential)		
Hea 04 Thermal Comfort	1st Credit: Where evidence provided demonstrates that thermal modelling has been carried out using software in accordance with CIBSE AM11. The modelling demonstrates that the building design and services strategy can deliver thermal comfort levels in occupied spaces in accordance with the criteria set out in CIBSE Guide A Environmental Design.	1	1	Thermal Comfort Assessment is required to demonstrate compliance.	MEP
	2nd Credit: Where credit 1 is achieved and evidence provided outlines that the thermal modelling demonstrates that the building design and services strategy can deliver thermal comfort levels in occupied spaces in accordance with the criteria set out in CIBSE Guide A Environmental Design for a projected climate change environment. Where these levels are not met the project team demonstrates how the building has been adapted or designed to be easily adapted in future using passive design solutions. Additionally evidence is provided for air conditioned buildings, the PMV and PPD indices based on the modelling are reported via the BREEAM assessment scoring and reporting tool.	1	- (+1)	This credit is currently not assumed; however, a potential additional credit is assumed for an 'Outstanding' rating. Note this is a new BREEAM 2014 credit issue.	MEP
	3rd Credit The thermal modelling analysis (undertaken for compliance with Credit 1) has informed the temperature control strategy for the building and its users. The strategy for proposed heating/cooling system(s) demonstrates that it has addressed the following: a. Zones within the building and how the building services could efficiently and appropriately heat or cool these areas. For example consider the different requirements for the central core of a building compared with the external perimeter adjacent to the windows. b. The degree of occupant control required for these zones, based on discussions with the end user (or alternatively building type or use specific design guidance, case studies, feedback) considers: i. User knowledge of building services ii. Occupancy type, patterns and room functions (and therefore appropriate level of control required) iii. How the user is likely to operate or interact with the system(s), e.g. are they likely to open windows, access thermostatic radiator valves (TRV) on radiators, change air-conditioning settings etc.	1	1	Report by MEP required based on proposed zoning.	MEP

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	iv. The user expectations (this may differ in the summer and winter) and degree of individual control (i.e. obtaining the balance between occupant preferences, for example some occupants like fresh air and others dislike draughts). c. How the proposed systems will interact with each other (where there is more than one system) and how this may affect the thermal comfort of the building occupants. d. The need or otherwise for an accessible building user actuated manual override for any automatic systems.				
Hea 05 Acoustic Performance	3 Credits: Up to three credits can be awarded where the following criteria is met: Sound Insulation: The sound insulation between acoustically sensitive rooms and other occupied areas complies with the performance criteria given in Section 7 of BS 8233:2014. 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 Additional information section of this BREEAM issue. Internal Indoor Ambient Noise Levels: Achieve indoor ambient noise levels that comply with the design ranges given in Section 7 of BS 8233:2014. A programme of acoustic measurements is carried out by a compliant test body in accordance with the acoustic testing and measurement procedures outlines in the Additional information section of this BREEAM issue. Reverberation: Acoustic environment (control of reverberation, sound absorption and speech transmission index): Achieve the requirements relating to sound absorption and reverberation times, where applicable, set out in Section 7 of BS 8233:2014.	3	3		Acoustician + Architect

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Hea 06 Safety and Security	1st Credit: Where external site areas form part of the assessed development the following apply: - Dedicated cycle paths provide direct access from site entrance(s) to any cycle storage provided - Footpaths on-site provide direct access from the site entrance(S) to building entrance(s) and connect to public footpaths off-site - Where provided, drop-off areas are designed off/adjoining to the access road and provide direct access to pedestrian footpaths, therefore avoiding the need for the pedestrian to cross vehicle access routes. - Dedicated pedestrian crossings are provided where pedestrian routes cross vehicle access routes, and appropriate traffic calming measures are in place to slow traffic down at these crossing points. - For large developments with a high number of public users or visitors, pedestrian footpaths are signposted to other local amenities and public transport nodes off-site - The lighting for access roads, pedestrian routes and cycle lanes is compliant with the external lighting criteria define in Hea 1. Where dedicated delivery access and drop-off areas form part of the assessed development the following apply: - Delivery areas are not directly accessed through general parking areas and - Do not cross or share pedestrian and cyclist routes and other outside amenity areas - There is a separate parking/waiting area for goods vehicles away from / adjacent to the manoeuvring area and staff/visitor car parking. - Parking and turning areas are designed for simple manoeuvring according to the type of delivery vehicle likely to access the site - There is a dedicated space for the storage of refuse skips and pallets away from the delivery vehicle manoeuvring area and staff/visitor car parking	1	1		Architect
	2nd Credit: Where evidence provided demonstrates that a suitably qualified security specialist (SQSS) conducts an evidence-based Security Needs Assessment during or prior to Concept Design (RIBA Stage 2). The recommendations from the SQSS must be implemented into the design.	1	1		

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member																																						
		Available	Targeted (Potential)																																								
Ene 01 (M) Reduction of CO₂ emissions  Mandatory: 5 credits for Excellent 8 credits for Outstanding	1 – 12 Credits: Where evidence provided demonstrates an improvement in the energy efficiency of the building's fabric and services and therefore achieves lower building operational related CO₂ emissions. The number of credits achieved is determined by comparing the Energy Performance ratio for New Constructions with the benchmarks in the table below. <table><tr><th colspan="2"></th><th colspan="2">Minimum Standards</th></tr><tr><th>BREEAM Credits</th><th>EPR_{NC}</th><th>Rating</th><th>Minimum Requirements</th></tr><tr><td>1</td><td>0.075</td><td rowspan="4">Pass Good Very Good</td><td rowspan="4">Requires performance improvement progressively better than relevant national building regulations compliant standards</td></tr><tr><td>2</td><td>0.15</td></tr><tr><td>3</td><td>0.225</td></tr><tr><td>4</td><td>0.30</td></tr><tr><td>5</td><td>0.375</td><td rowspan="3">Excellent</td><td rowspan="3">Requires 5 credits to be achieved</td></tr><tr><td>6</td><td>0.45</td></tr><tr><td>7</td><td>0.525</td></tr><tr><td>8</td><td>0.60</td><td rowspan="5">Outstanding</td><td rowspan="5">Requires 8 Credits to be achieve</td></tr><tr><td>9</td><td>0.675</td></tr><tr><td>10</td><td>0.75</td></tr><tr><td>11</td><td>0.825</td></tr><tr><td>12</td><td>0.90 AND zero net regulated CO₂ emissions</td></tr></table>			Minimum Standards		BREEAM Credits	EPR _{NC}	Rating	Minimum Requirements	1	0.075	Pass Good Very Good	Requires performance improvement progressively better than relevant national building regulations compliant standards	2	0.15	3	0.225	4	0.30	5	0.375	Excellent	Requires 5 credits to be achieved	6	0.45	7	0.525	8	0.60	Outstanding	Requires 8 Credits to be achieve	9	0.675	10	0.75	11	0.825	12	0.90 AND zero net regulated CO ₂ emissions	12	5 (+2)	Minimum eight credits is assumed as part of the baseline score. However, two additional potential credits have been assumed for an 'Outstanding' rating. MEP to confirm this can be achieved.	MEP
		Minimum Standards																																									
BREEAM Credits	EPR _{NC}	Rating	Minimum Requirements																																								
1	0.075	Pass Good Very Good	Requires performance improvement progressively better than relevant national building regulations compliant standards																																								
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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member												
		Available	Targeted (Potential)														
	Exemplary Credits Available – 5 credits <table><tr><th>Innovation Credits</th><th>Equivalent % Criteria</th></tr><tr><td>1</td><td>10%</td></tr><tr><td>2</td><td>20%</td></tr><tr><td>3</td><td>50%</td></tr><tr><td>4</td><td>80%</td></tr><tr><td>9</td><td>>100%</td></tr></table> The building is 'carbon negative' in terms of its total modelled operational energy consumption Exemplary Credits Available- up to 4 credits The building achieves an $EPR_{NC} \geq 0.9$ and zero net CO₂ emissions, and an equivalent percentage of the buildings modelled 'regulated' operational energy consumption, as stipulated in the table below, is generated by carbon neutral on-site, near-site or 'accredited external' sources and used to meet energy demand from 'unregulated' building systems or processes.	Innovation Credits	Equivalent % Criteria	1	10%	2	20%	3	50%	4	80%	9	>100%	5	-	These innovation credits are currently not assumed.	
Innovation Credits	Equivalent % Criteria																
1	10%																
2	20%																
3	50%																
4	80%																
9	>100%																
Ene 02 (M) Energy monitoring	1st Credit: Sub-metering of major energy consuming systems Where evidence provided demonstrates that the energy metering systems are installed that enable 90% of the estimated annual energy consumption of each fuel to be assigned to the various end-use categories of energy consuming systems. For buildings with a total useful floor area > 1000m² are metered using an appropriate energy monitoring and management system and systems in smaller buildings are metered either with an energy monitoring and management system or separate assessable energy sub-meters with pulsed or other open protocol communication outputs, to enable future connection to an energy monitoring and management system. The end energy consuming use is identifiable to the building user through labelling or data outputs.	1	1		MEP												

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	2nd Credit: Sub – metering of high energy load and tenancy areas An accessible energy monitoring and management system or separate accessible energy sub-meters with pulsed or other open protocol communication outputs to enable future connection to an energy monitoring and management system are provided, covering a significant majority of the energy supply to tenanted areas or, in the case of single occupancy buildings, relevant function areas or departments within the building/unit.	1	1		
Ene 03 External Lighting	1 Credit: Where evidence provided demonstrates that the external lighting has an average initial luminous efficacy of the external light fittings within the construction zone is not less than 60 luminaire lumens per circuit watt and that all external light fittings are automatically controlled for prevention of operation during daylight hours and presence detection in areas of intermittent pedestrian traffic.	1	1		MEP
Ene 04 Low Carbon Design	1st Credit: Where the first credit of Hea 4 (Thermal comfort) is achieved and the project team carries out an analysis of the design to identify opportunities for the implementation of passive design solutions that reduce demands for energy consuming building services, and that these solutions are implemented meaningfully into the design.	1	- (+1)	This credit is currently not assumed; however, a potential credit has been assumed for an 'Outstanding' rating.	MEP
	2nd Credit: Where the first credit is achieved, and the passive design analysis includes an analysis of free cooling and identifies opportunities for the implementation of free cooling solutions such as night time cooling, ground coupled air cooling or surface water cooling; i.e. does not use active cooling.	1	0	This credit is currently not assumed.	MEP
	3rd Credit: Where evidence provided demonstrates that a feasibility study has been carried out by the completion of the Concept Design stage (RIBA Stage 2) by an energy specialist to establish the most appropriate recognised local (on- or near-site) low or zero carbon energy source(s) for the development. A local LZC technology/ies has been specified for the building in line with the recommendations of this feasibility study and this method of supply results in a meaningful reduction in regulated CO ₂ emissions.	1	1	LZC Feasibility Study required asap demonstrating that suitable renewables will provide a significant reduction in CO ₂ emissions.	MEP

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Ene 06 Energy efficient transportation systems	1st Credit: Where evidence provided demonstrates that where either lifts, escalators or moving walks are required: - An analysis of the transportation demand and usage patterns for the building has been carried out to determine the optimum number and size of lifts (including counter-balancing ratio), escalators and/or moving walks. - The energy consumption has been estimated for different types and the lift/escalator/moving walk system/strategy with the lowest energy consumption has been specified. - Regenerative drives should be considered. - The transportation system with the lowest energy consumption is specified.	1	1	Transportation demand analysis required by MEP / lift supplier. Energy efficient lift specified.	MEP
	2nd and 3rd Credit: Where evidence provided demonstrates that the first credit has been achieved and for lifts, of the following energy-efficient features the three that offer the greatest potential energy savings are specified: - The lifts operate in a stand-by condition during off-peak periods. - The lift car uses energy-efficient lighting and display lighting - The lift uses a drive controller capable of variable-speed, variable-voltage, variable frequency (VVVF) control of the drive motor. Where regenerative drives are demonstrated to save energy, they are specified. For escalators and/or moving walks, each escalator and/or moving walk complies with EITHER of the following: - It is fitted with a load sensing device that synchronises motor output to passenger demand through a variable speed drive. OR It is fitted with a passenger sensing device for automated operation (auto walk), so the escalator operates in stand-by mode when there is no passenger demand.	2	2	Compliant features should be included in the specification of the lifts.	MEP

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Ene 08 Energy Efficient Equipment	2 Credits: - Identify the building's unregulated energy consuming loads and estimate their contribution to the total annual unregulated energy consumption of the building, assuming a typical/standard specification. - Identify the systems and/or processes that use a significant proportion of the total annual unregulated energy consumption of the development and its operation. - Demonstrate a meaningful reduction in the total annual unregulated energy consumption of the building.	2	0	Data Centre and IT Intensive areas are likely to be included in this development and are difficult to achieve.	MEP

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member																					
		Available	Targeted (Potential)																							
Tra 01 Public Transport Accessibility	1 – 3 Credits (dependant on building type): Where evidence provided demonstrates the accessibility to the public transport network. This is summarised in the table below. <table><tr><th>Accessibility Index</th><th>≥ 2</th><th>≥ 4</th><th>≥ 8</th><th>≥ 10</th><th>≥ 12</th><th>≥ 18</th></tr><tr><th>Building Type</th><th colspan="6">BREEAM Credits Available</th></tr><tr><td>Offices, Industrial, Multi-residential, Other building type 1</td><td>1</td><td>2</td><td>3</td><td>-</td><td>-</td><td>-</td></tr></table> The accessibility index for each building type is calculated based upon the following information: - The distance (m) from the main building entrance to each compliant public transport node - The public transport type(s) serving the compliant node e.g. bus or rail - The average number of services stopping per hour at each compliant node during the standard operating hours of the building for a typical day	Accessibility Index	≥ 2	≥ 4	≥ 8	≥ 10	≥ 12	≥ 18	Building Type	BREEAM Credits Available						Offices, Industrial, Multi-residential, Other building type 1	1	2	3	-	-	-	3	1	Discussed with Transport Consultant. A single credit is likely to be the maximum achievable.	Transport Consultant
Accessibility Index	≥ 2	≥ 4	≥ 8	≥ 10	≥ 12	≥ 18																				
Building Type	BREEAM Credits Available																									
Offices, Industrial, Multi-residential, Other building type 1	1	2	3	-	-	-																				
Tra 02 Proximity to amenities	1 Credit Where evidence provided demonstrates that the building is located within the 500m walking distance of at least two of the following amenities: - Appropriate food outlet - Cash point - Leisure facility	1	0	Discussed with Transport Consultant. Suitable amenities unlikely to be within the required distance.	Transport Consultant																					
Tra 03 Cyclist facilities	1st Credit: Credit is achieved where evidence provided demonstrates that the number of compliant cycle storage spaces provided are in accordance with the following: - 1 per 10 staff 2nd Credit: The credit is achieved where at least two of the following compliant cyclist facilities are provided for all building users: - Showers - Changing facilities - Lockers - Drying spaces	2	2	Discussed with Transport Consultant. 123 compliant cycle storage spaces required. Facilities including 8 showers, drying space, 123 lockers or changing facilities are required.	Architect																					

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member																						
		Available	Targeted (Potential)																								
Tra 04 Car Parking Capacity	Up to 2 credits Evidence demonstrates that the building's car parking capacity is compared to the maximum car parking capacity benchmarks in Table - 33 and the relevant number of BREEAM credits awarded. <table><tr><th rowspan="2">Building Accessibility Index</th><th colspan="3">Criteria</th><th rowspan="2">Credits</th></tr><tr><th><4</th><th>≤4-<8</th><th>≥8</th></tr><tr><td></td><td colspan="3">Max. parking capacity 1 space per x building users, where x is</td><td></td></tr><tr><td rowspan="2">Office</td><td>3</td><td>4</td><td>5</td><td>1</td></tr><tr><td>4</td><td>5</td><td>6</td><td>2</td></tr></table>	Building Accessibility Index	Criteria			Credits	<4	≤4-<8	≥8		Max. parking capacity 1 space per x building users, where x is				Office	3	4	5	1	4	5	6	2	2	1	Discussed with Transport Consultant.	Architect + Transport Consultant
Building Accessibility Index	Criteria			Credits																							
	<4	≤4-<8	≥8																								
	Max. parking capacity 1 space per x building users, where x is																										
Office	3	4	5	1																							
	4	5	6	2																							
Tra 05 Travel Plan	1 Credit: Where evidence provided demonstrates that a travel plan has been developed as part of the feasibility and design stages which considers all types of travel relevant to the building type and users. The travel plan must be structured to the needs of the particular site and takes into consideration the findings of a site-specific transport survey. The travel plan must include a package of measures that have been used to steer the design of the development in order to meet the travel plan objectives and minimise car-based travel patterns.	1	1		Transport Consultant																						
Wat 01 (M) Water Consumption	1 – 5 Credits: Where evidence provided demonstrates that water consumption has been reduced to the following levels compared against the baseline building model:	5	3 (+1)	Three credits are currently targeted. However, an additional potential credit has been assumed for an 'Outstanding' rating.	MEP + Architect																						

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member														
		Available	Targeted (Potential)																
	<table><tr><th>% Improvement</th><th>No. of BREEAM Credits</th></tr><tr><td>12.5%</td><td>1</td></tr><tr><td>25%</td><td>2</td></tr><tr><td>40%</td><td>3</td></tr><tr><td>50%</td><td>4</td></tr><tr><td>55%</td><td>5</td></tr><tr><td>65%</td><td>Exemplary performance</td></tr></table>	% Improvement	No. of BREEAM Credits	12.5%	1	25%	2	40%	3	50%	4	55%	5	65%	Exemplary performance				
% Improvement	No. of BREEAM Credits																		
12.5%	1																		
25%	2																		
40%	3																		
50%	4																		
55%	5																		
65%	Exemplary performance																		
Wat 02 (M) Water Monitoring  Mandatory: Criterion 1 only for Good and above	1 Credit: Where evidence provided demonstrates that a water meter with a pulsed output will be installed on the mains supply to each building/unit. Water-consuming plant or building areas, consuming 10% or more of the building's total water demand, need to be fitted with either sub meters or have water monitoring equipment integral to the plant or area. (Not applicable to Shell Only Assessments) Each meter (main and sub) must have a pulsed output to enable connection to a Building Management System (BMS) for the monitoring of water consumption. If the site on which the building is located has an existing BMS, managed by the same occupier/owner (as the new building), the pulsed water meter(s) for the new building must be connected to the existing BMS.	1	1		MEP														
Wat 03 Water Leak Detection	1st Credit: Where evidence provided demonstrates that a leak detection system which is capable of detecting a major water leak on the mains water supply within the building and between the building and the utilities water meter is provided.	1	1		MEP														
	2nd Credit: Where evidence provided demonstrates that flow control devices that regulate the supply of water to each WC area/facility according to demand are installed (and therefore minimise water leaks and wastage from sanitary fittings)	1	1																

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Wat 04 Water Efficient Equipment	One credit The design team has identified all unregulated water demands that could be realistically mitigated or reduced. System(s) or processes have been identified to reduce the unregulated water demand, and demonstrate, through either good practice design or specification, a meaningful reduction in the total water demand of the building.	1	1		Landscape + MEP
Mat 01 Life Cycle Impacts	1-5 Credits: Up to five credits are available dependent on the <i>Green Guide to Specification</i> and the environmental product declaration for the major building/finishing elements: - External Walls - Windows - Roof - Upper Floor Slabs - Internal walls - Floor Finishes / Coverings	5	3 (+1)	Three credits are currently targeted. However, one additional potential credit has been assumed for an 'Outstanding' rating.	Architect
Mat 02 Hard Landscaping and Boundary Protection	1 Credit: Where evidence provided demonstrates that at least 80% of the combined area of external hard landscaping and boundary protection specifications achieve an A or A+ rating, as defined by the <i>Green Guide to Specification</i> .	1	1		Landscape Architect

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member							
		Available	Targeted (Potential)									
Mat 03 (M) Responsible Sourcing  Mandatory: Criterion 1 sustainable timber sourcing for all ratings	Pre-requisite All timber and timber based products used on the project are 'legally harvested and traded timber' 1st Credit: Where evidence provided demonstrates that the principal contractor sources materials for the project in accordance with a documented sustainable procurement plan.	1	1	Note that this is a new element to this credit issue in BREEAM 2014.	Architect + Contractor							
	Up to 3 Credits: Where evidence provided demonstrates the available responsible sourcing of materials (RSM) can be awarded where the applicable building materials are responsibility sourced in accordance with the BREEAM methodology. <table><tr><th>RSM Credits</th><th>% of available RSM points achieved</th></tr><tr><td>3</td><td>≥ 54%</td></tr><tr><td>2</td><td>≥ 36%</td></tr><tr><td>1</td><td>≥ 18%</td></tr></table> Exemplary Credit: Where evidence provided demonstrates that at least 70% of the available RSM points are achieved.	RSM Credits	% of available RSM points achieved	3	≥ 54%	2	≥ 36%	1	≥ 18%	3	1 (+1)	Only one of three credits are currently targeted. However, an additional potential credit has been assumed for an 'Outstanding' rating.
RSM Credits	% of available RSM points achieved											
3	≥ 54%											
2	≥ 36%											
1	≥ 18%											
Mat 04 Insulation	1 Credit: Where evidence provided demonstrates that any new insulation specified for use within the following building elements must be assessed: - External walls - Ground floor - Roof - Building services The Insulation Index for the building fabric and services insulation is the same as or greater than 2.5.	1	1		Architect + MEP+ Contractor							

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Mat 05 Designing for Durability and Resilience	1 Credit: PART A: Where evidence provided demonstrates that the building incorporates suitable durability and protection measures or designed features/solutions to prevent damage to vulnerable parts of the internal and external building and landscaping elements. This must include, but is not necessarily limited to: - Protection from the effects of high pedestrian traffic in main entrances, public areas and thoroughfares (corridors, lifts, stairs, doors etc.). - Protection against any internal vehicular/trolley movement within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas. - Protection against, or prevention from, any potential vehicular collision where vehicular parking and manoeuvring occurs within 1m of the external building façade for all car parking areas and within 2m for all delivery areas. PART B: Additionally the relevant building elements incorporate appropriate design and specification measures to limit material degradation due to environmental factors. - Applicable building elements include foundation, retaining walls, external walls and doors, roof/balconies, glazing, cladding. - Environmental factors to consider include; solar radiation, temperature variation, wind, precipitation, vegetation, air and ground contaminants. - Material degradation effects includes (but not limited to); corrosion, swelling or shrinkage, fading, or rotting.	1	1	Note that Part B of this credit issue is a new BREEAM 2014 requirement.	Architect+ Contractor
Mat 06 Material Efficiency	1 Credit: Where evidence provided demonstrates that opportunities have been identified and appropriate measures investigated and implemented to optimise the use of materials in building design, procurement, construction, maintenance and end of life. This process must be carried out by the design/construction team in consultation with relevant parties at each RIBA stage. 1) Preparation and Brief 2) Concept Design 3) Developed Design 4) Technical Design 5) Construction	1	(1)	Note this is a new BREEAM 2014 credit issue.	PM

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member																								
		Available	Targeted (Potential)																										
Wst 01 (M) Construction waste management  Mandatory: 1 credit for Outstanding	1-3 Credits: Where a Resource Management Plan (RMP) has been developed covering the non-hazardous waste related to on-site construction and dedicated off-site manufacture or fabrication. In addition, evidence provided demonstrates that non-hazardous construction waste (excluding demolition and excavation waste) generated by the building's design and construction meets or exceeds the following resource efficiency benchmarks: <table><tr><th rowspan="2">BREEAM Credits</th><th colspan="2">Amount of waste generated per 100m² (gross internal floor area)</th></tr><tr><th colspan="2">m³</th></tr><tr><td>One credit</td><td>≤ 13.3</td><td>≤ 11.1</td></tr><tr><td>Two credits</td><td>≤ 7.5</td><td>≤ 6.5</td></tr><tr><td>Three credits</td><td>≤ 3.4</td><td>≤ 3.2</td></tr><tr><td>Exemplary level</td><td>≤ 1.6</td><td>≤ 1.9</td></tr></table>	BREEAM Credits	Amount of waste generated per 100m ² (gross internal floor area)		m ³		One credit	≤ 13.3	≤ 11.1	Two credits	≤ 7.5	≤ 6.5	Three credits	≤ 3.4	≤ 3.2	Exemplary level	≤ 1.6	≤ 1.9	3	2	Note: A RMP is roughly the same as a site waste management plan (SWMP)	Contractor							
	BREEAM Credits		Amount of waste generated per 100m ² (gross internal floor area)																										
m ³																													
One credit	≤ 13.3	≤ 11.1																											
Two credits	≤ 7.5	≤ 6.5																											
Three credits	≤ 3.4	≤ 3.2																											
Exemplary level	≤ 1.6	≤ 1.9																											
	4th Credit: Where evidence provided demonstrates that the following percentages of non-hazardous construction and demolition waste (where applicable) generated by the project have been diverted from landfill: <table><tr><th>BREEAM Credits</th><th>Type of Waste</th><th>Volume</th><th>Tonnage</th></tr><tr><td rowspan="3">One Credit</td><td>Non demolition</td><td>70%</td><td>80%</td></tr><tr><td>Demolition</td><td>80%</td><td>90%</td></tr><tr><td>Excavation</td><td>N/A</td><td>N/A</td></tr><tr><td rowspan="3">Exemplary level</td><td>Non demolition</td><td>85%</td><td>90%</td></tr><tr><td>Demolition</td><td>85%</td><td>95%</td></tr><tr><td>Excavation</td><td>95%</td><td>95%</td></tr></table>	BREEAM Credits	Type of Waste	Volume	Tonnage	One Credit	Non demolition	70%	80%	Demolition	80%	90%	Excavation	N/A	N/A	Exemplary level	Non demolition	85%	90%	Demolition	85%	95%	Excavation	95%	95%	1	1		Contractor
BREEAM Credits	Type of Waste	Volume	Tonnage																										
One Credit	Non demolition	70%	80%																										
	Demolition	80%	90%																										
	Excavation	N/A	N/A																										
Exemplary level	Non demolition	85%	90%																										
	Demolition	85%	95%																										
	Excavation	95%	95%																										

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member																					
		Available	Targeted (Potential)																							
Wst 02 Recycled aggregates	1 Credit: Where evidence provided demonstrates the significant use (>25% by weight or volume) of recycled or secondary aggregates in 'high-grade' building aggregate uses. To contribute to the total amount, the percentage of high-grade aggregate specified per application must meet the following minimum levels (by weight or volume): <table><tr><th>Application</th><th>Min. % One Credit</th><th>Min. % Exemplary performance</th></tr><tr><td>Structural Frame</td><td>15%</td><td>30%</td></tr><tr><td>Bitumen or hydraulically bound base, binder, and surface courses for paved areas and roads</td><td>30%</td><td>75%</td></tr><tr><td>Building foundations</td><td>20%</td><td>35%</td></tr><tr><td>Concrete road surfaces</td><td>15%</td><td>45%</td></tr><tr><td>Pipe bedding</td><td>100%</td><td>100%</td></tr><tr><td>Granular fill and capping</td><td>100%</td><td>100%</td></tr></table>	Application	Min. % One Credit	Min. % Exemplary performance	Structural Frame	15%	30%	Bitumen or hydraulically bound base, binder, and surface courses for paved areas and roads	30%	75%	Building foundations	20%	35%	Concrete road surfaces	15%	45%	Pipe bedding	100%	100%	Granular fill and capping	100%	100%	1	0	This credit is currently not assumed.	Civil/ Structural Engineer
	Application	Min. % One Credit	Min. % Exemplary performance																							
	Structural Frame	15%	30%																							
Bitumen or hydraulically bound base, binder, and surface courses for paved areas and roads	30%	75%																								
Building foundations	20%	35%																								
Concrete road surfaces	15%	45%																								
Pipe bedding	100%	100%																								
Granular fill and capping	100%	100%																								
	Exemplary level criteria: Where evidence provided demonstrates that the percentage of high grade aggregate that is recycled or secondary aggregate, specified in each application (present) must meet the exemplary minimum levels (by weight or volume) as defined in the table above and the material must not be transported more than 30km by road.	1	-	This innovation credit is currently not assumed.	Civil/ Structural Engineer																					
Wst 03 (M) Operational waste  <i>Mandatory: 1 credit for Excellent and above</i>	1 Credit: Where evidence provided demonstrates that there is dedicated space(s) to cater for the segregation and storage of operational recyclable waste volumes generated by the assessed building/unit, its occupant(s) and activities. The dedicated space(s) must be: - Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams - Accessible to building occupants / facilities operators for the deposit of materials and collections by waste management contractors	1	1		Architect																					

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	- 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. Where the consistent generation in volume of the appropriate operational waste streams is likely to exist, e.g. large amounts of packaging or compostable waste generated by the building's use and operation, the following facilities must be provided as part of its waste management strategy: - Static waste compactor(s) or baler(s); situated in a service area or dedicated waste management space. - Vessel(s) for composting suitable organic waste resulting from the building's daily operation and use OR adequate space(s) for storing segregated food waste and compostable organic material prior to collection and delivery to an alternative composting facility. - Where organic waste is to be stored/ composted on site, a water outlet is provided adjacent to or within the facility for cleaning and hygiene purposes.				
Wst 04 Speculative Floor and Ceiling Finishes	1 Credit: Where evidence evidence demonstrates the following: 1. For tenanted areas (where the future occupant is not known), prior to full fit-out works, carpets, other floor and finishes have been installed in a show area only. 2. In a building developed for a specific occupant, that occupant has selected (or agreed to) the specified floor and ceiling finishes.	1	0	This credit is currently not assumed. This is on the basis of the ceiling or carpets maybe installed during the Cat A fit out.	PM
Wst 05 Adaptation to climate change	1 Credit: Where evidence provided demonstrates that a climate change adaptation strategy appraisal for structural and fabric resilience has been conducted by the end of Concept design (RIBA Stage 2) covering hazard identification and assessment, risk estimation, evaluation and management. Appraisal to identify & evaluate impact on the building over its life cycle from expected extreme weather conditions arising from climate change and, where feasible, mitigate against these impacts ID hazards taking into account the following: structural stability, robustness, weather proofing and detailing, material durability, health and safety of occupants, impact on building contents and business continuity	1	1	Study required to be undertaken during Stage 2.	Architect + Structural Engineer + PM + Client + MEP

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	Exemplary Credit: A holistic approach to the design and construction of the current building's life cycle, to mitigate against the impacts of climate change, is represented by the achievement of these criteria. In addition to achieving the first credit above, the following must also be achieved: Hea 04 – Thermal Comfort: - Project team demonstrate how the building has been adapted, or designed to be easily adapted in future using passive design solutions Ene 01 – Reduction in energy use and carbon emissions - At least 8 credits in this issue have been achieved Ene 04 – Low Carbon Design - Passive design analysis credit has been achieved Wat 01 – Water Consumption - Minimum of three credits in this issue have been achieved Mat 05 – Designing for durability and resilience - Building elements incorporate appropriate design and specification measures to limit material degradation due to environmental factors Pol 03 Surface Water Run Off - Flood risk- A minimum of one credit has been achieved. - Surface Water Run Off- Two credits have been achieved.	1	(+1)	This innovation credit is currently not assumed but is included for an Outstanding rating to be achieved.	Architect + Structural Engineer + PM + Client + MEP
Wst 06 Functional Adaptability	1 Credit: Where evidence provided demonstrates that a building-specific functional adaptation strategy study has been undertaken by the client and design team by Concept Design (RIBA Stage 2) which includes recommendations for measures to be incorporated to facilitate future adaptation. Additionally functional adaptation measures have been implemented by RIBA Stage 4 in accordance with the functional adaptation strategy recommendations, where practical and cost effective.	1	1		Architect + Structural Engineer + PM + Client + MEP

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
LE 01 Site Selection	1st Credit: Where evidence is provided to demonstrate that at least 75% of the proposed development's footprint is on an area of land which has previously been developed for use by industrial, commercial or domestic purposes in the last 50 years.	1	0	This credit is currently not assumed based on the site being undeveloped.	Architect
	2nd Credit: Where evidence provided demonstrates that the site is significantly contaminated as confirmed by a contaminated land specialist's site investigation, risk assessment and appraisal. The client or principal contractor must confirm that remediation of the site will be carried out in accordance with the remediation strategy and its implementation plan.	1	0	This credit is currently not assumed.	
LE 02 Ecological Value of Site and Protection of Ecological Features.	1st Credit: Where evidence provided demonstrates that the site's construction zone is defined as 'land of low ecological value' using the BREEAM checklist or a Suitably Qualified Ecologist (SQE).	1	1	Check with ecologist if land is of low ecological value.	Ecologist
	2nd Credit: Where evidence provided demonstrates that all existing features of ecological value within and surrounding the construction zone and site boundary are adequately protected from damage during clearance, site preparation and construction activities in line with BS42020:2013, and in all cases the principal contractor is required to construct ecological protection recommended by the preliminary site construction or preparation works.	1	1		
LE 03 (M) Minimising impact on existing site ecology	2 Credits: Where evidence provided demonstrates that there is no negative change in the site's existing ecological value as a result of development using BREEAM LE03/04 calculator or a Suitably Qualified Ecologist (SQE). OR Where an SQE has been appointed, they confirm that based on site survey that broad habitat types that define the landscape of the assessed site in its existing pre-	2	2		Ecologist

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	developed state and proposed state, area of existing and proposed broad habitat plot types and average total taxon (plant species) richness within each habitat type. OR 1 Credit: Where the change in ecological value is less than zero but equal to or greater than minus 9 plant species i.e. a minimal change.	-	-		
LE 04 Enhancing site ecology	1st Credit: Where the design team (or client) has appointed a Suitably Qualified Ecologist to advise and report on enhancing and protecting the ecological value of the site; and implemented the professional's recommendations for general enhancement and protection of site ecology.	1	1		Ecologist + Contractor
	2nd Credit: Where credit 1 is achieved and there is a positive increase in the ecological value of the site of six species or greater.	1	1		
LE 05 Long term impact on biodiversity	Mandatory Requirement: Where evidence provided demonstrates that: - A Suitably Qualified Ecologist has been appointed prior to the commencement of activities on-site. - The SQE confirms that all relevant UK and EU legislation relating to the protection and enhancement of ecology has been complied with during the design and construction process. - Where a landscape and habitat management plan, appropriate to the site, is produced, covering at least the first five years after project completion in accordance with BS42020:2013 Section 11.1, this is to be handed over to the building owner/occupier. Additional Requirements:	2	2		Ecologist + Contractor

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member																														
		Available	Targeted (Potential)																																
	Where additional measures to improve the assessed site's long term biodiversity are adopted, according to the table below. <table> <tr> <th>Application</th><th colspan="5">Applicable Measures</th></tr> <tr> <th></th><th>All</th><th>4</th><th>3</th><th>2</th><th>1</th></tr> <tr> <th>Credits</th><th colspan="5">Number of additional measures to assess</th></tr> <tr> <td>1</td><td>2</td><td>2</td><td>2</td><td>N/A</td><td>N/A</td></tr> <tr> <td>2</td><td>4</td><td>4</td><td>3</td><td>2</td><td>1</td></tr> </table> Additional measures include: 1. Nominate Biodiversity Champion 2. Contractor trains workforce on how to protect site ecology 3. Principle contractor records actions taken to protect biodiversity and monitors effectiveness 4. New ecologically valuable habitat appropriate to local area is created 5. Where flora/fauna habitats exist on-site, the contractor programmes site works to minimise disturbance to wildlife	Application	Applicable Measures						All	4	3	2	1	Credits	Number of additional measures to assess					1	2	2	2	N/A	N/A	2	4	4	3	2	1				
Application	Applicable Measures																																		
	All	4	3	2	1																														
Credits	Number of additional measures to assess																																		
1	2	2	2	N/A	N/A																														
2	4	4	3	2	1																														

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Pol 01 Impact of Refrigerants	Pre-Requisite: All systems (with electronic compressors) must comply with the requirements of BS EN 378:2008, and where refrigeration systems containing ammonia are installed, they must comply with the Institute of Refrigeration Ammonia Refrigeration Systems Code of Practice. 3 Credits: Where evidence provided demonstrates that the building does not require the use of refrigerant within its building services or plant. 2 Credits: Where evidence provided demonstrates that the systems specified using refrigerants have Direct Effect Life Cycle CO₂ equivalent emissions (DELC CO_{2e}) of ≤100 kgCO_{2e}/kW cooling/heating capacity. OR Where air-conditioning or refrigeration systems are installed the refrigerants used have a Global Warming Potential (GWP) ≤10. 1 Credit: Where evidence provided demonstrates that the systems using refrigerants have Direct Effect Life Cycle CO₂ equivalent emissions of (DELC CO_{2e}) of ≤1000 kgCO_{2e}/kW cooling/heating capacity. Additional credit 1 Credit: Where evidence provided demonstrates that the systems using refrigerants have a permanent automated refrigerant leak detection system installed, capable of automatically isolating and containing the remaining refrigerant(s) charge in response to a leak detection incident.	3	1 (1)	Based on chillers refrigerant achieving the required performance. The credit for leak detection of refrigerant is currently not assumed.	MEP

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member								
		Available	Targeted (Potential)										
Pol 02 NOx Emissions	1-3 Credits: <table><tr><th>NO_x Emissions levels for heating and hot water (mg/kWh)</th><th>Credits</th></tr><tr><td>≤ 100mg/kWh</td><td>1 credit</td></tr><tr><td>≤ 70mg/kWh</td><td>2 credits</td></tr><tr><td>≤ 40mg/kWh</td><td>3 credits</td></tr></table> Where evidence provided demonstrates where the plant specified to meet the building's delivered heating and cooling demand has, under normal operating conditions, a dry NOx emission level (measured at 0% excess O₂) as follows for non-industrial buildings)	NO _x Emissions levels for heating and hot water (mg/kWh)	Credits	≤ 100mg/kWh	1 credit	≤ 70mg/kWh	2 credits	≤ 40mg/kWh	3 credits	3	3	Assuming heating is by gas fired boilers and not by electric heat pumps.	MEP
	NO _x Emissions levels for heating and hot water (mg/kWh)	Credits											
≤ 100mg/kWh	1 credit												
≤ 70mg/kWh	2 credits												
≤ 40mg/kWh	3 credits												
Pol 03 Surface Water Run Off	Part 1: Flood Risk 2 Credits: Where evidence provided demonstrates that the site is of low risk of flooding and a site specific flood risk assessment has been completed in line with PPS25, taking account of current and future sources of flooding.	-	-		Drainage Consultant								
	1 Credit: Where evidence provided demonstrates that the assessed development is located in a zone defined as having a medium or high annual probability of flooding AND the ground level of the building, car parking and access is at least 600mm above the design flood level of the flood zone for the site's location.	1	1	Advised by Peter Brett Ass.									

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	Part 2: Surface Water Run-Off Pre-Requisite: An appropriate consultant has been appointed. 1st Credit: Where evidence provided demonstrates that the consultant has confirmed that the drainage measures specified ensure 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, taking into account climate change. Additionally relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SUDs are in place. 2nd Credit: Where evidence provided demonstrates that the consultant has confirmed that there is no risk of flooding in the event of a local drainage system failure, AND EITHER - The post development run-off volume, over the development lifetime, is no greater than it would have been prior to the assessed site's development, including an allowance for climate change. - Any additional predicted volume of run-off for the 100-year 6-hour event must be prevented from leaving the site by using infiltration or other Surface Drainage System (SUDs) techniques OR (only where criterion no. 9 or 10 for this credit cannot be achieved) - Justification from the Appropriate Consultant indicating why the above criteria cannot be achieved i.e. where infiltration or other SUDS techniques are not technically viable options. - The post development peak rate of run-off is reduced to a limiting discharge.	2	1	Advised by Peter Brett Ass.	Drainage Consultant

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	Part 3: Minimising Watercourse pollution 1 Credit: Where evidence provided demonstrates that the following water course pollution prevention measures are covered: - Appropriate Consultant confirms that there will be no discharge from the developed site for rainfall up to 5mm. - Specification of Sustainable Drainage Systems (SUDs) or source control systems such as permeable surfaces or infiltration trenches - Specification of oil/petrol separators (or equivalent system) in surface water drainage systems, where there is a high risk of contamination or spillage of substances - All water pollution prevention systems have been designed and detailed in accordance with the recommendations of Pollution Prevention Guideline 3 - A comprehensive and up-to-date drainage plan of the site will be made available for the building/site occupiers.	1	0	This credit is currently not assumed. Advised by Peter Brett Ass.	Drainage Consultant
Pol 04 Reduction in night time light pollution	1 Credit: Where evidence provided demonstrates that the lighting system has been designed in accordance with the following requirements: - The external lighting strategy has been designed in compliance with Table 2 (and its accompanying notes) of the ILE Guidance notes for the reduction of obtrusive light, 2011. - All external lighting (except for safety and security lighting) can be automatically switched off between 2300hrs and 0700hrs. This can be achieved by providing a timer for all external lighting set to the appropriate hours. - If safety or security lighting is provided and will be used between 2300hrs and 0700hrs, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 2 of the ILE's Guidance notes, for example by using an automatic switch to reduce the lighting levels at 2300 or earlier. - Illuminated advertisements, where specified, must be designed in compliance with ILE Technical Report 5 – The Brightness of Illuminated Advertisements.	1	1		MEP

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Pol 05 Noise Attenuation	1 Credit: Where evidence provided demonstrates that there is either no noise-sensitive areas or buildings within 800m radius of the assessed development OR Where there are or will be noise-sensitive areas or buildings within 800m radius of the assessed development a noise impact assessment in compliance with BS 7445:1991 has been carried out and the following noise levels measured/determined: - Existing background noise levels at the nearest or most exposed noise-sensitive development to the proposed development or at a location where background condition can be argued to be similar. - The noise level from the proposed site/building, as measured in the locality of the nearest or most exposed noise-sensitive development is a difference no greater than +5dB during the day (07:00 to 23:00) and +3dB at night (23:00 to 07:00).	1	1		Acoustician

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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Innovation Exemplary Credits Summary	Up to a maximum of 10 credits are available in aggregate from a combination of the following: Exemplary level of performance in existing BREEAM issues Where the building demonstrates exemplary performance by meeting defined exemplary level performance criteria in one or more of following BREEAM assessment issues: - Man 03 Responsible construction practices - Man 05 Aftercare - Hea 01 Visual Comfort - Hea 02 Indoor Air Quality - Ene 01 Reduction of CO₂ Emissions - Wat 01 Water consumption - Mat 01 Life cycle impacts - Mat 03 Responsible sourcing of materials - Wst 01 Construction site waste management - Wst02 Recycled Aggregates - Wst 05 Adaptation to climate change One innovation credit can be awarded for each individual BREEAM issue exemplary performance level complied with. Approved Innovations One innovation credit can be awarded for each innovation application approved by BRE Global, where the building complies with the criteria defined within an Approved Innovation application form.	10	1 (+1)	Assumed that the following innovation credit is achieved. - Man 03 Responsible Construction Practices Note: Innovation credits have been assumed for an 'Outstanding' rating under the following credit issue: - Wst 05 Adaptation to Climate Change	Contractor + Architect

6.0 Appendix B: BREEAM 2014 New Construction

6.1 Introduction

The 'Building Research Establishment Environmental Assessment Method' (BREEAM) New Construction is being used as a benchmarking tool in the design of new non-domestic developments. The aim is to estimate the sustainability of buildings and to promote a programme of design improvement.

6.2 Background

BREEAM New Construction is published by the BRE. The methodology is based upon the categories and issues as set out in the table across.

Mandatory requirements (M) for 'Very Good' and above are identified in table C1. Where M_e and M_o represent mandatory credits requirements for 'Excellent' and 'Outstanding' ratings respectively.

Failure to meet the mandatory criteria would restrict a development to a 'zero-rating' regardless of the overall number of credits achieved.

Category	Issue
Management	Project Brief and design Lifecycle Cost and Service Life Planning Responsible Construction Practices (M _e), (M _o) Commissioning and Handover (M _e), (M _o) Aftercare (M _e)
Health & Wellbeing	Visual Comfort Indoor Air Quality Thermal Comfort Acoustic Performance Safety and Security
Energy	Reduction of CO ₂ Emissions (M _e) Energy Monitoring (M) External Lighting Low Carbon Design Energy Efficient Cold Storage Energy Efficient Transpiration Systems Energy Efficient Equipment
Transport	Public Transport Accessibility Proximity to Amenities Cyclist Facilities Maximum Car Parking Capacity Travel Plan
Water	Water Consumption (M) Water Monitoring (M) Water Leak Detection and Prevention Water Efficient Equipment
Materials	Life Cycle Impacts Hard Landscaping and Boundary Protection Responsible Sourcing of Materials (M) Insulation Designing for Durability and Resilience Material Efficiency
Waste	Construction Waste Management (M _o) Recycled Aggregates Operational Waste (M _e), (M _o) Speculative Ceiling and Floor Finishes Adaptation to Climate Change Functional Adaptability
Land Use & Ecology	Site Selection Ecological Value of Site and Protraction of Ecological Features Minimising the Impact on Existing Site Ecology (M) Enhancing Site Ecology Long Term Impact on Biodiversity
Pollution	Impact of Refrigerants NO _x Emissions Surface Water Run-off Reduction of Night-time Light Pollution Noise Attenuation

6.3 BREEAM Process

Figure 6.1 indicates the BREEAM process from appointment of the assessor, through to receipt of a post-construction certificate.

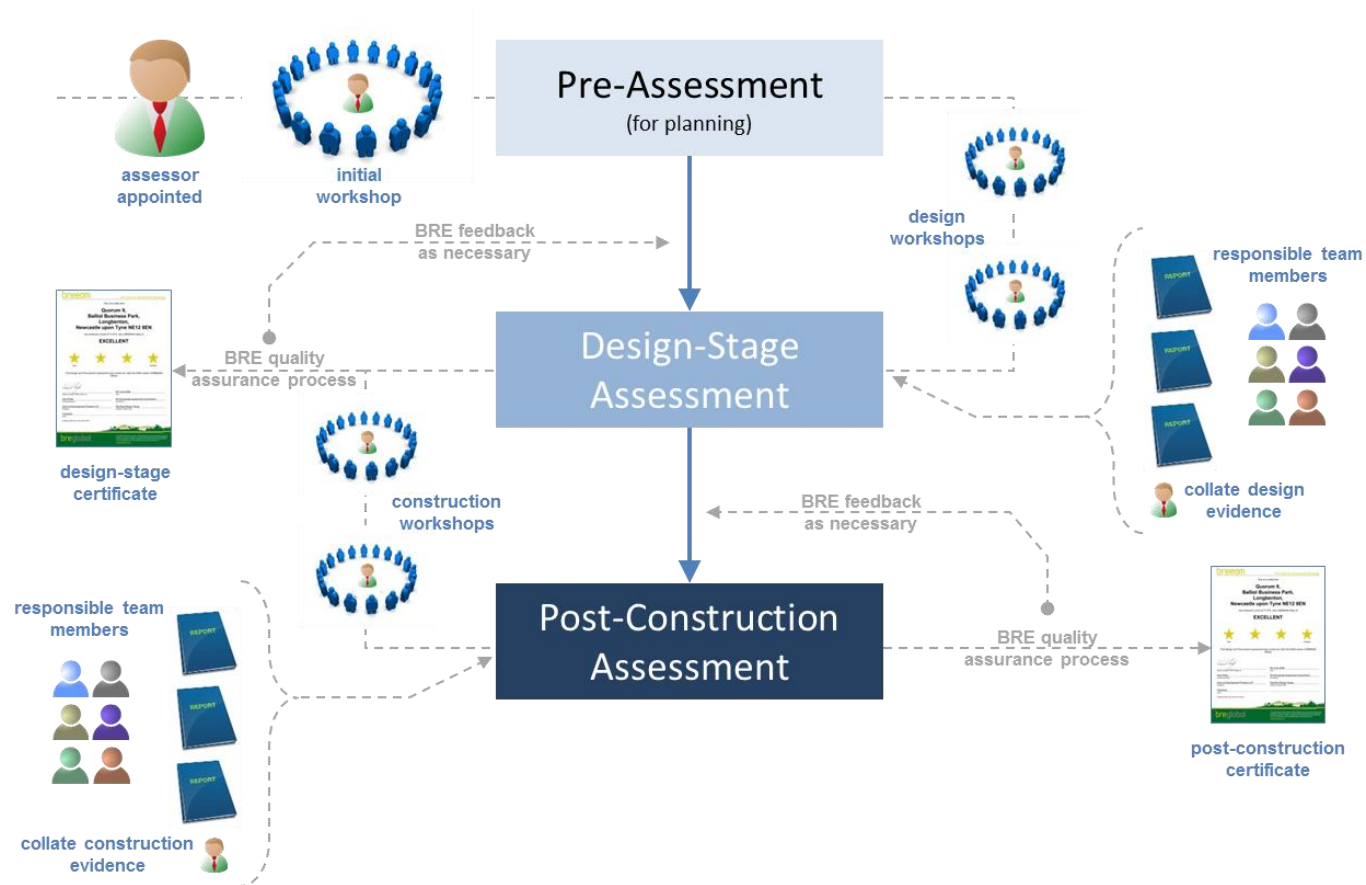


Figure 6.1: Summary of the BREEAM Process.

6.4 BREEAM 2014

BREEAM 2014 introduced a new approach for assessing shell and core developments (Office, retail and industrial buildings only) and offers two assessment stages, outlined in Figure 6.2 and below:

- Option 1 – Shell Only
- Option 2 – Shell and Core
- Option 3 – Fully Fitted.

Based on the current design proposals, the building is likely to be assessed under **Option 3 'Fully Fitted'**.

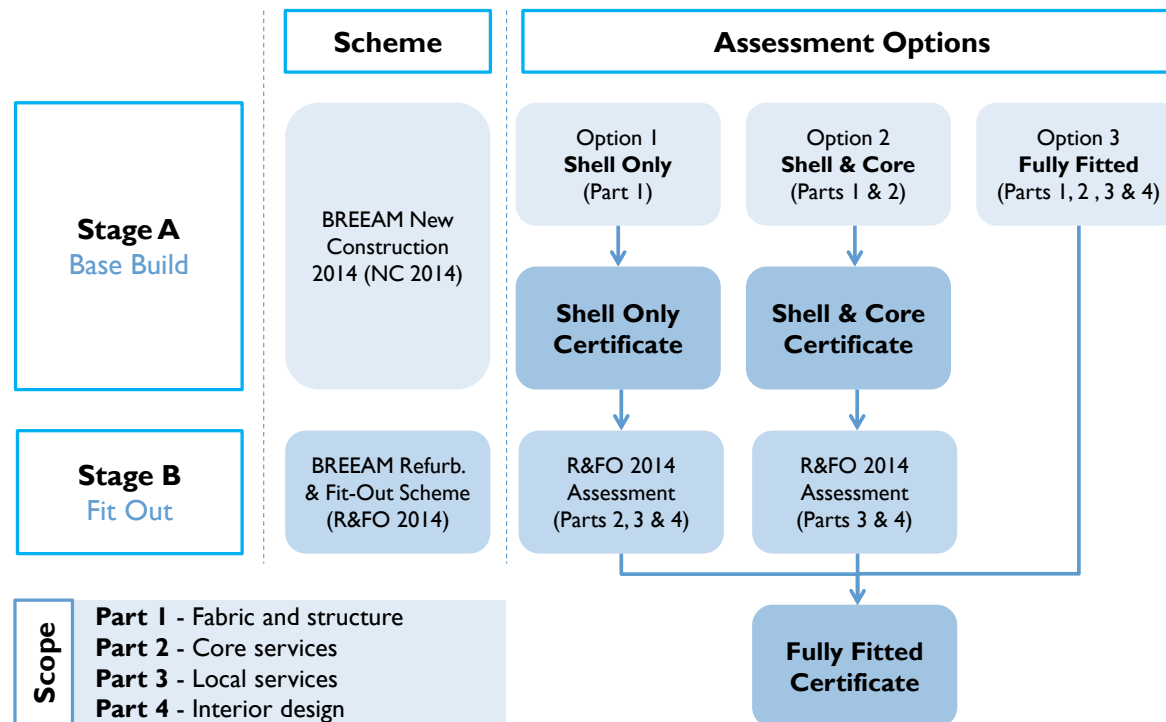


Figure 6.2: BREEAM 2014 Assessment Scheme Options.

7.0 Appendix C: Credit Weightings BREEAM 2014

The weightings for the associated credits depending on the assessment route are shown in Table 7.1 below.

Section	Section Weighting			No. of credits available	Value of Each Credit
	Fully-fitted out	Shell Only	Shell and core		
Management	12%	12.5%	11%	21	0.57%
Health and Wellbeing	15%	10%	10.5%	17	0.88%
Energy	15%	14.5%	15%	23	0.65%
Transport	9%	11.5%	10%	9	1.00%
Water	7%	4%	7.5%	9	0.78%
Materials	13.5%	17.5%	14.5%	13	1.04%
Waste	8.5%	11%	9.5%	9	0.94%
Land Use and Ecology	10%	13%	11%	10	1.00%
Pollution	10%	6%	11%	13	0.77%
Innovation	10%	10%	10%	10	1.00%

Table 7.1: Credit weighting and value of each credit

8.0 Appendix D: Credits Requiring Early Action

Under the 2014 New Construction Criteria, there are a number of credits which require early action by the design team in order for the credits to be awarded. The relevant credits, the actions which need to be carried out and when these should be executed are listed below:

Credit Issues	Stage 1 Actions Required	RIBA Stage
Man 01: Project Brief and Design	1st credit Stakeholder consultation: by the end of Stage 1 – definition and engagement of key stakeholders (incl. member with significant construction experience) and their roles and responsibilities; involvement in the project brief 3rd credit Sustainability Champion has been appointed to facilitate the setting and achievement of BREEAM performance targets for the project by Stage 2.	Stage 1
Mat 06: Material Efficiency	- Consult with relevant design team members to identify and implement measures for efficient use of materials throughout all key stages. - Examples provided include: - Details outlining activities relating to material efficiency - Drawings or building integrated model (BIM), calculations showing reduction of material use through design - Meeting note, construction program, responsibilities schedule (indicating parties consulted).	Stage 1
LE 04: Enhancing Site Ecology	The ecologist must be appointed by RIBA stage 1 to carry out surveys and provide recommendations in Stage 2.	Stage 1
LE 05: Long Term Impact on Biodiversity		

Table 8.1: BREEAM 2014 Stage 1 Early Action Credits

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Credit Issues	Stage 2 and 4 Actions Required	Stage
Man 01: Project Brief and Design	2nd credit Stakeholder consultation by completion of Concept Design. 4th credit Sustainability Champion: BREEAM performance targets have been formally agreed between the client and design/project team no later than Concept Design stage	Stage 2
Man 02: Life Cycle Costing and Service Life Planning	An elemental level Life Cycle Cost (LCC) analysis has been carried out based on the proposals developed during RIBA Work Stage 2	Stage 2
Hea 06: Safety and Security	Appoint security specialist to conduct a Security Needs Assessment (SNA) or consult with an Architectural Liaison Officer (ALO)	Stage 2
Ene 04: Low Carbon Design	Carry out a passive design analysis and a renewables feasibility study	Stage 2
Wst 05: Adaptation to Climate Change	Conduct a climate change adaption strategy appraisal for structural and fabric resistance	Stage 2
Wst 06: Functional Adaptability	- Undertake a Building-specific functional adaptation strategy study - Incorporate adaptation measures into the design where practical and cost effective	Stage 2 Stage 4
LE 04: Enhancing Site Ecology	The Ecology report must be available at Stage 2 (following the appointment of an ecologist at Stage 1)	Stage 2
LE 05: Long Term Impact on Biodiversity		

Table 8.2: BREEAM 2014 Stage 2 to 4 Early Action Credits