

BREEAM Pre-assessment Report

Union Park, Block 4, North Hyde Gardens, Hayes, UB3 4QQ

Prepared on behalf of:

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Summary

This pre-assessment report has been compiled for Union Park, Block 4, Hayes, and based on a meeting held 11th November 2024 between the BREEAM assessor and the design team.

The target BREEAM rating for the project is Excellent which requires a score of at least 70%. This pre-assessment shows that at this stage a score of 72.16% should be achievable provided the required evidence is compiled and provided to the assessor at the correct time.

Introduction to BREEAM Data centers 2010

BREEAM (Building Research Establishment Environmental Assessment Method) was created by BRE in 1990 as means of assessing, rating and certifying the sustainability of buildings. The scheme applicable to Block 4 is BREEAM Data Centres 2010 (with large associated function areas).

There are several factors involved in determining a BREEAM rating. These include the project's performance within the BREEAM categories and issues, and the minimum scores and standards required for each BREEAM rating. These are explained in more detail below.

Categories and Issues

To attain the required BREEAM rating, it is necessary to demonstrate performance in nine categories. Each category contains issues where credits can be awarded to build up a total score. Within each issue, there are several criteria which must adhered to in order to score one or more credits. These criteria often vary depending on the building type or context.

Minimum Scores

The weighted totals of achieved credits are used to create an overall percentage score for the development. Each BREEAM rating requires a minimum total percentage score, ranging from 'Pass' at 30% to 'Outstanding' at 85%. The minimum total scores required to attain each BREEAM rating are shown below. A project which does not achieve a rating of at least 30% is considered unclassified.

| BREEAM Rating | Minimum Score |
|----------------------|----------------------|
| Outstanding | 85% |
| Excellent | 70% |
| Very Good | 55% |
| Good | 45% |
| Pass | 30% |

Minimum Standards

The project is targeting an Excellent rating. To achieve this there are several mandatory credits, listed below:

| Issue | Mandatory credit/criterion |
|---|----------------------------|
| Man 1 Commissioning | One credit |
| Man 2 Considerate constructors | One credit |
| Ene 1 - Reduction of CO2 emissions | One credit |
| Ene 2 - Sub-metering of substantial energy uses | One credit |
| Ene 5 - Low or zero carbon technologies | Six credits |
| Wat 1 - Water consumption | One credit |
| Wat 2 - Water meter | One credit |
| LE 4 - Mitigating ecological impact | One credit |
| Wst 03 Operational waste | One credit |

The Certification Process

It is possible to be awarded BREEAM certification at two stages, known as design stage and post construction stage. A development is not considered to have achieved BREEAM until the post construction certification has been issued.

The design stage assessment provides a rating of the building as specified and is also referred to as an 'interim' rating. This assessment should ideally be carried out prior to work on site starting. It is not necessary to attain design stage certification in order to be certified at the post construction stage, although an interim certificate is sometimes required for planning. The post construction stage assessment is considered to determine the final BREEAM rating for the project.



BREEAM certificates are issued by BRE following the submission of a BREEAM report and compiled evidence by the assessor. A robust evidence policy is operated by BRE when considering projects for certification under BREEAM. Each criterion and requirement must be demonstrated by detailed documentary evidence in order for the credits to be awarded and for the certificate to be released. It is not the role of the assessor to produce evidence, instead evidence of compliance must be provided by the design team and compiled by the assessor for submission.

Pre-assessment score

The table below shows the score deemed achievable at this stage. It should be noted that a buffer of approximately 5%, over the target rating should be built in at this stage to ensure that, if credits are lost throughout the process, the rating is still achievable. A list of potential extra credits is included in the next section and a full list of targeted credits is provided in Appendix A.

| Section | Section weighting | Targeted credits % | Potential extra % | Targeted plus potential % |
|----------------------|-------------------|--------------------|-------------------|---------------------------|
| Management | 12% | 8.00% | 1% | 9.00% |
| Health and wellbeing | 10% | 4.62% | 0.77% | 5.39% |
| Energy | 37% | 29.60% | - | 29.60% |
| Transport | 5% | 1.50% | - | 1.50% |
| Water | 8.5% | 6.38% | 2.12% | 8.50% |
| Materials | 7% | 4.20% | 0.93% | 5.13% |
| Waste | 4.5% | 3.21% | - | 3.21% |
| Land use and ecology | 6% | 4.20% | 0.6% | 4.80% |
| Pollution | 10% | 5.45% | 0.91% | 6.36% |
| Innovation | 10% | 5.00% | - | 5.00% |
| Totals | 110% | 72.16% | 6.33% | 78.49% |

Potential extra credits

The list of credits below should be investigated by the design team to see which credits can be added in to increase the target score. As the predicted score is just over the 70% needed for an Excellent rating the additional credits should not be considered optional at this stage. To give some margin the design team should be aiming to achieve at least 75% in case any credits assumed in this pre-assessment are lost during design and construction.

| Ref | BREEAM issue | Credits and requirement | Credits available | % |
|-------|----------------------|--|-------------------|------|
| Man 8 | Security | <p>1. The design team has consulted with and sought the advice of a Suitably Qualified Security Specialist (SSQS) on designing out the opportunity for crime, in accordance with the principles and guidance of <i>Secured by Design</i>.</p> <p>2. Consultation with the ALO/CPDA occurred during or prior to the <i>concept design</i> stage (RIBA stage C) or equivalent.</p> <p>3. The final design embodies the recommendations of the ALO/CPDA and is built to conform to the principles and guidance of <i>Secured by Design</i>.</p> <p>Control Risk provided a report for Blocks 1-3 at RIBA Stage 2, Similar needed for Block 4.</p> | 1 | 1 |
| Hea 2 | View out | <p>The <i>relevant building areas</i> (offices/spaces with workstations) are within 7m distance of a wall with a window or permanent opening providing an <i>adequate view out</i>, where the window/opening is $\geq 20\%$ of the total inside wall area.</p> <p>The view out should ideally be through an external window providing a view of a landscape or buildings (rather than just the sky) at seated eye level (1.2 – 1.3m) in the <i>relevant building areas</i>. A view into an internal courtyard or atrium will comply provided the distance from the opening to the back wall of the courtyard/atrium is at least 10m (therefore allowing enough distance for the eyes to refocus). The view cannot be an internal view across the room, as this is likely to become obstructed by partitions, filing cabinets etc.</p> <p>NWA to provide calculations.</p> | 1 | 0.77 |
| Wat 3 | Major leak detection | <p>1. A leak detection system capable of detecting major leaks on the water supply must be installed. The system must cover all mains water supply between and within the building and the site boundary.</p> <p>2. The leak detection system is:</p> | 1 | 1.06 |

| | | | | |
|-------|------------|--|---|------|
| | | <p>a. Audible when activated</p> <p>b. 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</p> <p>c. Able to identify different flow and therefore leakage rates, e.g. continuous, high and/or low level, over set time periods</p> <p>d. Programmable to suit the owner/occupiers' water consumption criteria</p> <p>e. Where applicable, designed to avoid false alarms caused by normal operation of large water-consuming plant such as chillers.</p> <p>Gratte to investigate.</p> | | |
| Wat 6 | Irrigation | <p>1. Where the irrigation method specified for internal or external planting and/or landscaping complies with ANY ONE of the following:</p> <p>a. Drip feed subsurface irrigation that incorporates soil moisture sensors. The irrigation control should be zoned to permit variable irrigation to different planting assemblages.</p> <p>b. Reclaimed water from a rainwater or greywater system.</p> <p>c. External landscaping and planting that relies solely on precipitation, during all seasons of the year.</p> <p>d. The only planting specified is restricted to species that thrive in hot and dry conditions.</p> <p>e. Where no dedicated, mains-supplied irrigation systems (including pop-up sprinklers and hoses) are specified, and planting will rely solely on manual watering by building occupier or landlord.</p> <p>2. Where a sub surface drip feed irrigation system is installed for external areas, a rainstat must also be installed to prevent automatic irrigation of the planting and the landscape during periods of rainfall.</p> | 1 | 1.06 |
| Mat 6 | Insulation | <p>Any new insulation specified for use within the following building elements must be assessed:</p> <ul style="list-style-type: none"> · External walls · Ground floor · Roof · Building services <p>Insulation must be assessed against the Green Guide to Specification (A+ rating needed ideally) and achieve an Insulation Index of at least 2. (BREEAM calculator tool available)</p> <p>At least 80% of the thermal insulation used in the building elements identified above must be</p> | 2 | 0.93 |

| | | | | |
|--------------------------------|------------------------------|--|----------|--------------|
| | | responsibly sourced (BES 6001/ISO14001 certification will be needed) | | |
| LE5 | Enhancing site ecology | Ecology Solutions to provide report showing whether there will be an increase in ecological value on site. | 1 | 0.6 |
| Pol 2 | Preventing Refrigerant Leaks | Systems using refrigerants are contained in a moderately air tight enclosure (or a mechanically ventilated plant room), and a refrigerant leak detection system is installed covering high-risk parts of the plant. OR An automatic permanent refrigerant leak detection system is specified, which is NOT based on the principle of detecting or measuring the concentration of refrigerant in air. | 1 | 0.91 |
| Total potential credits | | | 8 | 6.33% |

Appendices

Appendix A –Credits targeted

The following table lists available BREEAM credits and shows those targeted and potential extras to give a route to achieving the Excellent rating.

| Ref | BREEAM issue | Credits available | Credits targeted | Potential extra credits | Comments |
|----------------------------------|---------------------------|-------------------|------------------|-------------------------|----------|
| Management | | | | | |
| Man 1 | Commissioning | 2 | 1 | 0 | |
| Man 2 | Considerate Constructors | 2 | 2 | 0 | |
| Man 3 | Construction Site Impacts | 4 | 4 | 0 | |
| Man 4 | Building User Guide | 1 | 1 | 0 | |
| Man 8 | Security | 1 | 0 | 1 | |
| Man 12 | Life Cycle Costing | 2 | 0 | 0 | |
| Total credits- Management | | 12 | 8 | 1 | |
| Health and well being | | | | | |
| Hea 1 | Daylighting | 1 | 0 | 0 | |

| | | | | | |
|---|---|-----------|----------|----------|---|
| Hea 2 | View Out | 1 | 0 | 1 | NWA to investigate |
| Hea 3 | Glare Control | 1 | 0 | 0 | |
| Hea 4 | High Frequency Lighting | 1 | 1 | 0 | |
| Hea 5 | Internal and External Lighting Levels | 1 | 1 | 0 | |
| Hea 6 | Lighting Zones and Controls | 1 | 0 | 0 | |
| Hea 7 | Potential for Natural Ventilation | 1 | 0 | 0 | |
| Hea 8 | Indoor Air Quality | 1 | 0 | 0 | |
| Hea 9 | Volatile Organic Compounds | 1 | 1 | 0 | |
| Hea 10 | Thermal Comfort | 1 | 1 | 0 | |
| Hea 11 | Thermal Zoning | 1 | 1 | 0 | Offices heated by VRF, zone controllers will be provided. |
| Hea 12 | Microbial Contamination | 1 | 1 | 0 | |
| Hea 13 | Acoustic Performance | 1 | 0 | 0 | |
| Total credits- Health and well being | | 13 | 6 | 1 | |
| Energy | | | | | |
| Ene 1 | Reduction of CO ₂ Emissions | 15 | 15 | 0 | |
| Ene 2 | Sub-metering of Substantial Energy Uses | 2 | 1 | 0 | |
| Ene 4 | External lighting | 1 | 1 | 0 | |

| | | | | | |
|---------------------------------|---|-----------|-----------|----------|---|
| Ene 5 | Low or Zero Carbon Technologies | 3 | 1 | 0 | |
| Ene 6 | Lifts | 2 | 2 | 0 | Lift traffic analysis required. |
| Ene 22 | Procurement of Sustainable IT Equipment | 2 | 0 | 0 | |
| Total credits- Energy | | 25 | 20 | 0 | |
| Transport | | | | | |
| Tra 1 | Provision of Public Transport | 3 | 1 | 0 | |
| Tra 2 | Proximity to Amenities | 1 | 0 | 0 | |
| Tra 3 | Cyclist Facilities | 2 | 1 | 0 | NWA confirmed that new cycle spaces are to be provided for Block 4. |
| Tra 4 | Pedestrian and Cyclist Safety | 1 | 0 | 0 | |
| Tra 5 | Travel Plan | 1 | 1 | 0 | New Travel Plan is to be written for Block 4. |
| Tra 6 | Maximum Car Parking Capacity | 2 | 0 | 0 | |
| Total credits- Transport | | 10 | 3 | 0 | |
| Water | | | | | |
| Wat 1 | Water consumption | 3 | 3 | 0 | Rainwater harvesting will be used for cooling process. |
| Wat 2 | Water meter | 1 | 1 | 0 | |
| Wat 3 | Major Leak Detection | 1 | 0 | 1 | To be investigated. |
| Wat 4 | Sanitary Supply Shut Off | 1 | 1 | 0 | |
| Wat 5 | Water Recycling | 1 | 1 | 0 | Greywater collection from showers and taps will be used for WC flush. |
| Wat 6 | Irrigation Systems | 1 | 0 | 1 | Green roof may need irrigation system. To be investigated. |
| Total credits- Water | | 8 | 6 | 2 | |
| Materials | | | | | |

| | | | | | |
|---------------------------------|--|-----------|----------|----------|---|
| Mat 1 | Materials Specification | 6 | 6 | 0 | |
| Mat 2 | Hard Landscaping and Boundary Protection | 1 | 0 | 0 | |
| Mat 3 | Reuse of Building Facade | 1 | 0 | 0 | |
| Mat 4 | Reuse of Building Structure | 1 | 0 | 0 | |
| Mat 5 | Responsible Sourcing of Materials | 3 | 3 | 0 | |
| Mat 6 | Insulation | 2 | 0 | 2 | |
| Mat 7 | Designing for Robustness | 1 | 0 | 0 | |
| Total credits- Materials | | 15 | 9 | 2 | |
| Waste | | | | | |
| Wst 1 | Construction Site Waste Management | 4 | 4 | 0 | Pre-demolition audit (Erith) does not cover the Adison Lee building. New pre-demolition audit needed for Block 4. |
| Wst 2 | Recycled Aggregates | 1 | 0 | 0 | |
| Wst 3 | Recyclable Waste Storage | 1 | 1 | 0 | HDR currently producing waste management strategy |
| Wst 4 | Compactor / Baler | 1 | 0 | 0 | |
| Total credits- Waste | | 7 | 5 | 0 | |
| Land use and ecology | | | | | |
| LE1 | Reuse of Land | 1 | 1 | 0 | |
| LE2 | Contaminated Land | 1 | 1 | 0 | Paragon (now Colliers) ground investigation report covers the entire site. |
| LE3 | Ecological Value of Site and Protection of Ecological Features | 1 | 1 | 0 | |
| LE4 | Mitigating Ecological Impact | 2 | 1 | 0 | |
| LE5 | Enhancing Site Ecology | 3 | 1 | 1 | Ecology Solutions to provide updated report for Block 4 (for LE3-6) |

| | | | | | |
|--|---|-----------|----------|----------|--|
| LE6 | Long Term Impact on Biodiversity | 2 | 2 | 0 | |
| Total credits- Land use and ecology | | 10 | 7 | 1 | |
| Pollution | | | | | |
| Pol 1 | Refrigerant GWP Building Services | 1 | 0 | 0 | |
| Pol 2 | Preventing Refrigerant Leaks | 2 | 0 | 1 | |
| Pol 4 | NOx Emissions from Heating Source | 2 | 0 | 0 | |
| Pol 5 | Flood Risk | 3 | 3 | 0 | |
| Pol 6 | Minimising Watercourse Pollution | 1 | 1 | 0 | |
| Pol 7 | Reduction of Night Time Light Pollution | 1 | 1 | 0 | |
| Pol 8 | Noise Attenuation | 1 | 1 | 0 | Plant noise assessment required for planning |
| Total credits- Pollution | | 11 | 6 | 1 | |
| Innovation | | | | | |
| Bap 1 | BREEAM AP | 2 | 0 | 0 | |
| Man 2 | Considerate Constructors | 1 | 0 | 0 | |
| Hea 1 | Daylighting | 1 | 0 | 0 | |
| Ene 1 | Reduction of CO2 Emissions | 1 | 1 | 0 | |
| Ene 5 | Low or Zero Carbon Technologies | 3 | 0 | 0 | |
| Wat 1 | Water Consumption | 1 | 1 | 0 | |
| Wat 2 | Water Meter | 1 | 1 | 0 | |

| | | | | | |
|--|------------------------------------|------------|-----------|----------|--|
| Mat 1 | Materials Specification | 1 | 0 | 0 | |
| Mat 5 | Responsible Sourcing of Materials | 1 | 1 | 0 | |
| Wst 1 | Construction Site Waste Management | 1 | 1 | 0 | |
| Total credits-Innovation (maximum of 10 achievable) | | 10 | 5 | 0 | |
| Overall total credits | | 121 | 75 | 8 | |

