



SUSTAINABILITY SERVICES

BREEAM Pre-Assessment

Trade City Sharston

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Document Control

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Executive Summary

This BREEAM Pre-Assessment presents a recommended strategy for achieving a BREEAM “Excellent” rating for the proposed Trade City development at Former Electrium Sales Ltd Site, 1934 Sharston Road, Wythenshawe.

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.

Due to the development being speculative without a known end user, it would not be technically feasible to achieve a BREEAM Outstanding rating, and this pre-assessment study confirms that the highest feasible rating for this development is ‘Excellent’.

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 City development at Former Electrium Sales Ltd Site, 1934 Sharston Road, Wythenshawe.

The proposed development is assessed under BREEAM UK New Construction Version 6.1.2 scheme 'shell and core' criteria (SD5079).

The proposed development is described as erection of two storey warehouse units (Use Class B2/B8) including ancillary offices and trade counters, with all associated works including landscaping, car parking and alterations to access arrangements.

The development consists of 9 industrial warehouse units (class B2/B8), including provision for ancillary offices, across three separate blocks and the site plan can be seen in figure 1 on the following page. The total gross internal area of the development is 8,511.5 m². Due to the development being speculative without a known end user, it would not be technically feasible to achieve a BREEAM Outstanding rating, and this pre-assessment study confirms that the highest feasible rating for this development is 'Excellent'.

The report is based on the drawings by Fletcher Rae Architects. Please refer to the cover letter submitted following the planning submission.

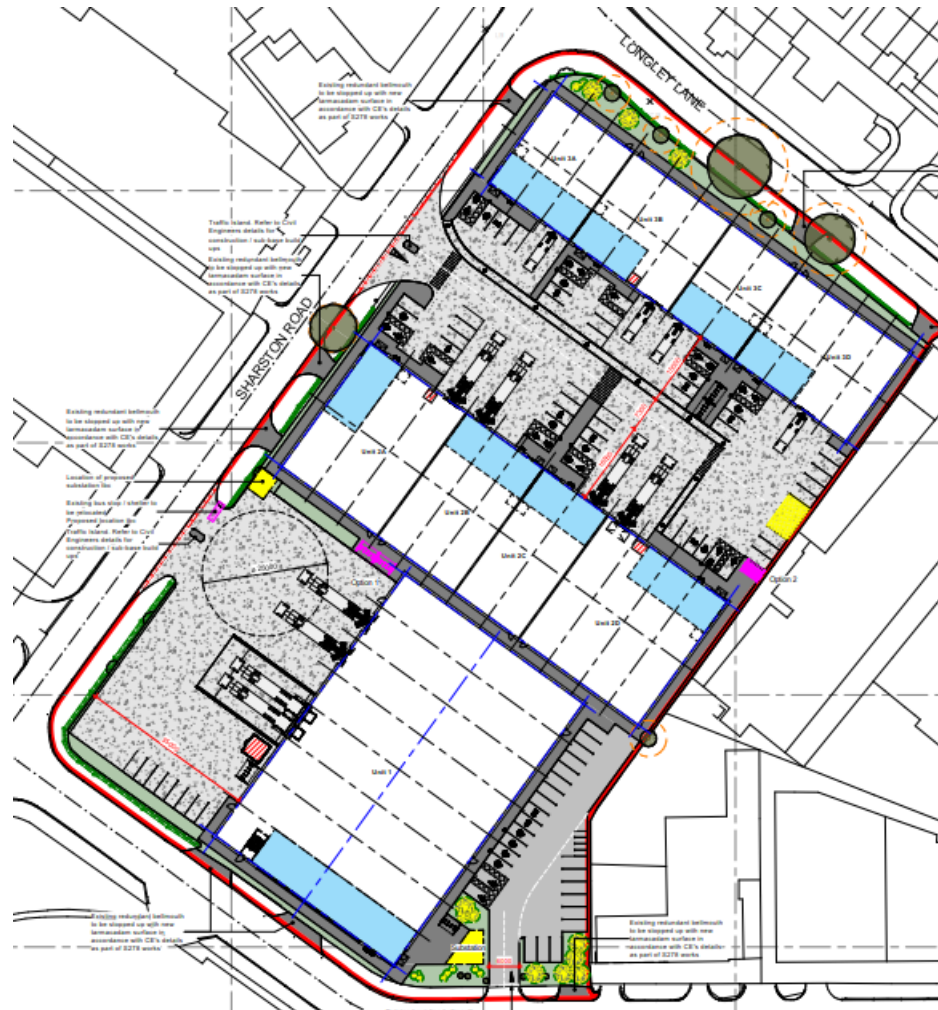


Figure 1: Proposed Development Site Plan

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.

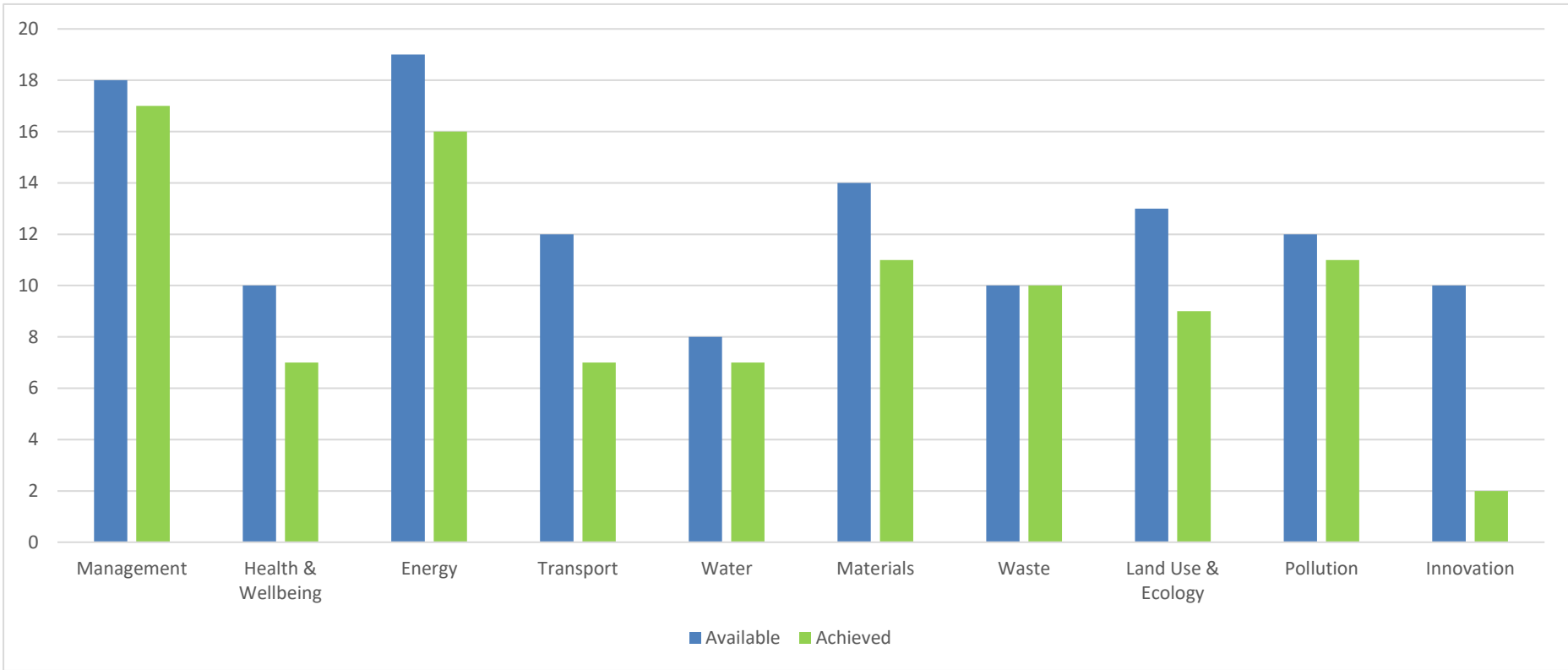
The BREEAM shell and core assessment is generally based on the developer's scope of works up to handover only. The future tenant may choose to perform an additional BREEAM assessment of their fit-out works in accordance with the BREEAM Refurbishment and Fit Out criteria.

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	81.99%	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

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. Consultation shall be carried out with the interested parties (including facilities management, representative and existing community and local heritage groups), prior to completion of RIBA Stage 2 to influence the project brief and design. 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	1	
	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 shall be carried out 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/m ² .
	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’.

	BREEAM Advisory Professional (Site)	1	1	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
	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. Prior to handover, non-technical/technical building user guides shall be developed for the building occupiers and facilities managers.
	Commissioning – design and preparation	1	1	
	Testing & Inspecting Building Fabric	1	0	
	Handover <i>(Building User Guides Mandatory)</i>	1	1	

				Credits may be awarded at the Design Stage where an appropriate project member is appointed to manage and advise all commissioning activities. To achieve the handover credit, non-technical/technical training schedules shall be developed and distributed alongside the building user guides.
Management Totals:		18	17	
Management score totals %:		11.00 %	10.38%	
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 meets the Category B requirements for PPD, PMV, and local discomfort set out in Table A.1 of Annex A of ISO 7730:2005. An additional 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	Expected A Credit can be awarded where the appointed Suitably Qualified Security Specialist (SQSS) conducts an evidence-based Crime Impact Assessment (CIA) and the recommendations from the SQSS shall be implemented in the design.
Hea 07	Safe Access	1	0	Credit not Targeted. Based on the current site plan, the safe access credit cannot be achieved. An outdoor space has not been indicated on the layout. However, from reviewing the plan, it's unclear whether there is sufficient space to provide adequate outdoor areas for the units on site.
	Outdoor Space	1	0	
Health & Wellbeing Totals:		10	7	
Health & Wellbeing score totals %:		8.00 %	5.60%	

Energy				
BREEAM Issues		Available	Expected Score	Comments
Ene 01	Energy Performance <i>(4 credits mandatory for Excellent)</i>	9	8	Expected CHBS has carried out the energy simulation for the proposed development and completed an energy assessment report confirming that 8 credits may be achieved.
	Prediction of operational energy consumption	4	4	In order to target the additional 4 credits for the prediction of operational energy consumption, a detailed energy modelling and sensitivity analysis must be undertaken to predict the building energy consumption. A range of scenarios would also need to have been modelled to inform improvements to design of the building and to operational, maintenance and handover strategies.
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 has 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	16	
Energy score totals:		14.00 %	11.84 %	
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.
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 AI calculated for the development is 5.36, which is < 25, the following measures are the most appropriate to target for this development: 1. The following provision has been made on site following latest site plan drawing received for electric car charging stations for at least 10% of car parking places (at least 4 spaces provided for unit 1 and 1 space each for Units 2A-2D and 3A-3D. Each car charging station should have a minimum of 7kW charging.

				2. Set up car share facility provide priority car parking (5% nearest to entrances) for car sharers. The following provision has been made on site following latest site plan drawing received (2 spaces provided for unit 1 and 1 space each for Units 2A-2D and 3A-3D.). 3. The number of BREEAM compliant cycle storage spaces for each unit shall be provided as follows: Unit 1 - 18 Unit 2 - 20 Unit 3A - 4 Unit 3B - 6 Unit 3C - 4 Unit 3D - 6 Total – 58 BREEAM Compliant cycle spaces has been provided exceeding compliance requirements of 54 4. Demonstrate how at least two of the following compliant cyclist facilities could be installed by the tenant: • Showers. • Changing facilities • Lockers • Drying spaces. 5. Three existing amenities within proximity of 500 m radius if the site • The Mess Café • Kids Start Nursery • Message Community Grocery
	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 4 credits, water consuming fittings shall be specified to show a 50% improvement on baseline water consumption.
Wat 02	Water Monitoring <i>(Criterion 1 Mandatory)</i>	1	1	Expected 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	7	
Water score totals:		7.00 %	6.12 %	
Materials				
BREEAM Issues		Available	Expected Score	Comments

Mat 01	LCA Superstructure	6	4	In BREEAM V6.1, this issue is 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. An 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	EARLY ACTION REQUIRED Material efficiency report has been produced. A credit may be awarded if the design team has set targets to optimise the use of materials at each RIBA Stage, as per BREEAM comments.
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 m ² (gross internal floor area) shall be no more than 3.4 m ³ 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.
	Construction Resource Efficiency	3	3	
	Diversion from Landfill	1	1	

				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.
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: The proposed site plan of the development confirms that waste storage areas align with BREEAM requirements, however, please provide updated drawing to show that the storage area is compliant with the following criteria: - Clearly segregated and labelled for recycling waste storage - Placed within accessible reach of the building (ideally 20m of a building's entrance) - In a location with good vehicular access to facilitate collections. For speculative developments, where potential waste streams may requirement 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 has been produced at RIBBA stage 2 to identify the impact of expected extreme weather conditions arising from climate change on the building over its projected life cycle. Recommendations have been developed based on the climate change adaptation strategy appraisal, that aim to mitigate the identified impact.

				A credit shall be achieved where the report is updated following BREEAM comments. 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	2	Expected Functional Adaptability and Ease of Disassembly study has been produced for the development and recommendations have been developed to enable and facilitate disassembly and functional adaptation. 1 credit shall be achieved where the report is updated following BREEAM comment. An additional credit is available for providing an update at RIBA Stage 4 on how the recommendations and solutions proposed during the study have been implemented where practical and cost effective. A building adaptability and disassembly guide shall also be produced to communicate the characteristics allowing functional adaptability and disassembly to prospective tenants.
Waste Totals:		10	10	
Waste score totals:		7.00 %	7.00 %	
Land Use & Ecology				
BREEAM Issues		Available	Expected Score	Comments
LE 01	Previously Occupied Land	1	1	Expected Based on google satellite imagery and the development site plan, the development shows the site is previously occupied and proposed structure and hard standing shall occupy more than 75% of previously developed land.
	Contaminated Land	1	1	

				Expected There is currently no record of land contamination. Appropriate person should be appointed to carry out a report to confirm the site if not exposed to any contamination
LE 02	Identifying & understanding ecological risks & opportunities: Survey & Evaluation Determining Ecological Outcomes	 1 1	 1 1	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.
LE 03	Managing negative impacts on ecology: Planning, liaison & implementation of data Managing negative impacts	 1 2	 1 1	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. Based on the BNG report, the proposed development will involve the clearance of existing vegetation and structures to accommodate new industrial units and hardstanding, resulting in the complete or partial loss of all baseline habitat units. Hence 1 credit has been targeted pending been the ecologist shall confirm that the negative impact of the development to ecology has been minimised in accordance with the hierarchy (avoidance/protection/reduction/compensation/enhancement)

				Potential A further credit can be awarded where the negative impacts are managed such that there is no overall loss in ecological value.
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 implementation of the solutions & measures to enhance ecology derived based on survey data & stakeholder consultation. Based on the BNG report, the proposed development will involve the clearance of existing vegetation and structures to accommodate new industrial units and hardstanding, resulting in the complete or partial loss of all baseline habitat units and there is currently no net gain in habit or vegetation on site. Potential 1 credit can be achieved where the offsite measures are taken to compensate for the ecology baseline loss of the proposed site or in the absence of suitable off-site providers, statutory biodiversity credits may need to be purchased.
	Change & enhancement of ecology:	3	0	
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	9	
Land Use & Ecology score totals:		15.00 %	10.38 %	
Pollution				
BREEAM Issues		Available	Expected Score	Comments
Pol 01	Impact of refrigerants	2	1	As prerequisite all systems with electric compressors comply with the requirements of BS EN 378-2:2016 and BS EN 378-3:2016+A1:2020. Refrigeration systems containing ammonia comply with the Institute of Refrigeration Ammonia Refrigeration Systems code of practice. Expected A credit on Impact of refrigerants can be awarded if all the Systems using refrigerants have a DELC of ≤1000kgCO ₂ -eq/kW cooling and heating capacity. A credit may be awarded for leak detection 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.

	Surface Water	2	2	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. • 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. A credit may be awarded if it is confirmed by an appropriate consultant that no discharge from site for rainfall is up to 5mm.
	Minimising Water Pollution	1	1	
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	11	
Pollution score totals:		9.00 %	8.25 %	

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 credits 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	To achieve this credit, the development must demonstrate that it has achieved or exceeded a 10% biodiversity net gain or is in line with the DEFRA Biodiversity Metric (versions 3.0, 3.1, or 4.0) and the Statutory Biodiversity Metric.
Innovation score totals:		10 (Max)	2	
OVERALL SCORE TOTALS:			81.99 %	