BRACKNELL DATA CENTRE

BREEAM PREDICTIVE ASSESSMENT
BREEAM UK Data Centres 2010 – Large Associated Function Areas

20305B-RPS-XX-XX-RP-P-9729

OXF11741
Bracknell Data Centre
BREEAM Pre-Assessment
Final
1 March 2021

rpsgroup.com

Quality Management

Version	Status	Authored by	Reviewed by	Approved by	Review date
FV	Final for submission	EAJ	AT	EAJ	01/03/21

Approval for issue

Emily Ashton-Jelley	[redacted]	1 March 2021

Prepared by:

RPS Consulting Services Ltd

Emily Ashton-Jelley
Principal Consultant

20 Western Avenue,
Milton Park
Abingdon,
Oxfordshire
OX14 4SH
T [redacted]
E

Contents

1 INTRODUCTION

1.1.1 This BREEAM pre-assessment has been prepared to support a planning application for the development of Land at Cain Road, Bracknell.

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

Project Name	Bracknell Data Centre
BREEAM Version	BREEAM 2010 - Data Centres v1.2
Assessment Stage	Predictive Assessment
Lead Assessor	Emily Ashton-Jelley
Target Rating	Excellent (70%)
Building Type	Data Centre

1.1.3 Please note that this is an uncontrolled copy and is for information only and a more detailed, formal assessment report will be issued at design stage. If you have any queries on the content of this report or the award of any of the credits please contact your licensed assessor as noted above.

1.1.4 The total development gross external area (GEA) would total 8,692 m^2. The Data Centre will consist of a 'data hall' totalling an area of 7,267 m^2, classing it as a significant majority (>75%) of the floor area and a 'other associated function area' totalling 1,425 m^2 which will include office and supporting facilities. On this basis the development will be assessed against a Data Centre with large associated function areas.

1.1.5 Where more up to date guidance documents and technical standards are available compared with what is required for BREEAM Data Centres 2010 requirements these should be used.

2 SCORING SCENARIOS

2.1.1 It should be noted that the scores have been based on the following scoring scenarios:

- Targeted - based on current information and credits deemed easily achievable.
- Potential Further Investigation - This is based on targeted scenario above plus more onerous elements.

2.1.2 On this basis, the scores in the table below are considered achievable under each scenario.

2.1.3 RIBA stages are stated in the final column and should be used as an indicator of when in terms of the development timeline a credit is applicable. Where specific actions are required at certain stages these have been **highlighted** within the body of text for that credit.

Scenario	Score	BREEAM Rating
Targeted	72.44	Excellent
Targeted Plus Potential	84.55	Outstanding

2.2 Minimum Standards

2.2.1 In addition, performance achieved against the minimum standards (required for the specified target rating) under each scenario is summarised below:

Issue	Targeted	Targeted with Potential
Man 1 - Commissioning	Yes	Yes
Man 2 - Considerate Constructors	Yes	Yes
Man 4 - Building User Guide	Yes	Yes
Hea 4 - High Frequency Lighting	Yes	Yes
Hea 12 - Microbial Contamination	Yes	Yes
Ene 1 - Reduction of CO_2 Emissions	Yes	Yes
Ene 2 - Sub-metering of Substantial Energy Uses	Yes	Yes
Ene 5 - Low or Zero Carbon Technologies	Yes	Yes
Wat 1 - Water Consumption	Yes	Yes
Wat 2 - Water Meter	Yes	Yes
Wst 3 - Recyclable Waste Storage	Yes	Yes
LE 4 - Mitigating Ecological Impact	Yes	Yes

2.2.2 If the required minimum standards are not met, then the target rating will not be achieved regardless of overall score.

3 CREDITS AND COMMENTS TABLE

		Available	Current	Targeted	Targeted plus potential	Technical Lead	Comments	RIBA Stage
Management								
Man 1	Commissioning	2	0	2	2	M&E Designer/ Contractor	**Minimum Requirement - First Credit** 1 Credit - An appropriate project team member is appointed to monitor and programme commissioning. This includes the appointment of a specialist commissioning manager for complex systems. 1 Credit - the first credit is achieved. Over at least a 12 month period the specialist commissioning manger will oversee seasonal commissioning and re-commissioning where necessary for all complex and simple systems.	**Stage 3-5** **Stage 4-5**
Man 2	Considerate Constructors	2	0	2	2	Client/Main Contractor	**Minimum Requirement - First Credit** 1 Credit - The Contractor has complied with and achieve a Considerate Constructors Scheme (CCS) score of at least 24. **Total of 2 Credits** - The Contractor has complied with and achieve a Considerate Constructors Scheme (CCS) score of between 32 and 35.5	**Stage 3-5**
Man 3	Construction Site Impacts	4	0	4	4	Client/Main Contractor	3 Credits - Evidence provided demonstrates six or more of the following will achieved: - Monitor, report and set targets for energy arising from site activities. - Monitor, report and set targets for energy arising from transport to and from site. - Monitor, report and set targets for water consumption arising from site activities. - Implement best practice policies in respect of air (dust) pollution arising from the site. - Implement best practice policies in respect of water (ground and surface) pollution occurring on the site. - The main contractor has an environmental materials policy, used for sourcing of construction materials to be utilised on site. - The main contractor operate an EMS (ISO14001).	**Stage 3-5**

		Available	Current	Targeted	Targeted plus potential	Technical Lead	Comments	RIBA Stage
							1 Credit - Where at least 80% of site timber will be responsibly sourced and 100% legally sourced.	
Man 4	Building User Guide	1	0	1	1	Client/Main Contractor	**Minimum Requirement - 1 credit for the production of a Building User Guide** 1 Credit - As part of the handover documentation a Building User Guide (BUG) will be developed and provided relevant non-technical guidance for building users that occupy the building. The content of the BUG will be in accordance with the BREEAM requirements.	**Stage 3-5**
Man 8	Security	1	0	1	1	Security Specialist/Client	1 Credit - The design team consult with and seeking advice from the local police Architectural Liaison Officer (ALO) or Crime Prevention Design Advisor (CPDA) **at RIBA stage 2** on designing out the opportunity for crime in accordance with the principles and guidance of Secured by Design. The final design embodies the recommendations of the ALO/CPDA and is built to conform to the principles and guidance of Secured by Design.	**Stage 2-4**
Man 12	Life Cycle Costing	2	0	0	2	**Potential Only** Life Cycle Cost Consultant	**Potential Credits** 1 Credit - A Life Cycle Cost (LCC) has been **carried out at RIBA Stage 2/3** based on the proposals developed during this time and covers construction, operation, maintenance and end of life. The analysis uses a study period of 25 or 30 and 60 years shown in real and discounted cash flow terms. The analysis demonstrates at least two of the following issues have been analysed at a strategic and systems level comparing alternative options: - Structure - Envelope - Services - Finishes The option(s) with the lowest discounted LCC over the period is preferred, assuming that their section results in at least one of the following: - The lowest building energy consumption over the operation life span of the building - A reduction in maintenance requirement/frequency - Prolonged replacement intervals of services infrastructure/systems or building fabric - Dismantling and recycling or reuse of building components.	**Stage 2-4**

		Available	Current	Targeted	Targeted plus potential	Technical Lead	Comments	RIBA Stage
							The Model is updated at RIBA Stage 3/4. 1 Credit - The first credit is achieved and results of the study have been implemented in the specification, design and final construction of the assessed building.	
Management Totals:		**12**	**0**	**10**	**12**			
Management score totals:		**12**	**0**	**10**	**12**			
Health & Wellbeing								
Hea 1	Daylighting	1	0	0	0	N/A	Credit not targeted - deemed unachievable	**Stage 1-4**
Hea 2	View Out	1	0	0	0	N/A	Credit not targeted - deemed unachievable	**Stage 1-4**
Hea 3	Glare Control	1	0	1	1	Architect	1 Credit - Within occupied areas, occupant-controlled shading systems will be provided on all windows, glazed doors and rooflights.	**Stage 1-4**
Hea 4	High Frequency Lighting	1	0	1	1	M&E Designer/ Contractor	**Minimum Requirement** 1 Credit - All fluorescent and compact fluorescent lamps will be fitted with high frequency ballasts.	**Stage 1-4**
Hea 5	Internal and External Lighting Levels	1	0	1	1	Lighting Designer M&E Designer/ Contractor	1 Credit - Internal and external lighting will be specified in accordance with the following standards: - CIBSE Code for Lighting 2006 - CIBSE Lighting Guide 7 (Sections 3.3, 4.6, 4.7, 4.8, 4.9) - CIBSE Lighting Guide 6 'The outdoor environment'	**Stage 1-4**

		Available	Current	Targeted	Targeted plus potential	Technical Lead	Comments	RIBA Stage
Hea 6	Lighting Zones and Controls	1	0	1	1	M&E Designer/ Contractor	1 Credit - Lighting will be zoned to allow for separate occupant control of the following areas (where present): - Office and circulation spaces - In office area, zones of no more than four workplaces - Workstations adjacent to windows and other building areas are separately zoned and controlled - Seminar and lecture rooms: zoned for presentation and audience areas - Library spaces - Dining, restaurants, cafe areas	**Stage 1-4**
Hea 7	Potential for Natural Ventilation	1	0	0	0	N/A	Credit not targeted - deemed unachievable	**Stage 1-4**
Hea 8	Indoor Air Quality	1	0	1	1	M&E Designer/ Contractor/ Architect	1 Credit - In air-conditioned and mixed-mode buildings, the buildings' air intakes and exhausts will be designed over 10m apart as well as intakes to be over 20m from sources of external pollution.	**Stage 1-4**
Hea 9	Volatile Organic Compounds	1	0	1	1	Client/Architect	1 Credit - The specification of internal finishes and fittings will have low emissions of volatile organic compounds (VOCs) in accordance with the relevant standards outlined in the BREEAM technical guidance.	**Stage 1-4**
Hea 10	Thermal Comfort	1	0	1	1	M&E Designer/ Contractor	1 Credit - Thermal modelling has been carried out using software selected and applied in accordance with CIBSE AM 11. The air-conditioned office spaces should achieve the thermal comfort criteria in accordance with CIBSE Guide A Table 1.5. This will be demonstrated through the provision of heat loss and heat gains calculations when sizing HVAC system. Software used to carry out the simulation at the detailed design stage must provide full dynamic thermal analysis.	**Stage 0-4**
Hea 11	Thermal Zoning	1	0	1	1	M&E Designer/ Contractor	1 Credit - Heating and cooling system will be designed to allow occupant control of zoned areas. The zoning allows separate occupant control of each perimeter area (i.e. within 7 m of each	**Stage 0-4**

		Available	Current	Targeted	Targeted plus potential	Technical Lead	Comments	RIBA Stage
							external wall) and the central zone (i.e. over 7 m of each external wall) .	
Hea 12	Microbial Contamination	1	0	1	1	M&E Designer/ Contractor	**Minimum Requirement - 1 Credit** All water systems in the building are designed in compliance with the measures outlined in the Health and Safety Executive's "Legionnaires' disease – the control of legionella bacteria in water systems" Approved Code of Practice and guidance, 2000	**Stage 0-4**
Hea 13	Acoustic Performance	1	0	1	1	Acoustician/ Architect	1 Credit - The indoor ambient noise levels in <u>unoccupied</u> staff/office areas comply with the following: • ≤40dB LAeq,T in single occupancy offices • 40-50dB LAeq,T in multiple occupancy offices • ≤40dB LAeq,T in general spaces • ≤35dB LAeq,T in spaces designed for speech • ≤50dB LAeq,T in informal cafe/canteen areas Fully fitted buildings only: The sound insulation between acoustically sensitive rooms and other occupied spaces complies with section 7.6.3.1 of BS823345, as follows: a. Dw + LAeq,T > 75 • Dw is the weighted sound level difference between the two spaces • LAeq,T is the design (or measured) indoor ambient noise level in the space adjacent to the acoustically sensitive room. Pre-completion acoustic testing is carried out by a suitably qualified acoustician.	**Stage 0-4**
Health & Wellbeing Totals:		**13**	**0**	**10**	**10**			
Health & Wellbeing score totals:		**10**	**0**	**7.69**	**7.69**			

		Available	Current	Targeted	Targeted plus potential	Technical Lead	Comments	RIBA Stage
Energy								
Ene 1	Reduction of CO_2 Emissions	15	0	15	15	Energy Consultant/ Client/ Architect	**Minimum Requirement - Six Credits** 15 Credits - A Power Usage Effectiveness (PUE) figure of 1.22 is targeted for the development with an equivalent CO_2 Index (EPC Rating) i.e. between 25-0. Based on current understanding and discussions with the Energy Consultant 15 credits should be achievable.	**Stage 0-4**
Ene 2	Sub-metering of Substantial Energy Uses	2	0	2	2	M&E Designer/ Contractor	**Minimum Requirement - 1 credit for separate accessible energy sub-meters** 1 Credit - Separate accessible energy sub-meters, labelled with the end energy consuming use will be provided for the following systems: • Space heating • Domestic Hot Water • Cooling • Fans (major) • Lighting • Small power • UPS system (input and output) • Generators • Power Distribution Units (PDUs) • Other major energy consuming items (eg. Lifts) 1 Credit - A BMS with the ability to monitor and controls the above and the internal environmental conditions (chillers, air handling units and pumps and other major HVAC plant) will be provided. The BMS will have the ability to draw attention to out of range operational values.	**Stage 2-4**
Ene 4	External Lighting	1	0	0	1	**Potential Only** Lighting Designer/ M&E	**Potential credit** 1 Credit - All external light fittings for the buildings access ways and pathways will have a luminous efficacy ≥50 lamp lumens/circuit Watt when Ra ≥60 OR ≥60 lamp lumens/circuit Watt when Ra <60. All external light fittings for car parking, associated road and	**Stage 2-4**

		Available	Current	Targeted	Targeted plus potential	Technical Lead	Comments	RIBA Stage
						Designer/ Contractor	floodlighting will have a luminous efficacy ≥70 lamp lumens/circuit Watt when Ra ≥60 OR ≥80 lamp lumens/circuit Watt when Ra <60. All external light fittings for signs and uplighting have a luminous efficacy of ≥60 lamp lumens/circuit Watt when the lamp wattage is ≥25W OR 50 lamp lumens/circuit Watt when the lamp wattage is <25w. External light fittings will be controlled through a time switch or/and daylight sensor to prevent operation during daylight hours.	
Ene 5	Low or Zero Carbon Technologies	3	0	1	1	Energy Consultant/ Client/	**Minimum Requirement - First Credit** A feasibility study needs to be carried out by at **RIBA <u>stage 2</u>** by an energy specialist to establish the most appropriate local LZC energy source for the building/development. A local LZC energy technology has been specified for the building/development in line with the recommendations of the feasibility study. **OR** The organisation that occupies the building has a contract in place with an energy supplier to provide electricity from a 100% renewable energy source. The supply must be delivered by an accredited external renewable source and the contract must be valid for a minimum of 3 years from occupation. <u>Remaining credits are unachievable based on current design.</u>	**Stage 0-2**
Ene 22	Procurement of Sustainable IT Equipment	2	0	0	2	Client	**<u>Potential credits</u>** 1 Credit - IT equipment integral to the design and operation of the inherent building systems will be procured in accordance with the 'EU Code of Conduct on Data Centres' Best practice supplement version 2'. 1 Credit - IT equipment for the running and operation of the building once constructed and in use will need to be procured in accordance with the 'EU Code of Conduct on Data Centres' Best practice supplement version 2'.	**Stage 2-4**
	Energy Totals:	**23**	**0**	**18**	**21**			
	Energy score totals:	**37**	**0**	**28.96**	**33.78**			

		Available	Current	Targeted	Targeted plus potential	Technical Lead	Comments	RIBA Stage
Transport								
Tra 1	Provision of Public Transport	3	0	0	0	N/A	Credits unachievable - not targeted Following an initial review of the site surroundings there isn't sufficient access to public transport to enable these credits to be targeted.	**Stage 0-4**
Tra 2	Proximity to Amenities	1	0	0	0	N/A	Credit unachievable - not targeted Following an initial review of the site surroundings there isn't sufficient access to amenities to enable these credits to be targeted.	**Stage 0-4**
Tra 3	Cyclist Facilities	2	0	0	0	Architect/Client	Credit unachievable - not targeted 1 Credit - Compliant cycle storage space will be provided for every ten buildings users. 1 Credit - First credit achieved. Accessible changing facilities with at least two of the following compliant facilities including; - compliant showers - changing facilities and lockers for clothes - compliant drying space for wet clothes.	**Stage 0-4**
Tra 4	Pedestrian and Cyclist Safety	1	0	0	0	N/A	Credit unachievable - not targeted This would require the provision of tailored vehicle access road, parking and/pedestrian access to the building, adequate cycle lanes and pedestrian pathways.	**Stage 0-4**
Tra 5	Travel Plan	1	0	1	1	Transport Consultant	1 Credit - A travel plan has been developed as part of the **feasibility and design stage (RIBA 0/1)** based upon the finding of a site-specific transport survey and assessment.	**Stage 0-4**
Tra 6	Maximum Car Parking Capacity	2	0	0	0	N/A	Credits unachievable - not targeted Would require limiting of the car parking spaces to no more than one space per three building users (1 credit) OR require limiting of	**Stage 0-4**

		Available	Current	Targeted	Targeted plus potential	Technical Lead	Comments	RIBA Stage
							the car parking spaces to no more than one space per four building users (2 credits).	
	Transport Totals:	**10**	**0**	**1**	**1**			
	Transport score totals:	**5**	**0**	**0.5**	**0.5**			
Water								
Wat 1	Water Consumption	3	0	3	3	M&E Designer/ Contractor	**Minimum Requirement - 1 credit for the specification of efficient sanitary fittings** 1 Credit - The specification of sanitary fittings will have the following performance details: • WCs have an effective flush volume of ≤4.5 litres • Of the following, the two that offer the greatest possible reduction in annual water consumption have been specified: - All taps except kitchen taps, cleaners' sinks and external taps have a maximum flow rate less than 6 litres/min for water pressure of 0.3MPa and are of, or a combination of, the following types: - Timed automatic shut-off e.g. push taps - Electronic sensor taps - Low flow screw-down/lever taps - Spray taps • All showers, where specified, have a measured flow rate that does not exceed 9 litres per minute for a water pressure of 0.3MP • All urinals are either fitted with individual presence detectors that operate the flushing control after each use OR are ultra low flush or waterless.	**Stage 1-4**

		Available	Current	Targeted	Targeted plus potential	Technical Lead	Comments	RIBA Stage
							1 Credit - cooling systems demonstrate an equal to or greater than 20% reduction in potable water consumption associated with the data centre cooling process. 1 Credit - cooling systems demonstrate an equal to or greater than 40% reduction in potable water consumption associated with the data centre cooling process.	
Wat 2	Water Meter	1	0	1	1	M&E Designer/ Contractor	**Minimum Requirement** 1 Credit - A mains water meter will be provided to the supply of each building, which has a pulsed output to enable connection to BMS monitoring system.	**Stage 3-4**
Wat 3	Major Leak Detection	1	0	1	1	M&E Designer/ Contractor	1 Credit - A leak detection system capable of detecting major leaks on the water supply between and within the building and the site boundary will be installed. The leak detection system will meets the following criteria: - Auditable when active Activated when the flow of water passes through the water meter/data logger at a flow rate above a pre-set maximum for a pre-set period of time. - Able to identify different flow and therefore leakage rates. - Programmable to suit the owner/occupiers water consumption criteria. - Where applicable, designed to avoid false alarms caused by normal operations of large water-consuming plant such as chillers.	**Stage 3-4**
Wat 4	Sanitary Supply Shut Off	1	0	1	1	M&E Designer/ Contractor	1 Credit - Solenoid valves will be installed on the water supply to each toilet area in the building and the flow of water through that supply is controlled by a link to either: • infra-red detectors within each toilet facility **OR** • Sensors or switches placed at or on entry doors to each facility	**Stage 3-4**
Wat 5	Water Recycling	1	0	0	0	N/A	Credit unachievable - not targeted Rainwater and waste water collection for reuse in onsite WC/Urinal flushing.	**Stage 3-4**

		Available	Current	Targeted	Targeted plus potential	Technical Lead	Comments	RIBA Stage
Wat 6	Irrigation Systems	1	0	1	1	Ecologist/Client	1 Credit - No dedicated, mains-suppled irrigation systems are specified, and planting will rely on precipitation and manual watering by building occupier/landlord.	**Stage 2-4**
	Water Totals:	**8**	**0**	**7**	**7**			
	Water score totals:	**8.5**	**0**	**7.44**	**7.44**			
Materials								
Mat 1	Materials Specification	6	0	6	6	Architect	6 Credits - The major building elements will target achieving BRE Green Guide ratings of A or A+ which will be entered into the Mat 1 calculator (External walls, windows, roof, upper floor slabs, internal walls, floor finishes/coverings).	**Stage 2-4**
Mat 2	Hard Landscaping and Boundary Protection	1	0	0	1	**Potential Only** Architect	**Potential Credit** 1 Credit - At least 80% of all external hard landscaping and boundary protection (by area) will achieve an A or A+ as defined in the Green guide to Specification.	**Stage 2-4**
Mat 3	Reuse of Building Facade	1	0	0	0	N/A	Not targeted: Would require at least 50% of the total final building façade (by area) to be reused and at least 80% of the reused façade (by mass) to comprise in-situ reused material.	**Stage 2-4**
Mat 4	Reuse of Building Structure	1	0	0	0	N/A	Not targeted: Would require at least 80% by volume of an existing primary structure is reused without significant strengthening or alteration works.	**Stage 2-4**
Mat 5	Responsible Sourcing of Materials	3	0	0	3	**Potential Only** Architect/ Client/ Main Contractor	**Potential** Credits 3 Credits - 80% of applicable materials for the major building elements (refer to BREEAM Technical Manual) will be sourced from manufactures capable of providing the necessary supporting responsibility certification. Any non-certified timber used, will be legally soured and will not be included on the CITES list.	**Stage 2-4**

		Available	Current	Targeted	Targeted plus potential	Technical Lead	Comments	RIBA Stage
Mat 6	Insulation	2	0	2	2	Architect/ M&E Designer/ Contractor/ Client/ Main Contractor	1 Credits - Thermal insulation for the external walls, ground floor, roof and building services will targeting achieving BRE Green Guide rating of A or A+. 1 Credits - At least 80% of thermal elements will be will sourced from manufacture capable of providing the necessary supporting responsibility certification.	**Stage 2-4**
Mat 7	Designing for Robustness	1	0	1	1	Architect	1 Credit - Internal and external areas of the building where vehicular, trolley and pedestrian movement occur will be suitably protected to prevent damage.	**Stage 2-4**
	Materials Totals:	**15**	**0**	**9**	**13**			
	Materials score totals:	**7**	**0**	**4.2**	**6.07**			
Waste								
Wst 1	Construction Site Waste Management	4	0	3	3	Client/ Main Contractor	2 Credits - A compliant Site Waste Management Plan (SWMP) will be developed and implemented covering the waste arising from the project with the aim of minimising waste. The amount of waste generated will be limited to a maximum of 6.5 tonnes/100m^2 **OR** 12.9 m^3/100m^2 per GIFA. 1 Credit - At least 75% by tonnage **OR** 65% by volume of the non-hazardous construction waste generated is diverted from landfill. For demolition projects, in addition, 90% by weight **OR** 80% by volume of non-hazardous demolition waste is diverted from landfill. Waste materials will be sorted into separate key waste groups either onsite or offsite through a licensed contractor for recovery.	**Stage 0-5**
Wst 2	Recycled Aggregates	1	0	1	1	Architect/Main Contractor	1 Credit - The amount of recycled and secondary aggregate specified to be over 25% (by weight or volume) of the total high-grade aggregate uses for the buildings.	**Stage 2-4**

		Available	Current	Targeted	Targeted plus potential	Technical Lead	Comments	RIBA Stage
Wst 3	Recyclable Waste Storage	1	0	1	1	Architect/Main Contractor/Client	**Minimum Requirement** 1 Credit - A clearly labelled dedicated storage space which is accessible from the building and has good access for collection to cater for recyclable materials generated by the building during occupation. The size of the space allocated will be adequate to store the likely volume of recyclable materials generated by the building's occupants/operation. This will be based on the building floor area (refer to the BREEAM Technical Manual)	**Stage 2-4**
Wst 4	Compactor / Baler	1	0	0	0	N/A	Not targeted 1 Credit - A static waste compactor or baler will be installed and situated in a service area or dedicated waste management space. This area will include at least one water outlet. Wst 03 requirements have been met.	**Stage 2-4**
	Waste Totals:	**7**	**0**	**5**	**5**			
	Waste score totals:	**4.5**	**0**	**3.21**	**3.21**			
Land Use & Ecology								
LE 1	Reuse of Land	1	0	1	1	Client	1 Credit - Greater than 75% of the proposed development's footprint is on land which has previously been developed upon in the last 50 years.	**Stage 0-2**
LE 2	Contaminated Land	1	0	0	1	**Potential Credit** Contaminated Land Specialist/ Client/ Main Contractor	**Potential Credit** 1 Credit - The site has been deemed to be contaminated by a contaminated land specialist's site investigation and it has been deemed necessary to remediate prior to the development of the site.	**Stage 0-2**
LE 3	Ecological Value of Site and Protection of Ecological Features	1	0	1	1	Ecologist/ Client	1 Credit - Land within the construction zone is defined as 'land of low ecological' value, either by a suitably qualified ecologist OR BREEAM checklist A4. Any existing features of ecological value surrounding the construction zone and site boundary area will be adequately	**Stage 0-4**

		Available	Current	Targeted	Targeted plus potential	Technical Lead	Comments	RIBA Stage
							protected. This ecological protection will be constructed prior to any preliminary site construction or preparation works.	
LE 4	Mitigating Ecological Impact	2	0	1	1	Ecologist/ Client	**Minimum Requirement** 1 Credit - Where the change in ecological value of the site is less than zero and equal to or greater than minus nine plant species i.e. minimal change.	**Stage 0-4**
LE 5	Enhancing Site Ecology	3	0	3	3	Ecologist/ Client	1 Credit - A suitably qualified ecologist (SQE) has appointed to report on enhancing and protecting the ecology of the site. The SQE provides an Ecology Report with appropriate recommendations for protection and enhancement of the site ecology and is based on a site visit prior to initial site preparation works. Recommendations of the report are implemented. 2 Credits - The first credit is achieved. The recommendation of the Ecology Report for enhancement and protection have been implemented and the SQE confirms that this will result in an increase in ecological value of more than 6 plant species.	**Stage 0-4**
LE 6	Long Term Impact on Biodiversity	2	0	2	2	Ecologist/ Client/ Main Contractor	2 Credit - a suitably qualified ecologist (SQE) has been appointed prior to commencement to activities on site. The SQE confirms all relevant UK and EU legislation relating to protection and enhancement have been/ will be complied with during the design and construction. A compliant landscape and habitat management plan covering the first five years after project completion is produced for the site. From the additional criteria list including (refer to the BREEAM Technical Manual for full details) at least four are implemented during construction.	**Stage 1-5**
Land Use & Ecology Totals:		**10**	**0**	**8**	**9**			
Land Use & Ecology score totals:		**6**	**0**	**4.8**	**5.4**			

Pollution

		Available	Current	Targeted	Targeted plus potential	Technical Lead	Comments	RIBA Stage
Pol 1	Refrigerant GWP Building Services	1	0	0	0	N/A	Credit unachievable - not targeted 1 Credit - The building having no refrigerant OR Refrigerant used within the building services to have a GWP less than 5.	**Stage 1-4**
Pol 2	Preventing Refrigerant Leaks	2	0	0	0	N/A	Credit unachievable - not targeted 1 Credit - The building has no refrigerant **OR** systems using refrigerant are contained in a moderately air tight enclosure and a refrigerant leak detection system is installed covering high-risk parts of the plant **OR** an automatic permanent refrigerant leak detection system, which is not based on the principle of detecting or measuring the concentration of refrigerant in the air. 1 Credit for refrigerant recovery system.	**Stage 1-4**
Pol 4	NOx Emissions from Heating Source	2	0	0	0	N/A	Credit unachievable - not targeted 1 Credit - Would require the building's space heating demand to be served by a system with a dry NOx emissions of <40 mg/kWh (at 0% excess O2). The heat pump system utilising grid electricity with a high NOx emission exceeds this threshold.	**Stage 1-4**
Pol 5	Flood Risk	3	0	2	3	Hydrologist/ Drainage Engineer	2 Credits - Development is situated in a flood zone that is defined as having a low annual probability of flooding and a site specific Flood Risk Assessment (FRA) confirms that there is a low risk of flooding from all sources. **Potential Credit only** 1 Credit - Attenuation measures are specified to ensure that the peak rate of run-off from the site to the watercourses (natural or municipal) is no greater for the developed site than it was for the predevelopment site. This should comply with the Interim Code of Practice for Sustainable Drainage systems published by CIRIA, or for at least a 1 year and 100 year return period event with a 6 hour duration. The capacity of the attenuation measures must include an allowance for climate change; this should be made in accordance with current best practice.	**Stage 0-3**
Pol 6	Minimising Watercourse Pollution	1	0	0	1	**Potential Credit** Drainage Engineer	**Potential Credit only** 1 Credit - Specification of Sustainable Drainage Systems (SUDs) or source control systems such as permeable surfaces or infiltration trenches where run-off drains are in areas with a relatively low risk source of watercourse pollution. Specification of oil/petrol separators in surface water drainage systems, where there is a high	**Stage 0-3**

		Available	Current	Targeted	Targeted plus potential	Technical Lead	Comments	RIBA Stage
							risk of contamination or spillage of substances such as petrol and oil. All water pollution prevention systems have been designed and detailed in accordance with the recommendations of Pollution Prevention Guideline 3 and where applicable the SUDS manual. A comprehensive and up-to-date drainage plan of the site will be made available for the building/site occupiers.	
Pol 7	Reduction of Night Time Light Pollution	1	0	1	1	M&E Designer/ Contractor/ Client	1 Credit - The external lighting will be designed in compliance with Table 1 (and its accompanying notes) of the ILE Guidance notes for the reduction of obtrusive light 2005. All external lighting (except for safety and security lighting) can be automatically switched off between 2300hrs and 0700hrs. This can be achieved by providing a timer for all external lighting set to the appropriate hours. If safety or security lighting is provided and will be used between 2300hrs and 0700hrs, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 1 of the ILE's Guidance notes. Illuminated advertisements, where specified, must be designed in compliance with ILE Technical Report 5 – The Brightness of Illuminated Advertisements.	**Stage 2-4**
Pol 8	Noise Attenuation	1	0	1	1	Acoustician	1 Credit - There are, or will be, existing noise-sensitive areas or buildings within 800m radius of the assessed development. A noise impact assessment in compliance with BS4142 will be carried out. This will determine the existing and proposed background noise levels. The rating level of the noise source from the site/building will target to be equivalent to or less than the background noise level. The noise impact assessment must be carried out by a suitably qualified acoustic consultant. Where the rating level of the noise source(s) from the site/building is greater than the background noise level, measures have been installed to attenuate the noise at its source to a level equivalent to or less than the background noise level.	**Stage 0-3**
	Pollution Totals:	**11**	**0**	**4**	**6**			
	Pollution score totals:	**10**	**0**	**3.64**	**5.45**			

Innovation

		Available	Current	Targeted	Targeted plus potential	Technical Lead	Comments	RIBA Stage
Bap 1	BREEAM AP	2	0	2	2	Client/BREEAM AP	1 Credit BREEAM performance objectives are agreed, (and must be achieved at final certification no later than the end of the design brief stage **(e.g. RIBA Stage 1).** The appointed BREEAM Accredited Professional is given the opportunity to attend key design team meetings (see Compliance Notes below) held from **the start of RIBA Stage 1** (up to and including Stage 4 or equivalent, and is to be included on the circulation list for minutes from all meetings. A Design stage assessment report is submitted to BRE Global for interim certification. 1 Credit - The first credit is achieved. The project is reviewed against BREEAM performance objectives by the appointed BREEAM Accredited Professional **no later than the end of RIBA Stage 4 or equivalent** procurement stage). The appointed BREEAM Accredited Professional is given the opportunity to attend key design team meetings held from the **start of RIBA Stage 4 up to and including Stage 5** and is to be included on the circulation list for minutes from all meetings. A Post Construction stage assessment report is submitted to BRE Global for final certification.	**Stage 1-5**
Man 2	Considerate Constructors	1	0	0	0		Not targeted	
Hea 1	Daylighting	1	0	0	0		Not targeted	
Ene 1	Reduction of CO2 Emissions	2	0	0	0		Not targeted	
Ene 5	Low or Zero Carbon Technologies	1	0	0	0		Not targeted	
Wat 2	Water Meter	1	0	0	0		Not targeted	
Mat 1	Materials Specification	1	0	0	0		Not targeted	

		Available	Current	Targeted	Targeted plus potential	Technical Lead	Comments	RIBA Stage
Mat 5	Responsible Sourcing of Materials	1	0	0	0		Not targeted	
Wst 1	Construction Site Waste Management	1	0	0	0		Not targeted	
Wat1	Water Consumption	1	0	0	1	**Potential Only** M&E Designer/ Contractor	**Potential credit** 1 Credit - cooling systems demonstrate a equal to or greater than 50% reduction in potable water consumption associated with the data centre cooling process.	
AI	Approved Innovation	2	0	0	0		Not targeted	
Innovation Totals: (+exemplary)		**14**	**0**	**2**	**3**			
Innovation score totals:		**14**	**0**	**2**	**3**			
OVERALL SCORE TOTALS:		**114**	**0**	**72.44**	**84.55**			