



**Former Royal Mail Sorting Office
& Distribution Centre**
Office Fully-Fitted Assessment
BREEAM 2018 Pre-Assessment Report

CHBS-PB-17022-2-A

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Document Control

This report is intended as a summary of the BREEAM pre-assessment review for the following project:

Project Name	Former Royal Mail Sorting Office & Distribution Centre 80 Cavendish Road, Reading, RG1 8JG
Client	Hermes
Project No.	17022
Report	BREEAM Pre-Assessment
BREEAM Version	BREEAM 2018 New Construction V2.0 – Fully-Fitted
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Quality Assurance

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1.0 Introduction

This report summarises the results of, and assumptions made, within the production of a BREEAM Pre-Assessment for the proposed Office elements of the redevelopment of the Former Royal Mail Sorting Office & Distribution Centre at 80 Cavendish Road, Reading, RG1 8JG. The proposed development is assumed to be assessed under BREEAM 2018 New Construction scheme (Version 2) Fully-Fitted.

The Local Authority Planning Policy requires that all non-domestic development >1,000 m² floor area achieve a BREEAM rating 50% Very Good/50% Excellent (Enhanced Very Good target of 62.5%). It is also required that a buffer of no less than 3% above the target score should be aimed for at pre-assessment stage.

In-line with the Local Authority guidance the smaller A1/A2/A3 & D1 units below <1,000 m² shall be excluded from the BREEAM assessment. As such there are expected to be two separate BREEAM assessments types required for the development:

Office – Fully-Fitted

Retail – Shell Only

This report focusses on the Fully-Fitted Offices Assessment, although there are issues common to both assessments.

The gross internal area of the proposed development is 9,590 m² Phase 1 and 6,184 m² Phase 3.

The report is based on information provided in the following drawings by tp bennett architecture:

A11113C2099 P1	A11113C2106 P1	A11113C2113 P1	A11113C2105 P1
A11113C2100 P1	A11113C2107 P1	A11113C2116 P1	A11113C2112 P1
A11113C2101 P1	A11113C2108 P1	A11113C2123 P1	A11113C2202 P1
A11113C2102 P1	A11113C2109 P1	A11113C2127 P1	A11113C2203 P1
A11113C2103 P1	A11113C2110 P1	A11113C2200 P1	A11113C2204 P1
A11113C2104 P1	A11113C2111 P1	A11113C2201 P1	

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.

A summary of the recommended targeted credits is to be found in Section 4 in this report.

Throughout the report, reference shall be made to the evidence required for the successful delivery of each credit. Once appointed as Assessors access may be provided to an online tracker system to give more detailed evidence requirements for each credit; please see section 1.1 for more details.

The assessment shall involve collecting evidence from various members of the project team. Responsibility for providing evidence for each credit shall be set at the beginning of the Design Stage Assessment - which is typically at a Pre-Planning Stage. By its nature achieving a BREEAM rating must be 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.

1.1 Assessment Tracking and Management

For all BREEAM assessments performed by CHB Sustainability, we use Tracker Plus, a cutting edge online tracker system throughout the assessment process. This becomes the focal point of the assessment where additional guidance can be found, evidence can be uploaded, and live up to the minute reports can be accessed and downloaded by any member of the project team at any time.

Tracker Plus is an online project management and assessment delivery system. It streamlines the process and improves communication, collaboration and workflow, collecting and disseminating information throughout an assessment. It was the first such system to be officially recognised by BRE Global for its ground-breaking ability to streamline the BREEAM assessment process for all members of the design team. The badge is used as a symbol that demonstrates formal approval by BRE Global that the software is compatible with the BREEAM QA systems.



2.0 BREEAM 2018

Context

The BRE Environmental Assessment Method (BREEAM) is a holistic measure of the sustainability of both new and majorly refurbished non-domestic buildings. 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.

How BREEAM Works

BREEAM 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.

Table 1: BREEAM Environmental section weightings (Fully Fitted)

Environmental Section	Weighting
Management	11.00%
Health & Wellbeing	14.00%
Energy	16.00%
Transport	10.00%
Water	7.00%
Materials	15.00%
Waste	6.00%
Land Use & Ecology	13.00%
Pollution	8.00%
Total	100.00%
Innovation	+10.00%

BREEAM Credits

There are three types of credit; 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, a maximum score of 10% can be added through innovation credits.

The mandatory criteria shall be discussed in Section 3.1 before consideration of the tradable credits and innovation credits in Section 4.0.

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

Table 2: BREEAM rating benchmarks

BREEAM Rating	% Score	Sustainability Performance	Percentage of UK new non-domestic buildings
Outstanding	85	Innovator	Less than top 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		

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.

BREEAM 2018

There have been some major changes within both the issues and technical requirements following the introduction of the BREEAM 2018 criteria. For those familiar with BREEAM 2014 we shall highlight within this pre-assessment report where significant changes have been introduced in order to support the development team throughout this transitional period onto the new scheme.

2.1 Assessment Criteria

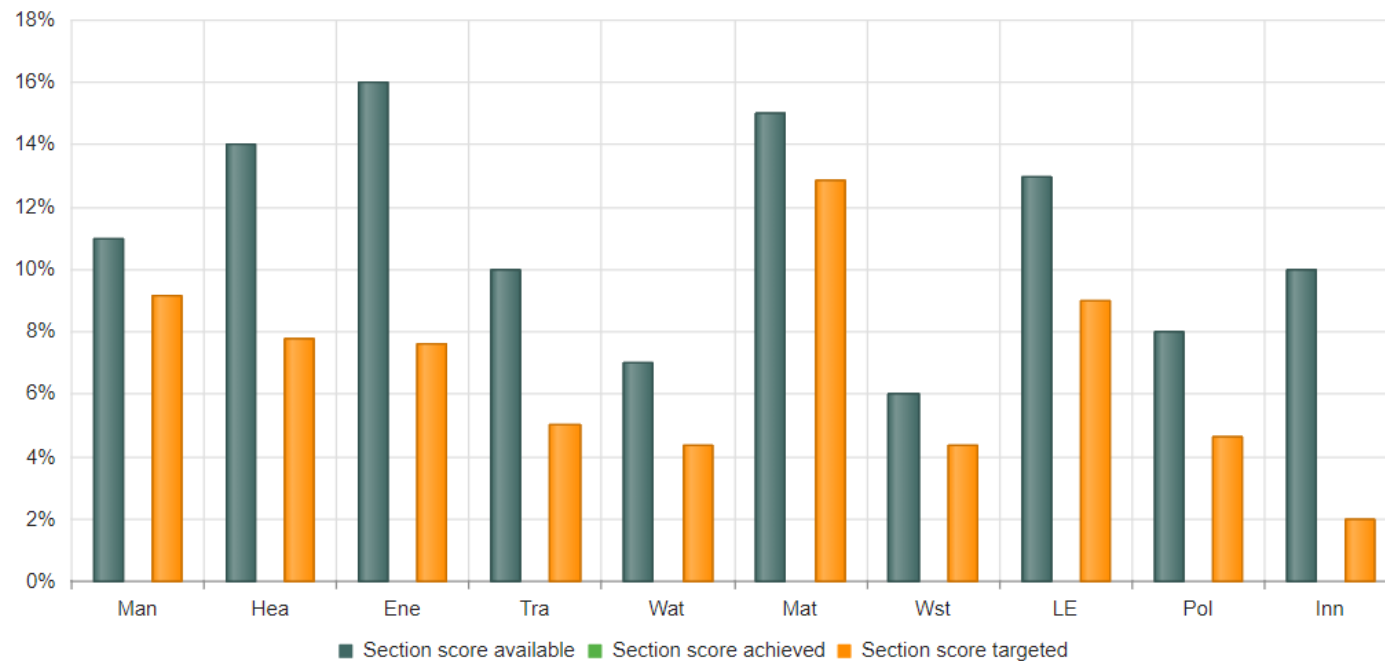
New Construction

The proposed development will 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 will come into operation/use for the first time upon completion of the works.

3.0 Scoring scenarios

Scenario	Score	BREEAM Rating
Expected Score	66.82	Enhanced Very Good

Performance by environmental category



3.1 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.

Minimum Standards Required for Very Good Rating

Man 04 - Commissioning & Test Schedule and Responsibilities (Criterion 1-5)

For Very Good it is mandatory that an appropriate project team member is responsible for commissioning and testing in accordance with the appropriate standards. All commissioning and testing activities shall be detailed in a schedule and programmed in to the contractor's programme and budget.

Man 04 – Building User Guide (Criterion 11)

Two Building User Guides must be developed; a technical guide for facilities managers; and a non-technical guide for building users.

Ene 02 – Energy Sub-metering (Criterion 1-3)

Energy end-uses shall be sub-metered, as the useful area of the new construction is over 1,000m² then an appropriate energy monitoring and management system shall be used to automate this process and clearly identify energy consuming end uses to the building users.

Wat 01 – Water Consumption (1 Credit)

For a Very Good rating the reduction in predicted domestic water consumption shall be at least 12.5%, this shall be achieved through water efficient fixtures and fittings.

Wat 02 – Water Monitoring (Criterion 1 only)

It is mandatory that each unit is provided with a water meter on the main supply to the building.

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 traded timber', in accordance with the UK Government's Timber Procurement Policy.

4.0 - Credits and Comments Table

Management				
	BREEAM Issues	Available	Expected Score	Comments
Man 01	Project Delivery Planning	1	1	Pre-planning actions required. Credits may be awarded for this issue where early stage actions at concept design stage (RIBA Stage 2) include: - Defining Roles & Responsibilities for project delivery within the project team (<i>Pro-forma detailing evidence requirements available on request</i>) - Design team consult with interested parties & take feedback on-board to influence design (Expected that Hermes Community Engagement Plan may include scope of this issue) An additional credit may be achieved by appointing a BREEAM AP & formally agreeing the BREEAM Target.
	Stakeholder Consultation	1	1	
	BREEAM Advisory Professional	2	0	
Man 02	Elemental Life Cycle Cost	2	2	Pre-planning actions required. The Elemental Stage LCC must be completed before the end of RIBA Stage 2 (Concept). 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 2018 Key Changes	Environmental Management	1	1	Pre-requisite that all timber and timber-based products used on the project are 'Legally harvested and traded timber'. Credits may be awarded where the Main contractor:
	BREEAM Advisory Professional	1	1	

	Responsible Construction Management	2	2	- Has ISO 14001/EMAS or equivalent. - Implements best practice pollution prevention policies & procedures (PPG6). - Appoints a BREEAM AP for the construction phase. - 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. - Monitors, records & reports transportation of site materials and waste.
	Monitoring Construction Site Impacts	2	2	
Man 04	Commissioning – Testing Schedule and responsibilities (<i>Mandatory</i>)	1	1	A schedule of commissioning and testing shall be prepared for all building services, control systems and building fabric. This schedule shall identify the appropriate standards and include a suitable timescale for commissioning and re-commissioning.
	Commissioning - design and preparation	1	1	An appropriate team member shall be appointed to monitor and programme pre-commissioning, commissioning and testing. They shall have responsibility for: - Undertaking design reviews and giving advice on suitable for ease of commissioning. - Providing commissioning management input to construction programming and during installation stages. - Management for commissioning, performance testing and handover or post-handover stages. <i>If any complex building services systems are used, then this issue shall require the appointment of a specialist commissioning manager.</i>
	Testing and inspecting building fabric	1	0	Credits may be awarded 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.
	Handover (<i>Criterion 11 Mandatory</i>)	1	1	Prior to handover, non-technical/technical building user guides & training schedules shall be developed for the building occupiers and facilities managers.
	Management Totals:	18	15	
	Management score totals %:	11.00 %	9.16 %	

Health & Wellbeing				
BREEAM Issues		Available	Expected Score	Comments
Hea 01	Control of glare from sunlight	1	0	There is potential to achieve the glare control credit if an assessment is carried out and measures implemented (such as user-controlled blinds) in order to control glare at workstations.
	Daylight	2	2	It is assumed that daylight calculations shall be unable to demonstrate that 80% of the speculative floor area shall meet the BREEAM daylighting criteria due to the relatively deep plan.
	View Out	1	1	It is assumed that all workstations shall be positioned a sufficient distance of a glazed façade in order to meet this criterion.
	Internal and external lighting levels, zoning and control	1	1	Internal lighting shall be designed in compliance with the SLL Code for Lighting 2012, CIBSE Lighting Guide 7 (in applicable areas) and any other relevant industry standard. The external lighting shall be in accordance with BS 5489-1:2013 and BS EN 12464-2:2014.
Hea 02	Ventilation	1	1	Pre-requisite that a site-specific indoor air quality (IAQ) plan has been produced no later than the end of RIBA Stage 2. The building has been designed to minimise the indoor concentration and recirculation of pollutants in the building.
	Emissions from construction products	2	0	There is the potential to achieve the further credits where:
	Post-construction indoor air quality measurement	1	0	Three out of five of the product types meet the emissions limits, testing requirements and any additional requirements listed in table 5.11 of the BREEAM manual.

				The indoor air quality shall be measured at post construction and is not expected to exceed the formaldehyde and TVOC limits listed in the BREEAM manual.
Hea 04	Thermal modelling	1	1	Dynamic thermal modelling shall be performed to demonstrate that the building fabric specification and services are sufficient to maintain thermal comfort.
	Design for future thermal comfort	1	1	An additional modelling scenario including an allowance for changes in external conditions due to climate change shall be considered to ensure that the design is adaptable.
	Thermal zoning and controls	1	1	The findings of the thermal comfort analysis shall inform the building services zoning and controls.
Hea 05	Acoustic Performance	3	0	There is potential for this credit to 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	Pre-planning actions required. In order to achieve this credit a Suitably Qualified Security Specialist (SQSS) shall be engaged to conduct an evidence-based Crime Impact Assessment (CIA) at no later than RIBA Stage 2 (Concept). Any recommendations or solutions proposed by the SQSS shall be implemented.
Hea 07 <i>2018 New Issue</i>	Safe Access	1	0	It is assumed that the design of the public realm shall not include dedicated cycle routes to the cycle stores and dedicated pedestrian crossings where the footpaths cross roadways therefore this credit cannot be achieved. It is assumed that the new public squares shall be adequately sized such that there are sufficient opportunities for staff from all buildings to utilise these areas during breaks and lunchtimes as external amenity areas.
	Outdoor Space	1	1	
Health & Wellbeing Totals:		18	10	
Health & Wellbeing score totals %:		14.00%	7.77 %	

Energy				
BREEAM Issues		Available	Expected Score	Comments
Ene 01 <i>2018 Key Changes</i>	Energy Performance	9	4	Based upon previous assessments a score of 4 credits is assumed to be achieved based on the SBEM modelling in support of the Energy Statement.
	Prediction of operational energy consumption	4	0	In order to target the additional 4 credits for prediction of operational energy consumption a workshop on building energy design must be held at RIBA Stage 2. A range of DSM energy simulations of operational energy shall be performed to inform risk management of construction & commissioning.
Ene 02	Sub-metering of end-use categories (Criteria 1-3 Mandatory)	1	1	Energy metering systems shall be installed so that at least 90% of the estimated annual energy consumption of each fuel is assigned to end-use categories. The energy consumption shall be metered by end-use category with an appropriate monitoring & metering system.
	Sub-metering of high energy load and tenancy areas	1	1	A significant majority of the energy supply shall be monitored with an accessible energy monitoring and management system. Sub-metering needs to be considered for each floor/tenancy area.
Ene 03	External Lighting	1	1	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. Any non-security lighting in areas of intermittent pedestrian traffic should be controlled by a presence detector.
Ene 04	Passive Design Analysis	1	0	Pre-planning actions required.
	Free Cooling	1	0	In order to achieve the passive design credit a dynamic energy simulation would be required at RIBA Stage 2 (Concept) in order to assess thermal comfort and explore passive design measures to reduce energy demands.
	LZC Feasibility	1	1	

				It is assumed that a BREEAM compliant LZC Feasibility study shall be developed at an early stage and LZC technologies shall form part of the building services installation to achieve reductions in primary energy/CO ₂ emissions.
Ene 06	Energy efficient transportation systems – Energy Consumption	1	1	For specified lifts the transportation demand and usage patterns for the building shall be analysed to determine the optimum number and size of the lifts. The analysis should also include energy consumption (BS EN ISO 25745 Part 2 or Part 3) comparison for at least two different lift types with the lowest energy consuming model specified.
	Energy efficient transportation systems – Energy efficient features	1	1	The specified lift shall include energy efficient features listed in the BREEAM manual.
Energy Totals:		21	10	
Energy score totals:		16.0 %	7.61 %	
Transport				
BREEAM Issues		Available	Expected Score	Comments
Tra 01	Travel Plan	2	2	Pre-planning actions required. The credits may be awarded where a BREEAM Compliant Travel Plan is produced by RIBA Stage 2 which includes recommendations to increase or improve sustainable travel options. It is assumed that a Transport Assessment would be required to support the planning application.
Tra 02 <i>2018 New Issue</i>	Transportation Options Implementation	10	4	1. There are a number of different measures that can be selected in order to make up a maximum number of 10 credits. The site Accessibility Index (AI) has been estimated to be between 8 and 25 (TBC within Travel Plan), therefore 1 credit may be achieved for AI>8 and a further 1 Credit for close proximity to local amenities. The following measures are the most appropriate to target for this development to gain additional credits for this issue

				1. Provide electric car charging stations for at least 10% of car parking places 2. Provide at least 50 BREEAM compliant cycle spaces for Phase 1 Office elements and 32 for the Phase 3 Office.
Transport Totals:		12	6	
Transport score totals:		10.00 %	5.00 %	
Water				
BREEAM Issues		Available	Expected Score	Comments
Wat 01	Water Consumption <i>(1 Credit Mandatory)</i>	5	3	Water consuming fittings to be specified to show a 40% improvement over baseline building water consumption in order to achieve 3 credits.
Wat 02	Water Monitoring <i>(Criterion 1 Mandatory)</i>	1	1	A credit may be awarded for providing a pulsed output water meter on the mains supply to the unit.
Wat 03	Leak detection	1	1	This credit may be awarded for provision of a main water leak detection system to the building's mains water supply.
	Flow control devices	1	0	There is potential to achieve the further credit where flow control devices that regulate the water supply to each WC area or sanitary facility shall be installed.
Water Totals:		8	5	
Water score totals:		7.00 %	4.37 %	
Materials				
BREEAM Issues		Available	Expected Score	Comments
Mat 01	LCA Superstructure	6	4	Pre-planning actions required.

2018 Key Changes	LCA Substructure & Hard Landscaping	1	1	In BREEAM 2018 this issue is now based on performing building Life Cycle Analysis (LCA) of the impact of the proposed construction materials. Credits are available for performing the following processes at both concept (RIBA Stage 2) and Technical Design (RIBA Stage 4): performing LCA; comparing against benchmark performance; and assessing different options for construction materials to reduce the environmental impact. A further credit may be awarded where hard landscaping is also considered within the Concept design stage LCA. It is assumed that the LCC/LCA early actions may be implemented in order to submit the LCA to BRE prior to a detailed/full planning application.
Mat 02 2018 New Issue	Environmental Product Declarations	1	1	Credits may be awarded for utilising construction materials with Environmental Product Declarations (EPD). It is assumed that at least 3 single product EPD's are available across a minimum of 5 product classification categories (e.g. timber, metals, concrete etc.) or any other combination in order to achieve a minimum of 20 points in the BREEAM MAT02 calculation methodology.
Mat 03 2018 Key Changes	Sustainable Procurement (Mandatory timber procurement) Responsible Sourcing	1 3	1 3	Pre-requisite that all timber and timber-based products used on the project are 'Legally harvested and traded timber'. The sustainable Procurement Plan must be in place before the end of Stage 2 Concept design. A credit may be awarded where the contractor shall have a sustainable procurement policy in line with BREEAM guidance, which all construction materials are sourced in accordance with. A further 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. In order 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.

Mat 05	Design for durability & resistance	1	1	Credits may be awarded where risks of damage to the internal and external building fabric from building usage, vehicles, malicious damage & environmental degradation have been considered and mitigations of these risks have been included within the proposed design. Key mitigations on this project may include: 1. Robust wall construction up to 2m high. 2. Door stoppers to stop doors damaging walls. 3. Blockwork, glazing and any cladding in accordance with industry durability standards. 4. Convenient access to façade for maintenance & cleaning.
Mat 06	Material efficiency	1	1	Pre-planning actions required. This credit requires targets are set and opportunities to optimise material use have been considered, reported and implemented in design, procurement, construction, maintenance and end of life. In order to achieve this credit evidence needs to be provided to demonstrate that material efficiency has been formally considered at preparation & brief and concept design stages.
Materials Totals:		14	12	
Materials score totals:		15.00 %	12.85 %	
Waste				
BREEAM Issues		Available	Expected Score	Comments
Wst 01	Pre-Demolition Waste Audit	1	1	Pre-planning actions required. Satellite imagery indicates that the development site is currently occupied by a multi-storey car park and hardstanding, therefore it is assumed that a pre-demolition waste audit shall be performed at concept design (RIBA Stage 2).
	Construction Resource Efficiency	3	3	
	Diversion from Landfill	1	1	

				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 construction waste arisings are diverted from landfill and 80% by volume or 90% by weight of the total demolition waste arisings are diverted from landfill.
Wst 02	Recycled Aggregates	1	1	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 virgin sources.
<i>2018 Key Changes</i>				
Wst 03	Operational Waste	1	1	This credit may be awarded where 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), or within the unit itself - 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 every 1,000 m² floor area they serve.
Wst 04	Speculative finishes	1	1	For tenanted office areas where the future occupant is not known, carpets and other floor/ceiling finishes must be limited to a show area only so that the future occupant can select the material and therefore avoid unnecessary waste.
Wst 05	Adaptation – Structural & Fabric Resilience	1	0	Pre-planning actions required.

				To achieve this credit a Climate Change Adaptation Strategy report is required to be commissioned to appraise the structural and fabric resistance to a changing climate over the building life cycle by RIBA Stage 2 or equivalent.
Wst 06 <i>2018 Key Changes</i>	Design for Functional Adaptability & Disassembly	2	0	Pre-planning actions required. A Building specific disassembly and functional adaptation strategy appraisal to be conducted by end of RIBA stage 2. 1 credit would be available based on the recommendations and a further credit where the recommended measures are implemented.
Waste Totals:		11	8	
Waste score totals:		6.00 %	4.36 %	
Land Use & Ecology				
BREEAM Issues		Available	Expected Score	Comments
LE 01	Previously Occupied Land	1	1	Based on satellite imagery the development site is on previously occupied land, hence 1 credits may be achieved for this issue.
	Contaminated Land	1	0	It is assumed that there is no significant land contamination on site such that remediation measures are necessary.
LE 02 <i>2018 Key Changes</i>	Identifying & understanding ecological risks & opportunities:			Pre-planning actions required. Although the site is mainly hardstanding and existing buildings, there are some areas of trees and vegetation along the site boundaries – as such it is assumed that the input from a Suitably Qualified Ecologist (SQE) shall be required to assess & advise with regards to Ecology for BREEAM (Route 2) in accordance with the GN34 risk assessment.
	Survey & Evaluation	1	1	
	Determining Ecological Outcomes	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. <i>The BREEAM 2018 revised ecology issues are technically complex, and the Ecologist should refer to BREEAM 2018 Technical Guidance and Guidance Note (GN) 40 for the full criteria in order to confirm the credits available</i>
LE 03 <i>2018 Key Changes</i>	Managing negative impacts on ecology: Planning, liaison & implementation of data Managing negative impacts	 1 2	 1 2	Linked pre-planning action, LE 02 is a prerequisite to achieving credits for this issue. 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 2 credits can be awarded where it can be demonstrated that there is no overall loss in ecological value. <i>The BREEAM 2018 revised ecology issues are technically complex, and the Ecologist should refer to BREEAM 2018 Technical Guidance and Guidance Note (GN) 40 for the full criteria in order to confirm the credits available.</i>

2018 Key Changes	LE 04 Liaison, implementation & data collection.	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.
	Change & enhancement of ecology.	3	1	The further 3 credits may be awarded based on ecologist calculations of the scale of ecological enhancement. At this stage it is assumed that 1 credit may be achieved. This shall be confirmed in consultation with the appointed ecologist. <i>The BREEAM 2018 revised ecology issues are technically complex, and the Ecologist should refer to BREEAM 2018 Technical Guidance and Guidance Note (GN) 40 for the full criteria in order to confirm the credits available.</i>
2018 Key Changes	LE 05 Long Term Ecological Management:			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.
	Planning, liaison, data, monitoring & review management & maintenance.	1	0	In order 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.
	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. <i>The BREEAM 2018 revised ecology issues are technically complex, and the Ecologist should refer to BREEAM 2018 Technical Guidance and Guidance Note (GN) 40 for the full criteria in order to confirm the credits available.</i>
Land Use & Ecology Totals:		13	9	
Land Use & Ecology score totals:		13.00 %	9.00 %	

Pollution				
BREEAM Issues		Available	Expected Score	Comments
Pol 01	Impact of refrigerant	2	0	There would be potential to achieve 2 credits for this issue where:
	Refrigerant use: Leak detection	1	0	Any specified systems using refrigerants have a DELC of ≤ 1000 kgCO₂-e/kW cooling and heating capacity. All specified systems are hermetically sealed or only use environmentally benign refrigerants. Where the systems are not hermetically sealed, the systems shall have a permanent automated refrigerant leak detection system. <i>It is a pre-requisite for this issue that all systems with electric compressors comply with the requirements of BS EN 378:2016. Refrigeration systems containing ammonia comply with the institute of Refrigeration Ammonia Refrigeration Systems code of practice.</i>
Pol 02	Local air quality	2	2	It is expected that all heating and hot water shall be supplied by non-combustion systems (all electric) and therefore 2 credits would be achieved for this issue.
Pol 03 2018 Key Changes	Flood Resilience	2	1	It is a pre-requisite that an appropriate professional is appointed to carry out the flood risk and surface water assessment. Initial investigations indicate that the site is located in a medium flood risk area (flood zone 2). A site-specific Flood Risk Assessment is required to confirm this and shall consider flooding from all sources. It is expected that the report shall be required to recommend suitable measures for flood resistance and resilience to be integrated into the design. A key change in the 2018 criteria is that peak rate of run-off must now be reduced by 30% compared to the pre-developed site, which shall likely mean that attenuation measures shall be necessary.
	Surface Water	2	2	
	Minimising Water Pollution	1	0	

				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% 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. To achieve the minimising water pollution credit SUDs shall be required such that there are no discharges from site for rainfall events up to 5mm.
Pol 04	Light Pollution	1	1	In order 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: 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	Due to there being a 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	7	
Pollution score totals:		8.00 %	4.66 %	

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	Pre-planning action required 1 credit may be achieved for aligning the MAN02 LCC & LCA at concept and technical design stages. A further credit can be awarded if all the MAT 01 stages of assessment have been followed & the LCA verified by a third party.
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 aggregates 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 GN36.
Innovation score totals:		10 (Max)	2	
OVERALL SCORE TOTALS:			66.82	

5.0 Conclusion

This BREEAM pre-assessment has demonstrated potential strategies for achieving a BREEAM Enhanced 'Very Good' rating for the proposed Fully Fitted Office within Reading Metropolitan Development. An expected BREEAM score of 66.82 % - 'Very Good' BREEAM rating shall be achieved if the recommendations are followed.

Typically, a target higher than the minimum required to achieve a particular BREEAM rating is aspired to in order to allow for any unforeseen circumstances that may result in credits targeted at the Design Stage not being possible to achieve in the Post Construction assessment. A buffer of 4% is currently targeted, in excess of the minimum 3% stipulated by the Local Planning Policies.

Particular attention should be paid to 'Pre-Planning Early Actions' where urgent attention at this point is required to ensure that the most cost-effective approach to BREEAM may be followed, and there are risks that the desired BREEAM rating cannot be achieved without actions at the Pre-Planning Stage. It should however be noted that as the current planning application is outline only then Stage 2 actions may still be completed post-planning in advance of any Stage 3 design work.

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

Some details of the evidence required to be produced in order to achieve each credit has been provided in this pre-assessment report. However, we suggest organising a dedicated BREEAM meeting with the project team members where the issues can be discussed in detail and delegation of credit responsibility would be proposed, thereby committing the relevant design team member to ensure that the requirements are incorporated into design and build specifications and are subsequently delivered.

Due to the importance of pre-planning early actions we would urge the development team to arrange a BREEAM workshop at the earliest opportunity.

Further details of these requirements would be provided on our online BREEAM progress tracking system on the commencement of the BREEAM design stage assessment. This online system will allow all the design team members to view requirements, upload the information that is required to achieve credits for the issues they have been allocated responsibility for and track the progress of the BREEAM assessment.