Notting Hill Home Ownership Ltd

St Clare Business Park

BREEAM
Pre-assessment Tracker & Action List

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Revision	Status	Description	Author	Checked/Approved	Date
0	I	Pre-assessment	Cat Clarkson	Deepshikha Mittal	02/07/2018
1	I	Pre-assessment Progress	Sam May	Clare Hardy	17/09/2019
2	I	Pre-assessment Progress	Sam May	Clare Hardy	02/10/2019
3	I	Pre-assessment Progress	Clare Hardy	Adrian Doling	17/06/2022
4	I	Pre-assessment Progress	Adrian Doling	Katharine Creamer	24/03/2023

Contents

1 Introduction

The St Clare Business Park development will be assessed under New Construction SD5076: 5.0 - 2014 Commercial - Offices - General Office, as a Shell and Core building.

This report has been prepared by Sweco Consulting Engineers Ltd Sustainability Group and provides guidance to the design team in relation to the BREEAM New Construction SD5076: 5.0 - 2014 development at St Clare Business Park.

The report is based upon information obtained at the pre-assessment meeting held on 8 June 2018, a pre-assessment review meeting held on 08 June 2020 and all correspondance with the team to date.

The project consists of demolition of existing buildings and erection of 1no. mixed use building between three and five storeys plus basement in height, comprising 86no. residential flats (Class C3) and 1,290sq.m of commercial floorspace (Class E); 1no. two storey building comprising 595sq.m of commercial floorspace (Class E); 14no. residential houses (Class C3) and associated access, external landscaping and car parking.

The units are to be naturally ventilated with a VRF refrigerant system proposed for the standalone commercial block, but not the units on the ground floor of the main residential block. There is still an element of flexibility on building use. Therefore some of the credits have not been targeted in order to allow as much flexibility as possible to a wide range of future tenants. Targeting credits which restrict the tenant use will be counter-productive as changes to the building may have to be made at a later date. BRE have published the following clarification for speculative buildings:

"*In the instance where there is potential for the building occupancy and use to change during the building lifetime, scheme classification should be based on the most likely occupancy and use of the building as anticipated at the time of the assessment."*

As a result, it has been decided to assess all buildings as office buildings.

The office/industrial areas will not be fitted out, and capped services installed only.

The cores of the buildings will include a reception area, toilet areas, lifts and stairwells. The heating strategy for these areas is yet to be determined, however they are expected to be naturally ventilated, with no cooling provided.

The building fabric will be similar for both buildings, and as a result both buildings can be assessed under BREEAM's "similar buildings" approach, rather than requiring separate BREEAM assessments. The current proposals include an RC frame, brick walls and a metal roof. An allowance has been made in the cost plan to include raised access floors to the tenanted areas, which have a timber finish to them.

1.1 What is BREEAM?

This guidance report is based on the New Construction SD5076: 5.0 - 2014 issued by the BRE. As with all schemes under the BREEAM umbrella the assessment seeks to minimise the adverse effects of new and existing buildings on the environment at global and local scales, whilst promoting healthy indoor conditions for the occupants. The environmental implications of any building are assessed at the design stage, and compared with good practice by independent assessors.

BREEAM establishes a set of categories under which specific credit requirements are grouped. These are:

- Management
- Health and Wellbeing
- Energy
- Transport
- Water
- Materials
- Waste
- Land Use and Ecology
- Pollution

Within each category there are a number of credits which the design team can choose from to achieve the desired rating. It should be noted that there will be certain minimum requirements that must be achieved depending on the BREEAM rating required. Building designs are compared against the credit criteria by registered assessors and credits awarded where the criteria have been met. An overall rating of the building's performance is given using the terms; Pass, Good, Very Good, Excellent or Outstanding. The rating is determined from the number of credits achieved in each of the categories, which are then weighted (i.e. credits multiplied by environmental weighting factor) to provide an overall score.

This report is for advice only. This report outlines the overall performance of the development and provides a written and tabulated summary that should be used as a quick reference guide. For full details of the credit criteria refer to the BRE website www.breeam.org where copies of the Assessment Manuals are available for download. The final rating achieved in a certified New Construction SD5076: 5.0 - 2014 assessment will be dependent on the provision of acceptable information as evidence that the compliance requirements of the credits have been met. Such evidence could be in the form of marked-up drawings, specification clauses, manufacturers' literature and project specific documents or reports.

1.2 Scoring and Rating Assessed Buildings

The BREEAM rating benchmarks for new construction projects assessed using the 2014 version of BREEAM are as follows:

BREEAM Rating	Score
Outstanding	≥ 85%
Excellent	≥ 70%
Very Good	≥ 55%
Good	≥ 45%
Pass	≥ 30%
Unclassified	< 30%

1.3 Minimum Standards

The BREEAM categories contain a number of environmental issues which reflect the choices available when procuring, designing and constructing a building.

Each category has a set number of ‘credits’ available and these credits are awarded where the building demonstrates that it complies with the requirements set by BREEAM.

1.4 Minimum Standards and BREEAM Ratings

The following outlines the minimum standards to meet specific ratings:

BREEAM Issue	BREEAM Rating / Minimum no. of credits				
	Pass	Good	Very Good	**Excellent**	Outstanding
Man 03: Responsible construction practices	None	None	None	**One credit (Considerate Construction)**	One credit (Considerate Construction)
Man 04: Commissioning and handover	None	None	None	**Criterion 10 (Building User Guide)**	Criterion 10 (Building User Guide)
Man 05:Aftercare	None	None	None	**One credit (Seasonal commissioning)**	One credit (Seasonal commissioning)
Ene 01: Reduction of energy use and carbon emissions	None	None	None	**Five credits**	Eight credits
Ene 02: Energy monitoring	None	None	One credit (First sub-metering credit)	**One credit (First sub-metering credit)**	One credit (First sub-metering credit)
Wat 01: Water consumption	None	One credit	One credit	**One credit**	Two credits
Wat 02: Water monitoring	None	Criterion 1 only	Criterion 1 only	**Criterion 1 only**	Criterion 1 only
Mat 03: Responsible sourcing of materials	Criterion 1 only	Criterion 1 only	Criterion 1 only	**Criterion 1 only**	Criterion 1 only
Wst 01: Construction waste management	None	None	None	**None**	One credit
Wst 03: Operational waste	None	None	None	**One credit**	One credit
LE 03: Minimising impact on existing site ecology	None	None	One credit	**One credit**	One credit

1.5 Innovation Credits

Innovation credits provide recognition for designs which innovate in the field on sustainable performance, above and beyond the level that is currently recognised and rewarded by standard BREEAM issues. There are two ways in which BREEAM awards 'Innovation Credits':

The first is by meeting Exemplary Performance criteria defined within an existing BREEAM issue i.e. going beyond the standard BREEAM assessment criteria and therefore best practice.

The second is where an application is made to BRE Global by the registered project's BREEAM Assessor to have a particular building technology or feature, design or construction method or process recognised as 'innovative'.

All Innovation credits have a fixed environmental weighting of 1% towards the final score, and there is a maximum of innovation credits (totalling 10%) which may be awarded to any scheme.

1.6 Environmental Weightings, Final Score and BREEAM Rating

Once each BREEAM credit has been assessed the category percentage scores are determined (based on the number of credits achieved over those available within a category) and an environmental weighting applied. The weighted category scores are then totalled to give an overall score and any additional score for innovation is added to give the final BREEAM score which is used to determine the BREEAM rating.

2 Project Status

2.1 BREEAM Workshops:

The pre-assessment meeting held atNotting Hill Housing Group, 2 Killick Street, London on the 7 June 2018 was attended by:

Name of Attendee	Company	Role in Project
Cat Clarkson	Sweco	Senior Sustainability Consultant
Angus Saunders	NHH	Planning Manager
David de Sousa	PCKO	Architect
Mark Walford	NHH	Development Project Manager
Zahid Rahman	Silcock Dawson	M&E
Tim Young	JRH	Cost Consultant

2.2 Summary

The project currently targets a score of 73.7% which equates to an EXCELLENT rating and the minimum standards to achieve this rating have been met.

To ensure that a Excellent ≥ 70% rating is achieved/maintained, Additional credits will need to be targeted. These credits are currently marked as TBC, and a decision will need to be made as to which are most appropriate to implement.

Where information could be provided to support the achievement of a credit this should be provided to the assessor at the earliest opportunity. The assessor should also be informed of any credit criteria, which cannot be met. Changes to existing specifications and tender package documents to address the criteria contained in this report would enable the design team to deliver the necessary rating.

This document should be used as a 'live' tool throughout the project and the BREEAM options and requirements should be considered at every stage of development.

Any changes made to the document from the last issue will be shown in red ink for tracking purposes.

The table below shows the progress of the score of the project based on the development of the scheme:

Score History Table

Revision	Report	Achieved Score (ACH)	Currently Targeted Score (CTS)	Potential Score (TBC)
4	Pre-assessment	2.20%	73.70%	73.70%

The initial score targeted at the Pre-assessment meeting will allow for the required BREEAM rating to be achieved provided sufficient and compliant evidence is received by Sweco.

The Pre-assessment meeting held for this project on the date above details the credits targeted, who is responsible for providing evidence for each credit, and the evidence that must be provided to the BREEAM assessor in order to secure credits and achieve the required BREEAM rating. Any changes to the targeted credits and/or changes to the score are detailed below for reference. Where any changes to the score have occurred, this is reflected in the current targeted score on the Summary page of this document.

The current projected score will allow for the required BREEAM rating to be achieved once sufficient and compliant evidence is received by Sweco.

2.3 Tracker

	Action By	Credit Status	AVL	ACH	CTS	TBC
Man01 Project Brief and Design **C1-3: Stakeholder Consultation (Project Delivery)** RIBA Stage 2(C): Consultations		Not targeted	1	0	0	0
		Not targeted				
Man01 Project Brief and Design **C4-7: Stakeholder Consultation (Third Party)** RIBA Stage 2(C): Consultations. RIBA Stage 4(EF): Feedback.	Architect	Targeted	1	0	1	0
		Targeted				
Man01 Stakeholder Consultation **C8-10: Sustainability Champion (Design)** RIBA Stage 1(A-B): Appointment	Client	Targeted	1	0	1	0
		Targeted				
Man01 Stakeholder Consultation **C11-12: Sustainability Champion (Monitoring Progress)** RIBA Stage 1(A-B): Appointment. RIBA Stage 2(C): BREEAM target confirmed		Not targeted	1	0	0	0
		Not targeted				
Man02 Life Cycle Cost and Service Life Planning **C1-3: Elemental Life Cycle Cost (LCC)** RIBA Stage 2(C): Elemental LCC		Not targeted	2	0	0	0
		Not targeted				
Man02 Life Cycle Cost and Service Life Planning **C4-5: Component Level LCC Plan Option Appraisal** RIBA Stage 4(E-F): Component Level LCC Plan.		Not targeted	1	0	0	0
		Not targeted				
Man02 Life Cycle Cost and Service Life Planning **C6: Capital Cost Reporting** RIBA Stage 6(J-K): Recommended action	Cost Consultant	Targeted	1	0	1	0
		Targeted				
Man03 Responsible Construction Practices **C1: Pre-requisite** RIBA Stage 4(E-F): Recommended action	Principal Contractor	Targeted	Pre-requisite for criteria			
	BREEAM AP	Targeted				
Man03 Responsible Construction Practices **C2-3: Environmental Management** RIBA Stage 4(E-F)/Stage 5: Recommended action	Principal Contractor	Targeted	1	0	1	0
	BREEAM AP	Targeted				
Man03 Responsible Construction Practices **C4-6: Sustainability Champion (construction)** RIBA Stage 4(E-F): Recommended action	Principal Contractor	Targeted	1	0	1	0
	BREEAM AP	Targeted				
Man03 Responsible Construction Practices **C7: Considerate Construction** RIBA Stage 4(E-F)/Stage 5: Recommended action	Principal Contractor	Targeted	2	0	2	0
	BREEAM AP	Targeted				

	Action By	Credit Status	AVL	ACH	CTS	TBC
Man03 Responsible Construction Practices **C8: Monitoring of Construction-Site Impacts** RIBA Stage 4(E-F): Recommended action	Principal Contractor	Targeted	Pre-requisite for criteria 9 to 17			
	BREEAM AP	Targeted				
Man03 Responsible Construction Practices **C9-14: Utility Consumption** RIBA Stage 4(E-F)/Stage 5: Recommended action	Principal Contractor	Targeted	1	0	1	0
	BREEAM AP	Targeted				
Man03 Responsible Construction Practices **C15-17: Transport of construction materials and waste** RIBA Stage 4(E-F)/Stage 5: Recommended action	Principal Contractor	Targeted	1	0	1	0
	BREEAM AP	Targeted				
Man03 Responsible Construction Practices **C18: Exemplary Level Criteria** RIBA Stage 4(E-F): Recommended action		Not targeted	1	0	0	0
		Not targeted				
Man04 Commissioning and Handover **C1-4: Commissioning and testing schedule and responsibilities** RIBA Stage 4(E-F): Appointment RIBA Stage 4(E-F): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				
Man04 Commissioning and Handover **C5-6: Commissioning Building Services** RIBA Stage 4(E-F): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				
Man04 Commissioning and Handover **C7-9: Testing and inspecting building fabric** RIBA Stage 4(E-F): Recommended action		Not targeted	1	0	0	0
		Not targeted				
Man04 Commissioning and Handover **C10: Handover** RIBA Stage 4(E-F): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				
Hea01 Visual Comfort **C3: Daylighting (building type dependent)** RIBA Stage 4(E-F): Recommended action		Not targeted	1	0	0	0
		Not targeted				
Hea01 Visual Comfort **C4-5: View Out** RIBA Stage 4(E-F): Recommended action	Architect	Targeted	1	0	1	0
		Targeted				
Hea01 Visual Comfort **C7-12: Internal and External Lighting Levels, Zoning and Control** RIBA Stage 4(E-F): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				

	Action By	Credit Status	AVL	ACH	CTS	TBC
Hea01 Visual Comfort **C14: Exemplary Level Criteria** RIBA Stage 4(E-F): Recommended action		Not targeted	1	0	0	0
		Not targeted				
Hea02 Indoor Air Quality **C2-5: Ventilation** RIBA Stage 4(E-F): Recommended action		Not targeted	1	0	0	0
		Not targeted				
Hea02 Indoor Air Quality **C13-14: Adaptability - Potential for Natural Ventilation** RIBA Stage 4(E-F): Recommended action		Not targeted	1	0	0	0
		Not targeted				
Hea04 Thermal Comfort **C1-4: Thermal modelling** RIBA Stage 4(E-F): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				
Hea04 Thermal Comfort **C5-8: Adaptability - For a Projected Climate Change Scenario** RIBA Stage 4(E-F): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				
Hea05 Acoustic Performance **C1: (for Education, Healthcare, Office and Law Courts building types)** RIBA Stage 4(E-F): Recommended action		Not targeted	1	0	0	0
		Not targeted				
Hea06 Safety and Security **C1-10: Safe Access** RIBA Stage 3(D): Recommended action		Not targeted	1	0	0	0
		Not targeted				
Hea06 Safety and Security **C11-13: Security of Site and Building** RIBA Stage 2(C): Crime Impact Assessment RIBA Stage 4(E-F): Recommended action	Architect	Targeted	1	0	1	0
		Targeted				
Ene01 Reduction of Energy Use and Carbon Emissions **C1: Energy Performance** RIBA Stage 4(E-F): Recommended action	M&E	Targeted	12	0	5	0
		Targeted				
Ene01 Reduction of Energy Use and Carbon Emissions **C2-3: Exemplary Level Criteria - Up to four credits - Zero regulated carbon** RIBA Stage 4(E-F): Recommended action		Not targeted	4	0	0	0
		Not targeted				
Ene01 Reduction of Energy Use and Carbon Emissions **C4: Exemplary Level Criteria - Five credits - Carbon negative** RIBA Stage 4(E-F): Recommended action		Not targeted	5	0	0	0
		Not targeted				

	Action By	Credit Status	AVL	ACH	CTS	TBC
Ene02 Energy Monitoring **C1-4: Sub-Metering of Major Energy Consuming Systems** RIBA Stage 4(E-F): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				
Ene02 Energy Monitoring **C5: Sub-Metering of High Energy Load and Tenancy Areas** RIBA Stage 4(E-F): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				
Ene03 External Lighting **C1-3: One Credit** RIBA Stage 4(E-F): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				
Ene04 Low Carbon Design **C1-3: Passive Design Analysis** RIBA Stage 2(C): Passive Design Analysis RIBA Stage 4(E-F): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				
Ene04 Low Carbon Design **C4-6: Free Cooling** RIBA Stage 2(C): Passive Design Analysis RIBA Stage 4(E-F): Recommended action		Not targeted	1	0	0	0
		Not targeted				
Ene04 Low Carbon Design **C7-8: Low Zero Carbon (LZC) Feasibility Study** RIBA Stage 2(C): Feasibility Study RIBA Stage 4(E-F): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				
Ene06 Energy Efficient Transportation Systems **C1: Energy Consumption** RIBA Stage 4(E-F): Recommended action	Lift Engineer	Targeted	2	0	2	0
	M&E	Targeted				
Ene06 Energy Efficient Transportation Systems **C2-6: Energy Efficient Features** RIBA Stage 4(E-F): Recommended action	Lift Engineer	Targeted	1	0	1	0
	M&E	Targeted				
Tra01 Public Transport Accessibility **C1-2: Accessibility Index** **C3: Dedicated Bus Service** RIBA Stage 3(D): Recommended action	Transport Consultant	Achieved	3	2	2	0
		Achieved				
Tra02 Proximity to Amenities **C1-2: Proximity to Local Amenities** RIBA Stage 3(D): Recommended action	Transport Consultant	Targeted	1	0	1	0
		Targeted				
Tra03 Cyclist Facilities **C1-4: Cycle Storage and Cyclist Facilities** RIBA Stage 3(D): Recommended action	Architect	Targeted	2	0	2	0
		Targeted				

	Action By	Credit Status	AVL	ACH	CTS	TBC
Tra04 Maximum Car Parking Capacity **C1: Car Parking Capacity** RIBA Stage 3(D): Recommended action	Architect	Targeted	2	0	2	0
		Targeted				
Tra05 Travel Plan **C1-4: One Credit** RIBA Stage 3(D): Recommended action	Transport Consultant	Targeted	1	0	1	0
		Targeted				
Wat01 Water Consumption **C1-5: Up to Five Credits (Building Dependant)** RIBA Stage 3(D): Recommended action	Architect	Targeted	5	0	3	0
	Client	Targeted				
Wat02 Water Monitoring **C1-4: One Credit** RIBA Stage 4(E-F): Recommended action	M&E	Targeted	1	0	1	0
	Client	Targeted				
Wat03 Water Leak Detection **C1: Leak Detection System** RIBA Stage 3(D): Recommended action	M&E	Targeted	1	0	1	0
	Client	Targeted				
Wat03 Water Leak Detection **C2: Flow Control Devices** RIBA Stage 3(D): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				
Wat04 Water Efficient Equipment **C1-2: One Credit** RIBA Stage 3(D): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				
Mat 01 Life Cycle Impacts **C1-3: Up to 6 Credits (Building Dependant)** RIBA Stage 3(D): Recommended action	Architect	Targeted	5	0	3	0
		Targeted				
Mat 01 Life Cycle Impacts **C4-8: Exemplary Level Criteria** RIBA Stage 3(D): Recommended action		Not targeted	3	0	0	0
		Not targeted				
Mat 02 Hard Landscaping and Boundary Protection **C1: One Credit** RIBA Stage 3(D): Recommended action	Architect	Targeted	1	0	1	0
		Targeted				
Mat03 Responsible Sourcing of Materials **C1: Pre-requisite** RIBA Stage 3(D): Recommended action	Principal Contractor	Targeted	Pre-requisite to achieve credit			
	BREEAM AP	Targeted				

	Action By	Credit Status	AVL	ACH	CTS	TBC
Mat03 Responsible Sourcing of Materials **C2: Sustainable Procurement Plan** RIBA Stage 3(D): Recommended action	Principal Contractor	Targeted	1	0	1	0
	BREEAM AP	Targeted				
Mat03 Responsible Sourcing of Materials **C3: Responsible Sourcing of Materials (RSM)** RIBA Stage 3(D): Recommended action		Not targeted	3	0	0	0
		Not targeted				
Mat04 Insulation **C1-2: Embodied impact** RIBA Stage 3(D): Recommended action	Architect	Targeted	1	0	1	0
	M&E	Targeted				
Mat05 Designing for Durability and Resilience **C1:Protecting vulnerable parts of the building from damage** **C2: Protecting exposed parts of the building from material degradation** RIBA Stage 3(D): Recommended action	Architect	Targeted	1	0	1	0
		Targeted				
Mat06 Material Efficiency **C1-2: One Credit** RIBA Stages 1,2,3 and 4: Material Use Review RIBA Stage 3(D): Recommended action		Not targeted	1	0	0	0
		Not targeted				
Wst01 Construction Waste Management **C1-3: Construction Resource Efficiency** RIBA Stage 3(D): Recommended action	Principal Contractor	Targeted	3	0	2	0
	BREEAM AP	Targeted				
Wst01 Construction Waste Management **C4-5: Diversion of Resources from Landfill** RIBA Stage 3(D): Recommended action	Principal Contractor	Targeted	1	0	1	0
	BREEAM AP	Targeted				
Wst01 Construction Waste Management **C6-8: Exemplary Level Criteria** RIBA Stage 3(D): Recommended action		Not targeted	1	0	0	0
		Not targeted				
Wst02 Recycled Aggregates **C1-3: One Credit** RIBA Stage 3(D): Recommended action		Not targeted	1	0	0	0
		Not targeted				
Wst02 Recycled Aggregates **C4-6: Exemplary Level Criteria** RIBA Stage 3(D): Recommended action		Not targeted	1	0	0	0
		Not targeted				
Wst03 Operational Waste **C1-7: One Credit** RIBA Stage 3(D): Recommended action	Architect	Targeted	1	0	1	0
		Targeted				

	Action By	Credit Status	AVL	ACH	CTS	TBC
Wst04 Speculative Floor and Ceiling Finishes **C1-2 One Credit - Office building types only** RIBA Stage 4(E-F): Recommended action	Architect	Targeted	1	0	1	0
		Targeted				
Wst05 Adaptation to Climate Change **C1: Structural and Fabric Resilience** RIBA Stage 1(A-B): Climate Adaptation Strategy Appraisal RIBA Stage 3(D): Recommended action	Architect	Targeted	1	0	1	0
	Structural Engineer	Targeted				
Wst06 Functional Adaptability **C1-2: One Credit** RIBA Stage 1(A-B): Functional Adaptation Strategy Appraisal RIBA Stage 3(D): Recommended action	Architect	Targeted	1	0	1	0
	M&E	Targeted				
LE01 Site Selection **C1: Previously Occupied Land** RIBA Stage 1(A-B): Recommended action	Architect	Targeted	1	0	1	0
		Targeted				
LE01 Site Selection **C2-3: Contaminated Land** RIBA Stage 2(C): Recommended action	Geotech Eng	Targeted	1	0	1	0
		Targeted				
LE02 Ecological Value of Site and Protection of Ecological Features C1: Ecological Value of Site RIBA Stage 4(E-F): Recommended action	Ecologist	Targeted	1	0	1	0
		Targeted				
LE02 Ecological Value of Site and Protection of Ecological Features C2-3: Protection of Ecological Features RIBA Stage 4(E-F): Recommended action	Ecologist	Targeted	1	0	1	0
		Targeted				
LE03 Minimising Impact on Existing Site Ecology **C1-2: Change in Ecological Value** RIBA Stage 3(D): Recommended action	Ecologist	Targeted	2	0	2	0
		Targeted				
LE04 Enhancing Site Ecology **C1-3: Ecologist's Report and Recommendations** RIBA Stage 1(A-B): Ecologist Appointment RIBA Stage 4(E-F) Recommended action	Ecologist	Targeted	1	0	1	0
		Targeted				
LE04 Enhancing Site Ecology **C4-6: Increase in Ecological Value** RIBA Stage 1(A-B): Ecologist Appointment RIBA Stage 4(E-F) Recommended action	Ecologist	Targeted	1	0	1	0
		Targeted				
LE05 Long Term Impact on Biodiversity **C1-3: Up to Two Credits** RIBA Stage 4(E-F): Recommended action	Principal Contractor	Targeted	2	0	2	0
	Ecologist	Targeted				

	Action By	Credit Status	AVL	ACH	CTS	TBC
Pol01 Impact of Refrigerants **C1: No Refrigerant Use** RIBA Stage 3(D): Recommended action	M&E	Targeted	3	0	3	0
		Targeted				
Pol02 NOx Emissions **C1-2: Up to Three Credits (Building Type Dependent)** RIBA Stage 3(D): Recommended action	M&E	Targeted	3	0	3	0
		Targeted				
Pol03 Surface Water Run-off **C1-3: Flood Risk** RIBA Stage 3(D): Recommended action	Flood Risk Assessor	Targeted	2	0	2	0
		Targeted				
Pol03 Surface Water Run-off **C4: Pre-requisite** RIBA Stage 3(D): Recommended action	Drainage Consultant	Targeted	Pre-requisite for C4-14, C15-22			
		Targeted				
Pol03 Surface Water Run-off **C5-14: Surface Water Run-off** RIBA Stage 3(D): Recommended action	Drainage Consultant	Targeted	2	0	2	0
		Targeted				
Pol03 Surface Water Run-off **C15-22: Minimising Water Course Pollution** RIBA Stage 3(D): Recommended action	Drainage Consultant	Targeted	1	0	1	0
		Targeted				
Pol04 Reduction of Night Time Light Pollution **C:1-5 One credit** RIBA Stage 3(D): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				
Pol05 Reduction of Noise Pollution **C:1-5 One credit** RIBA Stage 3(D): Recommended action	Acoustician	Targeted	1	0	1	0
		Targeted				

3 Amendments

Credit(s) added/removed since the Pre-assessment:

Credit	Date	From	Result	Comments
Man03 Responsible Sourcing Materials C4-6 Sustainability Champion (construction)	16/09/2019	Not Targeted	Credit added	This credit is now targeted.
Man03 Responsible Sourcing Materials C15-17 Transport of construction materials and waste	16/09/2019	Not Targeted	Credit added	This credit is now targeted.
Mat01 Life Cycle Impacts C1-3 Up to 6 credits (building dependant)	01/10/2019	TBC	Credit added	This credit is now targeted.

4 Score Summary

New Construction SD5076: 5.0 - 2014

Pre-assessment date: 07 June 2018

Updated: 24 March 2023

BREEAM Reference: BREEAM-0073-5894

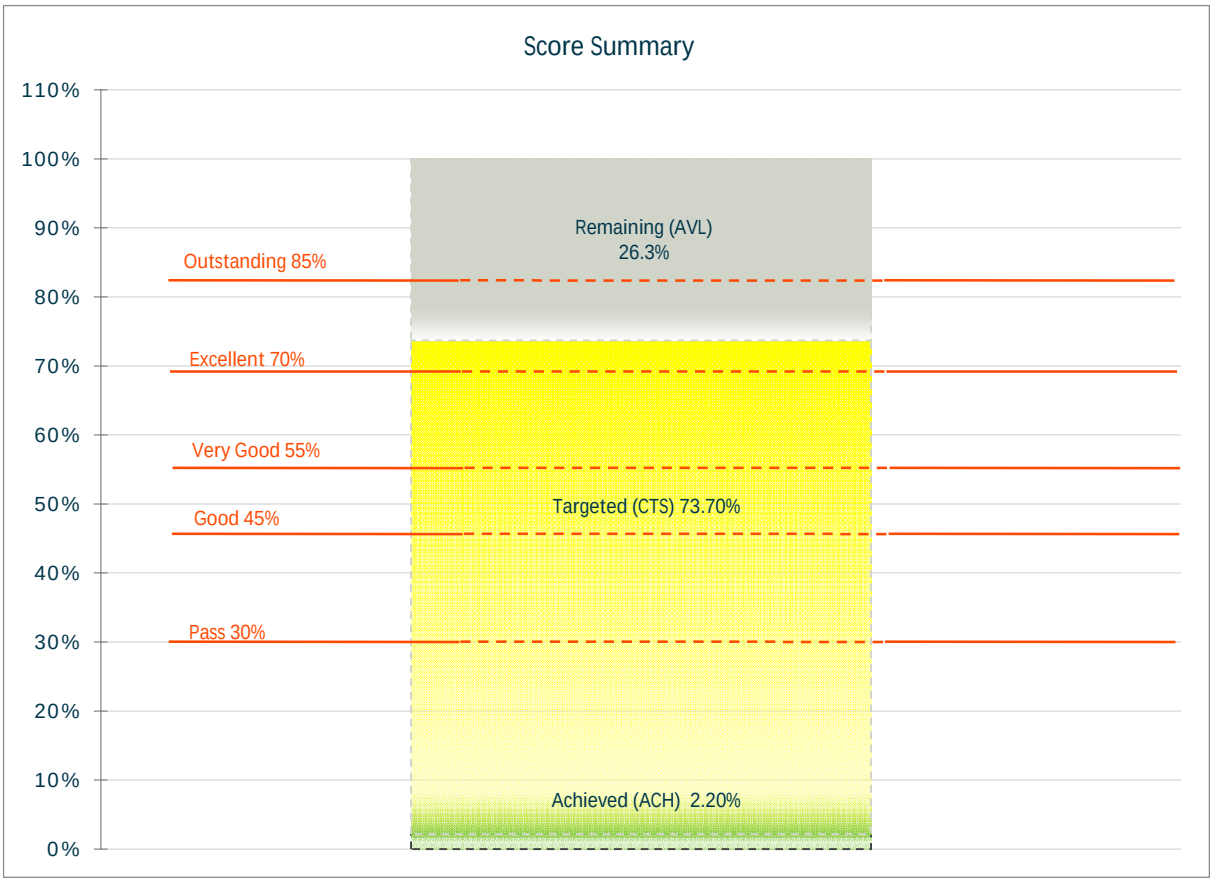
Internal Reference: AD/580534/CH

BREEAM Requirement: Excellent ≥ 70%

Minimum standards level achieved: Excellent

Current Targeted Score: 73.7%

Achieved Score: 2.2%



5 Credit Status

This report provides an overview of the current position of the project in terms of the BREEAM assessment and the progress in achieving the required rating.

The 'Targeted' credits and any still 'To Be Confirmed' (TBC) are detailed in the following pages and it is the responsibility of the design team to provide the evidence, as required by BREEAM, to the Assessor as soon as it becomes available.

'TBC' items are not included in the 'Current Targeted Score' and should be confirmed as either 'Targeted' or 'Not Sought' as soon as possible to clarify the project's position.

All the BREEAM Credits have a recommended time period where they should be completed within to help ensure they are carried out at the most appropriate time. All credits and specific criteria have mandatory RIBA stages where they must be completed within unless otherwise indicated with 'Recommended Action' beside it in the credit summary bar. Below are the RIBA stages referred to in this report.

Strategic Definition	Preparation and Brief	Concept Design	Developed Design	Technical Design	Construction	Handover and Close Out
0 (A.)	1 (B.)	2 (C.)	3(D)	4 (E-F)	5	6 (J-K)

Each credit has been assigned to a responsible party. It is their responsibility to refer to the relevant section of the Credit Status in this document and BREEAM manual.

Please note that it is not possible to achieve 100% in a BREEAM assessment, therefore there will always be credits that are 'Not Sought' due to the nature of the assessment.

The credits detailed below were agreed at the pre-assessment meeting for the and the status of each credit reflects the information provided by the Design Team following all meetings and correspondence to date with the BREEAM Assessor.

All actions and evidence must be submitted to the BREEAM Assessor as soon as possible for review to and inclusion in the BREEAM report.

Where text is struck through, evidence has been received, reviewed and signed off.

Changes to the document following the report issued prior to this issue (where applicable) are shown in orange text.

5.1 Scoring Abbreviations:

AVL = Available credits

ACH = Achieved credits out of the total credits available

CTS = Credits which form part of the Current Targeted Score

TBC = Credits which are To Be Confirmed. These include the CTS credits and additional credits that are potentially achievable but not formally confirmed as targeted.

	Action By	Credit Status	AVL	ACH	CTS	TBC
MANAGEMENT 0.61% weighting per credit			**18**	**0**	**12**	**0**
Man01 Project Brief and Design **C1-3: Stakeholder Consultation (Project Delivery)** RIBA Stage 2(C): Consultations		Not targeted	1	0	0	0
		Not targeted				

Assessor's Notes
8/6/18 - CC - This credit is not recommended as targeted in the NHH BREEAM guide.

No further action required at Design Stage

Man01 Project Brief and Design **C4-7: Stakeholder Consultation (Third Party)** RIBA Stage 2(C): Consultations. RIBA Stage 4(EF): Feedback.	Architect	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 DdS confirmed that stakeholder consultation would be done, and requested further details of the exact BREEAM requirements.

Evidence/Action Required

4. Provide documentary evidence (meeting minutes, consultation plan, consultee feedback) confirming that, prior to completion of the Concept Design stage, all relevant third party stakeholders have been consulted by the design team and this covers the following minimum consultation content dependent on the building type:
   1. Functionality, build quality and impact (including aesthetics)
   2. Provision of appropriate internal and external facilities (for future building occupants and visitors/users)
   3. Management and operational implications
   4. Maintenance resources implications
   5. Impacts on the local community, e.g. local traffic/transport impact
   6. Opportunities for shared use of facilities and infrastructure with the community/appropriate stakeholders, if relevant/appropriate to building type.
   7. Compliance with statutory (national/local) consultation requirements.
   8. Inclusive and accessible design.

   Relevant third parties include:
   1. Actual/intended building users (if known) including facilities management (FM) staff or those responsible for the day-to-day operation of the building and grounds.
   2. Representative consultation group from the existing community (if the building is a new development in an existing community) or for a community still under construction.
   3. Existing partnerships and networks that have knowledge of and experience working on existing buildings of the same type.
   4. Potential users of any shared facilities, e.g. operators of clubs and community groups.
5. Provide documentary evidence in the form of feedback forms, amended design drawings, and specification addendums to demonstrate how the stakeholder contributions and outcomes of the consultation exercise have influenced or changed the Initial Project Brief and Concept Design.
6. Provide documentary evidence confirming prior to completion of the detailed design (RIBA Stage 4, Technical Design or equivalent), consultation feedback has been given to, and received by, all relevant parties regarding suggestions made, including how the results of the consultation process have influenced, or resulted in modifications to, the proposed design and building operation/use.

	Action By	Credit Status	AVL	ACH	CTS	TBC

Feedback must cover:
1. What was proposed during the consultation exercise;
2. How these proposals were considered;
3. The outcome, e.g. implementation of the suggestion or a description of why options have not been deemed feasible;
4. Implications for management and operation of the building.

The consultation feedback must be summarised within a design intent document which has been approved by each of the main parties/stakeholders.

Man01 Stakeholder Consultation **C8-10: Sustainability Champion (Design)** RIBA Stage 1(A-B): Appointment	Client	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - Sweco (formerly MLM) appointed as sustainability champion.

Evidence/Action Required

8. ~~Provide an appointment letter, specification clause, project programme, meeting minutes confirming that a Sustainability Champion (BREEAM Accredited Professional) has been appointed to facilitate the setting and achievement of BREEAM performance target(s) for the project. The design stage Sustainability Champion is appointed to perform this role during the feasibility stage (Stage 1, Preparation and Brief stage, as defined by the RIBA Plan of Work 2013 or equivalent).~~
9. The defined BREEAM performance target(s) has been formally agreed between the Client and design/project team no later than the Concept Design stage (RIBA Stage 2 or equivalent). This formal agreement must be in the form of a letter of appointment or contract and provided to the Assessor as evidence.
10. To achieve this credit at the interim (design) assessment stage, the agreed BREEAM performance target(s) must be demonstrably achieved by the project design. This is demonstrated via the BREEAM Assessor's design stage certification report.

Man01 Stakeholder Consultation **C11-12: Sustainability Champion (Monitoring Progress)** RIBA Stage 1(A-B): Appointment. RIBA Stage 2(C): BREEAM target confirmed		Not targeted	1	0	0	0
		Not targeted				

Assessor's Notes
8/6/18 - CC - Sweco (formerly MLM) appointment does not currently cover the full design stage (only stage 1 - 3) and as such this would present an additional cost to the project. We would recommend (impartially!) that a BREEAM AP is used, as their advice can be invaluable in avoiding loss of credits.

No further action required at Design Stage

	Action By	Credit Status	AVL	ACH	CTS	TBC
Man02 Life Cycle Cost and Service Life Planning **C1-3: Elemental Life Cycle Cost (LCC)** RIBA Stage 2(C): Elemental LCC		Not targeted	2	0	0	0
		Not targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 TY confirmed that an elemental LCC would not be conducted as a matter of course.

No further action required at Design Stage

Man02 Life Cycle Cost and Service Life Planning **C4-5: Component Level LCC Plan Option Appraisal** RIBA Stage 4(E-F): Component Level LCC Plan.		Not targeted	1	0	0	0
		Not targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC suggested that this exercise may present significant additional cost to the project. In addition, the NHH BREEAM Guidance does not suggest targeting it.

No further action required at Design Stage

Man02 Life Cycle Cost and Service Life Planning **C6: Capital Cost Reporting** RIBA Stage 6(J-K): Recommended action	Cost Consultant	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 TY and AS confirmed that there would be no issue with reporting the capital cost of the project.

Evidence/Action Required
6. Report the capital cost for the building in pounds per square metre (£k/m2), via the BREEAM Assessment Scoring and Reporting tool, Assessment Issue Scoring tab, Management section.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Man03 Environmental Management Minimum standards for this credit with the currently targeted Excellent ≥ 70% BREEAM rating: One credit (Considerate Construction)						
Man03 Responsible Construction Practices **C1: Pre-requisite** RIBA Stage 4(E-F): Recommended action	Principal Contractor	Targeted	Pre-requisite for criteria			
	BREEAM AP	Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC confirmed that this is standard practice for contractors, and would need to be included as a requirement for them in their tender pack/contract.

Evidence/Action Required

1. All timber and timber based products used on the project is 'Legally harvested and traded timber' (see Relevant definitions below).

   BREEAM follows the UK government's definition of legally sourced timber, as outlined in the Central Point of Expertise on Timber (CPET) 5th Edition report on the UK Government Timber Procurement Policy, which states that legal timber and wood-derived products are those that originate from a forest where the following criteria are met:

   1. The forest owner/manager holds legal use rights to the forest.
   2. There is compliance by both the forest management organisation and any contractors with local and national legal criteria including those relevant to:
   a. Forest management
   b. Environment
   c. Labour and welfare
   d. Health and safety
   e. Other parties' tenure and use rights
   f. All relevant royalties and taxes are paid.
   3. There is full compliance with the criteria of CITES.

Man03 Responsible Construction Practices **C2-3: Environmental Management** RIBA Stage 4(E-F)/Stage 5: Recommended action	Principal Contractor	Targeted	1	0	1	0
	BREEAM AP	Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC confirmed that this is standard practice for main contractors, and would need to be included as a requirement for them in their tender pack/contract.

Evidence/Action Required

2. The principal contractor operates an environmental management system (EMS) covering their main operations. The EMS must be either:
   a. be third party certified, to ISO 14001/EMAS or equivalent standard; OR
   b. have a structure that is in compliance with BS 8555 2003 and has 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.

   Provide a copy of the EMS certificate as confirmation.
3. Provide site log books, pollution prevention procedures, etc confirming that the principal contractor implements best practice pollution prevention policies and procedures on-site in accordance with Pollution Prevention Guidelines, Working at construction and demolition-sites: PPG6.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Man03 Responsible Construction Practices **C4-6: Sustainability Champion (construction)** RIBA Stage 4(E-F): Recommended action	Principal Contractor	Targeted	1	0	1	0
	BREEAM AP	Targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC stated that not all main contractors have in house sustainability champions. Where they are not in house, there can be a reasonable additional cost (circa £850/site visit, with site visits generally timed monthly).
06/09/19 - SM - This credit is now targeted after discussion with the client.

Evidence/Action Required

4. Provide a contract letter confirming the appointment of a Sustainability Champion (BREEAM AP) to monitor the project to ensure ongoing compliance with the relevant sustainability performance/process criteria, and therefore BREEAM target(s), during the Construction, Handover and Close Out stages (as defined by the RIBA Plan of Works 2013, stages 5 and 6).

   The following roles and responsibilities should be detailed in full within the documentary evidence:
   Sustainability Champion will ideally be site based or will visit the site regularly to carry out spot checks, with the relevant authority to do so and require action to be taken to address shortcomings in compliance.
   The Sustainability Champion will monitor site activities at key stages of construction to ensure that risks of non-compliance are minimised.
   They will report on progress at relevant project team meetings including identifying potential areas of non-compliance and any action needed to mitigate.
5. The defined BREEAM performance target must form a requirement of the principal contractor's contract and be formally agreed between the Client and design/project team no later than the Concept Design stage (RIBA Stage 2 or equivalent). This formal agreement must be in the form of a letter of appointment or contract and provided to the Assessor as evidence.

6. To achieve this credit at the final post-construction stage of assessment, the BREEAM related performance target for the project must be demonstrably achieved by the project. This is demonstrated via the BREEAM assessor’s final post-construction stage certification report.

Man03 Responsible Construction Practices **C7: Considerate Construction** RIBA Stage 4(E-F)/Stage 5: Recommended action	Principal Contractor	Targeted	2	0	2	0
	BREEAM AP	Targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC confirmed that this is good practice for main contractors, and would need to be included as a requirement for them in their tender pack/contract.

Evidence/Action Required

7. Provide specification clauses or a formal letter of commitment from the Client/developer confirming that the site has been registered with the Considerate Constructors Scheme or other compliant organisation.

   The BREEAM credits can be awarded as follows:
   To achieve BREEAM credits using the Considerate Constructors Scheme (CCS) and its Code of Considerate Practice, the principal contractor must achieve scheme certification and a CCS score as follows:
   1. One credit: a CCS score between 25 and 34*
   2. Two credits: a CCS score between 35 and 39**
   3. Exemplary level performance: a CCS score of 40 or more**.
   * A score of at least 5 in each of the five sections must be achieved.
   ** A score of at least 7 in each of the five sections must be achieved.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Man03 Responsible Construction Practices **C8: Monitoring of Construction-Site Impacts** RIBA Stage 4(E-F): Recommended action	Principal Contractor	Targeted	Pre-requisite for criteria 9 to 17			
	BREEAM AP	Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC confirmed that this is standard practice for main contractors, and would need to be included as a requirement for them in their tender pack/contract.

Evidence/Action Required

8. Provide a letter of confirmation or specification clause detailing that responsibility has been assigned to an individual(s) for monitoring, recording and reporting energy use, water consumption and transport data (where measured) resulting from all on-site construction processes (and dedicated off-site monitoring) throughout the build programme.

   To ensure the robust collection of information, this individual(s) must have the appropriate authority and responsibility to request and access the data required. Where appointed, the Sustainability Champion (BREEAM AP) could perform this role.

Man03 Responsible Construction Practices **C9-14: Utility Consumption** RIBA Stage 4(E-F)/Stage 5: Recommended action	Principal Contractor	Targeted	1	0	1	0
	BREEAM AP	Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC confirmed that this is standard practice for main contractors, and would need to be included as a requirement for them in their tender pack/contract.

Evidence/Action Required

Energy Consumption 9-11

9. Criterion 8 is achieved
10. Monitor and record data on principal contractor's and sub-contractors' energy consumption in kWh (and where relevant, litres of fuel used) as a result of the use of construction plant, equipment (mobile and fixed) and site accommodation.
11. Using the collated data report the total carbon dioxide emissions (total kgCO2/project value) from the construction process via the BREEAM Assessment Scoring and Reporting tool.

Water Consumption 12-14

12. Criterion 8 is achieved.
13. Monitor and record data on principal contractor's and sub-contractors' potable water consumption (m3) arising from the use of construction plant, equipment (mobile and fixed) and site accommodation.
14. Using the collated data report the total net water consumption (m3), i.e. consumption minus any recycled water use, from the construction process via the BREEAM Assessment Scoring and Reporting tool.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Man03 Responsible Construction Practices **C15-17: Transport of construction materials and waste** RIBA Stage 4(E-F)/Stage 5: Recommended action	Principal Contractor	Targeted	1	0	1	0
	BREEAM AP	Targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC confirmed that while this credit looks simple to achieve, the transport distances are required from factory, to distribution centre, to site and as such it requires more work than just reporting the mileage from the driver at the site gate. Contractors are sometimes reluctant to commit to achieving this credit.
06/09/19 SM: This credit is now targeted after discussion with the client and it will be the responsibility of the contractor.

Evidence/Action Required

15. Criterion 8 is achieved.
16. Monitor and record data on transport movements and impacts resulting from delivery of the majority of construction materials to site and construction waste from site. As a minimum this must cover:

    a. Transport of materials from the factory gate to the building site, including any transport, intermediate storage and distribution, See Relevant definitions.

    b. Scope of this monitoring must cover the following as a minimum:
    i. Materials used in major building elements (i.e. those defined in BREEAM issue Mat 01 Life cycle impacts), including insulation materials.
    ii. Ground works and landscaping materials.

    c. Transport of construction waste from the construction gate to waste disposal processing/recovery centre gate. Scope of this monitoring must cover the construction waste groups outlined in the project's waste management plan.
17. Using the collated data, report separately for materials and waste, the total fuel consumption (litres) and total carbon dioxide emissions (kgCO2 eq), plus total distance travelled (km) via the BREEAM Assessment Scoring and Reporting tool.

Man03 Responsible Construction Practices **C18: Exemplary Level Criteria** RIBA Stage 4(E-F): Recommended action		Not targeted	1	0	0	0
		Not targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC confirmed that there may be risk around achieving this credit. A score of 40+ on CCS is increasingly difficult to achieve, and dependent to an extent on the CCS inspector that you get.

No further action required at Design Stage

	Action By	Credit Status	AVL	ACH	CTS	TBC
Man04 Commissioning and Handover Minimum standards for this credit with the currently targeted Excellent ≥ 70% BREEAM rating: Criterion 10 (Building User Guide)						
Man04 Commissioning and Handover **C1-4: Commissioning and testing schedule and responsibilities** RIBA Stage 4(E-F): Appointment	M&E	Targeted	1	0	1	0
RIBA Stage 4(E-F): Recommended action		Targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 ZR confirmed that this is standard practice and could be included in specifications.

Evidence/Action Required

1. Provide 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.
2. The schedule will identify the appropriate standards that all commissioning activities will be conducted in accordance with, such as current Building Regulations, BSRIA and CIBSE guidelines and/or other appropriate standards, where applicable. Where a building management system (BMS) is specified, the following commissioning procedures must be carried out and detailed in the appointment letter/s:
   1. Commissioning of air and water systems is carried out when all control devices are installed, wired and functional
   2. In addition to air and water flow results, commissioning results include physical measurements of room temperatures, off-coil temperatures and other key parameters as appropriate
   3. The BMS/controls installation should be running in auto with satisfactory internal conditions prior to handover
   4. All BMS schematics and graphics (if BMS is present) are fully installed and functional to user interface before handover
   5. The occupier or facilities team is fully trained in the operation of the system.
3. Provide a copy of the appointment letter detailing the commissioning responsibilities or specification clause confirming that an appropriate project team member(s) is appointed to monitor and programme pre-commissioning, commissioning, testing and, where necessary, re-commissioning activities on behalf of the Client.
4. Provide a copy of the specification clause or a letter confirming that the principal contractor accounts for the commissioning and testing programme, responsibilities and criteria within their budget and main programme of works, allowing for the required time to complete all commissioning and testing activities prior to handover.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Man04 Commissioning and Handover **C5-6: Commissioning Building Services** RIBA Stage 4(E-F): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 ZR confirmed that this is standard practice and could be included in specifications.

Evidence/Action Required

5. The commissioning and testing schedule and responsibilities credit is achieved.
6. Provide a letter of appointment for the specialist commissioning engineer for buildings with complex building services and systems. The letter must confirm that the specialist commissioning manager is appointed during the design stage (by either the Client or the principal contractor) with responsibility for:

   a. Undertaking design reviews and giving advice on suitability for ease of commissioning.

   b. Providing commissioning management input to construction programming and during installation stages.

   c. Management of commissioning, performance testing and handover/post hand-over stages.

Man04 Commissioning and Handover **C7-9: Testing and inspecting building fabric** RIBA Stage 4(E-F): Recommended action		Not targeted	1	0	0	0
		Not targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC confirmed that this credit can be difficult to achieve dependent on timing, and as such should not be targeted at this stage.

No further action required at Design Stage

	Action By	Credit Status	AVL	ACH	CTS	TBC
Man04 Commissioning and Handover **C10: Handover** RIBA Stage 4(E-F): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC confirmed that a building user guide should be included in the contractor's tender pack/contract as a requirement.

Evidence/Action Required

10. Provide a formal letter of commitment from the design team or relevant section clauses of the specification confirming that a Building User Guide (BUG) will be developed prior to handover for distribution to the building occupiers and premises managers.

    The Building User Guide (BUG) must cover all functions and uses of the building, ensuring building users are able to access and use the building effectively. Where relevant, the documents must describe the facilities to be shared and how access to them will be arranged for potential users.

    The BUG should be made readily available to all future building users and provide information relevant to the following stakeholders:
    The building's staff (or where relevant residents) AND
    The non technical facilities management team/building manager
    Other building users e.g. visitors / community users

    The content of the guide must be specific to the building type and end users, but broadly include information on the following:
    • Overview of the building and its environmental strategy, e.g. energy/water/waste efficiency policy/strategy and how users should engage with/deliver the policy/strategy.
    • Building services overview and access to controls, e.g. where to find them, what they control, how to operate effectively and efficiently etc.
    • Pre-arrival information for visitors, e.g. access and security procedures/provisions
    • Provision of, and access to, shared facilities
    • Safety and emergency information/instructions
    • Building related operational procedures specific to Building type/operation, e.g. laboratories.
    • Building related incident reporting/feedback arrangements
    • Building related training information/links
    • Provision of, and access to, transport facilities, e.g. public transport, cyclist facilities, pedestrian routes etc.
    • Provision of, and access to, local amenities
    • Re-fit, refurbishment and maintenance arrangements/considerations
    • links, references and relevant contact details

	Action By	Credit Status	AVL	ACH	CTS	TBC
HEALTH & WELLBEING 1.05% weighting per credit			**10**	**0**	**5**	**0**
Hea01 Visual Comfort **C3: Daylighting (building type dependent)** RIBA Stage 4(E-F): Recommended action		Not targeted	1	0	0	0
		Not targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 ZR confirmed that there were no plans to undertake daylight modelling for any reason other than BREEAM.

No further action required at Design Stage

Hea01 Visual Comfort **C4-5: View Out** RIBA Stage 4(E-F): Recommended action	Architect	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 Dds suggested this credit would likely be achievable.

Evidence/Action Required

4. Provide scaled floor plans and calculations confirming that 95% of relevant floor areas are within 7m of a wall with a window or permanent opening the provides an adequate view out. The floor plans must detail all rooms/ spaces names. Relevant areas are where there are or will be workstations/ benches or desks for building users. Also where close work will be undertaken or visual aids used.
5. Provide calculations confirming that the window/ opening is ≥20% of the surrounding wall area (in m2) of the internal wall in which the window/opening is located, including the area of the window/opening itself). Where the room depth is greater than 7m, compliance is only possible where the percentage of window/opening is the same as, or greater than, the values in table 1.0 of BS 8206.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Hea01 Visual Comfort **C7-12: Internal and External Lighting Levels, Zoning and Control** RIBA Stage 4(E-F): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 ZR confirmed this credit would be achievable.

Evidence/Action Required

Internal Lighting

7. Provide written confirmation and/or design drawings confirming that all fluorescent and compact fluorescent lamps are fitted with high frequency ballasts.

   Provide design drawings, and either relevant specification clauses or a formal letter confirming compliance with all of the following standards in relevant areas.

8. Internal lighting in all relevant areas of the building is designed to provide an illuminance (lux) level appropriate to the tasks undertaken, accounting for building user concentration and comfort levels. 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.

9. 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. This gives recommendations highlighting:

   a. Limits to the luminance of the luminaires to avoid screen reflections. (Manufacturers' data for the luminaires should be sought to confirm this)

   b. For up lighting, the recommendations refer to the luminance of the lit ceiling rather than the luminaire; a design team calculation is usually required to demonstrate this.

   c. Recommendations for direct lighting, ceiling illuminance, and average wall illuminance.

External Lighting

10. Provide design drawings, and either relevant specification clauses or a formal letter confirming 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 areas and BS EN 12464-2:2014 Light and lighting - Lighting of work places - Part 2: Outdoor work places.

	Action By	Credit Status	AVL	ACH	CTS	TBC

Zoning and occupant control

Provide design drawings, and either relevant specification clauses or a formal letter confirming compliance with all of the following standards in relevant areas:

11. Internal lighting is zoned to allow for occupant control in accordance with the criteria below for relevant areas present within the building:

    a. In office areas, zones of no more than four workplaces

    b. Workstations adjacent to windows/atria and other building areas separately zoned and controlled

    c. Seminar and lecture rooms: zoned for presentation and audience areas

    d. Library spaces: separate zoning of stacks, reading and counter areas

    e. Teaching space or demonstration area

    f. Whiteboard or display screen

    g. Auditoria: zoning of seating areas, circulation space and lectern area

    h. Dining, restaurant, café areas: separate zoning of servery and seating/dining areas

    i. Retail: separate zoning of display and counter areas

    j. Bar areas: separate zoning of bar and seating areas

    k. Wards or bedded areas: zoned lighting control for individual bed spaces and control for staff over groups of bed spaces

    l. Treatment areas, dayrooms, waiting areas: zoning of seating and activity areas and circulation space with controls accessible to staff.

    Note: Occupant control such as light switches or controls for a particular area/zone of the building must be accessed and operated by the individual(s) occupying that area or zone. Such controls must be located in, or within the vicinity of, the zone or area they control.

12. Areas used for teaching, seminar or lecture purposes have lighting controls provided in accordance with CIBSE Lighting Guide 5.

Hea01 Visual Comfort **C14: Exemplary Level Criteria** RIBA Stage 4(E-F): Recommended action		Not targeted	1	0	0	0
		Not targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC confirmed this credit is rarely achieved, and should not be relied upon to achieve the required Excellent rating.

No further action required at Design Stage

Hea02 Indoor Air Quality **C2-5: Ventilation** RIBA Stage 4(E-F): Recommended action		Not targeted	1	0	0	0
		Not targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 ZR confirmed this credit would not be achievable due to proximity to pollution sources.

No further action required at Design Stage

	Action By	Credit Status	AVL	ACH	CTS	TBC
Hea02 Indoor Air Quality **C13-14: Adaptability - Potential for Natural Ventilation** RIBA Stage 4(E-F): Recommended action		Not targeted	1	0	0	0
		Not targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 DdS and AS confirmed that there was a preference for a natural ventilation strategy, however, there has not to date been any overheating modelling undertaken, and as such it is still unclear whether this is fully viable.
16/08/19 SM: This credit was reviewed and has been changed to Not targeted as it is likely to restrict the design for future tenants.

No further action required at Design Stage

Hea04 Thermal Comfort **C1-4: Thermal modelling** RIBA Stage 4(E-F): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 ZR confirmed this credit would be achievable.

Evidence/Action Required

Provide relevant specification clauses and correspondence and a copy of the thermal comfort modelling report confirming the following:

1. Thermal modelling has been carried out using software in accordance with CIBSE AM11 Building Energy and Environmental Modelling.
2. The software used to carry out the simulation at the detailed design stage provides full dynamic thermal analysis. For smaller and more basic building designs with less complex heating or cooling systems, an alternative less complex means of analysis may be appropriate (such methodologies must still be in accordance with CIBSE AM11).
3. The model must demonstrate that:

   a. For air conditioned buildings, summer and winter operative temperature ranges in occupied spaces are in accordance with the criteria set out in CIBSE Guide A Environmental design, Table 1.5; or other appropriate industry standard (where this sets a higher or more appropriate requirement/level for the building type).

   The model must also demonstrate the Predicted Mean Vote (PMV) and Predicted Percentage of Dissatisfied (PPD) indices.

   b. For naturally ventilated/free running buildings:

   i. Winter operative temperature ranges in occupied spaces are in accordance with the criteria set out in CIBSE Guide A Environmental design, Table 1.5; or other appropriate industry standard (where this sets a higher or more appropriate requirement/level for the building type).

   ii. The building is designed to limit the risk of overheating, in accordance with the adaptive comfort methodology outlined in CIBSE TM52: The limits of thermal comfort: avoiding overheating in European buildings.

4. For air conditioned buildings, the PMV (predicted mean vote) and PPD (predicted percentage of dissatisfied) indices based on the above modelling will be reported via the BREEAM assessment scoring and reporting tool.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Hea04 Thermal Comfort **C5-8: Adaptability - For a Projected Climate Change Scenario** RIBA Stage 4(E-F): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 ZR confirmed this credit would be achievable.

Evidence/Action Required

5. Criteria 1-4 must be achieved.
6. The thermal modelling must demonstrate that the relevant requirements set out in criteria 3 are achieved for a projected climate change environment.

   Projected climate change environment Note:

   Note:
   Dynamic thermal simulation software packages currently provide the facility for building designs to be assessed under external climatic conditions specific to geographic location. Industry standard weather data for the UK is available in the form of Test Reference Years (TRYs) and Design Summer Years (DSYs) provided by CIBSE. This weather data enables thermal analysis of building designs under current climatic conditions, yet no account is taken of the projected variations in weather data that will occur during the building's life cycle as a result of climate change. The following probabilistic DSY weather data files should be used to establish the projected climate change environment against which the design is evaluated.

   Free Running Buildings
   - Time period: 2050s
   - Emissions scenario: Medium (A1B)
   Mechanically Ventilated or Mixed Mode Buildings
   - Time period: 2030s
   - Emissions scenario: Medium (A1B).

   The above weather files represent the minimum requirements to perform thermal modelling under a climate change scenario and subsequently demonstrate compliance. Where design teams feel that added consideration of building occupant risk/sensitivity to overheating is necessary, weather files can be used that exceed the minimum requirements outlined above. The time periods indicated above have been selected to represent the building services life cycle likely to be present in each building services strategy type. A shorter time period is chosen for mechanically ventilated/mixed mode building types due to consideration of mechanical servicing equipment life span (before major upgrade or replacement is required), and to avoid over-specification of plant which could lead to inefficient operation.

7. Where thermal comfort criteria are not met for the projected climate change environment, provide updated specifications, drawings and calculations demonstrating how the building has been adapted, or designed to be easily adapted in future using passive design solutions in order to subsequently meet the requirements under criterion 6.

8. For air conditioned buildings, the PMV (predicted mean vote) and PPD (predicted percentage of dissatisfied) indices based on the above modelling will be reported via the BREEAM assessment scoring and reporting tool.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Hea05 Acoustic Performance **C1: (for Education, Healthcare, Office and Law Courts building types)** RIBA Stage 4(E-F): Recommended action		Not targeted	1	0	0	0
		Not targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 Hann Tucker were unavailable, and it is unclear currently whether this credit is achievable.

No further action required at Design Stage

Hea06 Safety and Security **C1-10: Safe Access** RIBA Stage 3(D): Recommended action		Not targeted	1	0	0	0
		Not targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 AS confirmed this credit would not be achievable due to crossing delivery/parking routes.

No further action required at Design Stage

	Action By	Credit Status	AVL	ACH	CTS	TBC
Hea06 Safety and Security **C11-13: Security of Site and Building** RIBA Stage 2(C): Crime Impact Assessment	Architect	Targeted	1	0	1	0
RIBA Stage 4(E-F): Recommended action		Targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 DdS confirmed that an ALO/DOCO would be consulted.

Evidence/Action Required

11. Provide written confirmation that a suitably qualified security specialist (SQSS) will be appointed to conduct an evidence-based Security Needs Assessment (SNA) during or prior to Concept Design (RIBA Stage 2 or equivalent).

    An individual achieving any of the following can be considered to be 'suitably qualified' for the purposes of compliance with BREEAM:

    1. Crime Prevention Design Advisors (CPDA) or Architectural Liaison Officers (ALO), Counter Terrorism Security Advisor (CTSA); Design Out Crime Officer (DOCO); or
    2. A specialist registered with a BREEAM-recognised third party accreditation scheme for security specialists.
    3. A practising security consultant that meets the following requirements:
    a. Minimum of three years relevant experience within the last five years. This experience must clearly demonstrate a practical understanding of factors affecting security in relation to construction and the built environment, relevant to the type and scale of the project being undertaken.

    b. Hold a suitable qualification relevant to security.
    c. Maintains (full) membership to a relevant professional body or accreditation scheme that meets the following:
    i. Has a professional code of conduct, to which members must adhere; and
    ii. Ongoing membership is subject to peer review.

12. Provide a copy of the recommendations or solutions set out by the suitably qualified security specialist (SQSS). These recommendations or solutions must aim to ensure that the design of buildings, public and private car parks and public or amenity space are planned, designed and specified to address the issues identified in the preceding Security Needs Assessment (SNA).

    The Security Needs Assessment (SNA) is the project and site specific assessment of security needs, and must include (where applicable):
    1. A visual audit of the site and surroundings, identifying environmental cues and features pertinent to the security of the proposed development.
    2. Formal consultation with relevant stakeholders, including the local SQSS, in order to obtain a summary of crime and disorder issues in the immediate vicinity of the proposed development.
    3. Identify risks specific to the proposed, likely or potential use of the building(s).
    4. Identify risks specific to the proposed, likely or potential user groups of the building(s).
    5. Identify any detrimental effects the development may have on the existing community. The purpose of the assessment is to inform stakeholder decision-making and allow the identification and evaluation of security recommendations and solutions.

13. Provide drawings to confirm that the recommendations or solutions proposed by the suitably qualified security specialist (SQSS) are implemented. Any deviation from those recommendations or solutions will need to be justified, documented and agreed in advance with a suitably qualified security specialist.

	Action By	Credit Status	AVL	ACH	CTS	TBC
ENERGY 0.71% weighting per credit			**21**	**0**	**13**	**0**

Ene01 Reduction of Energy Use and Carbon Emissions

Minimum standards for this credit with the currently targeted Excellent ≥ 70% BREEAM rating:

Five credits

Ene01 Reduction of Energy Use and Carbon Emissions **C1: Energy Performance** RIBA Stage 4(E-F): Recommended action	M&E	Targeted	12	0	5	0
		Targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 ZR and CC discussed the number of credits to target, which has been set at the minimum required for a BREEAM Excellent rating. As soon as a Part L report has been produced, this should be updated.

Evidence/Action Required

1. To calculate the Energy Performance Ratio (EPRNC), provide the following:

   A copy of the Building Regulations "As Designed" Output Document, i.e. BRUKL Output Document (SBEM) from the approved software from an Accredited Energy Assessor to confirm the following figures:

   a. The building's operational energy demand;
   b. The building's primary energy consumption;
   c. The total resulting CO2 emissions;
   d. Provide the following performance data by modelling the building's specified/designed regulated fixed building services and fabric, as undertaken by an accredited energy assessor using approved building energy calculation software:

   • Building floor area (m2);
   • Notional building energy demand (MJ/m2);
   • Actual building energy demand (MJ/m2);
   • Notional building energy consumption (kWh/m2);
   • Actual building energy consumption (kWh/m2);
   • Target Emission Rate (kgCO2/m2);
   • Building Emission Rate (kgCO2/m2).

   Table - 25: Ene 01 EPRNC benchmark scale

BREEAM Credits	EPRNC	Rating	Minimum Requirements
1	0.075	Pass Good Very Good	Requires a performance improvement progressively better than the relevant national Building Regulations compliant standard.
2	0.15		
3	0.225		
4	0.3		
5	0.375	Excellent	Requires 5 credits to be achieved (equivalent to an EPR of at least 0.375).
6	0.45		
7	0.525		
8	0.6	Outstanding	Requires 8 credits to be achieved (equivalent to an EPR of at least 0.6).
9	0.675		
10	0.75		
11	0.825		
12	0.90 AND zero net regulated CO_2 emissions		

	Action By	Credit Status	AVL	ACH	CTS	TBC
Ene01 Reduction of Energy Use and Carbon Emissions **C2-3: Exemplary Level Criteria - Up to four credits - Zero regulated carbon** RIBA Stage 4(E-F): Recommended action		Not targeted	4	0	0	0
		Not targeted				

Assessor's Notes
8/6/18 - CC - These credits are unachievable where 12 credits have not been achieved on ENE 01 C1.

No further action required at Design Stage

Ene01 Reduction of Energy Use and Carbon Emissions **C4: Exemplary Level Criteria - Five credits - Carbon negative** RIBA Stage 4(E-F): Recommended action		Not targeted	5	0	0	0
		Not targeted				

Assessor's Notes
8/6/18 - CC - These credits are unachievable where 12 credits have not been achieved on ENE 01 C1.

No further action required at Design Stage

	Action By	Credit Status	AVL	ACH	CTS	TBC
Ene02 Sub-Metering of Major Energy Consuming Systems Minimum standards for this credit with the currently targeted Excellent ≥ 70% BREEAM rating: One credit (First sub-metering credit)						
Ene02 Energy Monitoring **C1-4: Sub-Metering of Major Energy Consuming Systems** RIBA Stage 4(E-F): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 ZR confirmed this credit would be achievable.

Evidence/Action Required

1. Provide specification clauses and design drawings confirming that the energy metering systems are installed with pulsed outputs that enable at least 90% of the estimated annual energy consumption of each fuel to be assigned to the various end-use categories of energy consuming systems as per the guidance in CIBSE TM39 Building energy metering (see Methodology in the manual).

   Energy Consuming Systems are systems that consume energy to perform the following functions within a building:

   a. Space heating

   b. Domestic hot water heating

   c. Humidification*

   d. Cooling*

   e. Ventilation i.e. fans (major)*

   f. Pumps

   g. Lighting

   h. Small power

   i. Renewable or low carbon systems (separately)

   j. Controls

   k. Other major energy-consuming systems/plant, where appropriate. Depending on the building type, this might include for example: plant used for swimming or hydrotherapy pools; other sports and leisure facilities; kitchen plant/catering equipment; cold storage plan;, laboratory plant; sterile services equipment; transportation systems (e.g. lifts and escalators); drama studios and theatres with large lighting rigs; telecommunications; dedicated computer room or suite; dealing rooms; covered car parks; ovens/furnaces; and floodlighting. See also CIBSE TM39: Building energy metering for further information.

2. The energy consuming systems in buildings with a total useful floor area greater than 1,000m2 must be metered using an appropriate energy monitoring and management system.

3. Provide specification clauses and design drawings confirming that the systems in smaller buildings are metered either with an energy monitoring and management system or with separate accessible energy sub-meters with pulsed or other open protocol communication outputs, to enable future connection to an energy monitoring and management system (see Relevant definitions).

4. Provide written confirmation that the end energy consuming uses are identifiable to the building users, for example through labelling or data outputs.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Ene02 Energy Monitoring **C5: Sub-Metering of High Energy Load and Tenancy Areas** RIBA Stage 4(E-F): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 ZR confirmed this credit would be achievable with tenant areas separately sub metered.

Evidence/Action Required

5. Provide specifications and design drawings confirming that 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.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Ene03 External Lighting **C1-3: One Credit** RIBA Stage 4(E-F): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 ZR confirmed this credit would be achievable and included in specifications.

Evidence/Action Required

Provide specification clauses and lighting drawings which confirm:

1. The building has been designed to operate without the need for external lighting (which includes on the building, signs and at entrances).

   OR alternatively, where the building does have external lighting, one credit can be awarded as follows:

2. The average initial luminous efficacy of the external light fittings within the construction zone is not less than 60 luminaire lumens per circuit Watt.

3. All external light fittings are automatically controlled for prevention of operation during daylight hours and presence detection in areas of intermittent pedestrian traffic.

   An automatic external lighting control system that prevents operation during daylight hours through either time switch or daylight sensor (a manually switched lighting circuit with daylight sensor or time switch override is also acceptable) in addition to providing presence detection in areas of intermittent traffic.
   Note: for external lighting not fitted with presence detectors, time switches must provide automatic switch off of lighting after a specified curfew hour - except in cases where there is a specific requirement for lighting to be left on all night.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Ene04 Low Carbon Design **C1-3: Passive Design Analysis** RIBA Stage 2(C): Passive Design Analysis RIBA Stage 4(E-F): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 ZR confirmed this credit would be achievable and included in the planning documentation.

Evidence/Action Required

1. The first credit within issue Hea 04 Thermal comfort has been achieved to demonstrate the building design can deliver appropriate thermal comfort levels in occupied spaces.
2. Provide an analysis of the proposed building design/development by Concept Design stage (RIBA Stage 2 or equivalent) to identify opportunities for the implementation of passive design solutions that reduce demands for energy consuming building services. As a minimum, the passive design analysis should cover:

    1. Site location
    2. Site weather
    3. Microclimate
    4. Building layout
    5. Building orientation
    6. Building form
    7. Building fabric
    8. Thermal mass or other fabric thermal storage
    9. Building occupancy type
    10. Daylighting strategy
    11. Ventilation strategy
    12. Adaptation to climate change.
3. The building must use passive design measures to reduce the total heating, cooling, mechanical ventilation and lighting loads and energy consumption in line with the findings of the passive design analysis and the analysis demonstrates a meaningful reduction in the total energy demand as a result. The installation should contribute at least 5% of overall building energy demand and/or CO2 emissions.

Ene04 Low Carbon Design **C4-6: Free Cooling** RIBA Stage 2(C): Passive Design Analysis RIBA Stage 4(E-F): Recommended action		Not targeted	1	0	0	0
		Not targeted				

Assessor's Notes
8/6/18 - CC - This credit is dependent on a natural ventilation strategy being moved forwards. As it is currently unclear whether this is possible, it has been left as TBC.
16/08/19 SM: This credit has been changed to 'Not targeted' as it is restrictive for future tenants.

No further action required at Design Stage

	Action By	Credit Status	AVL	ACH	CTS	TBC
Ene04 Low Carbon Design **C7-8: Low Zero Carbon (LZC) Feasibility Study** RIBA Stage 2(C): Feasibility Study	M&E	Targeted	1	0	1	0
RIBA Stage 4(E-F): Recommended action		Targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 ZR confirmed this credit would be achievable and included in the planning documentation.

Evidence/Action Required

7. Provide a copy of a BREEAM compliant LZC feasibility study carried out by an energy specialist (Planning reports are generally not compliant). The feasibility study must establish the most appropriate recognised local (onsite or near-site) low or zero carbon (LZC) energy source(s) for the building/development, and be carried out by the completion of the Concept Design stage (RIBA Stage 2 or equivalent). The LZC study should cover as a minimum:
   1. Energy generated from LZC energy source per year
   2. Carbon dioxide savings from LZC energy source per year
   3. Life cycle cost of the potential specification, accounting for payback
   4. Local planning criteria, including land use and noise
   5. Feasibility of exporting heat/electricity from the system
   6. Any available grants
   7. All technologies appropriate to the site and energy demand of the development.
   8. Reasons for excluding other technologies
   9. Where appropriate to the building type, connecting the proposed building to an existing local community CHP system or source of waste heat or power OR specifying a building/site CHP system or source of waste heat or power with the potential to export excess heat or power via a local community energy scheme.

8. A local LZC technology/technologies must be specified and installed in the building/development in line with the recommendations of this feasibility study and this method of supply results in a meaningful reduction in regulated carbon dioxide (CO2) emissions. The installation should contribute at least 5% of overall building energy demand and/or CO2 emissions.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Ene06 Energy Efficient Transportation Systems **C1: Energy Consumption** RIBA Stage 4(E-F): Recommended action	Lift Engineer	Targeted	2	0	2	0
	M&E	Targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC stated that if a major lift manufacturer (Kone/Orona etc) is used, they will produce the compliant report for this issue. ZR agreed this as achievable.

Evidence/Action Required

1. Where lifts, escalators and/or moving walks (transportation types) are specified, provide design drawings showing the lift location/s in the building and provide a copy of the professional report/transportation study and calculations confirming:

   a. An analysis of the transportation demand and usage patterns for the building must be carried out to determine the optimum number and size of lifts, escalators and/or moving walks.

   b. The energy consumption has been estimated in accordance with BS EN ISO 25745 Energy performance of lifts, escalators and moving walks, Part 2 : Energy calculation and classification for lifts (elevators) and/or Part 3 - Energy calculation and classification for escalators and moving walks, for one of the following:

   i) At least two types of system (for each transportation type required); OR

   ii) An arrangement of systems (e.g. for lifts, hydraulic, traction, machine room-less lift (MRL)); OR

   iii) A system strategy which is ‘fit for purpose’.

   c. The use of regenerative drives should be considered, subject to where it produces an energy saving greater than the additional standby energy used to support the drives. Regenerative drives will typically be appropriate for lifts with high travel and high intensity use.

   d. The transportation system with the lowest energy consumption is specified.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Ene06 Energy Efficient Transportation Systems **C2-6: Energy Efficient Features** RIBA Stage 4(E-F): Recommended action	Lift Engineer	Targeted	1	0	1	0
	M&E	Targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC stated that if a major lift manufacturer (Kone/Orona etc) is used, they will produce the compliant report for this issue. ZR agreed this as achievable.

Evidence/Action Required

2. Criterion 1 must be achieved.

   Provide relevant specification clauses and either manufacturers' product details or a formal letter of commitment from the system manufacturer/supplier confirming:

   Lifts

3. For each lift, the following three energy-efficient features must be specified:

   a. The lifts operate in a stand-by condition during off-peak periods. For example the power side of the lift controller and other operating equipment such as lift car lighting, user displays and ventilation fans switch off when the lift has been idle for a prescribed length of time.

   b. The lift car lighting and display lighting provides an average lamp efficacy, (across all fittings in the car) of > 55 lamp lumens/circuit Watt.

   c. The lift uses a drive controller capable of variable speed, variable-voltage, and variable-frequency (VVVF) control of the drive motor.

	Action By	Credit Status	AVL	ACH	CTS	TBC
TRANSPORT 1.11% weighting per credit			**9**	**2**	**8**	**0**
Tra01 Public Transport Accessibility **C1-2: Accessibility Index** **C3: Dedicated Bus Service** RIBA Stage 3(D): Recommended action	Transport Consultant	Achieved	3	2	2	0
		Achieved				

Assessor's Notes
8/6/18 - CC -Sweco have provided sufficient evidence to award these credits at design stage. At post construction stage, a re-assessment of the site's accessibility index (e.g. how many local busses/trains there are) will be required.

No further action required at Design Stage

Tra02 Proximity to Amenities **C1-2: Proximity to Local Amenities** RIBA Stage 3(D): Recommended action	Transport Consultant	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC stated that an intial look on google maps concluded that the site is supported by sufficient facilities.

Evidence/Action Required

1. Provide a marked up scaled plan highlighting the location and distance (in m) of all relevant amenities, as listed in Table - 31 below, from the proposed project/ development.

   AND

   In the case of a large phased development where new amenities will be provided, but at a later stage a commitment has been made to provide transport facilities within the shortest of the following periods, demonstrated either within the General Contract Specification or in the form of a Section 106 Agreement:
   1. The transport facilities will be available for use by the time 25% of all phases have been completed and are ready for occupation. OR
   2. The transport facilities will be available for use within 25% of the total build time for the phase in which the assessed building forms a part, measured from the completion date of that phase.
   The most appropriate rule for the development in question must be used, ensuring that the time building users have to wait before having use of the transport facilities is as short as possible.

   Where the transport facilities will not be available for use within a period of five years from occupation of the building, they cannot be considered for determining compliance with the BREEAM criteria.

2. Where a building type is indicated to have core amenities (Labelled as C in Table - 31) at least two of these must be provided as a part of the total number required. The remaining number of amenities required can be met using any other applicable amenities (including any remaining core amenities).

Action By Credit Status AVL ACH CTS TBC

Table - 31: Credits available for Tra02 for different building types

Criteria	Building Types						
	1	2	3	4	5		6
No. of BREEAM Credits	1	1	1	1	1	1	1
No. of Amenities	3	3	4	4	4	7	2
Proximity (metres)	500	500	500	500	500	1000	500
Appropriate food outlet	C	C	C	C	C	C	✓
Access to cash	C	C	C	C	C	C	✓
Access to an outdoor open space (public or private, provided suitably sized and accessible to building users	✓	✓	✓	C	C	C	✓
Access to a recreation/leisure facility for fitness/sports	C	C	C	✓	✓	✓	✓
Publicly available postal facility	✓	✓	✓	✓	✓	✓	✓
Community facility	✓	✓	✓		✓	✓	✓
Over-the-counter services associated with a pharmacy	✓	✓	✓	✓	✓	✓	✓
Public sector GP surgery or general medical centre			✓		✓	✓	✓
Child care facility or school	✓		✓		✓	✓	✓

Key:
✓ - Amenity relevant to building type
C - Core amenity for building type

Building Types:
Type 1: Offices, Retail, Industrial, Courts
Type 2: Pre-school, Schools, Sixth Form
Type 3: Higher Education and Further Education
Type 4: Healthcare
Type 5: Multi-residential (there are two credits available and each can be awarded independently of the other).
Type 6: Other Building types
This issue is not applicable to prison buildings/developments.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Tra03 Cyclist Facilities **C1-4: Cycle Storage and Cyclist Facilities** RIBA Stage 3(D): Recommended action	Architect	Targeted	2	0	2	0
		Targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 DdS and AS confirmed that cycle storage and facilities would be provided. Clarification on the calculations was requested by DdS.

Evidence/Action Required

1 credit available for the provision of adequate cycle storage

1. Provide design drawings, relevant specification clauses and manufacturers' literature confirming compliant cycle storage spaces that meet the minimum levels set out in Table - 32 are specified.

   Compliant cycle storage spaces are defined as those that meet the following:

   1. Cycles can be secured within spaces in rack(s).They are covered overhead and the cycle racks are set in or fixed to a permanent structure (building or hard-standing). Alternatively the cycle storage may be located in a locked structure fixed to or part of a permanent structure with appropriate surveillance.

   2. The distance between each cycle rack, and cycle racks and other obstructions, e.g. a wall, allows for appropriate access to the cycle storage space, to enable bikes to be easily stored and accessed.

   3. The storage facility or entrance to the facility is in a prominent site location that is viewable/overlooked from either an occupied building or a main access to a building.

   4. The cycle storage facility has adequate lighting, this could be demonstrated with the lighting criteria defined in BREEAM issue Hea 01 Visual comfort. The lighting must be controlled to avoid out-of-hours use and operation during daylight hours, where there is sufficient daylight in or around the facility.

1 credit available for the provision of adequate cyclist facilities

2. Criterion 1 must be achieved.

3. Provide design drawings, relevant specification clauses and manufacturers' literature confirming that at least two of the following types of compliant cyclist facilities must be provided for all staff and pupils (where appropriate):

   a. Showers

   b. Changing facilities

   c. Lockers

   d. Drying spaces

   Compliant showers are defined as those that meet the following:
   1. Provision of one shower for every 10 cycle storage spaces, subject to a minimum provision of one shower.
   2. Any development providing eight showers or more will comply regardless of the number of cycle storage spaces provided.

   3. Both male and female users must be catered for i.e. either separate showers within shared gender-specific facilities (required provision split 50-50) or single shower cubicles and changing space for mixed use.
   4. The showers do not need to be dedicated to cyclists and can be those shared with other users/uses.

Action By Credit Status AVL ACH CTS TBC

Compliant changing facilities are defined as those that meet the following:
1. Appropriately sized for the likely/required number of users. The assessor should use their judgement to determine whether the changing area is appropriately sized given the number of cycle storage spaces or
2. Changing areas must include adequate space and facilities to hang or store clothing and equipment while changing or showering, e.g. bench seat and/or hooks.

3. Toilet/shower cubicles cannot be counted as changing facilities.

Compliant lockers are defined as those that meet the following:
1. The number of lockers is at least equal to the number of cycle spaces required.
2. Lockers are either in or adjacent to compliant changing rooms, where provided.
3. The lockers are sized appropriately for the storage of a cyclist's equipment.

A compliant drying space is defined as a space that is specifically designed and designated with adequate heating/ventilation for the drying of wet clothes. A plant room for example is not a compliant drying space.

Cycle storage and cyclist facilities (sheltered housing, care homes and supported living facilities and prison building types only)

4. Where criteria 1 to 3 have been met for cycle space and cycle facilities requirements.

Table - 32: Cycle storage criteria for each building type

Building Type	No. Spaces per Unit of Measure	Unit of Measure	Notes
Commercial			
Offices, Industrial	1	20 staff	Please note, this is half the requirement stated in the BREEAM manual as the site has a high accessibility level (see relevant compliance note).
Note: Where the number of building users (based upon the unit of measure) exceeds 200 the sliding scale of compliance can be used to identify the appropriate number of cycle spaces required (see Methodology section).			

* See definitions in the BREEAM issue Tra01 Public transport accessibility for classification of transport type 1, 2 and 3.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Tra04 Maximum Car Parking Capacity **C1: Car Parking Capacity** RIBA Stage 3(D): Recommended action	Architect	Targeted	2	0	2	0
		Targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 DdS and AS confirmed that there is parking provision, however a calculation of building users using the BRE methodology would be required.
16/08/19 SM: There are 20 proposed car parking spaces and 2314m2 of commercial area (building users = 0.111x2314m2 = 257 building users). 257/5 = 52 spaces maximum. Therefore with only 20 spaces (disabled spaces are excluded), this credit is targeted.

Evidence/Action Required

1. 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.

   a. Provide drawings, relevant specification clauses or contract requirements confirming the number and type of parking spaces provided for the building

   AND

   b. Provide the relevant documentation or correspondence from the design team or Client confirming the number of building users.

   Where relevant: Provide confirmation of the building's Accessibility Index as per Tra 01.

   Table-33: Credits available in Tra04 Maximum car parking capacity for different building types

Building Accessibility Index	Criteria Building's Accessibility Index			No. of credits
	<4	≥4 - <8	≥8	
Building Type	Max. parking capacity 1 space per x building users, where x is:			
Office, industrial, student residences and key worker accommodation	3	4	5	1
	4	5	6	2

	Action By	Credit Status	AVL	ACH	CTS	TBC
Tra05 Travel Plan **C1-4: One Credit** RIBA Stage 3(D): Recommended action	Transport Consultant	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 AS confirmed that a travel plan will be produced.

Evidence/Action Required

1. Provide a copy of a compliant travel plan developed as part of the feasibility and design stages.

   A travel plan should be a strategy for managing all travel and transport within an organisation, principally to increase choice and reduce reliance on the car by seeking to improve access to a site or development by sustainable modes of transport. A travel plan contains both physical and behavioural measures to increase travel choices and reduce reliance on single-occupancy car travel.

2. Provide a site specific travel assessment/statement undertaken to ensure the travel plan is structured to meet the needs of the particular site and covers the following (as a minimum):

   a. Where relevant, existing travel patterns and opinions of existing building or site users towards cycling and walking so that constraints and opportunities can be identified.

   b. Travel patterns and transport impact of future building users.

   c. Current local environment for walkers and cyclists (accounting for visitors who may be accompanied by young children)

   d. Disabled access (accounting for varying levels of disability and visual impairment)

   e. Public transport links serving the site

   f. Current facilities for cyclists

3. The travel plan must include a package of measures to encourage the use of sustainable modes of transport and movement of people and goods during the buildings operation and use. Provide design drawings demonstrating examples of design measures implemented, these may include:
   - Providing parking priority spaces for car sharers
   - Providing dedicated and convenient cycle storage and changing facilities
   - Lighting, landscaping and shelter to make pedestrian and public transport waiting areas pleasant
   - Negotiating improved bus services, i.e. altering bus routes or offering discounts
   - Restricting and/or charging for car parking
   - Criteria for lobby areas where information about public transport or car sharing can be made available.
   - Pedestrian and cycle friendly (for all types of user regardless of the level of mobility or visual impairment) via the provision of cycle lanes, safe crossing points, direct routes, appropriate tactile surfaces, well-lit and signposted to other amenities, public transport nodes and adjoining off-site pedestrian and cycle routes
   - Providing suitable taxi drop-off/waiting areas
   - Ensuring that rural buildings are located with appropriate transport access to ensure that they adequately serve the local community (where procured to do so e.g. community centre).

4. If the occupier is known, they must be involved in the development of the travel plan and they must confirm in the form of a formal letter of commitment or, in the case of a speculative development, the developer must confirm that the travel plan will be implemented post construction and supported by the buildings management in operation.

	Action By	Credit Status	AVL	ACH	CTS	TBC
WATER 0.83% weighting per credit			**9**	**0**	**7**	**0**

Wat01 Water Consumption

Minimum standards for this credit with the currently targeted Excellent ≥ 70% BREEAM rating:

One credit

Wat01 Water Consumption **C1-5: Up to Five Credits (Building Dependant)** RIBA Stage 3(D): Recommended action	Architect	Targeted	5	0	3	0
	Client	Targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC confirmed that the NHH BREEAM Guide states 3 credits are achievable, and is in agreement with this.

Evidence/Action Required

1. An assessment of the efficiency of the building's domestic water consuming components is undertaken using the BREEAM Wat 01 calculator.
2. The water consumption (litres/person/day) for the assessed building is compared against a baseline performance and BREEAM credits awarded based upon Table - 35.
3. Provide relevant specification clauses, manufacturers' literature and design drawings confirming the efficiency of the following water-consuming components specified in the proposed building/development:
   a. WC's - flush volume in litres;
   b. Urinals - flush volume on litres and flush control;
   c. Taps - flow rate in litres/min, water pressure and temperature (wash hand basins and where specified kitchen taps and waste disposal unit);
   d. Showers - flow rate in litres/min, water pressure and temperature;
   e. Baths - capacity in litres;
   f. Dishwashers - domestic in litres/cycle and commercial sized in litres/rack;
   g. Washing machines - domestic in litres/use and commercial or industrial sized in litres/kg.

   Provide confirmation that where greywater and/or rainwater systems are provided:
4. its yield (l/person/day) is used to off-set non potable water demand from components that would otherwise be supplied using potable water.
5. the systems must be specified and installed in compliance with BS 8525-1:2010 Greywater Systems - Part 1 Code of Practice. Any rainwater systems must be specified and installed in compliance with BS 8515:2009+A1:2013 Rainwater Harvesting Systems - Code of practice.

   Table - 35: BREEAM Credits available for percentage improvement over baseline building water consumption.

% Improvement	No. of BREEAM Credits
12.50%	1
25%	2
40%	3
50%	4
55%	5
65%	Exemplary performance

Note: for some building types an alternative approach to compliance must be used to award credits (for further information please refer to the Methodology section, below, and the BREEAM Wat01 calculator)

	Action By	Credit Status	AVL	ACH	CTS	TBC
Wat02 Water Monitoring Minimum standards for this credit with the currently targeted Excellent ≥ 70% BREEAM rating: Criterion 1 only						
Wat02 Water Monitoring **C1-4: One Credit** RIBA Stage 4(E-F): Recommended action	M&E	Targeted	1	0	1	0
	Client	Targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 ZR confirmed this would be achievable. Any areas of the building consuming 10% or more of the water demand for the building must be separately sub metered.

Evidence/Action Required

1. Provide specification clauses and drawings confirming the specification of a water meter on the mains water supply to each building; this includes instances where water is supplied via a borehole or other private source.

2. Water-consuming plant or building areas, consuming 10% or more of the building's total water demand, must be either fitted with easily accessible sub meters or have water monitoring equipment integral to the plant or area.

3. Each meter (main and sub) must have a pulsed or other open protocol communication output to enable connection to an appropriate utility monitoring and management system, e.g. a building management system (BMS), for the monitoring of water consumption. Examples also include automatic meter reading systems (AMR) and building energy management systems (BEMS). Automatic monitoring and targeting (aM&T) is an example of a management tool that includes automatic meter reading and data management.

4. 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.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Wat03 Water Leak Detection **C1: Leak Detection System** RIBA Stage 3(D): Recommended action	M&E	Targeted	1	0	1	0
	Client	Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 ZR confirmed this would be achievable.

Evidence/Action Required

1. Provide specification clauses, drawings and manufacturers' literature confirming the specification of a leak detection 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 specified. The leak detection system must be:

   a. A permanent automated water leak detection system that alerts the building occupants to the leak OR an in-built automated diagnostic procedure for detecting leaks is installed.

   b. Activated when the flow of water passing through the water meter/data logger is at a flow rate above a pre-set maximum for a pre-set period of time.

   c. Able to identify different flow and therefore leakage rates, e.g. continuous, high and/or low level, over set time periods.

   d. Programmable to suit the owner/occupiers' water consumption criteria.

   e. Where applicable, designed to avoid false alarms caused by normal operation of large water-consuming plant such as chillers.

Wat03 Water Leak Detection **C2: Flow Control Devices** RIBA Stage 3(D): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 ZR confirmed this would be achievable.

Evidence/Action Required

2. Provide relevant specification clauses and design drawings confirming the specification of flow control devices that regulate the supply of water to each WC area/facility (WCs, wash hand basin taps and urinals) according to demand are installed (and therefore minimise water leaks and wastage from sanitary fittings).

   The following could be considered as types of flow control devices:
   - A time controller, i.e. an automatic time switch device to switch off the water supply after a predetermined interval.

   - a programmed time controller, i.e. an automatic time switch device to switch water on and/or off at predetermined times.
   - a volume controller, i.e. an automatic control device to turn off the water supply once the maximum pre-set volume is reached.
   - a presence detector and controller, i.e. an automatic device detecting occupancy or movement in an area to switch water on and turn it off when the presence is removed.
   - a central control unit, i.e. a dedicated computer-based control unit for an overall managed water control system, utilising some or all of the types of control elements listed above.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Wat04 Water Efficient Equipment **C1-2: One Credit** RIBA Stage 3(D): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 DdS confirmed this would be achievable, with either timed irrigation or no irrigation installed.

Evidence/Action Required

1. The design team has identified all unregulated water demands that could be realistically mitigated or reduced. Unregulated water is water not used for domestic purposes and is therefore not regulated by Building Regulations or other relevant legislation. This includes, but is not limited to, equipment used for irrigation and, for the relevant building types, vehicle wash plant/equipment.

2. Provide specification and/or design drawings to confirm that 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.

   The design team needs to demonstrate to the assessor that they have identified key areas of water consumption in the building and that a reduction in unregulated water consumption has been achieved using existing 'tried and tested' solutions or new innovative solutions relevant to the building and its functional requirements. The following are some examples of solutions deemed to satisfy compliance for a number of different building types or functions (where the unregulated water demand for that function is one of/the significant contributor in the building):

   1. Drip-fed subsurface irrigation incorporating soil moisture sensors. The irrigation control should be zoned to permit variable irrigation to different planting assemblages.
   2. Reclaimed/recovered water from a rainwater collection or waste water recovery system, with appropriate storage, i.e. greywater collection from building functions or processes that use potable water, e.g. vehicle wash, training water in fire stations, sanitary facilities, irrigation etc. This should take into account the Government Buying Standards where appropriate to the building type.
   3. External landscaping and planting that relies solely on precipitation, during all seasons of the year.
   4. All planting specified is restricted to contextually appropriate species that thrive without irrigation and will continue to do so in those conditions likely as a result of climate change, i.e. typically warmer and drier conditions.

	Action By	Credit Status	AVL	ACH	CTS	TBC
MATERIALS 1.12% weighting per credit			**13**	**0**	**7**	**0**
Mat 01 Life Cycle Impacts **C1-3: Up to 6 Credits (Building Dependant)** RIBA Stage 3(D): Recommended action	Architect	Targeted	5	0	3	0
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 DdS provided a description of the likely building materials to be used, and CC estimated this would likely achieve 3 or 4 credits. CC requested further details as soon as they are available.

Evidence/Action Required

1. BREEAM awards credits on the basis of the building's quantified environmental life cycle impact through assessment of the main building elements, as set out in Table - 38 below. Specify A or A+ Green Guide rated materials for all elements listed below to ensure the maximum number of credits are achieved for this item.

   Using the MAT 01 evidence template (design team to request this from the assessor) provide full material specification breakdowns and their area in m2 for each type of above elements applicable.

   Provide copies of section and design drawings of each element detailing each layer of the materials within.

Table - 38: Elements assessed by building type

Building Type	Element Type Assessed					
	External Walls	Windows	Roof	Upper Floor Slab	Internal Walls	Floor Finishes / Coverings
Office	✓	✓	✓	✓	-	✓

Mat 01 Life Cycle Impacts **C4-8: Exemplary Level Criteria** RIBA Stage 3(D): Recommended action		Not targeted	3	0	0	0
		Not targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC noted that the first of these 3 credits requires all 5 C-1-3 credits to be achieved. The second and third require full LCA with BRE licensed software which would likely be a cost prohibitive exercise.

No further action required at Design Stage

	Action By	Credit Status	AVL	ACH	CTS	TBC
Mat 02 Hard Landscaping and Boundary Protection **C1: One Credit** RIBA Stage 3(D): Recommended action	Architect	Targeted	1	0	1	0
		Targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 DdS provided a description of the likely landscaping materials, CC confirmed it is likely recycled sub bases should be used.

Evidence/Action Required

1. At least 80% of all external hard landscaping and boundary protection (by area) must achieve an A or A+ Green Guide rating.

   Specify A or A+ Green Guide rated materials for all external hard surfaces and boundary protection. Provide copies of section drawings with the following:
   • A detailed description of each applicable element and its constituent materials;
   • Locations and area (m2) of each applicable element;
   • Green Guide element numbers for the applicable materials.

1. Green Guide specifications, element numbers and ratings can be reviewed at: www.thegreenguide.org.uk.

   For the purpose of assessment, hard landscaping includes (but is not limited to) parking areas (including manoeuvring areas, lanes, roads within the parking area), pedestrian walkways, paths, patios. The definition excludes basement parking, access or approach roads and designated vehicle manoeuvring areas, balconies, roof terraces, specialist sports areas (running tracks, netball areas etc.) and retaining walls.

	Action By	Credit Status	AVL ACH CTS TBC
Mat03 Responsible Sourcing of Materials Minimum standards for this credit with the currently targeted Excellent ≥ 70% BREEAM rating: Criterion 1 only			
Mat03 Responsible Sourcing of Materials **C1: Pre-requisite** RIBA Stage 3(D): Recommended action	Principal Contractor	Targeted	Pre-requisite to achieve credit
	BREEAM AP	Targeted	

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC confirmed that this is standard practice for contractors and should be included as a requirement in the tender pack/contract.

Evidence/Action Required

1. Provide written confirmation that all timber used on the project is 'Legally harvested and traded timber'.

   This must come from either the supplier – confirming their timber is sourced in compliance with the UK Government's Timber Procurement Policy for legal and sustainable sourcing
   OR
   Copies of the actual chain of custody evidence in accordance with CPET requirements
   OR
   A specification or letter of intent from the design team confirming that all timber will be procured in accordance with the policy.

   Note:
   a. It is a minimum requirement for achieving a certified BREEAM rating certification (for any rating level) that compliance with criterion 1 is confirmed.

   b. For other materials there are no pre-requisite requirements at this stage.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Mat03 Responsible Sourcing of Materials **C2: Sustainable Procurement Plan** RIBA Stage 3(D): Recommended action	Principal Contractor	Targeted	1	0	1	0
	BREEAM AP	Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC confirmed that this is good practice for contractors and should be included as a requirement in the tender pack/contract.

Evidence/Action Required

2. The principle contractor must provide a sustainable procurement plan setting out the framework for responsible sourcing of materials. The aim being to guide procurement throughout the project.

   The plan may be prepared and adopted at an organisational level or be site/project specific and for the purposes of BREEAM compliance, will cover the following as a minimum:

   1. Risks and opportunities are identified against a broad range of social, environmental and economic issues. BS 8902:2009 Responsible sourcing sector certification schemes for construction products-Specification can be used as a guide to identify these issues.

   2. Aims, objectives and targets to guide sustainable procurement activities.

   3. Strategic assessment of sustainably sourced materials available locally and nationally. There should be a policy to procure materials locally where possible.

   4. Procedures are in place to check and verify that the sustainable procurement plan is being implemented/adhered to on individual projects. These could include setting out measurement criteria, methodology and performance indicators to assess progress and demonstrate success

Mat03 Responsible Sourcing of Materials **C3: Responsible Sourcing of Materials (RSM)** RIBA Stage 3(D): Recommended action		Not targeted	3	0	0	0
		Not targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC confirmed that these credits are hard work and risky, in addition the NHH BREEAM Guide does not recommend that they are targeted.

No further action required at Design Stage

	Action By	Credit Status	AVL	ACH	CTS	TBC
Mat04 Insulation **C1-2: Embodied impact** RIBA Stage 3(D): Recommended action	Architect	Targeted	1	0	1	0
	M&E	Targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC confirmed that this credit is readily achievable using rockwool type insulation.

Evidence/Action Required

1. Provide a full list and manufacturers' literature for any new insulation specified for use within the following building elements:
   a. External walls
   b. Ground floor
   c. Roof
   d. Building services

   For each specified insulation material in the building fabric, provide manufacturers' literature or written confirmation direct from the manufacturer confirming all of the following:
   • Area of insulation (m2);
   • Thickness (mm);
   • Density (kg/m3);
   • Thermal conductivity (W/mK).

   For each specified insulation material in the building services, provide manufacturers' literature or written confirmation direct from the manufacturer confirming all of the following:
   • Volume of insulation (m3);
   • Density (kg/m3);
   • Thermal conductivity (W/mK).

   Please complete the MAT 04 evidence template.

   Provide marked up drawings showing the location of each insulation type.

2. The Insulation index for the building fabric and services insulation must be the same as or greater than 2.5. See the Methodology section in the manual for a description of calculating the Insulation Index.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Mat05 Designing for Durability and Resilience **C1:Protecting vulnerable parts of the building from damage** **C2: Protecting exposed parts of the building from material degradation** RIBA Stage 3(D): Recommended action	Architect	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 DdS confirmed this would be achievable, and requested further templates/support from Sweco to achieve it.

Evidence/Action Required

Protecting vulnerable parts of the building from damage

1. Provide drawings, specifications, written confirmation and manufacturers' literature (where applicable) 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:

   a. Protection from the effects of high pedestrian traffic in main entrances, public areas and thoroughfares (corridors, lifts, stairs, doors etc).

   b. Protection against any internal vehicular/trolley movement within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas.

   c. 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.

   Suitable durability and protection measures to vulnerable parts of the building can include:
   1. Bollards/barriers/raised kerbs to delivery and vehicle drop-off areas
   2. Robust external wall construction, up to 2m high
   3. Corridor walls specified to Severe Duty (SD) as per BS 5234-2 and, for Healthcare buildings, Health Technical Memorandum 56 - Partitions
   4. Protection rails to walls of corridors
   5. Kick plates/impact protection (from trolleys etc) on doors
   6. Hard-wearing and easily washable floor finishes in heavily used circulation areas (i.e. main entrance, corridors, public areas etc)
   7. Designing out the risk without the need for additional materials specification to protect vulnerable areas.

Protecting exposed parts of the building from material degradation:

2. Provide an analysis of the relevant building elements demonstrating that appropriate design and specification measures to limit material degradation due to environmental factors have been incorporated. Design drawings, specifications and manufacturers' literature may also serve as evidence.

   See Table - 50 for list of applicable elements, environmental factors and material degradation effects to consider.

   Methodology

   The following outlines the process to assess criterion 2.
   1. Identify from the list of ‘applicable building elements’ under Table-50 the elements that are appropriate to the building being assessed.
   2. Establish from the ‘environmental factors’ list those factors that are likely to cause material degradation effects in the identified applicable building elements.
   3. Confirm the design and specification measures in place to limit these degradation effects.

Action By	Credit Status	AVL	ACH	CTS	TBC

Table - 50: Applicable building elements, environmental factors and material degradations effects to consider.

Applicable Building Elements, Environmental Factors and Material Degradation Effects
Applicable Building Elements
1. Foundation/substructure/lowest floor/retaining walls
2. External walls
3. Roof/balconies
4. Glazing: windows, skylight
5. External doors
6. Railings/Balusters (where exposed to external environment)
7. Cladding (where exposed to external environment)
8. Staircase/ramps (where exposed to external environment)
9. Hard landscaping
Environmental Factors
1. Environmental agents, including:
a. Solar radiation
b. Temperature variation
c. Water/Moisture
d. Wind
e. Precipitation e.g rain and snow
f. Extreme weather conditions: High wind speeds, flooding, driving rain, snow
2. Biological Agents, including:
a. Vegetation
b. Pests, insects
3. Pollutants, including:
a. Air contaminants
b. Ground contaminants
Material Degradation Effects (includes, but not necessarily limited to the following)
1. Corrosion
2. Dimensional change, e.g. swelling or shrinkage
3. Fading/discolouration
4. Rotting
5. Leaching
6. Blistering
7. Melting
8. Salt crystallisation
9. Abrasion

Mat06 Material Efficiency **C1-2: One Credit**		Not targeted	1	0	0	0
RIBA Stages 1,2,3 and 4: Material Use Review RIBA Stage 3(D): Recommended action		Not targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC confirmed that this credit is high risk due to the volume of evidence required from every RIBA Stage.

No further action required at Design Stage

	Action By	Credit Status	AVL	ACH	CTS	TBC
WASTE 1.06% weighting per credit			**9**	**0**	**7**	**0**
Wst01 Construction Waste Management **C1-3: Construction Resource Efficiency** RIBA Stage 3(D): Recommended action	Principal Contractor	Targeted	3	0	2	0
	BREEAM AP	Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC confirmed that this is good practice for contractors and should be included as a requirement in the tender pack/contract.

Evidence/Action Required

1. Provide a copy of a Resource Management Plan (RMP) detailing the amount of non-hazardous waste related to on-site construction and dedicated off-site manufacture or fabrication (including demolition and excavation waste) generated by the building's design and construction. The project waste arisings should be recorded and include construction, demolition and excavation waste. Note that the performance benchmarks for the award of credits do not include demolition and excavation waste.

   The aim of the RMP is to promote resource efficiency and to prevent illegal waste activities. Resource efficiency includes minimising waste at source and ensuring that Clients, designers and principal contractors assess the use, reuse and recycling of materials and products on and off the site.

   A compliant RMP is one that defines:
   1. A target benchmark for resource efficiency, i.e. m3 of waste per 100m2 or tonnes of waste per 100m2;
   2. Procedures and commitments for minimising non-hazardous waste in line with the target benchmark;
   3. Procedures for minimising hazardous waste;
   4. A waste minimisation target and details of waste minimisation actions to be undertaken;
   5. Procedures for estimating, monitoring, measuring and reporting hazardous and non-hazardous site waste. If waste data is obtained from licensed external waste contractors, the data needs to be reliable and verifiable, e.g. by using data from EA/SEPA/EA Wales/NIEA Waste Return Forms;
   6. Procedures for sorting, reusing and recycling construction waste into defined waste groups, either on-site or through a licensed external contractor;
   7. Procedures for reviewing and updating the plan;
   8. The name or job title of the individual responsible for implementing the above.

2. Where construction waste related to on-site construction and off-site manufacture/fabrication (excluding demolition and excavation waste) meets or is lower than the following benchmarks in Table - 51:

Action By Credit Status AVL ACH CTS TBC

Table - 51: Construction waste resource efficiency benchmarks

BREEAM Credits	Amount of waste generated per 100m^2 (gross internal floor area)	
	m^3	Tonnes
One credit	≤13.3	≤11.1
Two credits	≤7.5	≤6.5
Three credits	≤3.4	≤3.2
Exemplary Level	≤1.6	≤1.9

Note - Volume (m^3) is actual volume of waste (not bulk volume).

3. Where existing buildings on the site will be demolished a pre-demolition audit of any existing buildings, structures or hard surfaces must be completed to determine if, in the case of demolition, refurbishment / reuse is feasible and, if not, to maximise the recovery of material from demolition for subsequent high-grade / value applications. The audit must be referenced in the RMP and cover:

   a. Identification of the key refurbishment/ demolition materials.

   b. Potential applications and any related issues for the reuse and recycling of the key refurbishment and demolition materials in accordance with the waste hierarchy.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Wst01 Construction Waste Management **C4-5: Diversion of Resources from Landfill** RIBA Stage 3(D): Recommended action	Principal Contractor	Targeted	1	0	1	0
	BREEAM AP	Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 CC confirmed that this is good practice for contractors and should be included as a requirement in the tender pack/contract.

Evidence/Action Required

4. Provide a copy of the RMP and calculations confirming that non-hazardous construction (on-site and off-site manufacture/fabrication in a dedicated facility), demolition and excavation waste (where applicable) generated by the project have been diverted from landfill, meeting the requirements set out below via one or more of the following:
   • Reusing the material on site (in-situ or for new applications);
   • Reusing the material on other sites;
   • Salvaging or reclaiming the material for reuse;
   • Returning the material to the supplier via a 'take-back' scheme;
   • Recovery of the material from site by an approved waste management contractor and recycled or sent for energy recovery.

   The amount of waste diverted from landfill must meet the following benchmarks:

   Table - 52:Diversion from landfill benchmarks

BREEAM Credits	Type of Waste	Volume	Tonnage
One Credit	Non demolition	70%	80%
	Demolition	80%	90%
	Excavation	N/A	N/A

5. The RMP must detail how waste materials will be sorted into separate key waste groups see Table - 50 in the BREEAM manual (according to the waste streams generated by the scope of the works) either onsite or offsite through a licensed contractor for recovery.

Wst01 Construction Waste Management **C6-8: Exemplary Level Criteria** RIBA Stage 3(D): Recommended action		Not targeted	1	0	0	0
		Not targeted				

Assessor's Notes
At the pre-assessment meeting this credit was considered unachievable because it is unlikely that the exemplary level requirements will be met.

No further action required at Design Stage

	Action By	Credit Status	AVL	ACH	CTS	TBC
Wst02 Recycled Aggregates **C1-3: One Credit** RIBA Stage 3(D): Recommended action		Not targeted	1	0	0	0
		Not targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting it was considered that this credit would likely be high cost, and TY highlighted it should not be targeted.

No further action required at Design Stage

	Action By	Credit Status	AVL	ACH	CTS	TBC
Wst02 Recycled Aggregates **C4-6: Exemplary Level Criteria** RIBA Stage 3(D): Recommended action		Not targeted	1	0	0	0
		Not targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting it was considered that this credit would likely be high cost, and TY highlighted it should not be targeted.

No further action required at Design Stage

	Action By	Credit Status	AVL	ACH	CTS	TBC
Wst03 Operational Waste Minimum standards for this credit with the currently targeted Excellent ≥ 70% BREEAM rating: One credit						
Wst03 Operational Waste **C1-7: One Credit** RIBA Stage 3(D): Recommended action	Architect	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 DdS and AS confirmed that bin storage area would be provided. They also confirmed there is no expectation for catering waste or any volumes of packaging waste.

Evidence/Action Required

1. Provide marked up drawings and specification clauses confirming that 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

   a. Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams
   b. Accessible to building occupants or facilities operators for the deposit of materials and collections by waste management contractors

   c. Of a capacity appropriate to the building type, size, number of units (if relevant) and predicted volumes of waste that will arise from daily/weekly operational activities and occupancy rates.

   Minimum storage space provision:
   1. At least 2m2 per 1000m2 of net floor area for buildings < 5000m2.
   2. A minimum of 10m2 for buildings ≥5000m2
   3. An additional 2m2 per 1000m2 of net floor area where catering is provided (with an additional minimum of 10m2 for buildings ≥ 5000m2).

2. Provide written confirmation, drawings and specification clauses confirming that there will be no clarge amounts of packaging or compostable waste generated by the building's use and operation.

Wst04 Speculative Floor and Ceiling Finishes **C1-2 One Credit - Office building types only** RIBA Stage 4(E-F): Recommended action	Architect	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 DdS confirmed that an allowance had been made for a raised access floor which has an integrated wood finish. Further confirmation has been requested via email of this system to ensure that the timber finish cannot be removed and discarded by tenants.

Evidence/Action Required

1. For tenanted areas (where the future occupant is not known), provide design drawings and/or relevant specification or contract clauses confirming, prior to full fit-out works, carpets, other floor finishes and ceiling finishes have been installed in a show area only.

   For an office a show area could be either a floor plate or an individual office. However, to award this credit it must be less than 25% of the net lettable floor area.

2. In a building developed for a specific occupant, provide a copy of formal agreement from the Client confirming that the occupant has selected (or agreed to) the specified floor and ceiling finishes.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Wst05 Adaptation to Climate Change **C1: Structural and Fabric Resilience** RIBA Stage 1(A-B): Climate Adaptation Strategy Appraisal RIBA Stage 3(D): Recommended action	Architect	Targeted	1	0	1	0
	Structural Engineer	Targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 DdS confirmed that in collaboration with the structural engineers would untake this study. CC confirmed she would provided a detailed template to assist.

Evidence/Action Required

1. Conduct a climate change adaptation strategy appraisal for structural and fabric resilience by the end of Concept Design (RIBA Stage 2 or equivalent), in accordance with the following approach:

   a. Carry out a systematic (structural and fabric resilience specific) risk assessment to identify and evaluate the impact on the building over its projected life cycle from expected extreme weather conditions arising from climate change and, where feasible, mitigate against these impacts. The assessment should cover the following stages:

   i) Hazard Identification
   ii) Hazard assessment
   iii) Risk estimation
   iv) Risk Evaluation
   v) Risk Management

   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/hazards include:
   1. Solar radiation
   2. Temperature variation
   3. Water/moisture
   4. Wind
   5. Precipitation e.g rain and snow
   6. Extreme weather conditions: high wind speeds, flooding, driving rain, snow; rainwater ponding
   7. Subsidence/ground movement.

   Methodology:

   Hazard identification
   1. Review the evidence/information from relevant bodies to identify and understand the expected impacts of increased extreme weather events climate change for on the building.
   2. Identify likely hazards (see Relevant definitions in the manual).

   Hazard assessment
   1. Identify the scale of the hazards identified.
   Risk estimation
   1. Identify the risk presented by these hazards to the building and the likely impact of the hazards taking into account the following aspects as a minimum:
   a. Structural stability
   b. Structural robustness
   c. Weather proofing and detailing
   d. Material durability
   e. Health and safety of building occupants and others
   f. Impacts on building contents and business continuity.

   Risk evaluation
   1. Evaluate the potential impact of these risks on the building.
   2. Determine the tolerable risk threshold.
   3. Check the sensitivity of the risk assessment.
   4. Identify areas where the risks are unacceptable in health and safety, life cycle assessment and financial terms.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Wst06 Functional Adaptability **C1-2: One Credit** RIBA Stage 1(A-B): Functional Adaptation Strategy Appraisal RIBA Stage 3(D): Recommended action	Architect	Targeted	1	0	1	0
	M&E	Targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 DdS confirmed that in collaboration with the M&E engineers would untake this study. CC confirmed she would provided a template to assist.

Evidence/Action Required

1. Provide a copy of the functional adaptation strategy confirming that a building-specific functional adaptation strategy study has been undertaken by Concept Design (RIBA Stage 2 or equivalent), which includes recommendations for measures to be incorporated to facilitate future adaptation.

   This should consider:
   1. The potential for major refurbishment, including replacing the façade.
   2. Design aspects that facilitate the replacement of all major plant within the life of the building e.g. panels in floors/walls that can be removed without affecting the structure, providing lifting beams and hoists.
   3. The degree of adaptability of the internal environment to accommodate changes in working practices.
   4. The degree of adaptability of the internal physical space and external shell to accommodate change in-use.
   5. The extent of accessibility to local services, such as local power, data infrastructure etc.

2. Provide implementation plan report confirming functional adaptation measures have been implemented (RIBA Stage 4 or equivalent) in accordance with the functional adaptation strategy recommendations, where practical and cost effective. Omissions have been justified in writing to the assessor.

   The implementation will be specific to the building and scope of project, but information should be made available to the assessor covering:
   1. The feasibility for multiple/alternative building uses and area functions e.g. related to structural design of the building
   2. Options for multiple building uses and area functions based on design details e.g. modularity
   3. Routes and methods for major plant replacement e.g. networks and connections have flexibility and capacity for expansion
   4. Accessibility for local plant and service distribution routes e.g. detailed information on building conduits and connections infrastructure
   5. The potential for the building to be extended, horizontally and/or vertically.

	Action By	Credit Status	AVL	ACH	CTS	TBC
LAND & ECOLOGY 1.10% weighting per credit			**10**	**0**	**10**	**0**
LE01 Site Selection **C1: Previously Occupied Land** RIBA Stage 1(A-B): Recommended action	Architect	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 AS confirmed that the site is on previously developed land.

Evidence/Action Required

1. Provide design drawings (including existing site plan) and calculations confirming at least 75% of the proposed development's footprint is on an area of land which has previously been occupied by industrial, commercial or domestic buildings or fixed surface infrastructure.

   The design drawings, report or site photographs must confirm the following:
   • Type and duration of previous land use;
   • Area (m2) of previous land use;
   • Proposed site plan showing location and footprint (m2) of proposed development and temporary works.

LE01 Site Selection **C2-3: Contaminated Land** RIBA Stage 2(C): Recommended action	Geotech Eng	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 AS confirmed that there is some contaminated land remediation which will be required.

Evidence/Action Required

2. Provide a copy of the contaminated land professional's site investigation report, risk assessment and appraisal which has deemed land within the site to be affected by contamination. The site investigation, risk assessment and appraisal must have identified:
3. Provide formal written confirmation from the Client or principal contractor 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.

   Note: Asbestos can only be considered as a contaminant if it is found within the ground.

	Action By	Credit Status	AVL	ACH	CTS	TBC
LE02 Ecological Value of Site and Protection of Ecological Features C1: Ecological Value of Site RIBA Stage 4(E-F): Recommended action	Ecologist	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - Greengage's preliminary ecology assessment confirms this is achievable (ref:551024epFeb18DV01_PEA)

Evidence/Action Required

1. Provide confirmation that the land within the assessment zone is defined as ‘land of low ecological value’ using either:

   a. The BREEAM checklist for defining land of low ecological value (see Checklists and tables in the BREEAM manual);

   OR

   b. Provide a copy of a signed and dated ecology report from the Suitably Qualified Ecologist (SQE) who has identified the land as being of ‘low ecological value’ within an ecological assessment report, based on a site survey.

	Action By	Credit Status	AVL	ACH	CTS	TBC
LE02 Ecological Value of Site and Protection of Ecological Features C2-3: Protection of Ecological Features RIBA Stage 4(E-F): Recommended action	Ecologist	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - Greengage's preliminary ecology assessment confirms this is achievable provided recommendations are followed (ref:551024epFeb18DV01_PEA)

Evidence/Action Required

2. Provide specification clauses, drawings and, if appointment, the SQE's report, confirming that all existing features of ecological value within and surrounding the construction zone and site boundary area are adequately protected from damage during clearance, site preparation and construction activities in line with BS42020:2013. These must include the following as a minimum:

   1. Trees determined to be of value using one of the following measures:

   a. More than 10 years old (or where age is unknown where the trunk diameter is over 100mm)

   b. Tree of significant ecological value (as defined by BS 5837: 2012 and confirmed by the Suitably Qualified Ecologist or qualified arboriculturalist).

   2. Hedges and natural areas requiring protection.

   3. Watercourses and wetland areas.

   Note: Where a tree is deemed to create a significant danger to the public or occupants by a statutory body or qualified arboriculturalist, then that feature may be exempt from the 'protection of ecological features' requirement of this issue.

3. In all cases, the principal contractor is required to construct the ecological protection measures recommended by the SQE, prior to any preliminary site construction or preparation works (e.g. clearing of the site or erection of temporary site facilities).

	Action By	Credit Status	AVL	ACH	CTS	TBC
LE03 Minimising Impact on Existing Site Ecology Minimum standards for this credit with the currently targeted Excellent ≥ 70% BREEAM rating: One credit						
LE03 Minimising Impact on Existing Site Ecology **C1-2: Change in Ecological Value** RIBA Stage 3(D): Recommended action	Ecologist	Targeted	2	0	2	0
		Targeted				

Assessor's Notes

8/6/18 - CC - Greengage's preliminary ecology assessment confirms this is achievable provided recommendations are followed (ref:551024epFeb18DV01_PEA)

Evidence/Action Required

2 credits - Change in Ecological Value 1 (no negative change in ecological value)

1. a. Provide scaled existing and proposed site plans confirming landscape and vegetation plot types, area (m2) of vegetation plot types

   The plans should confirm the area (m2) of the existing and proposed broad habitat types. Habitat types can be found in Table - 54 of the manual.

   OR

   b. Provide a signed and dated copy of the Suitably Qualified Ecologist (SQE) report (where appointed) along with scaled existing and proposed site plans confirming the area (m2) of the existing and proposed broad habitat types and based on their site survey, they confirm the following and either the assessor or Ecologist inputs this data in to the BREEAM LE 03/LE 04 calculator:

   i) The broad habitat types that define the landscape of the assessed site in its existing pre-developed state and proposed state.

   ii) Area (m2) of the existing and proposed broad habitat plot types.

   iii) Average total taxon (plant species) richness within each habitat type.

   Two credits are achieved where the change in the ecological value of the site is equal or greater than 0 i.e. no negative change.

   1 credit - Change in Ecological Value 2

2. Where the change in ecological value of the site is less than zero but equal to or greater than minus nine plant species i.e. a minimal change, using the methods outlined in either 1(a) or (b) above.

	Action By	Credit Status	AVL	ACH	CTS	TBC
LE04 Enhancing Site Ecology **C1-3: Ecologist's Report and Recommendations** RIBA Stage 1(A-B): Ecologist Appointment RIBA Stage 4(E-F) Recommended action	Ecologist	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - Greengage's preliminary ecology assessment confirms this is achievable provided recommendations are followed (ref:551024epFeb18DV01_PEA)

Evidence/Action Required

1. Provide confirmation that a suitably qualified Ecologist (SQE) has been appointed by the Client or their project representative by the end of the Preparation and Brief stage (RIBA Stage 1 or equivalent) to advise on enhancing the ecology of the site at an early stage.
2. Provide a copy of the SQE's Ecology Report with appropriate recommendations for the enhancement of the site's ecology at Concept Design stage (RIBA Stage 2 or equivalent). The report must be based on a site visit/survey by the SQE.

   The suitably qualified Ecologist must carry out site surveys of existing site ecology, on which their report is based (or to provide verification where the report is prepared by others) at the Concept Design stage (RIBA Stage 2 or equivalent) in order to facilitate and maximise potential ecological enhancement.
3. Provide landscape plans and formal written confirmation that the early stage advice and recommendations of the Ecology Report for the enhancement of site ecology have been or will be, implemented in the final design and build.

LE04 Enhancing Site Ecology **C4-6: Increase in Ecological Value** RIBA Stage 1(A-B): Ecologist Appointment RIBA Stage 4(E-F) Recommended action	Ecologist	Targeted	1	0	1	0
		Targeted				

Assessor's Notes
8/6/18 - CC - Greengage's preliminary ecology assessment confirms this is achievable provided recommendations are followed (ref:551024epFeb18DV01_PEA)

Evidence/Action Required

4. The criteria of the first credit must be met.
5. The recommendations of the Ecology Report for the enhancement of site ecology have been implemented in the final design and build, and the Suitably Qualified Ecologist confirms that this will result in an increase in ecological value of the site, with an increase of six plant species or greater.
6. The increase in plant species has been calculated using the BREEAM LE 03/LE 04 calculator, using actual plant species numbers.

   Provide landscape plans and formal written confirmation that the advice and recommendations of the Ecology Report for the enhancement of site ecology have been or will be, implemented in the final design and build.

	Action By	Credit Status	AVL	ACH	CTS	TBC
LE05 Long Term Impact on Biodiversity **C1-3: Up to Two Credits** RIBA Stage 4(E-F): Recommended action	Principal Contractor	Targeted	2	0	2	0
	Ecologist	Targeted				

Assessor's Notes

8/6/18 - CC - Greengage's preliminary ecology assessment confirms this is achievable provided recommendations are followed (ref:551024epFeb18DV01_PEA)

Evidence/Action Required

1. Provide confirmation a Suitably Qualified Ecologist (SQE) was appointed prior to commencement of activities on-site and they confirm 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.
2. Provide a copy of a site specific landscape and habitat management plan 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 BS 42020:2013 Section 11.1. Provide written confirmation that this will be handed over to the building owner/occupants for use by the grounds maintenance staff.
3. Where additional measures to improve the assessed site's long term biodiversity are adopted, according to Table - 58.

No. of Credits	No. of Additional Measures
1	2
2	4

Provide confirmation where the Suitably Qualified Ecologist (SQE) confirms that some of the additional measures listed in Table - 58 are not applicable to the assessed development, the credits can be awarded as follows:

	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

Action By Credit Status AVL ACH CTS TBC

Evidence is required in the form of letters, training schedules, toolbox talks, presentation literature, company policies, photographs, specification clauses, projects programmes, etc for the additional measures being implemented on site.

Ref	Additional measures for the improvement of long term biodiversity
1	The principal contractor nominates a Biodiversity Champion with the authority to influence site activities and ensure that detrimental impacts onsite biodiversity are minimised in line with the recommendations of a Suitably Qualified Ecologist
2	The principal contractor trains the site workforce on how to protect site ecology during the project. Specific training must be carried out for the entire site workforce to ensure they are aware of how to avoid damaging site ecology during operations onsite. Training should be based on the findings and recommendations for protection of ecological features highlighted within a report prepared by a Suitably Qualified Ecologist
3	The principal contractor records actions taken to protect biodiversity and monitor their effectiveness throughout key stages of the construction process. The requirement commits the principal contractor to make such records available where publicly requested
4	Where a new ecologically valuable habitat appropriate to the local area is created. This includes a habitat that supports nationally, regionally or locally important biodiversity, and/or which is nationally, regionally or locally important itself; including any UK Biodiversity Action Plan (UK BAP) priority habitats Local Biodiversity Action Plan (LBAP) habitats, those protected within statutory sites (e.g. SSSIs), or those within non-statutory sites identified in local plans.
	Local biodiversity expertise should be sought during the Preparation and Brief (RIBA Stage 1 or equivalent) to help identify species of local biodiversity importance onsite and ensure that the proposals support local priorities
5	Where flora and/or fauna habitats exist onsite, the contractor programmes site works to minimise disturbance to wildlife. For example, site preparation, ground works, and soft landscape have been, or will be, scheduled at an appropriate time of year to minimise disturbance to wildlife. Timing of works may have a significant impact on, for example, breeding birds, flowering plants, seed germination, amphibians etc. Actions such as phased clearance of vegetation may help to mitigate ecological impacts. This additional requirement will be achieved where a clear plan has been produced detailing how activities will be timed to avoid any impact on site biodiversity in line with the recommendations of a Suitably Qualified Ecologist

	Action By	Credit Status	AVL	ACH	CTS	TBC
POLLUTION 0.85% weighting per credit			**13**	**0**	**13**	**0**
Pol01 Impact of Refrigerants **C1: No Refrigerant Use** RIBA Stage 3(D): Recommended action	M&E	Targeted	3	0	3	0
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 ZR confirmed that no refrigerants will be specified.

Evidence/Action Required
1. Provide specification clauses or formal written confirmation that the building does not require or use refrigerants within its installed plant/systems.

Pol02 NOx Emissions **C1-2: Up to Three Credits (Building Type Dependent)** RIBA Stage 3(D): Recommended action	M&E	Targeted	3	0	3	0
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 ZR confirmed that heating to core areas would likely be through the use of gas boilers. CC requested that these are low Nox models.

Evidence/Action Required
1. Provide relevant specification clauses from the building specification or contract confirming the NOx emissions of the boilers specified for the project and the manufacturer's product information.

   The building's delivered heating and hot water demand, under normal operating conditions, dry NOx emission levels (at 0% excess O2) must meet the following:

NOx Emission levels for heating and hot water (mg/kWh)	Credit
≤100 mg/kWh	1 credit
≤70 mg/kWh	2 credits
≤40 mg/kWh	3 credits

   Provide calculations showing the average NOx emissions for the building where multiple systems are present.

2. The direct and indirect NOx emissions will be reported via the BREEAM scoring and reporting tool in mg/kWh/yr and energy consumption in kWh/m2/yr arising from systems installed to meet the building's space heating, cooling and hot water demands.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Pol03 Surface Water Run-off **C1-3: Flood Risk** RIBA Stage 3(D): Recommended action	Flood Risk Assessor	Targeted	2	0	2	0
		Targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 AS confirmed that a FRA is not required for planning, however is not unachievable to do.
16/08/19 SM: This credit can now be targeted as a FRA will be completed and measures to reduce the flood risk will be included.

Evidence/Action Required

1. Low Flood Risk (Two credits)
   Provide a site specific Flood Risk Assessment (FRA) to determine the flood zone of the site. It must confirm the development is situated in a flood zone that is defined as having a low annual probability of flooding (in accordance with current best practice national planning guidance) and detail the flood risk from:
   • Fluvial;
   • Tidal;

   • Surface water: Sheet run-off from adjacent land (urban and rural);
   • Groundwater: Most common in low-lying areas underlain by permeable rock (aquifers);
   • Sewers: Combined, foul or surface water sewers;
   • Reservoirs, canals and other artificial sources.

   OR

2. Medium/ High Flood Risk (One credit)

   Provide a site specific Flood Risk Assessment to determine the flood zone of the site and detail the flood risk from:
   • Fluvial;
   • Tidal;
   • Surface water: Sheet run-off from adjacent land (urban and rural);

   • Groundwater: Most common in low-lying areas underlain by permeable rock (aquifers);
   • Sewers: Combined, foul or surface water sewers;
   • Reservoirs, canals and other artificial sources.

   The site-specific FRA should confirm the development is situated in a flood zone that is defined as having a medium or high annual probability of flooding and is not in a functional floodplain (in accordance with current best practice national planning guidance).

3. Provide calculations from a suitable qualified professional and drawings confirming that one of the following is achieved:

   a. The ground level of the building and access to both the building and the site, are designed (or zoned) so they are at least 600mm above the design flood level of the flood zone in which the assessed development is located.

   OR

   b. The final design of the building and the wider site reflects the recommendations made by an appropriate consultant in accordance with the hierarchy approach outlined in section 5 of BS 8533:2011.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Pol03 Surface Water Run-off **C4: Pre-requisite** RIBA Stage 3(D): Recommended action	Drainage Consultant	Targeted	Pre-requisite for C4-14, C15-22			
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 AS confirmed that Tully have been appointed for drainage design.

Evidence/Action Required

4. Provide confirmation that an appropriate consultant is appointed to carry out, demonstrate and/or confirm the development's compliance with the criteria 5-14, C15-22 or 23-24 (Simple Buildings).

   A consultant with qualifications and experience relevant to designing SUDS and flood prevention measures and completing peak rate of run-off calculations. Where complex flooding calculations and prevention measures are required, this must be a specialist hydrological engineer.

Pol03 Surface Water Run-off **C5-14: Surface Water Run-off** RIBA Stage 3(D): Recommended action	Drainage Consultant	Targeted	2	0	2	0
		Targeted				

Assessor's Notes
8/6/18 - CC - At the pre-assessment meeting on 7/6/18 AS confirmed that Tully have been appointed for drainage design. CC has emailed for confirmation of whether credits are achievable.

Evidence/Action Required

One credit

5. Provide a drainage report, full calculations and drawings from an appropriate consultant confirming that the drainage measures are specified to 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.

   The report must contain all information necessary to demonstrate compliance including:
   1 Type and storage volume (l) of the drainage measures;
   2 Total area of hard surfaces (m2);
   3 Peak/Volume flow rates (l/s) pre and post development for the return period events;
   4 Additional allowance for climate change designed in to the system;
   5 Impact on the building from flooding from local drainage system failure

6. Provide details of the relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS are in place.

7. The calculations must include an allowance for climate change; this should be made in accordance with current best practice planning guidance.

   One credit

8. The drainage report from the appropriate consultant should also include information showing the proposed drainage solution, system failure flood flow routes, potential flood ponding levels and ground floor levels where flooding of property will not occur in the event of local drainage system failure (caused either by extreme rainfall or a lack of maintenance); AND

   EITHER

Action By Credit Status AVL ACH CTS TBC

9. Calculations for the pre and post development volume of run-off where drainage design measures are specified to ensure that the post development run-off volume, over the development lifetime, is no greater than it would have been prior to the assessed site's development for the 100-year 6-hour event, including an allowance for climate change (see criterion 14).
10. Calculations for the pre and post development volume of run-off where any additional predicted volume of run-off for this event is prevented from leaving the site by using infiltration or other Sustainable Drainage System (SuDS) techniques.

    OR (only where criteria 8 and 9 for this credit cannot be achieved)
11. Provide 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.
12. Provide calculation results for the limiting discharge where drainage design measures are specified to ensure that the post development peak rate of run-off is reduced to the limiting discharge. The limiting discharge is defined as the highest flow rate from the following options:

    a. The pre development 1 year peak flow rate; OR

    b. The mean annual flow rate Qbar; OR

    c. 2L/s/ha.

    Note: for the 1 year peak flow rate, the 1 year return period event criterion applies (as described in the peak run-off criteria above).
13. Provide relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS are in place.
14. For either option, above calculations must include an allowance for climate change; this should be made in accordance with current best practice planning guidance.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Pol03 Surface Water Run-off **C15-22: Minimising Water Course Pollution** RIBA Stage 3(D): Recommended action	Drainage Consultant	Targeted	1	0	1	0
		Targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 AS confirmed that Tully have been appointed for drainage design. CC has emailed for confirmation of whether credits are achievable.

Evidence/Action Required

15. Provide a written statement or drainage report, calculations and/or drawings confirming that there is no discharge from the developed site for rainfall up to 5mm (confirmed by the Appropriate Consultant).
16. Provide design drawings or relevant specification clauses indicating for areas with a low risk source of watercourse pollution, an appropriate level of pollution prevention treatment is provided, using appropriate SuDS techniques.
17. Provide design drawings or relevant specification clauses indicating where there is a high risk of contamination or spillage of substances such as petrol and oil (areas include vehicle manoeuvring areas, car parks, waste disposal facilities, delivery and storage facilities or plant areas.), separators (or an equivalent system) are installed in surface water drainage systems.
18. Provide design drawings or relevant specification clauses indicating where the building has chemical/liquid gas storage areas, a means of containment is fitted to the site drainage system (i.e. shut-off valves) to prevent the escape of chemicals to natural watercourses (in the event of a spillage or bunding failure).
19. Provide a formal letter from the design team or drainage report confirming all water pollution prevention systems have been designed and installed in accordance with the recommendations of documents such as Pollution Prevention Guideline 3 (PPG 3) and/or where applicable the SUDS manual. For areas where vehicle washing will be taking place, pollution prevention systems must be in accordance with Pollution Prevention Guidelines 13.
20. Provide formal written confirmation that a comprehensive and up-to-date drainage plan of the site will be made available for the building/site occupiers.
21. Provide formal written confirmation that relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS will be in place.
22. Provide drawings and details of all, where present, external storage and delivery areas and confirm they have been designed and detailed in accordance with the current best practice planning guidance (see Other information in the manual for further information).

	Action By	Credit Status	AVL	ACH	CTS	TBC
Pol04 Reduction of Night Time Light Pollution **C:1-5 One credit** RIBA Stage 3(D): Recommended action	M&E	Targeted	1	0	1	0
		Targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 ZR confirmed this is achievable.

Evidence/Action Required

Provide specification clauses and drawings confirming the external lighting meets the following requirements:

1. 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.

   OR alternatively, where the building does have external lighting, one credit can be awarded as follows:

2. The external lighting strategy has been designed in compliance with Table 2 (and its accompanying notes) of the ILP Guidance notes for the reduction of obtrusive light, 2011.

   Buildings located in Scotland must comply with the light pollution criteria in the guidance note 'Controlling Light Pollution and Reducing Lighting Energy Consumption'. This can be demonstrated via completion of the checklists in Annexes B and C of the guidance note by a relevant member of the design team.

3. 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.

   Buildings located in Scotland must comply with the light pollution criteria in the guidance note 'Controlling Light Pollution and Reducing Lighting Energy Consumption'. This can be demonstrated via completion of the checklists in Annexes B and C of the guidance note by a relevant member of the design team.

4. If safety or security lighting is provided and will be used between 23:00 and 07:00, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 2 of the ILP's Guidance notes.

5. Illuminated advertisements, where specified, must be designed in compliance with ILP PLG 05 The Brightness of Illuminated Advertisements.

	Action By	Credit Status	AVL	ACH	CTS	TBC
Pol05 Reduction of Noise Pollution **C:1-5 One credit** RIBA Stage 3(D): Recommended action	Acoustician	Targeted	1	0	1	0
		Targeted				

Assessor's Notes

8/6/18 - CC - At the pre-assessment meeting on 7/6/18 AS confirmed Hann Tucker are working on the acoustics, and CC noted it'd be likely any planning condition would be more onerous than the BREEAM requirements.

Evidence/Action Required

1. Provide a drawing showing that there are, or will be, no noise-sensitive areas or buildings within 800 m radius of the assessed development.
   OR
2. Alternatively, where the building does have noise sensitive areas or buildings within 800 m radius of the development, one credit can be awarded by appointing a suitably qualified Acoustician to carry out a noise impact assessment and provide a report in compliance with BS 7445: 2003 the following noise levels measured/determined:

   a. Where a noise impact assessment in compliance with BS 7445 has been carried out and the following noise levels measured/determined:

   i. Existing background noise levels at the nearest or most exposed noise-sensitive development to the proposed development or at a location where background conditions can be argued to be similar.
   ii. The rating noise level resulting from the new noise-source.

3. The noise impact assessment must be carried out by a suitably qualified acoustic consultant holding a recognised acoustic qualification and membership of an appropriate professional body.

   A suitably qualified acoustician is an individual who holds a recognised acoustic qualification and membership of an appropriate professional body. The primary professional body for acousticians in the UK is the Institute of Acoustics.

4. 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) compared to the background noise level.

5. Where the noise source(s) from the proposed site/building is greater than the levels described in criterion 4, provide written confirmation that attenuation measures compliant with the SQA recommendations will be installed to attenuate the noise at its source to a level where it will comply with criterion 4.

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