



SUSTAINABILITY SERVICES

BREEAM Pre-Assessment

Land to the South of Elizabeth Street, Cheetham Hill

CHBS-KA-21027-1-B

www.chbs.co.uk

Document Control

Project Name	Land to the South of Elizabeth Street, Cheetham Hill
Project No.	21027
Report	BREEAM Pre-Assessment
BREEAM Version	BREEAM 2018 New Construction – Shell and Core

Quality Assurance

Prepared by:	Kehinde Adewumi Bachelor of Technology in Architecture BREEAM ASSOCIATE	November 2021
Checked by:	Mike Horsfall BREEAM ASSESSOR	November 2021
Verified by:	Julian Leese BREEAM ASSESSOR	November 2021

Issue Record

Revision	Revised	Checked	Date	Comments
*	-	-	29/11/21	-
A	KA	MH	31/01/22	Revised for Excellent Target
B	MH	KA	11/02/22	Revised following comments

Email: info@chbs.co.uk

Tel: 0161 341 0088

CHB Design Services Limited T/A CHB Sustainability

Reg. No: 5945817 Reg. Office: Northwich Business Centre, Meadow Street, Northwich, Cheshire, CW9 5BF

Contents

Executive Summary.....	4
Introduction	5
BREEAM Assessment Criteria.....	7
Scoring scenario	11
Minimum Standards.....	12
Credits and Comments Table (Excellent).....	14

Executive Summary

This BREEAM pre-assessment presents a recommended strategy for achieving a BREEAM ‘Excellent’ rating for the proposed Industrial and Logistics Warehouse units at the Land South of Elizabeth Street at Cheetham Hill in Manchester.

A target higher than the minimum 70% required to achieve a BREEAM ‘Excellent’ rating is aspired to in order to allow a buffer for any unforeseen circumstances that may result in credits targeted at the Design Stage not being possible to achieve in the Post Construction assessment.

It should be ensured that all mandatory credits are achieved as required for the relevant BREEAM rating, otherwise this target rating cannot be achieved.

This pre-assessment looks at the BREEAM issues on a site-wide basis and considers the scope of the base-build shell and core development only.

Introduction

This report summarises the results of, and assumptions made, within the production of a BREEAM Pre-Assessment for the proposed Trade and Logistics City development at Elizabeth Street in Cheetham Hill, Manchester.

The proposed development is assessed under BREEAM 2018 New Construction scheme 'shell and core' criteria (SD5078 version 3.0).

The development consists of nine speculative shell-and-core Class B2/B8 warehouse units and the site plan can be seen in figure 1 below. The total gross internal area of the development is 8,100 m²

The development is described as Proposed demolition of existing unit and redevelopment of site for industrial and logistics uses (Classes B2 and B8) with ancillary office floorspace, including provision of revised access arrangements from Elizabeth Street and all associated works and landscaping

The report is based on the planning drawings provided as part of the planning application.



Figure 1: Proposed Development Site Plan

The report shall explain the importance of, and methodology behind, the BREEAM assessment criteria. The report will detail the project specific requirements to achieve the mandatory credits. It will then go on to detail the requirements for tradable credits which, within the experience of CHB Sustainability, would be realistically achievable for the proposed development.

Throughout the report, reference shall be made to the evidence required for the successful delivery of each credit. At design stage, access may be provided to an online tracker system to give more detailed evidence requirements for each credit.

The assessment shall involve collecting evidence from various members of the project team, achieving a BREEAM rating is a collaborative effort between the whole design and construction team, responsibility cannot be placed solely with one individual or organisation.

Due to the nature of the pre-assessment being undertaken at an early stage, some assumptions have been made and these shall all be clearly noted within the body of this report.

BREEAM Assessment Criteria

BREEAM is the leading and most widely used environmental assessment method for buildings and sets the standard for best practice in sustainable design.

The objectives of BREEAM are as follows:

- Provide market recognition for low environmental impact buildings
- Ensure best environmental practice is incorporated in buildings
- Set criteria and standards surpassing those required by regulations
- Challenge the market to provide innovative solutions to minimise the environmental impact of the built environment
- Raise awareness of the benefits of low environmental impact buildings to owners, occupants, and operators
- Allow organisations to demonstrate progress towards corporate environmental objectives.

The BREEAM assessment criteria is made up of nine categories, and several issues are covered within each category, with credits available for meeting the criteria of that issue.

Each category has a weighting factor (Table 1) for which the proportion of the maximum credits achieved in that category is multiplied by and then summed across all categories to achieve the final BREEAM Rating percentage.

Environmental Section	Weighting
Management	11.0%
Health & Wellbeing	8%
Energy	14.0%
Transport	11.5%
Water	7.00%
Materials	17.5%
Waste	7.00%
Land Use & Ecology	15.0%
Pollution	9.0%
Total	100.0%
Innovation	+10.0%

Table 1: BREEAM Environmental section weightings (Shell and Core)

There are three types of credits: mandatory, tradable and innovation.

The mandatory credits differ depending on the target BREEAM rating and must be achieved in order to attain the required rating. The building must score the rest of the required credits from the tradable or innovation credits. There are no restrictions within BREEAM on which tradable credits are achieved.

Innovation credits are also available for certain categories and for innovation in areas not currently covered by any BREEAM categories; 1% is added to the overall percentage points score for each innovation credit achieved, whereby a maximum score of 10% can be added through innovation credits.

The BREEAM levels can be achieved through scoring percentage points as demonstrated in table 2 (assuming all mandatory requirements are met).

It is recommended to aim to surpass the minimum percentage points target at the pre-assessment stage as there are frequently credits targeted at this stage which may not be achievable for the completed building due to unforeseen circumstances.

The proposed development shall be assessed under 'New Construction' compliance notes.

'New Construction' is defined as development that results in a new standalone structure, or new extension to an existing structure, which shall come into operation/use for the first time upon completion of the works.

BREEAM Rating	% Score	Sustainability Performance	Percentage of UK new non-domestic buildings
Outstanding	85	Innovator	<1%
Excellent	70	Best Practice	Top 10%
Very Good	55	Advanced Good Practice	Top 25%
Good	45	Intermediate Good Practice	Top 50%
Pass	30	Standard Good Practice	Top 75%
Unclassified	<30		

Table 2: BREEAM rating benchmarks

In a deviation from the previous BREEAM shell and core methodology, Green Lease Agreements and Green Building Guides covering the future fit-out works are no longer required in most cases.

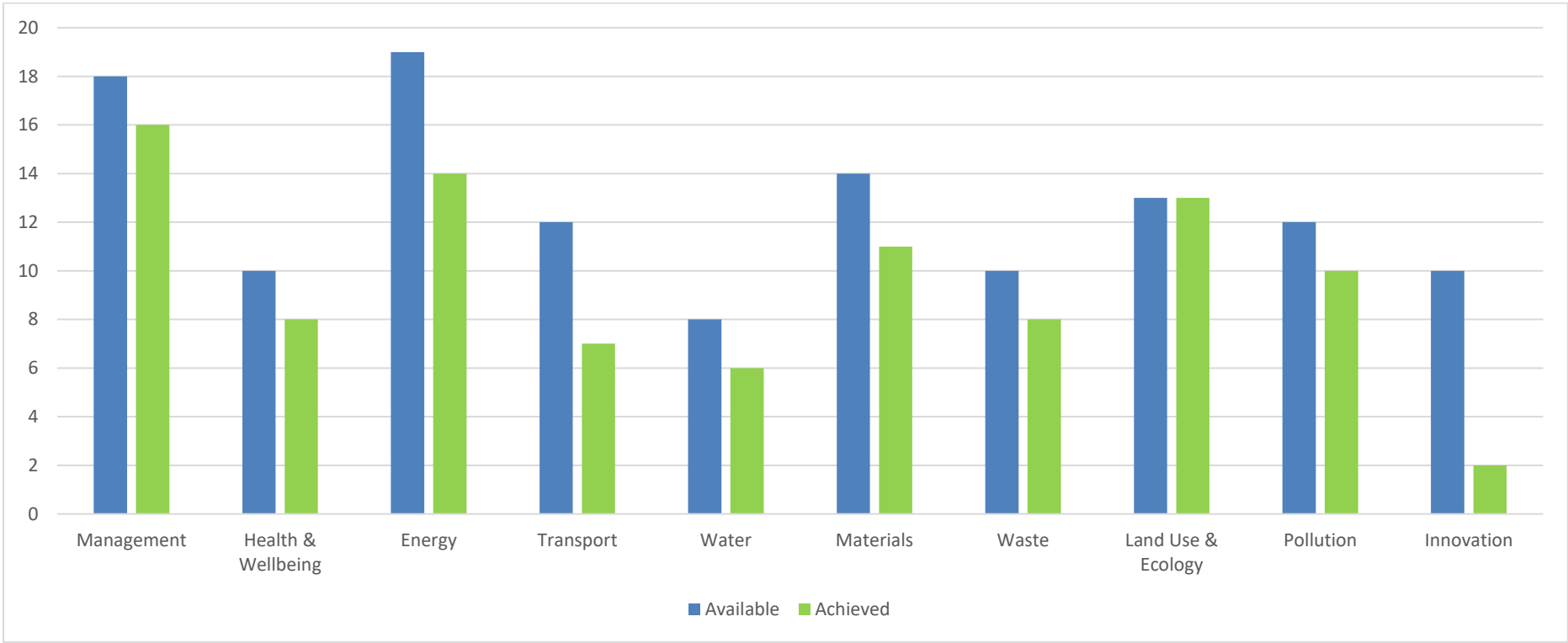
The BREEAM shell and core assessment is generally based on the developer's scope of works up to handover only. The future tenant may choose to perform an additional BREEAM assessment of their fit-out works in accordance with the BREEAM Refurbishment and Fit Out criteria.

It is assumed that a shell and core assessment shall be carried out as the developer's scope of works is expected to include no more than the following:

- External walls, windows, doors (external), roof, core internal walls, structural floors.
- Hard and soft landscaping areas.
- Core Building Services (i.e., centralised mechanical and electrical plant including heating, cooling and ventilation).

Scoring scenario

Scenario	Score	BREEAM Rating
Expected Score	82.30%	Excellent



Minimum Standards

It should be noted that if the required minimum standards for a particular BREEAM rating are not met then the rating **will not** be achieved regardless of overall score.

'Excellent' Minimum Standards

Man 03 – Responsible Construction Practices

The Principal Contractor should implement a range of responsible construction measures to ensure that at least 1 credit is achieved under the 'responsible construction management' issue.

Man 04 - Commissioning-test schedule and responsibilities

A schedule of commissioning and testing that identifies and includes a suitable timescale and commissioning standard for the commissioning and re-commissioning of all complex and non-complex building services, control systems and testing of building fabric shall be prepared.

Man 04 - Handover (Building User Guide)

It is mandatory that two building user guides are developed prior to handover. One shall be non-technical for the building occupiers, and one shall be technical for the premise's facilities managers.

Ene 01 - Energy Performance

A minimum of four credits shall be achieved under ENE01 for the energy performance of the building.

Ene 02 - Energy Monitoring (First sub-metering credit)

Energy metering systems are installed to enable at least 90% of energy end-uses to be recorded. As the floor area is greater than 1,000m² an appropriate energy monitoring and management system is required.

Wat 01 - Water Consumption (1 Credit)

A minimum improvement in water consumption of 12.5% is required compared to baseline water consumption.

Wat 02 - Water Monitoring (Criterion 1 only)

It is mandatory that there is a water meter on the main supply to each unit.

Mat 03 - Responsible Sourcing of Materials (Criterion 1 only)

To achieve any BREEAM Rating it is mandatory that all timber and timber-based products used on the project are demonstrably 'Legally harvested and sustainable timber', in accordance with the UK Government's Timber Procurement Policy.

Wst 03 - Operational Waste

Dedicated space must be provided for the segregation and storage of operational recyclable waste generated. The space must be clearly labelled, accessible to building users and of a capacity appropriate to the building type, size, number of units and predicted volumes of waste that will arise from daily or weekly operational activities and occupancy rates.

Credits and Comments Table (Excellent)

Management				
	BREEAM Issues	Available	Expected Score	Comments
Man 01	Project Delivery Planning	1	1	Expected Prior to completion of the Concept Design, the project delivery stakeholders to meet, decide and define the roles, responsibility, and contribution for the key phases of the project delivery. Stakeholder Consultation requires that consultation with interested parties (including facilities management, representatives from existing community and local heritage groups) has been carried out prior to completion of RIBA Stage 2 to influence the project brief and design. It is assumed this has not been carried out and therefore the credit cannot be targeted. CHB Sustainability have been appointed at an early stage (RIBA stage 2) and their BREEAM AP, Julian Leese has agreed the BREEAM targets and is supporting the design team through Concept and Developed Design Stages.
	Stakeholder Consultation	1	0	
	BREEAM Advisory Professional (Concept Design)	1	1	
	BREEAM Advisory Professional (Developed Design)	1	1	
Man 02	Elemental Life Cycle Cost	2	2	Expected An entire asset LCC plan at Process Stage 2 (equivalent to Concept Design – RIBA Stage 2) together with any design options appraisals in line with ‘Standardised method of life cycle costing for construction procurement’ PD 156865: 2008. A credit may be awarded for carrying out Life Cycle Cost (LCC) analysis throughout RIBA Stages 3 and 4 (Detailed/Technical design). A credit may be awarded for reporting the project capital cost in £k/m².
	Component Life Cycle Cost	1	1	
	Capital Cost Report	1	1	

Man 03	Environmental Management	1	1	Pre-requisite that all timber and timber-based products used on the project are ‘legally harvested and traded timber’. Expected Credits may be awarded where the Main contractor: • Has ISO 14001/EMAS or equivalent, (as has any separate demolition contractor.) • Implements best practice pollution prevention policies & procedures (PPG6). • Has formally agreed performance targets. • Appoints a BREEAM AP. • Significantly exceeds compliance in CCS. • Achieves a further 6 (min) items from the BREEAM Table 4.1 list of Responsible Construction Management items. • Monitors, records & reports energy consumption & water consumption. • monitoring the transport of materials & waste to & from the site
	BREEAM Advisory Professional (Site)	1	1	
	Responsible Construction Management <i>(1 credit mandatory for Excellent)</i>	2	2	
	Monitoring Construction Site Impacts	2	2	
Man 04	Commissioning and testing schedule and responsibilities <i>(Mandatory)</i>	1	1	Expected A schedule of commissioning and testing shall be prepared which identifies and includes a suitable timescale for commissioning and re-commissioning of all building services and control systems. The schedule shall also identify all the appropriate standards for all commissioning activities to be included. An appropriate team member shall be appointed to monitor and programme pre-commissioning, commissioning, and testing. An appropriate project team member shall be appointed for the responsibility for: - Undertaking design reviews and giving advice on suitability for ease of commissioning - Providing commissioning management input to construction programming and during installation stages - Management of commissioning, performance testing and handover or post-handover stages.
	Commissioning – design and preparation	1	1	
	Testing & Inspecting Building Fabric	1	0	
	Handover <i>(Building User Guides Mandatory)</i>	1	1	

				Prior to handover, non-technical/technical building user guides shall be developed for the building occupiers and facilities managers. Credits may be awarded at the Design Stage where an appropriate project member is appointed to manage and advise all commissioning activities. An additional credit can be achieved where the Main contractor completes post-construction testing in terms of thermographic analysis & air tightness testing and commits to rectify any defects prior to handover and close out. To achieve the handover credit, non-technical/technical training schedules shall be developed and distributed alongside the building user guides.
Management Totals:		18	16	
Management score totals %:		11.00 %	9.77%	
Health & Wellbeing				
BREEAM Issues		Available	Expected Score	Comments
Hea 01	Daylight	1	1	Expected A credit may be achieved where daylight calculations are performed to demonstrate that 80% of the mezzanine floor area shall meet the BREEAM daylighting criteria. It is assumed that the mezzanine office spaces will be provided with an adequate view out. A credit may be achieved where the external lighting shall be in accordance with BS 5489-1:2013 and BS EN 12464-2:2014.
	View Out	1	1	
	External Lighting	1	1	
Hea 02	Ventilation	1	0	Pre-Requisite that a site-specific indoor air quality plan has been produced and implemented in accordance with the guidance in Guidance Note GN06.

				To achieve the ventilation credit, the building must be designed to minimise the indoor concentration and recirculation of pollutants in the building. The requirements of this issue are expected to be too onerous to be viably targeted.
Hea 04	Thermal Modelling	1	1	Expected. The thermal modelling shall be carried out by the end of RIBA stage 4 and must demonstrate that the thermal environment in occupied spaces meet the Category B requirements for PPD, PMV and local discomfort set out in Table A.1 of Annex A of ISO 7730:2005. A credit may be awarded if the thermal modelling demonstrates that it has considered and made provision for projected climate change that might affect the building.
	Design for future thermal comfort	1	1	
Hea 05	Acoustic Performance – Fabric	1	1	Expected A credit may be awarded where a suitably qualified acoustician is appointed to ensure that the building meets appropriate acoustic performance standards in terms of indoor ambient noise levels (BS 8233:2014 Section 7) and pre-completion testing is performed to demonstrate compliance.
Hea 06	Security	1	1	EARLY ACTION REQUIRED A Credit can be awarded where a Suitably Qualified Security Specialist (SQSS) is engaged during Concept Design to conduct an evidence-based Crime Impact Assessment (CIA). Where the SQSS is appointed after Stage 2 they must be able to confirm that no opportunities have been missed at earlier stages.
Hea 07	Safe Access	1	0	Expected A credit maybe awarded for provision of appropriate seating to the landscaped areas to create an outdoor space for staff away from the car parking areas would allow for an additional credit to be achieved. The amenity space to the north of Unit 2 shown on the site plan would be appropriate for an 'Outdoor Space' and therefore the credit can be targeted.
	Outdoor Space	1	1	
Health & Wellbeing Totals:		10	8	
Health & Wellbeing score totals %:		8.00 %	6.40%	

Energy				
BREEAM Issues		Available	Expected Score	Comments
Ene 01	Energy Performance	9	6	Expected Based on calculation from the SBEM report carried out for the energy statement a score of 6 credits shall be achieved on a site-wide basis for energy performance. Further confirmation of this will be required as the design develops. The calculation is based on the following metric. 1. The building's heating and cooling energy demand 2. The building's primary energy consumption 3. The total resulting CO₂-eq emissions In order to target the additional 4 credits for prediction of operational energy consumption a workshop on building energy design must be held early in the design process. A range of DSM energy simulations of operational energy would also need to have been performed to inform risk management of construction & commissioning
	Prediction of operational energy consumption <i>(4 credits mandatory for Excellent)</i>	4	4	
Ene 02	Sub-metering of end-use categories <i>(Mandatory credit)</i>	1	1	Expected To achieve the first sub-metering credit, energy metering systems shall be installed so that 90% of the estimated annual energy consumption of each fuel can be assigned to end-use categories. An energy monitoring and management system or separate accessible sub-meters with pulsed/open protocol outputs shall be installed to fulfil this function. All metering and monitoring systems shall be labelled or have data outputs for identification by the building user.

	Sub-metering of high energy load and tenancy areas	1	1	To achieve the second credit, the energy monitoring and management systems and/or sub-meters shall include the energy consumption for separate relevant function areas (office, amenity & warehouse) and floor plate.
Ene 03	External Lighting	1	1	Expected A credit may be achieved where external lighting has a fitting luminous efficacy of no less than 70 lumens/circuit Watt and is controlled to prevent usage during daylight hours and presence detection in areas of intermittent pedestrian traffic.
Ene 04	Passive Design Analysis	1	0	Expected A BREEAM compliant LZC feasibility report shall be completed in order to achieve the LZC Feasibility credit. LZC technologies shall be installed in line with the findings of the LZC feasibility report.
	Free Cooling	1	0	
	LZC Feasibility	1	1	
Energy Totals:		19	14	
Energy score totals:		14.00 %	10.31 %	
Transport				
BREEAM Issues		Available	Expected Score	Comments
Tra 01	Travel Plan	2	2	The credits may be awarded where a BREEAM Compliant Travel Plan is produced which includes recommendations to increase or improve sustainable travel options. The requirements of a BREEAM Compliant Transport Assessment and Travel Plan are more than that required for planning, further guidance may be provided to the Transport Consultants to ensure that the documentation includes all required details for BREEAM. It is expected that the credits can be awarded provided the Travel Plan and Transport assessment for the previous scheme are revised with an addendum to cover any changes arising from the revised scheme.

Tra 02	Transportation Options Implementation	10	5	TRA01 is a Pre-requisite to TRA02 Expected There are several different measures that can be selected to make up a maximum number of 10 credits. The site Accessibility Index has been estimated to be between the range of 25 - 40 and the following measures are the most appropriate to target for this development: 1. Provide electric car charging stations for at least 10% of car parking places. 2. Set up car share facility provide priority car parking (5% nearest to entrances) for car sharers. 3. Provide at least 50 BREEAM compliant cycle spaces. 4. Demonstrate how at least two of the following compliant cyclist facilities could be installed by the tenant: • Showers. • Changing facilities • Lockers • Drying spaces.
Transport Totals:		12	7	
Transport score totals:		11.50 %	6.70 %	
Water				
BREEAM Issues		Available	Expected Score	Comments
Wat 01	Water Consumption <i>(Mandatory)</i>	5	4	Expected To achieve 3 credits, water consuming fittings shall be specified to show a 40% improvement on baseline water consumption. Additional credit may be by taking more action towards providing specification and guidance on selection.
Wat 02	Water Monitoring	1	1	Expected

	(Criterion 1 Mandatory)			A credit shall be awarded for providing a pulsed output water meter on the mains supply to each unit.
Wat 03	Leak Detection system	1	1	Expected A credit can be achieved where a BREEAM compliant leak detection system is installed on the mains water supply to each unit. A credit may be achieved where Flow control devices that regulate the water supply to each WC/sanitary area shall be installed to minimise undetected wastage and leaks from sanitary fittings and supply pipework.
	Flow control devices	1	1	
Water Totals:		8	6	
Water score totals:		7.00 %	5.25 %	
Materials				
BREEAM Issues		Available	Expected Score	Comments
Mat 01	LCA Superstructure	6	4	In BREEAM 2018 this issue is now based on performing building Life Cycle Analysis (LCA) of the impact of the proposed construction materials. At RIBA stage 2 opportunities to reduce environmental impact shall be identified by carrying out building LCA options appraisal of at least 6 different substructure and hard landscaping option or using a recognised BREEAM LCA tool according to methodology. Additional credit is available for carrying out an exercise to compare the building superstructure LCA against the BREEAM LCA benchmark at RIBA Stage 4
	LCA Substructure & Hard Landscaping	1	1	
Mat 02	Environmental Product Declarations	1	0	Credit not targeted

Mat 03	Sustainable Procurement <i>(Mandatory timber procurement)</i>	1	1	Pre-requisite that all timber and timber-based products used on the project are ‘Legally harvested and traded timber’. Expected 3 credits may be awarded where at least 30% of the available points for responsible sourcing of main building elements shall be achieved. The scope includes superstructure, internal finishes, substructure, and hard landscaping. To achieve credits for this issue, all materials shall be sourced from suppliers and manufacturers capable of providing certification for BES6001, EMS (EMAS/ISO 14001) or equivalent. All timber shall be sourced from suppliers capable of providing FSC Certificate with CoC number.
	Responsible Sourcing	3	3	
Mat 05	Design for durability & resistance	1	1	Expected The risk of damage to the internal and external building fabric from building usage, vehicles, malicious damage & environmental degradation shall be considered, and mitigations of these risks have been included within the proposed design. Key mitigations on this project would include: 1. Bollards, barriers or raised kerbs to protect where car parking within 1m of façade and delivery areas within 2m. 2. Robust wall construction up to 2m high. 3. Door stoppers to stop doors damaging walls. 4. Blockwork, glazing and metal cladding in accordance with industry durability standards. 5. Convenient access to roof & façade for maintenance & cleaning.
Mat 06	Material efficiency	1	1	Expected. A credit may be awarded if the team has set targets and report on opportunities and methods to optimise the use of materials at RIBA stage 1 and 2.
Materials Totals:		14	11	
Materials score totals:		17.50 %	13.75 %	

Waste				
BREEAM Issues		Available	Expected Score	Comments
Wst 01	Pre-demolition audit	1	1	Expected A complete pre-demolition audit shall be completed prior to any works on site. The audit scope should include an assessment of existing building and hard surfaces identifying potential for refurbishment or reuse and chances for recovery. Three credits may be achieved for this issue if the amount of non-hazardous construction waste generated per 100 m² (gross internal floor area) shall be no more than 3.4 m³ of actual volume (or 3.2 tonnes). This target does not include excavation waste. A BREEAM compliant Resource Management Plan shall be produced to contain the strategy for achieving the waste benchmark and to keep accurate records of actual waste arisings. A further credit may be achieved where at least 70% by volume or 80% by weight of the total waste arisings is diverted from landfill. And at least 80% by volume or 90% by weight of demolition waste is diverted from landfill.
	Construction Resource Efficiency	3	3	
	Diversion from Landfill	1	1	
Wst 02	Recycled Aggregates	1	1	Expected Credits may be awarded based on a calculation assessing all aggregate sources and their proximity to the development site. In order to ensure a good score for this issue local sources of aggregate shall be specified and where possible these should be recycled rather than from new sources.
Wst 03	Operational Waste <i>(Mandatory for Excellent)</i>	1	1	Expected This credit may be awarded where shared dedicated recyclable waste storage space for operational waste shall be provided in addition to the provision of general waste storage area. This facility shall be compliant with the following criteria:

				- Clearly labelled for recycling - Placed within accessible reach of the building (ideally 20m of a building's entrance) - Sized according to the predicted volume of waste that will arise from the development - In a location with good vehicular access to facilitate collections. The operational waste recycling areas should be at least 2m² for each of the proposed units on site. For speculative developments, where potential waste streams may require a compactor baler, the services for a future provision including concrete standing, power supply and good vehicular access shall be provided.
Wst 05	Adaptation – Structural & Fabric Resilience	1	1	EARLY ACTION REQUIRED A systematic risk assessment is to be carried out at RIBA stage 2 to identify the impact of expected extreme weather conditions arising from climate change on the building over its projected life cycle. The assessment shall cover the installation of building services and renewable systems, as well as structural and fabric resilience aspects and includes: - Hazard identification - Hazard assessment - Risk estimation - Risk evaluation - Risk management. Develop recommendations or solutions based on the climate change adaptation strategy appraisal, before or during Concept Design, that aim to mitigate the identified impact. Provide an update during Technical Design demonstrating how the recommendations or solutions proposed at Concept Design have been implemented where practical and cost effective. Omissions have been justified in writing by the assessor.
Wst 06	Design for Functional Adaptability & Disassembly	2	0	Credit not targeted.

Waste Totals:		10	8	
Waste score totals:		7.00 %	5.60 %	
Land Use & Ecology				
BREEAM Issues		Available	Expected Score	Comments
LE 01	Previously Occupied Land	1	1	Expected Based on satellite imagery the development site consists entirely of previously developed land. It is expected that the site can be classified as ‘a contaminated’ site as per BREEAM definition as it is understood that there is Japanese Knotweed present. This credit is to be awarded where remediation works as been provided to facilitate the development.
	Contaminated Land	1	1	
LE 02	Identifying & understanding ecological risks & opportunities:			The first credit may be awarded where the SQE has been appointed at an early stage and they shall have completed an appropriate level of survey and evaluation prior to completion of preparation and brief to ascertain the ecological baseline for the site in terms of: current and potential ecological value; risks to ecological value; and capacity/feasibility for enhancement. The ecological report should include data shared with the team to inform site preparation, design and construction operations. The second credit may be awarded where the project team liaise and collaborate with representative stakeholders at concept design stage; this is required internally between Client, Landscape design, drainage design etc.; and externally with Local Authority, relevant conservation groups etc. where appropriate. In addition to this the ecologist shall select the most appropriate ecological outcomes for the site in consideration with relevant stakeholders and the avoidance/protection/reduction/compensation/enhancement hierarchy.
	Survey & Evaluation	1	1	
	Determining Ecological Outcomes	1	1	

LE 03	Managing negative impacts on ecology:			Achieving LE02 is a pre-requisite for further ecology credits The first credit may be achieved where: roles and responsibilities have been defined at an early stage to ensure that the project ecological outcomes are successfully achieved; site preparation & construction works are planned at an early stage; and any on-going liaison between relevant stakeholders continues during site preparation & construction phases. The second credits may be achieved where the negative impacts of the development are successfully managed in accordance with the hierarchy (avoidance/protection/reduction/compensation/enhancement) such that the loss of ecological value has been limited as much as possible. A further credit can be awarded where the negative impacts are managed such that there is no overall loss in ecological value.
	Planning, liaison & implementation of data	1	1	
	Managing negative impacts	2	2	
LE 04	Liaison, implementation and data collation	1	1	A pre-requisite that LE03 roles & responsibilities are defined at an early stage and that site preparation and construction works are planned to optimise ecological benefits and outputs. The first credit may be awarded for implantation of the solutions & measures to enhance ecology derived based on survey data & stakeholder consultation. Further credits may be awarded based on ecologist calculations of the scale of ecological enhancement.
	Change & enhancement of ecology:	3	3	
LE 05	Long Term Ecological Management:			A pre-requisite that LE03 roles & responsibilities are defined at an early stage, site preparation and construction works are planned to optimise ecological benefits and outputs and that 1 credit is achieved for minimising impact in LE04. To achieve the first credit on-going monitoring & review would be required to assess the effectiveness of the ecological protection & enhancement measures as well as developing and reviewing on-going maintenance arrangements in accordance with survey data & stakeholder consultation.
	Planning, liaison, data, monitoring & review management & maintenance.	1	1	
	Landscape & ecological management plan.	1	1	

				The second credit may be awarded where a Landscape and Ecology Management Plan is developed in accordance with BS 42020:2013 to support on-going maintenance of the ecological value.
Land Use & Ecology Totals:		13	13	
Land Use & Ecology score totals:		15.00 %	15.00 %	
Pollution				
BREEAM Issues		Available	Expected Score	Comments
Pol 01	Impact of refrigerants	2	0	Expected Credit may be awarded if all systems are hermetically sealed or only use environmentally benign refrigerants
	Leak detection	1	1	
Pol 02	Local air quality	2	2	Expected It is expected that all heating and hot water shall be supplied by non-combustion systems and therefore, 2 credits can be achieved for this issue.
Pol 03	Flood Resilience	2	2	It is a pre-requisite that an appropriate professional is appointed to carry out the flood risk and surface water assessment. Expected Initial investigations indicate that the site is located in a low flood risk area. The credits can be achieved provided that a site-specific Flood Risk Assessment is produced confirm flooding from all sources. The report should also recommend suitable measures for flood resistance and resilience if necessary. The Surface Water credits can be achieved if an appropriate consultant shall carry out an assessment to demonstrate and/or confirm the following criteria: - Peak rate of run-off from the site is 30% lower 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.
	Surface Water	2	2	
	Minimising Water Pollution	1	1	

				• All calculations include an allowance for climate change; this should be made in accordance with current best practice planning guidance. • Relevant maintenance and ownership arrangement of drainage systems. • 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) • 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. Credit may be awarded if it is confirmed by an appropriate consultant that no discharge from site for rainfall is up to 5mm
Pol 04	Light Pollution	1	1	Expected To achieve this credit evidence shall be provided to demonstrate that the external lighting design shall be in compliance with the guidance in the Institution of Lighting Professionals (ILP) Guidance notes for the reduction of obtrusive light, 2011. The lighting controls installed shall ensure all external lighting (except for safety and security lighting) can be automatically switched off between 23:00 and 07:00. If safety or security lighting is provided and will be used between 23:00 and 07:00, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 2 of the ILP guidance notes.
Pol 05	Reduction of noise pollution	1	1	Expected Due to the presence of noise-sensitive areas/buildings within an 800m radius of the development, an acoustic assessment shall be carried out investigating the existing environmental noise levels and considering the re-radiated noise level at the site. Where applicable, noise attenuation measures should be implemented.
Pollution Totals:		12	10	
Pollution score totals:		9.00 %	7.50 %	

Innovation				
BREEAM Issues		Available	Expected Score	Comments
Man 03	Responsible Construction Practices	1	0	A credit may be achieved where all Responsible Construction measures are implemented.
Hea 01	Visual Comfort	1	0	Credits are available for meeting exemplary daylighting criteria.
Hea 06	Security	1	0	A credit is available for demonstrating compliance with the BRE security rating scheme "SABRE"
Mat 01	Life Cycle Impacts	2	2	2 credit may be achieved for aligning the MAN02 LCC & LCA at concept and technical design stages.
Mat 03	Responsible Sourcing of Materials	1	0	An innovation credit is available where at least 50% of the available responsible sourcing credits are achieved.
Wst 01	Construction Waste Management	1	0	In order to achieve the innovation credit both the exemplary waste benchmark performance and levels of avoidance from landfill must be achieved.
Wst 02	Recycled & Sustainably Aggregates	1	0	To achieve this level of performance an exemplary level of sustainable aggregate sourcing would be required with all aggregate sources from a very local area and of a very high recycled content.
Le 02	Identifying & understanding ecological risks & opportunities	1	0	To achieve this credit the wider site sustainability-related activities and potential for ecosystem service-related benefits should be considered. Also required are: full credits for Hea 07; Pol 03 surface water run-off & watercourse pollution.
Le 04	Change & enhancement of ecology	1	0	An innovation credit may be achieved for demonstrating a significant increase to ecological value using the methodology detailed in GN40.
Innovation score totals:		10 (Max)	2	
OVERALL SCORE TOTALS:			82.30 %	