Former Sipson Garden Centre

BREEAM Pre-assessment

VIRTUS Data Centres

30 September 2026

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Quality information

Prepared by	Checked by	Verified by	Approved by
SA Graduate Sustainability Consultant EF Senior Energy and Carbon Consultant	ES Associate Director	RH Associate Director	KT Technical Design Lead

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Prepared for:

VIRTUS Data Centres

Prepared by:

AECOM Limited
Aldgate Tower
2 Leman Street
London E1 8FA
United Kingdom

T: +44 (0)20 7061 7000
aecom.com

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Executive Summary

AECOM's Sustainability and Decarbonisation Advisory (SDA) team has carried out a BREEAM pre-assessment for the proposed Data Centre project at the Former Sipson Garden Centre at the London Borough of Hillingdon. The pre-assessment is based on the BREEAM Data Centres (DC) 2010 scheme v1.2, which is currently the applicable scheme for data centres in the UK. This report outlines the information and assumptions used to establish the development's 'achievable' BREEAM score based on its current RIBA Stage 2 design. The report also presents credits designated as 'potential', where opportunities exist to enhance the current predicted score, thereby strengthening the project's overall certification strategy and increasing confidence in achieving the rating. Table 1 summarises the BREEAM achievable and potential score under the different sustainability categories.

Table 1. Summary of BREEAM DC 2010 Pre-assessment score

Credit Category	Available Points	Achievable Credits	Achievable + Potential Credits
Management	12	9	12
Health& Wellbeing	13	7	11
Energy	25	22	24
Transport	10	4	6
Water	8	8	8
Materials	15	8	11
Waste	7	4	6
Land Use& Ecology	10	3	7
Pollution	11	5	8
Innovation	10	3	7
Total score %		**73.09%**	**94.94%**
BREEAM Rating		**Excellent**	**Outstanding**

The key points of this BREEAM pre-assessment for the Data Centre project are as follows:

- Several early-stage studies requiring specialist appointments have been identified and should be considered prior to the commencement of RIBA Stage 3. This includes the Low or Zero Carbon Feasibility Study, which is a minimum standard requirement for achieving a BREEAM Excellent rating.
- The current achievable score is 73.09%, which corresponds to a BREEAM Excellent rating and exceeds the required threshold by 3.09%. AECOM typically recommends targeting an additional 4-5% above the threshold to provide resilience against potential credit losses as the design develops. Furthermore, several potential credits have been identified for further investigation during the next design stage.

This report is based on information provided by the project team during the BREEAM pre-assessment workshop and subsequent communications. The achievable and potential credits will require further detailed assessment, and supporting evidence will need to be reviewed throughout the subsequent design stages. The BREEAM Assessor will continue to work closely with the client and project team throughout the project to monitor design development, assess any changes, and identify risks and opportunities to maximise the project's BREEAM score.

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1. Introduction

1.1 Background

AECOM has been appointed by VIRTUS Data Centres to undertake a BREEAM pre-assessment which was required to evaluate the environmental performance for the following Proposed Development:

> 'Redevelopment of the former Sipson Garden Centre site to provide a data centre facility including associated energy infrastructure, security measures and access arrangements.'

This document presents the findings of this assessment.

1.2 Site context and the Proposed Development

The Site is located to the northeast of Sipson village, within the administrative area of the London Borough of Hillingdon. This is the former Sipson Garden Centre development site that is approximately 2km north of London Heathrow Airport and 2km south of West Drayton town centre. The site lies immediately south of the Holiday Inn London Heathrow hotel. The M4 motorway defines the eastern boundary, while residential properties along Sipson Road adjoin the western edge. To the south is a secondary school, beyond which Sipson Lane runs east–west across the motorway.The Site is currently used as an Airside Support Vehicle servicing and repair centre which has been operational since 2024, following the closure of the Garden Centre.

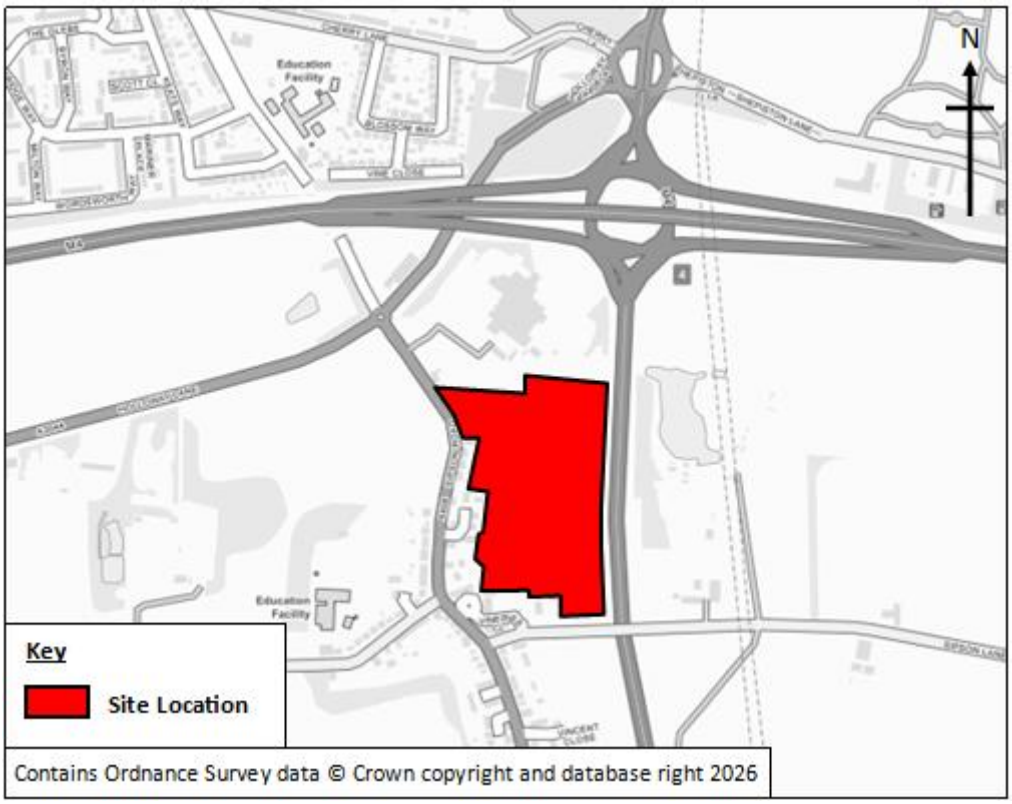


Figure 1: Map of Existing Site at Sipson Village

The development would provide approximately up to 54,000 sqm of gross internal floorspace, including data halls, administration block, plant, and associated ancillary infrastructure with an anticipated operational capacity of approximately 54 MW. The development will also include internal access roads, a car park, landscaping, and supporting infrastructure. Access to the proposed development will be retained via the existing site access from Sipson Road.

2. BREEAM Methodology

BREEAM (Building Research Establishment's Environmental Assessment Method) is a leading sustainability assessment and certification scheme for the built environment. Through its application, BREEAM recognises and

reflects the value in higher performing assets and aims to inspire and empower change by rewarding and motivating sustainability across the life cycle of master-planning projects, infrastructure and buildings.

In accordance with guidance by the Building Research Establishment (BRE), the most appropriate BREEAM scheme to assess a new data centre in the UK, is the BREEAM Data Centres (DC) 2010 v1.2[1].

The aim of this pre-assessment is to establish the BREEAM score and rating that is achievable by the proposed development, based on its current design. The document uses information provided by the project team (AECOM and VIRTUS Data Centres) to confirm the BREEAM credits that can be considered achievable and those that could be considered as potential credits to increase the current buffer above the score required for a BREEAM Excellent rating.

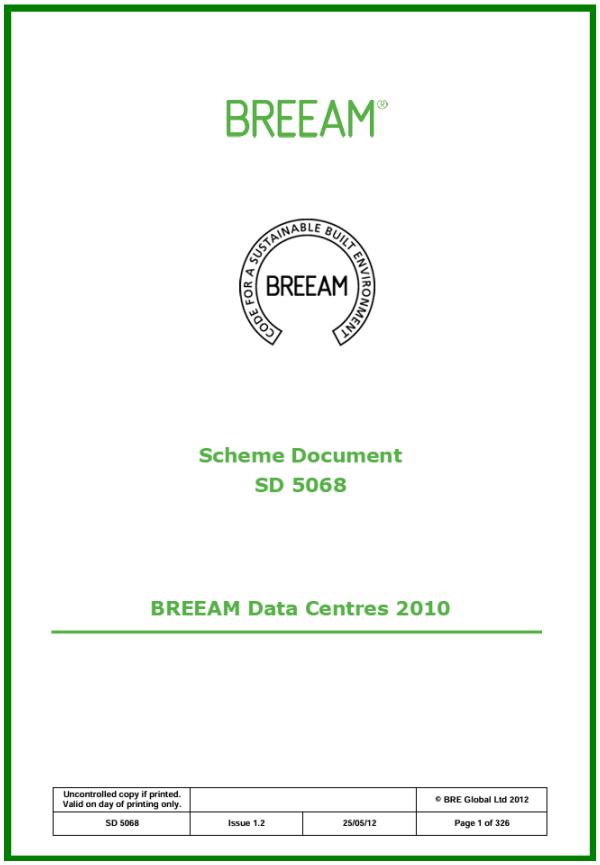


Figure 2: BREEAM Data Centres 2010 v1.2 technical manual

2.1 BREEAM categories and rating

BREEAM seeks to minimise the adverse effects of new buildings on the environment at global and local scales, whilst promoting healthy indoor conditions for the occupants. Building projects are assessed at the design and post-construction stages using a system of environmental issues grouped within the following ten categories:

- Management (Man)
- Health and Wellbeing (Hea)
- Energy (Ene)
- Transport (Tra)
- Water (Wat)
- Materials (Mat)
- Waste (Wst)
- Land Use & Ecology (LE)

[1] https://tools.breeam.com/filelibrary/Technical%20Manuals/SD5068_1_2_BREEAM_Datacentres_2010.pdf

- Pollution (Pol)
- Innovation (Inn)

Those categories represent sustainability themes and involve a number of underlying credits. A percentage weighting is assigned to each category, which is then distributed across the credits within this category. Each credit has criteria which must be met in order to award the credit. Certain credits have time critical requirements linked to the RIBA stages of work. These require certain actions to be undertaken during Stage 1 (equivalent to Stage B based on the RIBA Plan of Work 2007), with more credits following at Stage 2 (equivalent to Stage C based on the RIBA Plan of Work 2007). The timings are discussed in more detail in Sections 2.2 and 3.

The assessment of a building results in a final online report being produced by the BREEAM Assessor and a BREEAM certificate is produced by the BRE to validate the rating and score. The building's performance is expressed as a BREEAM rating based on the scale and percentages of awarded credits presented in Figure 3 below.

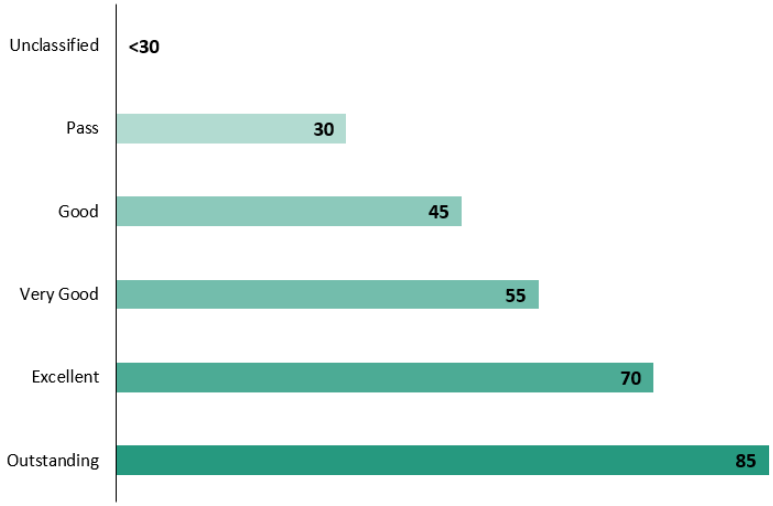


Figure 3: BREEAM rating benchmark score percentages

A BREEAM 'Pass' rating requires a total percentage score of at least 30% and a few minimum standard credits to be awarded. Similarly, BREEAM 'Good', 'Very Good', 'Excellent' and 'Outstanding' ratings require % scores of 45, 55, 70 and 85, respectively and further minimum standards to be achieved. AECOM recommends that a buffer of 4-5% above the target rating should be incorporated as part of the pre-assessment to mitigate against any loss of credits as the development progresses.

Table 2 (below) presents the minimum standards required for the different BREEAM ratings according to the BREEAM DC 2010 scheme. These also have to be considered as part of the assessment as they set minimum standards of performance in focus areas that BRE see as fundamental environmental aspects that need to be met before any rating can be achieved.

Table 2. BREEAM minimum standards by rating level

BREEAM Credits	Minimum Standard / number of credits required for each BREEAM rating				
	Pass	Good	Very Good	Excellent	Outstanding
Man 1 - Commissioning	1	1	1	1	2
Man 2 - Considerate Constructors	-	-	-	1	2
Man 4 - Building user guide	-	-	-	1	1
Hea 4 - High frequency lighting	1	1	1	1	1
Hea 12 - Microbial contamination	1	1	1	1	1
Ene 1 - Reduction of CO_2 emissions	-	-	-	6	10
Ene 2 - Sub-metering of substantial energy uses	-	-	1	1	1
Ene 5 - Low or zero carbon technologies	-	-	-	1	1

BREEAM Credits	Minimum Standard / number of credits required for each BREEAM rating				
	Pass	Good	Very Good	Excellent	Outstanding
Wat 1 - Water consumption	-	1	1	1	2
Wat 2 - Water meter	-	1	1	1	1
Wst 3 - Storage of recyclable waste	-	-	-	1	1
LE 4 - Mitigating ecological impact	-	-	1	1	1

2.2 Assessment timeline

The Royal Institute of British Architects (RIBA) Outline Plan of Work is used in the UK to describe the stages in construction projects. The BREEAM DC 2010 manual was issued when RIBA Outline Plan of Work 2007[2] was in use. Therefore, the BREEAM DC 2010 technical manual refers to design stages A to E. Figure 4 (below) outlines the BREEAM assessment process, aligned with the RIBA Plan of Work 2007 and 2020 versions. It is adapted from Figure 2 of the BREEAM UK New Construction Technical Manual. As shown in Figure 4, RIBA 2007 stages A-E correspond to RIBA 2020 stages 0-4. This project follows the RIBA Plan of Work 2020, which is the current industry standard.

The BREEAM assessment encourages the design team to be actively engaged throughout the design stages to maximise the final rating of the building. The BREEAM rating reflects the overall performance of the building rather than the opportunities or limitations placed on specific stakeholders involved in the procurement process. Early BREEAM consideration and target integration maximises the opportunity to embed sustainability measures into the design and to achieve credits, whilst it typically reduces the associated BREEAM costs to the project.

A BREEAM workshop was held with the design team on 2nd September 2026 to review the requirements of all applicable BREEAM DC 2010 credits and to assess their relevance to the project and their feasibility. The workshop focused on identifying credits that are achievable, as well as those that should be considered and integrated during the next stages, to maximise the project's potential BREEAM performance as the design develops. Sections 3 and 4 present the BREEAM DC 2010 credits with requirements applicable during early design stages or require early design engagement. Section 4 summarises the pre-assessment outcome.

[2] https://www.bparchitecture.co.uk/downloads/resources/RIBA-Outline2007.pdf

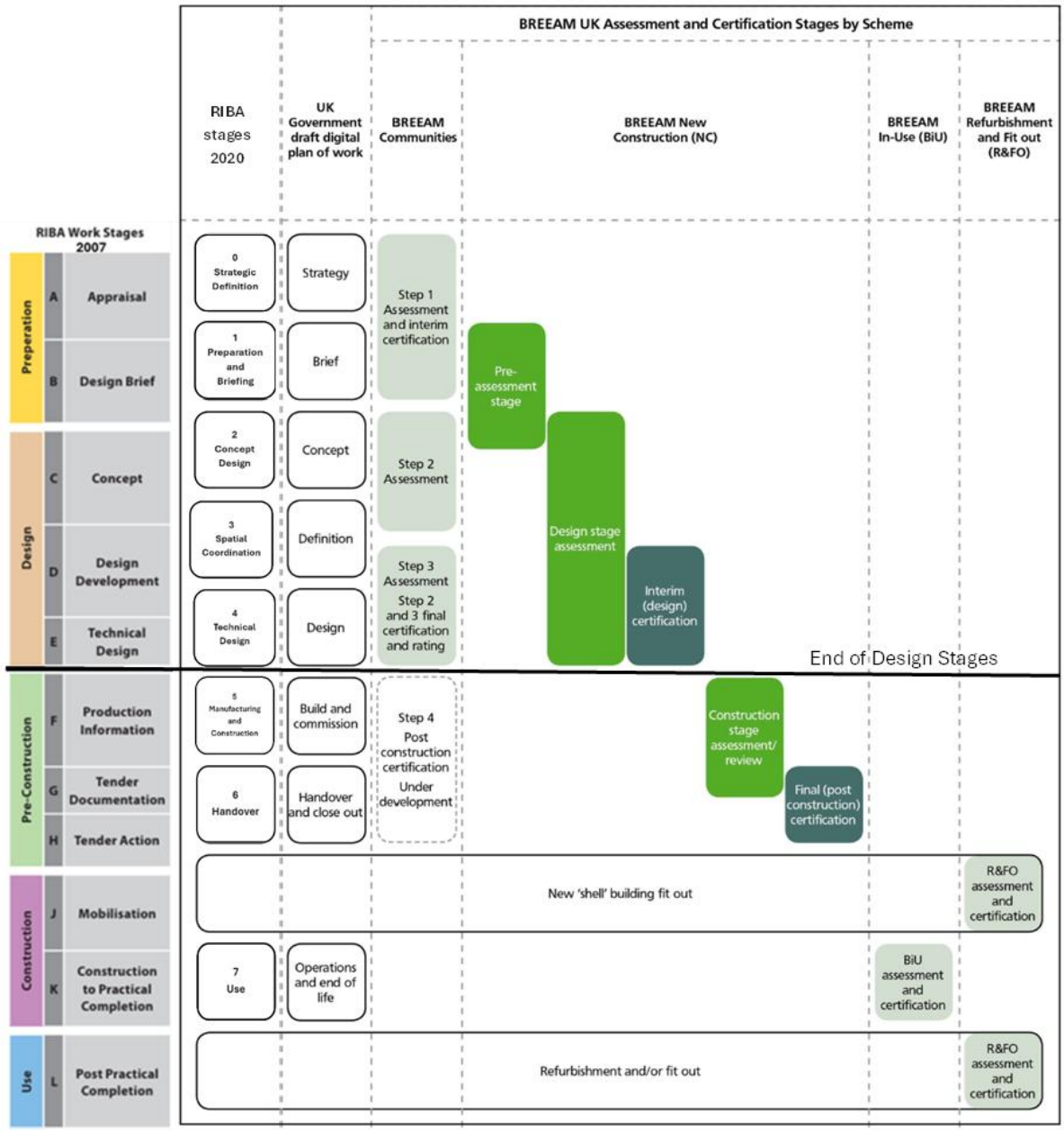


Figure 4: BREEAM assessment and certification stages and the RIBA Outline Plan of Work (2007 and 2020)

3. Early-stage credits

BREEAM DC 2010 includes a number of requirements that are aligned with RIBA 2020. There are assessment issues that need to be addressed during the Preparation and Briefing Stage (Stage 1) or within Concept Design (Stage 2). There are actions and studies explicitly required to be undertaken during RIBA Stages 1 and 2, as described in paragraphs 3.1 and 3.2. There are also elements of the design that affect the ability of the project to achieve a BREEAM credit, which are best to consider and integrate early, but their later consideration does not preclude the award of a BREEAM credit. These are presented in paragraph 3.3 below.

3.1 Credits and actions required at RIBA Stage 1

Table 3 (below) summarises the credits for which actions are specifically required by BREEAM during RIBA Stage 1. The status and actions are summarised to provide an indication of the type of information that was required to achieve these credits. It should be noted that this report was prepared during Stage 2 of the design process. It should be noted that this report was completed during Stage 2 of the design process. The credits identified below are not BREEAM minimum standards or mandatory requirements for achieving a specific rating. Some of these

credits can also be targeted at subsequent project stages, provided that the required early-stage studies are undertaken and appropriate evidence is available.

Table 3. Credits and actions required at RIBA Stage 1

Issue	Issue name	Action owner	Status/ Early actions required
LE 5	Enhancing Site Ecology	Client, Ecologist	A suitably qualified ecologist has been appointed at an early stage, and a Preliminary Ecological Appraisal (PEA) has been completed, identifying ecological recommendations and enhancement opportunities. Discussions have commenced with the Landscape Team regarding the installation of bird and bat boxes.
Innovation	BREEAM Accredited Professional	BREEAM Assessor	BREEAM performance objectives must be agreed no later than the end of RIBA Stage 1. Although the sustainability team has been involved in the project from an early stage, the BREEAM AP has not been appointed in time.

3.2 Credits and actions required at RIBA Stage 2

Table 4 below summarises the BREEAM early stage requirements during RIBA Stage 2. The status and actions are summarised to provide an indication of the type of information that is required to achieve the credits. Only Ene 5, Low or Zero Carbon Technologies, constitutes a minimum standard and requires at least one point to enable a BREEAM Excellent rating.

Table 4. Credits and actions required explicitly at RIBA Stage 2

Issue	Issue name	Owner	Status/ Actions needed
Man 8	Security	Client, Suitably Qualified Security Specialist	A risk assessment has been completed as part of the planning submission; however, this alone does not satisfy the relevant BREEAM criteria. The credit has therefore been identified as a potential credit, subject to the completion of a compliant Security Needs Assessment (SNA) before Stage 3.
Man 12	Life Cycle Costing (LCC)	Client, Cost Consultant	LCC analysis was not confirmed as part of Stage 2 scope. Hence, this credit is marked as potential. If the analysis is completed during Stage 3, the credit can still be achieved. BREEAM DC 2010 state possibility to conduct the elemental LCC at either Stage 2 or 3.
Ene 5	Low Zero Carbon Technologies	Client, Energy Consultant	Achieving one credit under Ene 05 is a minimum standard requirement for an Excellent rating. The inclusion of this study has to be confirmed by the client and will have to be completed before Stage 3 commences.
Tra 5	Travel Plan	Transport Consultant	A travel plan and transport assessment are being developed as part of the planning deliverables. Hence, this credit is considered achievable.

3.3 BREEAM credits requiring early design engagement

Although not explicitly required by BREEAM, several credits benefit from early consideration and integration into the design. This section outlines the key actions and recommendations identified through the BREEAM workshop and ongoing coordination with the design team. Table 5 presents these credits, together with their current status and the key actions that should be progressed and monitored throughout the design development stage. Further information is provided in the BREEAM Assessment tracker presented in Appendix A.

Table 5. Credits and actions requiring early design engagement

Issue	Issue name	Action owner	Status / Early actions required
Hea 2	View Out	Architect	The credit will require verification against the proposed workstation layout during the next design stage and has therefore been marked as a potential credit.

Issue	Issue name	Action owner	Status / Early actions required
Hea 3	Glare Control	Architect	Blinds are expected to be incorporated within the next design stages for regularly occupied spaces with workstations. Therefore, the credit is currently considered achievable.
Hea 5	Internal and External Lighting Levels	Lighting designer	The proposed office areas are expected to achieve compliance with the internal lighting requirements, while the external lighting strategy is also anticipated to meet the relevant criteria. Subject to the detailed lighting design confirming compliance, this credit is currently considered achievable.
Hea 6	Lighting Zones and Controls	Lighting designer	This will require verification at the next design stage once the detailed lighting controls strategy has been developed. Therefore, this is currently marked as a potential credit.
Hea 8	Indoor Air Quality	Mechanical designer	The mechanical engineer has confirmed that the required 10 m separation between air intakes and sources of pollution is expected to be achieved as well as the 20m from sources of external air pollution. Therefore, this credit is currently considered achievable, subject to detailed design confirmation.
Hea 11	Thermal Zoning	Mechanical designer	Separate perimeter and internal zoning is considered standard practice and is expected to be included within the design. As the HVAC design is not yet sufficiently developed to confirm compliance, this credit is currently considered achievable, subject to detailed design verification.
Ene 1	Reduction of CO_2 Emissions	Electrical designer / Building Physics consultant	6 credits are a minimum standard requirement for an Excellent rating. Based on an EPC of 21 and a PUE of 1.2, the project is expected to achieve 15 credits, including 1 exemplary performance credit. This will be validated at the detailed design stage.
Ene 4	External Lighting	Lighting designer	The lighting designer has confirmed that the proposed lighting design is expected to meet the relevant criteria. Therefore, this credit is currently considered achievable.
Tra 3	Cyclist Facilities	Transport Consultant, Architect	Secure cycle storage will be provided either within the building or in a dedicated secure external facility. Appropriate cyclist facilities, including showers, changing areas, and lockers, will also be provided. The final provision is yet to be confirmed. This credit is considered achievable and subject to detailed design confirmation.
Tra 4	Pedestrian and Cycle Safety	Transport Consultant, Architect	The design could readily be adapted to provide minor enhancements to meet the criteria. Therefore, this credit is considered achievable.
Tra 6	Maximum Car Parking Capacity	Transport Consultant, Architect	Current parking provision is approximately one space per building user thus not meeting BREEAM criteria; however, this is expected to be reduced and the credit has therefore been marked as potential.
Wat 3	Major Leak Detection	Public Health designer	The metering strategy will incorporate leak detection. Based on the current design intent, this credit is considered achievable.
Wat 4	Sanitary Supply Shut Off	Public Health designer	This criterion is expected to be achieved through the use of PIR-controlled automatic water shut-off within WC facilities. Therefore, this credit is considered achievable.
Wat 5	Water Recycling	Public Health designer	Rainwater harvesting forms part of the design strategy and will be used for both irrigation and WC flushing. Therefore, this credit is considered achievable.
Wat 6	Irrigation Systems	Public Health designer	Irrigation is likely to be required during plant establishment and for the proposed green roofs during dry periods. That will be covered by the rainwater system as mentioned above. Therefore, this credit is considered achievable.

Issue	Issue name	Action owner	Status / Early actions required
Mat 1	Materials Specification	LCA Specialist	Further assessment will be required to confirm the total number of credits achievable. At this stage, 4 credits are considered achievable with the design intent.
Mat 2	Hard Landscaping and Boundary Protection	Architect	This requirement will be incorporated into the project specifications. Based on the current design intent, compliance is anticipated and the credit is therefore considered achievable.
Pol 1	Refrigerant GWP – Building Services	MEP	Achievement of this credit is considered unlikely, as the targeted GWP of 5 is exceptionally low and is not currently considered achievable for this building.
Pol 7	Reduction of Nighttime Light Pollution	Lighting designer	All external lighting is controlled via photocells and astronomical time clocks. Based on the current design information, this credit is considered achievable.
Pol 8	Noise Attenuation	Acoustician	The acoustic assessment is currently within the project scope; however, it considers the most sensitive receptors rather than all receptors within an 800 m radius. As a result, achievement of this credit is currently identified as a potential opportunity, subject to further verification.

4. BREEAM pre-assessment

Based on information provided by the project team, BREEAM credits have been marked as 'achievable' or 'potential', as listed in Table 6 below. Achievable credits are those that are within the current design intent or programme of works. Whereas potential credits are those that are either unconfirmed at this stage or are not currently met based on specifications but could be investigated at later stage and have a cost or higher risk implication. Appendix A provides a full list of available credits, including the information and assumptions used to assess each credit and determine whether it is achievable, potential, or not feasible.

Table 6. BREEAM DC 2010 achievable and potential credits.

Credit ID	Credit Name	Credits Available	Achievable Credits	Achievable + Potential Credits
Management				
Man 1	Commissioning	2	2	2
Man 2	Considerate Constructors	2	2	2
Man 3	Construction Site Impacts	4	4	4
Man 4	Building user guide	1	1	1
Man 8	Security	1	0	1
Man 12	Life Cycle Costing	2	0	2
Weighting	12%	12	9	12
Health & Wellbeing				
Hea 1	Daylighting	1	0	0
Hea 2	View Out	1	0	1
Hea 3	Glare Control	1	1	1
Hea 4	High Frequency Lighting	1	1	1
Hea 5	Internal and External Lighting Levels	1	0	1
Hea 6	Lighting Zones & Controls	1	1	1
Hea 7	Potential for Natural Ventilation	1	0	0
Hea 8	Indoor Air Quality	1	1	1
Hea 9	Volatile Organic Compounds	1	1	1
Hea 10	Thermal Comfort	1	0	1
Hea 11	Thermal Zoning	1	1	1
Hea 12	Microbial Contamination	1	1	1
Hea 13	Acoustic Performance	1	0	1
Weighting	10%	13	7	11

Energy				
Ene 1	Reduction of CO2 Emissions	15	15	15
Ene 2	Sub-metering of Substantial Energy Uses	2	2	2
Ene 4	External Lighting	1	1	1
Ene 5	Low Zero Carbon Technologies	3	2	2
Ene 8	Lifts	2	0	2
Ene 22	Sustainable Procurement of IT	2	2	2
Weighting	37%	25	22	24
Transport				
Tra 1	Provision of Public Transport	3	0	0
Tra 2	Proximity to Amenities	1	0	0
Tra 3	Cyclist Facilities	2	2	2
Tra 4	Pedestrian and Cycle Safety	1	1	1
Tra 5	Travel Plan	1	1	1
Tra 6	Maximum Car Parking Capacity	2	0	2
Weighting	5%	10	4	6
Water				
Wat 1	Water Consumption	3	3	3
Wat 2	Water Meter	1	1	1
Wat 3	Major Leak Detection	1	1	1
Wat 4	Sanitary Supply Shut Off	1	1	1
Wat 5	Water Recycling	1	1	1
Wat 6	Irrigation Systems	1	1	1
Weighting	8.5%	8	8	8
Materials				
Mat 1	Materials Specification (major building elements)	6	4	6
Mat 2	Hard Landscaping and Boundary Protection	1	1	1
Mat 3	Re-use of Building Façade	1	0	0
Mat 4	Re-use of Building Structure	1	0	0
Mat 5	Responsible Sourcing of Materials	3	1	1
Mat 6	Insulation	2	1	2
Mat 7	Designing for Robustness	1	1	1
Weighting	7%	15	8	11
Waste				
Wst 1	Construction Site Waste Management	4	2	3
Wst 2	Recycled Aggregates	1	1	1
Wst 3	Recyclable Waste Storage	1	1	1
Wst 4	Compactor / Baler	1	0	1
Weighting	4.5%	7	4	6
Land Use & Ecology				
LE1	Re-use of Land	1	0	1
LE2	Contaminated Land	1	0	1
LE3	Ecological Value of Site and Protection of Ecological Features	1	0	0
LE4	Mitigating Ecological Impact	2	1	1
LE5	Enhancing Site Ecology	3	1	2
LE6	Long Term Impact on Biodiversity	2	1	2
Weighting	6%	10	3	7
Pollution				
Pol 1	Refrigerant GWP - Building Services	1	0	0
Pol 2	Preventing Refrigerant Leaks	2	0	2
Pol 4	NOx Emissions from Heating Source	2	0	0
Pol 5	Flood Risk	3	3	3
Pol 6	Minimising Watercourse Pollution	1	1	1
Pol 7	Reduction of Nighttime Light Pollution	1	1	1
Pol 8	Noise Attenuation	1	0	1
Weighting	10%	11	5	8

Innovation				
Man 2	Considerate Constructors	1	1	1
Hea 1	Daylighting	1	0	0
Ene 1	Reduction of CO_2 emissions	2	1	1
Ene 5	Low or Zero Carbon Technologies	1	0	1
Ene 21	Power Usage Effectiveness	0	0	0
Wat 1	Water Consumption	1	0	1
Wat 2	Water Meter	1	1	1
Mat 1	Materials Specification	1	0	0
Mat 5	Responsible Sourcing of Materials	1	0	0
Wst 1	Construction Site Waste Management	1	0	0
Innovation - BREEAM Accredited Professional				
Innovation	BREEAM Accredited Professional	2	0	2
Innovation - BRE Global Approved Innovation credits				
Innovation	Approved Innovations		0	0
Weighting	10%	10	3	7
	Total points- Unweighted	121	73	100
	Total score%- Weighted		73.09%	94.94%
	BREEAM Rating		Excellent	Outstanding

It should be noted that, a number of construction credits have been marked as 'achievable' based on standard industry practices. For example, Man 2 Considerate Constructors and Man 3 Construction Site Impacts are assumed to be achievable, based on what is commonly achieved on other BREEAM projects. These will need to be agreed and relevant clauses to be integrated into the Contractor Preliminaries/ tender documentation.

Minimum standard requirement credits for this project need attention to achieve the target BREEAM Excellent rating. These are presented in Table 2 (above) and were all considered achievable based on information and assumptions provided. Based on the above, the project is assumed to be able to target a BREEAM score of 73.09%. This is equivalent of a BREEAM Excellent rating.

5. Conclusions

This BREEAM DC 2010 pre-assessment was conducted for the Data Centre building during the project's RIBA Stage 2. A BREEAM workshop was held to discuss opportunities to target early-stage credits and credits require early engagement prior to RIBA Stage 3. Credits were identified as achievable, potential or not feasible. Early-stage studies that require additional studies or specialist appointments are highlighted, including the low or zero carbon feasibility study that represents a minimum standard requirement for a BREEAM Excellent rating.

The current 'achievable' score is 73.09% (Excellent) that is 3.09% above the relevant threshold. AECOM recommends an additional 4-5% to be targeted above the threshold for any BREEAM rating. Furthermore, potential credits were identified to strengthen the project's certification strategy and reduce the risk of credits being lost during the design development, due to constraints, or during the BREEAM review process.

Appendix A BREEAM DC 2010 Assessment tracker

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