

RIDGE

# MAUNA KEA LIMITED, LAND SOUTH OF BRYN LANE, WREXHAM

## BREEAM VERSION 6 NEW CONSTRUCTION TARGET PLANNING REPORT

# MAUNA KEA LIMITED, LAND SOUTH OF BRYN LANE, WREXHAM.

# BREEAM UK NEW CONSTRUCTION V6 PLANNING TARGET REPORT

04.11.2024

## Prepared for

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## VERSION CONTROL

| VERSION | DATE | DESCRIPTION | CREATED BY | REVIEWED BY |
|---|---|---|---|---|
| 1.0 | 23.10.24 | First issue | WW | JW |
| 2.0 | 04.11.24 | Second issue corrections | WW | |
| | | | | |
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## CONTENTS


1. INTRODUCTION 3
2. MEETINGS 3
3. PROJECT DESCRIPTION 3
4. PROJECT PROGRAMME 3
5. BACKGROUND TO SUSTAINABLE DESIGN & BREEAM 4
6. BREEAM STRATEGY & TARGETS 5
7. SUMMARY 5
APPENDIX A- DETAILED ASSESSMENT REPORT 6

# 1. INTRODUCTION

Ridge and Partners LLP have been appointed to undertake a BREEAM Post Construction Assessment of the development of a new B2/B8 industrial unit on Wrexham Industrial Estate.

The development is required, by planning, to achieve a minimum of a BREEAM Excellent rating and will be assessed under BREEAM V6 New Construction as a Shell and Core Post Construction Assessment.

# 2. MEETINGS

A BREEAM Pre-assessment meeting held on 15.10.24 which was attended by me (Wendy Walker- BREEAM Assessor/AP) and all relevant members of the design team including the client, John Hughes (Net World Sport). The BREEAM Assessment was discussed in detail and a target established for the attainment of the BREEAM Excellent rating with required Mandatory credits including energy performance. Subsequent meetings have been held with the team to ensure the continued smooth running of the process. The first BREEAM Ecology Workshop was held 14.10.24 to identify 'at risk areas' with the development site and identify ecological enhancements moving forward.

# 3. PROJECT DESCRIPTION

The site is located on Wrexham Industrial Estate, to the south of Bryn Lane.

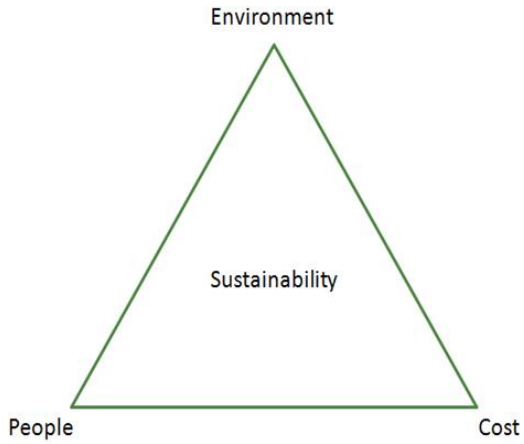
The project is the construction of a single, large warehouse building with associated office and ancillary areas. The building will be circa 16,000m$^2$ and will be situated in an area of arable fields, comprised of a mix of semi-improved grassland, native species rich hedgerows, scrub and scattered broadleaved trees.

# 4. PROJECT PROGRAMME

The project is currently in RIBA Stage 2 with planning submission proposed before the end of 2024. RIBA Stage 3 is set to commence immediately following submission, with Stage 4 in August 2025 and a build programme of 15 months.

## 5. BACKGROUND TO SUSTAINABLE DESIGN & BREEAM

Sustainability is defined as the ability to meet the needs of today, without compromising the ability of future generations to provide for the needs of tomorrow. It can be described as the equilibrium between environmental and financial considerations, and the needs of the community. A truly sustainable development will achieve a balance between fitness-for-purpose, value-for-money and environmental impact and will achieve this via integration as part of a larger, sustainable community.




BREEAM (Building Research Establishment's Environmental Assessment Method) is a voluntary scheme that can be used to assess the environmental life cycle of new non-domestic buildings at the design and construction stages.

BREEAM assessments can be either undertaken in two stages: Firstly, the design stage, which leads to an Interim BREEAM certified rating; Secondly, the post construction stage, which leads to a final BREEAM certified rating or as a single Post Construction Assessment which leads to a final BREEAM certified rating.

Buildings are assessed using a system of credits. The credits are grouped within the following categories: Within each of the BREEAM categories outlined above, there are a number of credit requirements that reflect the options available to designers and managers of buildings.

An environmental weighting is applied to the scores achieved under each category, as shown in the table above, in order to calculate the final BREEAM score. The weighting factors have been derived from consensus-based research with various groups such as government, material suppliers and lobbyists. This research was carried out by BRE to establish the relative importance of each environmental issue. The weighting factors vary depending on whether the project is fully fitted, shell & core or shell only, and on the answers to a number of set up questions.

| **BREEAM Section** | **% Weighting** (Shell & Core) |
|---|---|
| Management | 11% |
| Health and Wellbeing | 8% |
| Energy | 14% |
| Transport | 11.5% |
| Water | 7% |
| Materials | 17.5% |
| Waste | 7% |
| Land Use & Ecology | 15% |
| Pollution | 9% |

The assessment process results in a report covering the issues assessed together with a formal certification giving a rating on a scale of PASS (at least 30%), GOOD (at least 45%), VERY GOOD (at least 55%), EXCELLENT (at least 70%) and OUTSTANDING (at least 85%). A score of less than 30% is UNCLASSIFIED.

## 6. BREEAM STRATEGY & TARGETS

The development is targeting a minimum of a BREEAM 'Excellent' rating, as required by planning. The following report therefore outlines how this can be achieved.

In all assessments we recommend a score buffer of between 5 and 7% to allow for unexpected changes or compliance issues as the project progresses.

The development will be assessed using BREEAM V6 New Construction, Industrial - (see https://files.bregroup.com/breeam/technicalmanuals/sd/uk-new-construction-version-6).

The assessment will use the BREEAM 'Shell and Core 'scope reflecting the further fit out possible by end users in the warehouse and ancillary spaces.

Within the preassessments there may be issues which are outside of the current scope of works/specification and will need inclusion if the targeted credits are to be met. Attention must therefore be paid to ALL credits targeted within this report, to ensure the necessary measures required are feasible, and, incorporated within specifications.

It is sometimes the case that achievement of a particular BREEAM credit comes with a disproportionately increased cost, without offering equivalent advantages in functionality or sustainability. We would recommend that any such issues are identified early and that these issues are only incorporated within the design once a cost-benefit analysis has been carried out.

It is important to build a robust strategy for the BREEAM certification process into the project programme to ensure that the client's requirements can be achieved. It is recommended that a 'managed' post construction assessment is undertaken. A single report will be submitted to the BRE following completion of the building, rather than a separate interim (design stage) and final (post construction) submission. This option provides a more streamlined approach to assessment. It has the benefit of continual assessment throughout the design and construction phases and allows changes to be picked up as they occur.

For the certification to be a smooth process for all concerned, an Information Required Schedule (IRS) will be issued, depicting all the required information with an indication of when it should be issued for assessment. It is by this approach that we ensure a constant flow of information and avoid credit time deadlines being missed and the BREEAM rating jeopardised.

## 7. SUMMARY

In the preassessment meeting targets were identified to achieve an Excellent BREEAM rating with a score of **76.47%** with a contingency of **6.4%.**

A Shell and Core Industrial BREEAM Post Construction assessment has been proposed as the most appropriate certification route for the base buildings. Should the end user require a complete building certification also covering fit out this could be achieved by carrying out a further separate fit out assessments and combining the two certificates.

A detailed breakdown is provided in Appendix A which should be read in conjunction with the current BREEAM V6 NC manual.

Please note that for any particular rating there are mandatory credits that need to be achieved within the targeted percentage score. These are highlighted in Appendix A.

# APPENDIX A- DETAILED ASSESSMENT REPORT

**BREEAM NC v6 Shell & Core**
**Planning Target Report.**

RIDGE

## Net World Sports, land South of Bryn Lane.

| | |
|---|---|
| PASS | 30 |
| GOOD | 45 |
| VERY GOOD | 55 |
| EXCELLENT | 70 |
| OUTSTANDING | 85 |

Report Prepared/Reviewed By: Wendy Walker/Jessica Wilson
BREEAM Registration: BREEAM-0125-9571
Date: 23.10.24

| Results Summary | | | | | |
|---|---|---|---|---|---|
| **Sector** | **Total Available** | **Weighting** Shell & Core | **Target score** | **Provisional Score** | **Final Score** |
| Management | 18 | 11.0% | 11.00% | 0.00% | 0.00% |
| Health & Wellbeing | 10 | 8.0% | 5.60% | 0.80% | 0.00% |
| Energy | 21 | 14.0% | 11.33% | 0.00% | 0.00% |
| Transport | 12 | 11.5% | 5.75% | 0.00% | 0.00% |
| Water | 9 | 7.0% | 5.44% | 0.00% | 0.00% |
| Materials | 12 | 17.5% | 13.12% | 0.00% | 0.00% |
| Waste | 10 | 7.0% | 7.00% | 0.00% | 0.00% |
| Land Use & Ecology | 13 | 15.0% | 9.23% | 0.00% | 0.00% |
| Pollution | 12 | 9.0% | 6.00% | 0.00% | 0.00% |
| | | | **74.47%** | 0.80% | 0.00% |
| **Innovation** | 10 | 10.0% | **2.00%** | 0.00% | 0.00% |
| **Total Score** | | | **76.47%** | 0.80% | 0.00% |
| **BREEAM Rating** | | | **EXCELLENT** | UNCLASSIFIED | UNCLASSIFIED |

| Project Team | Company | Abbreviation |
|---|---|---|
| Client | Net World Sports Ltd | NWS |
| Project Manager | Motion Project Management | MPM |
| Planning Consultant | Carter Jonas | CJ |
| QS | Enabl | Enabl |
| Architect | Pace Architecture | PA |
| Energy Consultant | Hilson Moran | HM |
| M&E Consultant | Synergy Building Services | SBS |
| MEP | Robert Whetham Associates | RWA |
| Ecologist | TEP | TEP |
| Acoustician | Tetra Tech | TT |
| Civil/Structural Engineers | Tier | Tier |
| BREEAM/AP/LCC/LCA | Ridge & Partners LLP | R&P |
| Landscape Architect | Nicholsons | Nichol |
| Air Quality Consultants | Redmore Environmental | Ref |
| Transport Consultant | Cora IHT | CI |
| Main Contractor | TBC | MC |
| Demolition Contractor (if applicable) | TBC | DC |
| M&E subcontrators | TBC | M&E subs |

## BREEAM V6 New Construction, Industrial, Shell and Core

| Assessment Issue | | Credits Available | Weighted worth of 1 credit | Credit Information<br>Please refer to https://www.breeam.com/NC2018/for full details) | Target | Risk | Responsibility |
|---|---|---|---|---|---|---|---|
| **MANAGEMENT** | | | | | | | |
| **Man01** | **Project Brief and Design** | | | | | | |
| Req 1-3 | Project Delivery Planning | 1 | 0.61 | It is assumed that:<br><br>Prior to the end of RIBA Stage 2 all the project delivery stakeholders (client/developer, contractor, design team) meet, identify and define roles, responsibilities & contributions during each key phase.<br><br>The project team demonstrates how the stakeholder contributions and consultation process influences the following:<br>- Initial Project Brief - Project Execution Plan<br>- Communications Strategy - Concept Design<br><br>Please note the BRE expect all the above documentation to be present for a project unless the project manager can justify why a certain report is not appropriate for a particular project. the above documents can be combined into a single document as long as it is clear that all elements are covered. | 1 | Medium | NWS/MPM/CJ |
| Req 4-7 | Stakeholder Consultation (Interested Parties) | 1 | 0.61 | It is assumed that prior to the end of RIBA Stage 2 consultation has occurred with all interested parties. It must be demonstrated that the consultation has influenced the Project Brief and Concept Design. Prior to the end of RIBA Stage 4, all interest parties give and receive feedback. | 1 | High | NWS/MPM/CJ |
| Req 8 | Pre-Requisite - BREEAM AP | | | It is assumed that the project team and client formally agreed (contract or letters of appointment) strategic performance targets, including the BREEAM rating, early in the design process. | | Medium | NWS / MPM/ DT |
| Req 9 | BREEAM AP (Concept Design) | 1 | 0.61 | It is assumed that the appointed BREEAM AP will**:**<br>- Work with the project team, including the client, to consider the links between BREEAM issues and assist them in maximising the project's overall performance against BREEAM throughout Concept Design (RIBA Stage 2).<br>- Monitor progress against the performance targets throughout all stages.<br>- Identify risks and opportunities related to the achievement of the targets agreed.<br>- Provide feedback to the project team as appropriate.<br>- Monitored and coordinate the generation of appropriate evidence by the project team. | 1 | Low | R&P |
| Req 11-12 | BREEAM AP (Developed Design) | 1 | 0.61 | This credit can only be achieved if criteria 8 and 9 (above) have been achieved.<br>Is assumed the appointed BREEAM AP will:<br>- Worked with the project team, including the client, to consider the links between BREEAM issues and assist them in maximising the project's overall performance against BREEAM throughout Developed Design (RIBA Stage 3).<br>- Monitor progress against the performance targets throughout all stages.<br>- Identify risks and opportunities related to the achievement of the targets agreed.<br>- Provide feedback to the project team as appropriate.<br>- Monitor and coordinate the generation of appropriate evidence by the project team. | 1 | Low | R&P |
| **Man02** | **Life Cycle Cost and Service Life Planning** | | | | | | |
| Req 1-3 | Elemental Life Cycle Cost<br>Req 1-3 | 2 | 0.61 | It is assumed that prior to the end of RIBA Stage 2, a competent person will carry out an elemental life cycle costing analysis together with elemental options appraisals in accordance with PD 156865:2008. | 2 | Medium | R&P / Enabl |
| Req 4-5 | Component Level LCC Plan<br>Req 4-5 | 1 | 0.61 | It is assumed that prior to the end of RIBA Stage 4 a competent person will carry out a component level life cycle costing (LCC) plan in line with PD 156865:2008. Where present, the LCC plan should include: Envelope; Services; Finishes & External Spaces<br><br>The component level LCC needs to have been used to influence design and specification. | 1 | Medium | R&P / Enabl |

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| Req 6 | Capital Cost Reporting Req 6 | 1 | 0.61 | It is assumed that the capital cost for each building is reported to the BREEAM Assessor (R&P)) for input into the BREEAM Spreadsheet in £k/m2. | 1 | Low | Enabl |
| **Man03** | **Responsible Construction Practices** | | | **Minimum standard: Req 7 for Excellent, Req 8-9 for** | | | |
| Req 1 | Pre-requisite: Timber | | | It is assumed that all timber and timber based products used on the project will be 'legally harvested and traded timber'. | | Low | MC/DC |
| Req 3-4 | Environmental Management | 1 | 0.61 | It is assumed that any party who at any stage manages the construction site (typically demolition, remediation, groundworks and main contractors where applicable):<br><br>- Operates an EMS e.g. ISO14001.<br>- Implements best practice pollution prevention policies and procedures in accordance with Working at construction and demolition sites: PPG6, Pollution Prevention Guidelines. | 1 | Low | MC/DC |
| Req 5 | Pre-requisite for BREEAM AP | | | It is assumed that the client and contractor formally agree performance targets. | | Low | MC/DC/ NWS / MPM |
| Req 6 | BREEAM AP (Site) | 1 | 0.61 | Is it assumed that a BREEAM AP is appointed and:<br><br>- Works with the project team, including the client, to consider the links between BREEAM issues and assist them in achieving the project's performance targets throughout the Construction, Handover and Close Out stages.<br>- Monitors construction progress against the performance targets agreed.<br>- Identifies risks and opportunities related to the procurement and construction process.<br>- Provides feedback to the contractor and the project team.<br>- Monitors and coordinates the generation of appropriate evidence by the project team. | 1 | Low | R&P/MC |
| Req 7 | Responsible Construction Management - Credit 1 | 1 | 0.61 | It is assumed that the project will be registered with the Considerate Constructors Scheme and achieve a minimum of 7 points per section and 35 overall | 1 | Low | MC |
| Req 8-9 | Responsible Construction Management - Credit 2 | 1 | 0.61 | In addition to req 13, it is assumed that the contractor the project will be registered with the Considerate Constructors Scheme and achieve a minimum of 11 points per section and 39 overall. | 1 | Low | MC |
| Req 10 | Monitoring of Construction- Site Impacts- Pre-requisite | | | It is assumed that responsibility will be assigned to an individual(s) for monitoring, recording and reporting energy use, water consumption and transport data throughout the build programme. | | Low | MC/DC |
| Req 11 - 18 | Monitoring of Construction- Site Impacts (Energy and Water) | 1 | 0.61 | It is assumed that the appointed individual:<br><br>- lets targets for, and monitors site energy consumption in kWh and also reports kgCO2, and kgCO2/project value.<br>- The appointed individual sets targets for, and monitors potable water consumption (m3) usage on site. | 1 | Low | MC/DC |
| Req 19-22 | Monitoring of Construction- Site Impacts (Transport) | 1 | 0.61 | It is assumed that:<br><br>The appointed individual sets targets for, and monitors data on transport of construction materials and waste. KgCO2eq, km and litres should be reported separately for materials and waste. | 1 | Medium | MC/DC |

| Man04 | Commissioning and Handover | | | Minimum Standard: Req 1-5 & 11 for Very Good & Above | | | |
|---|---|---|---|---|---|---|---|
| Req 1-5 | Commissioning - Testing Schedule and Responsibilities | 1 | 0.61 | It is assumed that:<br><br>- An appropriate team member will be appointed to monitor and programme pre-commissioning, commissioning and testing.<br>- A schedule of commissioning is prepared, identifying appropriate timescales and standards e.g. CIBSE, BSRIA. Where a BMS is installed, carry out commissioning and training as per the BREEAM criteria (req 3).<br>- The contractor accounts for commissioning, testing, responsibilities and standards within budget and programme of works. | 1 | Medium | MC/RWA/M&E subs |
| Req 6-7 | Commissioning - Design and Preparation | 1 | 0.61 | It is assumed that:<br><br>- The above credit is achieved.<br>- An appropriate team member, not involved in installation works, is appointed during design to undertake design reviews, provide commissioning management input and manage commissioning performance testing and handover / post-handover stages.<br>- For buildings with complex systems, a specialist commissioning manager must be appointed. | 1 | Medium | RWA |
| Req 8-10 | Testing and Inspecting Building Fabric | 1 | 0.61 | It is assumed that the following criteria will be achieved:<br><br>- Criteria 1-5 will be met.<br>- Air tightness & thermographic surveys will be undertaken to QA integrity of building fabric, continuity of insulation, avoidance of thermal bridging & air leakage paths.<br>- Any defects found are rectified. | 1 | Medium | MC |
| Req 11-12 | Handover | 1 | 0.61 | It is assumed that:<br>- Prior to handover, two building user guides are developed - a non technical guide for building occupiers and a technical guide for FM.<br><br>- A draft copy is developed and discussed with users first, where building occupiers are known.<br>- Two training schedules are prepared, one as a non-technical training schedule for the building occupiers, and a technical version for FM team. | 1 | Medium | MC |

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| **HEALTH & WELLBEING** | | | | | | | |
| **Hea01** | **Visual Comfort** | | | | | | |
| Req 4 | Daylighting | 1 | 0.80 | It is assumed that ALL of the following **MAY** be achieved but further investigation is required in the office areas:<br><br>Relevant areas will meet good practice daylighting criteria as per Table 5.1 (Typically 2% daylighting factor over 80% of area for all occupied spaces plus uniformity ratios, minimum point daylight factors, view of the sky or room depth criterion). | | **Possible** | **Daylight consultant** |
| Req 5-6 | View Out | 1 | 0.80 | It is assumed that all of the following **MAY** be achieved:<br>- That 95% of the relevant floor area is within 8m of an external wall which has a window or permanent opening, AND the window or opening must be ≥ 20% of the surrounding wall area.<br>- Where the room depth is 14m, the percentage of window or opening must instead be the same as, or greater than,30% of the surrounding wall area (See Table 1.0 BS8206).<br>- The view out must be a view of a landscape or buildings (rather than just the sky) at seated eye level (1.2– 1.3m) within the relevant building areas and should ideally be through an external window. | | **Possible** | **PA** |
| Req 9-10 | External Lighting | 1 | 0.80 | Note: for Shell and Core assessments only the external lighting requirements apply.<br>It is assumed that external lighting within the construction zone will comply with BS5489-1:2013 and BS12464-2:2014 Part 2. | 1 | **Low** | **RWA/M&E subs** |
| **Hea02** | **Indoor Air Quality** | | | | | | |
| Req 1 | Pre-Requisite - Indoor Air Quality Plan (IAQ) | | | An indoor air quality plan will be required in accordance with Guidance Note GN06.The indoor air quality plan must consider the following:<br>1.a Removal of contaminant sources<br>1.b Dilution and control of contaminant sources, including:<br>1.b.i Air quality requirements of specialist areas such as laboratories, where present<br>1.c Procedures for pre-occupancy flush out and purge ventilation<br>1.d Third party testing and analysis<br>1.e Maintaining good indoor air quality in-use<br>1.f Any relevant local authority plans or policies (for example, Air Quality Management Areas or Local Air Quality Action Plans | | | **HM** |
| Req 2 | Ventilation | 1 | 0.80 | It is assumed that all the aims of this credit **MAY** be met primarily because air intakes and exhausts are likely to be over 10m (horizontally) apart and intakes are over 10m (horizontally) from sources of external pollution AND the air intakes and exhausts location are likely to be designed in accordance with BS EN 13779:2007 Annex A2. | | **Possible** | **RWA** |
| **Hea04** | **Thermal Comfort** | | | | | | |
| Req 1-4 | Thermal Modelling | 1 | 0.80 | It is assumed that:<br><br>- Full dynamic thermal modelling will be carried out in accordance with CIBSE AM11.<br>- The study will demonstrate that the building design and services strategy can deliver thermal comfort levels in accordance with the criteria set out in CIBSE Guide A Table 1.5.<br>- In addition for naturally ventilated buildings overheating meets the recommendations of TM52 or TM59.<br>- For air conditioned buildings the PMV (predicted mean vote) and PPD (percentage people dissatisfied) is reported. | 1 | **Medium** | **RWA** |
| Req 5-8 | Design for Future Thermal Comfort | 1 | 0.80 | It is assumed that:<br><br>- Dynamic thermal modelling demonstrates compliance for the above criteria when run for a projected climate change environment (see Relevant definitions in the BREEAM 2018 Manual).<br>- Where thermal comfort criteria are not met, a report must be produced demonstrating how the building has been or can be easily adapted in future using passive design solutions in order to meet the requirements above.<br>- For air conditioned buildings, the PMV and PPD indices based on the above modelling must be reported. | 1 | **Medium** | **RWA** |

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|---|---|---|---|---|---|---|---|
| **Hea05** | **Acoustic Performance** | | | | | | |
| | Indoor Ambient Noise level | 1 | 0.80 | It is assumed that:<br><br>- A suitably qualified acoustician (SQA) will carry out a quantifiable assessment of the specification of the build form, construction and any external factors likely to affect the indoor ambient noise levels.<br>- The SQA must then confirm the developer's works will enable a future tenant utilising a typical fit-out and specification to meet the appropriate indoor ambient noise levels required to demonstrate compliance. | 1 | **Low** | **TT** |
| **Hea06** | **Security** | | | | | | |
| Req 1-3 | Security of Site and Building | 1 | 0.80 | It is assumed that:<br><br>- A Suitably Qualified Security Specialist (SQSS) conducts an evidence-based Security Needs Assessment (SNA) during or prior to Concept Design (RIBA Stage 2 or equivalent).<br>- The SQSS develops a set of security controls and recommendations for incorporation into the proposals. Those controls and recommendations shall directly relate to the threats and assets identified in the preceding SNA.<br>- The controls and recommendations are incorporated into the proposals and implemented into the as-built development. Any deviation from those controls and recommendations shall be justified and agreed with the SQSS. | 1 | **Low** | **SQSS/PA/MPM** |
| **Hea07** | **Safe and Healthy Surroundings** | | | | | | |
| Req 1-6 | Safe Access | 1 | 0.80 | It is assumed that the following will be achieved-<br><br>- There are compliant dedicated combined footpath / cycle lanes (clearly delineated) on site which are lit in accordance with BS 5489-1:2013 and:<br>a. Provide cyclist access from the site entrance to any cycle storage (and connect to any off site cycle paths where applicable)<br>b. Provide pedestrian access from: Site entrance to building entrance; Car parks to building entrance; Building to outdoor space; Connecting off-site paths to on-site paths.<br><br>- Dedicated pedestrian crossing points are provided where needed to allow pedestrians to cross vehicle routes.<br><br>- Appropriate traffic calming measures are in place at crossing points.<br><br>- Pedestrian drop-off areas are designed off, or adjoining to, the access road and should provide direct access to other footpaths.<br><br>- Delivery areas are not accessed through general parking areas and do not cross or share the pedestrian and cyclist paths, or outside amenity areas accessible to building users and general public.<br><br>- There is a dedicated parking or waiting area for goods vehicles with appropriate separation from the manoeuvring area and staff and visitor car parking.<br><br>- Parking and turning areas are designed for simple manoeuvring according to the type of delivery vehicle likely to access the site, thus avoiding the need for repeated shunting. | 1 | **Medium** | **PA / Nichol** |
| Req 7 | Outside Space | 1 | 0.80 | It is assumed that the following will be provided:<br><br>An appropriately sized outside space providing building users with an external amenity area. The outside space must:<br>- Be an outdoor landscaped area open to the sky.<br>- Have appropriate seating areas and be non-smoking.<br>- Be accessible to all building users.<br>- Away from areas which may cause noise pollution e.g. building services, car parks, busy roads and delivery areas. | 1 | **High** | **PA / Nichol** |

| ENERGY | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Ene01** | **Reduction of Energy Use and Carbon Emissions** | | | **Minimum standard: 4 Credits for Excellent, 6 for Outstanding** | | | |
| Req 1 | Energy Performance | 9 | 0.67 | It is assumed that an Energy Performance Ratio of 0.6 or greater will be achieved to enable 6 credits to be awarded. | 6 | High | HM |
| Req 3-5 | Energy Modelling and Reporting | 4 | 0.67 | It is assumed that the following will be undertaken:<br>-Achieve criterion 2 in Ene 04 Low carbon design<br>- The team undertakes additional energy modelling during the design and post-construction stage to generate predicted operational energy consumption figures.<br>- Predicted energy consumption targets by end use, design assumptions & input data are reported.<br>- A risk assessment is undertaken to highlight any significant design, technical and process risks that should be monitored and managed throughout the construction and commissioning process. | 4 | High | HM |
| **Ene02** | **Energy Monitoring** | | | | | | |
| Req 1-4 | Sub-metering of Major Energy Consuming Systems<br>Req 1-3 | 1 | 0.67 | It is assumed that:<br><br>- Energy metering systems are installed that enable at least 90% of the estimated annual energy consumption of each fuel to be assigned to the various end-use categories of energy consuming systems.<br>- The energy consuming systems are metered using an appropriate energy monitoring and management system.<br>- The end energy consuming uses are identifiable to the building users, for example through labelling or data outputs. | 1 | Medium | RWA/M&E subs |
| Req 5 | Sub-metering of High Energy Load and Tenancy Areas<br>Req 4-5 | 1 | 0.67 | It is assumed that a significant majority of the energy supply to each building will be monitored by an accessible energy monitoring and management system for relevant function areas or departments. (This will include, offices areas, ancillary areas, warehouse and gatehouse) | 1 | Medium | RWA/M&E subs |
| **Ene03** | **External lighting** | | | | | | |
| | External lighting | 1 | 0.67 | It is assumed that:<br><br>- The average initial luminous efficacy of the external light fittings within the construction zone is not less than 70 luminaire lumens per circuit Watt.<br>- All external lights have daylight sensors and PIRs in areas of intermittent pedestrian traffic. | 1 | Low | RWA/M&E subs |

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|---|---|---|---|---|---|---|---|
| **Ene04** | **Low Carbon Design** | | | | | | |
| Req 1-4 | Passive Design Analysis | 1 | 0.67 | It is assumed that the following has been achieved:<br><br>- The first credit of Hea 04 Thermal comfort has been achieved.<br>- The project team carries out a Passive Design Analysis (PDA) during Concept Design or early in scheme design stage (RIBA Stage 3) which identifies opportunities for the implementation of passive design solutions that reduce demands for energy consuming building services.<br>- The building uses passive design measures to reduce the total heating, cooling, mechanical ventilation, lighting loads and energy consumption in line with the PDA. The total reduction in energy demand and CO2 emissions is quantified.<br>. | 1 | Medium | HM |
| Req 5-8 | Free Cooling | 1 | 0.67 | It is assumed that free cooling **cannot** meet the building's cooling demand. | 0 | | |
| Req 9-12 | Low Zero Carbon Feasibility Study | 1 | 0.67 | It is currently assumed that the following will be achieved:<br><br>- A feasibility study has been carried out by the completion of the Concept Design stage (RIBA Stage 2) by an energy specialist to establish the most appropriate recognised local (on-site or near-site) low or zero carbon (LZC) energy source(s) for the building/development.<br>- Local LZC technology(is) have been specified in line with the recommendations of the feasibility study and the reduction in regulated CO2 emissions from this is quantified.. | 1 | Medium | HM |
| **Ene06** | **Energy Efficient Transportation Systems** | | | | | | |
| Req 1 | Energy Consumption | 1 | 0.67 | It is assumed that where lifts are specified:<br>- An analysis of the transportation demand and usage patterns for the building has been carried out to determine the optimum number and size of transport systems.<br>- The energy consumption has been calculated in accordance with BS EN ISO 25745 Part 2 and/or Part 3 - Energy calculation and classification for escalators and moving walks.<br>- The analysis includes one of the following:<br><br>i. At least two types of system (for each transportation type required);<br>ii. An arrangement of systems (e.g. for lifts, hydraulic, traction, machine room-less);<br>iii. A system strategy which is 'fit for purpose'.<br><br>- The use of regenerative drives should be considered, where it produces an energy saving greater than the additional standby energy used to support the dives.<br>- The transportation system with the lowest energy consumption is specified. | 1 | Medium | MC |
| Req 3-4 | Energy Efficient Features (Lifts) | 1 | 0.67 | It is assumed for each lift, the following three energy efficient features are specified:<br><br>a. The lifts operate in a standby condition during off-peak periods. For example the power side of the lift controller and other operating equipment such as lift car lighting, user displays and ventilation fans switch off when the lift has been idle for a prescribed length of time.<br>b. The lift car lighting and display lighting provides an average lamp efficacy, (across all fittings in the car) of > 55 lamp lumens/circuit Watt.<br>c. The lift uses a drive controller capable of variable speed, variable-voltage, and variable-frequency (VVVF) control of the drive motor.<br><br>- Where the use of regenerative drives is demonstrated to save energy, they are specified.<br>- If a regenerative drive is not to be installed it needs to be proven with calculations that energy will not be saved. | 1 | Medium | MC |

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| **TRANSPORT** | | | | | | | |
| **Tra01** | **Transport Assessment and Travel Plan** | | | | | | |
| | Travel Plan | 2 | 0.96 | It is assumed that:<br><br>- During RIBA Stage 2 a draft travel plan is created based and a site specific travel assessment is carried out. Note that all the points under criterion 2 need to be covered as minimum, including Accessibility Index and Local Amenities - see BREEAM 2018 NC Manual for more details.<br>- The travel plan includes proposals to increase or improve sustainable modes of transport and movement of people and goods during the building operation and use covering all items in table 7.4 of the BREEAM 2018 Manual.<br>- If known, the occupier must be involved in the development of the travel plan.<br>- The travel plan is completed prior to construction and is implemented post construction, supported by the building's management in operations. | 2 | **High** | **CI** |
| **Tra02** | **Sustainable Transport Measures** | | | | | | |
| 1 | Pre-requisite | | | Achieve the Tra 01 credits (above) | | **High** | **CI** |
| | Sustainable Transport Measures | 10 | 0.96 | It is assumed that 6 points will be achieved by implementing the following Sustainable Transport Measures as per Table 7.4 within the BREEAM Manual. an AI of 16.13 i.e. <25<br><br>~~- AI > 8 (1 point)~~<br>~~- Access to 3 key existing amenities within 500m (1 point)~~<br>- Provision of BREEAM compliant cycle storage (1 space per 20 users for the first 200 users then 1 per 15 for the next 100 then 1 per 20 up to 400 users and 1 in 25 beyond that ) (1 point)<br>- Provision of BREEAM compliant cyclist facilities (2 from the following list, note all must be BREEAM compliant and be able to be used independently: showers, lockers, changing facilities & drying room) (1 point)<br>- Provision for electric recharging stations (min 3kw) for at least 10% of the total car parking capacity (1 point)<br>- Live transport information display (1 point)<br>- Outdoor space ( 2 points)- | 4 | **Medium** | **PA/RWA/MPM/Nichol** |

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| **WATER** | | | | | | | |
| **Wat01** | **Water Consumption** | | | **Minimum standard: 1 credit for Good and above; 2 credits for Outstanding** | | | |
| | Water Consumption | 5 | 0.78 | It is assumed that a 40% improvement in water consumption over the notional baseline will be achieved. An example of how this could be achieved by:<br><br>- 3.75l flush WCs (6l/4l dual flush) -<br>- wash handbasins limited to 4.75 l/min<br>- showers limited to 6 l/min<br>- 1no urinal cistern with 4.5l capacity serving 2no bowls with automatically operated flushing cistern at 2no per hour)<br>- kitchenette taps limited to 6 l/min<br>◦ no baths / waste disposal unit<br>◦ no domestic sized dishwashers<br>◦ no domestic sized washing machines<br>◦ no grey water/ rainwater harvesting | 3 | **Medium** | **PA/MC** |
| **Wat02** | **Water Monitoring** | | | **Minimum standard: Criterion One Only for Good and Above** | | | |
| Req 1 | Water Sub Meters | | | It is assumed that the main supply to each building on site will be fitted with a pulsed water meter connected to the buildings BMS or AMS | | **Low** | **MC** |
| Req 2-6 | Water Sub Meters | 1 | 0.78 | It is assumed that the pulsed output water meters (as above) will be connected to the BMS. Pulsed Submeters will be required to any area that uses >10% of the expected unit's water usage. | 1 | **Low** | **MC/M&E subs** |
| **Wat03** | **Water Leak Detection and Prevention** | | | | | | |
| Req 1-2 | Leak Detection System | 1 | 0.78 | It is assumed that a BREEAM compliant water leak detection system will be installed. This must be able to detect leaks within the buildings1 Building fitted with Thames water meter. | 1 | **Low** | **M&E subs** |
| Req 3 | Flow Control Devices | 1 | 0.78 | It is assumed that flow control devices that regulate the water supply to each WC area or sanitary facility according to demand will be installed, in order to minimise undetected wastage and leaks from sanitary fittings and supply pipework.<br><br>The devices should be installed on the cold water supply to taps, WCs and urinals but must not allow the cold water system to automatically switch off in showers while hot water is still running. | 1 | **Low** | **M&E subs** |
| **Wat04** | **Water Efficient Equipment** | | | | | | |
| | Water Efficient Equipment | 1 | 0.78 | It is assumed that the only potential unregulated water demand would be for irrigation of soft landscaping.<br><br>It is assumed that landscaping and planting will rely solely on precipitation, during all seasons of the year. | 1 | **Low** | **Nichol** |

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| **MATERIALS** | | | | | | | |
| **Mat01** | **Environmental impacts from construction products -Building life cycle assessment (LCA)** | | | | | | |
| Req 1-5 | Superstructure | 4 | 1.46 | It is assumed that an IMPACT Life Cycle Assessment will be carried at RIBA Stage 2 and will consider LCA options for 4 substantially different superstructure elements followed by a Stage 4 more detailed LCA review on a further 3 options based on the Stage 2 choice. The Mat 01 calculator will need to be submitted to BRE at Stage 2 & 4. | 4 | Low | R&P/ PA / Tier |
| Req 6-7 | Substructure and Hard Landscaping Options Appraisal | 1 | 1.46 | It is assumed that an IMPACT Life Cycle Assessment will be carried at RIBA Stage 2 and will consider LCA options for 6 substantially different substructure or hard landscaping elements (at least 2 being sub structure and 2 being hard landscaping). The Mat 01 calculator will need to be submitted to BRE at Stage 2. | 1 | Low | R&P / Nichol / Tier |
| **Mat02** | **Environmental impacts from construction products -Environmental Product Declarations (EPD)** | | | | | | |
| | Specification of products with a recognised environmental product declaration (EPD) | 1 | 1.46 | It is assumed the below will be achieved :<br>Construction products with an EPD would need to be specified to achieve a total EPD points score of at least 20 (note this is likely to need in excess for 40 different products to have EPD ratings across a range of building elements. See BREEAM Manual for further details). | 1 | High | MC |
| **Mat03** | **Responsible Sourcing** | | | **Minimum standard: Req 1 for all BREEAM assessments** | | | |
| Req 1 | Pre Requisite | | | It is assumed that all timber and timber based products used within the project will be legally harvested and traded timber. | | Low | MC |
| Req 2 | Enabling Sustainable Procurement | 1 | 1.46 | This credit has **NOT** been targeted as it has been assumed that a sustainable procurement planwill not be s used by the design team to guide specification towards sustainable construction products **in RIBA Stage 1**.<br>For this to be achieved, the plan would need to have covered the following.<br>1. Sustainability aims, objectives and strategic targets to guide procurement activities.<br>2. A requirement for assessing the potential to procure construction products locally. There must be a policy to procure construction products locally where possible.<br>3. Details of procedures in place to check and verify the effective implementation of the sustainable procurement plan.<br>In addition, it is applied to several sites or adopted at organisational level it must:<br>4. Identify the risks and opportunities of procurement against a broad range of social, environmental and economic issues following the process set out in BS ISO 20400:2017. | 0 | | |
| Req 3 | Measuring Responsible Sourcing | 3 | 1.46 | It is assumed that materials will be sourced from suppliers with appropriate responsible sourcing certification (e.g. BES6001 / ISO14001 / FSC / CSA / MTCC / PEFC / SFI etc.) and that for the superstructure, 10% of available points are achieved. For excellent: 20% of the points need to be scored over superstructure, substructure, finishes and hard landscaping. | 2 | High | MC |

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| **Mat05** | **Designing for Durability and Resilience** | | | | | | |
| | Designing for Durability and Resilience | 1 | 1.46 | It is assumed that:<br><br>1. The buildings will incorporate suitable durability / protection measures / designed features / solutions to prevent damage to vulnerable parts of the internal and external building and landscaping, including:<br>- Protection from the effects of high pedestrian traffic in main entrances, public areas and thoroughfares (corridors, lifts, stairs, doors etc.).<br>- Protection against any internal vehicular/trolley movement within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas.<br>- Protection against, or prevention from, any potential vehicular collision where vehicular parking and manoeuvring<br>- Protection from malicious damage to building materials and finishes, in public and common areas where appropriate.<br>2. Key exposed building elements have been designed and specified to limit long and short term degradation due to environmental factors. This can be demonstrated through one of the following:<br>a. The element or product achieving an appropriate quality or durability standard or design guide, see Table 9.14 in BREEAM 2018 NC Manual for more details. -to be addressed.<br>OR<br>b. A detailed assessment of the element's resilience when exposed to the applicable material degradation and environmental factors.-to be addressed.<br>3. Include convenient access to the roof and façade for cost-effective cleaning, replacement and repair in the building's design.<br>4. Design the roof and façade to prevent water damage, ingress and detrimental ponding. | 1 | Medium | PA / Nichol |
| **Mat06** | **Material Efficiency** | | | | | | |
| | Material Efficiency | 1 | 1.46 | Credit NOT targeted due to requirement for input at the Preparation and Brief Stage.<br>Set targets and report on opportunities and methods to optimise use of materials. This must be done for each RIBA stage up to Construction. | 0 | | |
| **WASTE** | | | | | | | |
| **Wst01** | **Construction Site Waste Management** | | | **Minimum standard: One Credit for Outstanding** | | | |
| Req 1 | pre-demolition audit | 1 | 0.70 | Complete a pre-demolition audit of any existing buildings, structures or hard surfaces being considered for demolition. | 1 | Medium | DC |
| Req 3-4 | Construction Resource Efficiency | 3 | 0.70 | It is assumed that:<br><br>- A Resource Management Plan (RMP) has been developed covering the non-hazardous waste related to on-site construction and dedicated off-site manufacture or fabrication (including excavation waste) generated by the building's design and construction. The RMP also covers accurate data records on waste arisings and waste management routes.<br>- Non hazardous construction waste will be less than the following:<br>3.4m³ or 3.2 tonnes/100m2 GIFA for 3 credits<br>7.5m³ or 6.5 tonnes/100m2 GIFA for 2 credits | 3 | High | MC |
| Req 5-6 | Diversion of resources from Landfill | 1 | 0.70 | It is assumed that the following percentage of non-hazardous construction (on-site and off-site manufacture / fabrication in a dedicated facility) waste generated by the project has been diverted from landfill:<br><br>- Non Demolition - 70% by Volume or 80% by tonnage<br>- Demolition - 80% by Volume or 90% by tonnage | 1 | Low | MC |
| **Wst02** | **Use of Recycled and Sustainably Sourced Aggregates** | | | | | | |
| Req 1 | Pre-requisite | | | Complete a pre-demolition audit of any existing buildings, structures or hard surfaces being considered for demolition. | | | DC |
| Req 2-6 | Project Sustainable Aggregate Points | 1 | 0.70 | It is assumed that the following will be achieved:<br><br>At least 3.5 points will be achieved using the Wst 02 calculator, based on:<br>- Identifying all aggregate uses and types on the project.<br>- The quantity in tonnes for each identified use and aggregate type.<br>- The region in which the aggregate source is located.<br>- The distance in kilometres travelled by all aggregates by transport type. | 1 | High | MC |

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| **Wst03** | **Operational Waste** | | | **Minimum standard: 1 credit for Excellent and Outstanding** | | | |
| Req 1 | Dedicated space for recyclables | 1 | 0.70 | It is assumed that a dedicated recycling area, adequately sized to serve the development and accessible to building occupiers and waste contractors will be provided. | 1 | **Low** | **PA** |
| Req 2 | Compactor / Baler / Composting | | | It is assumed that installation of a static compactor / baler will be provided in a dedicated waste management space.<br><br>It is assumed that a compliant vessel for composting organic waste will **NOT** be required as there IS NO ALLOWANCE food preparation. | | | |
| **Wst05** | **Adaptation to Climate Change** | | | | | | |
| | Resilience of structure, fabric, building services and renewables installation | 1 | 0.70 | Conduct a Climate Change Adaptation Strategy Appraisal using:<br>1. A systematic risk assessment to identify the impact of expected extreme weather conditions arising from climate change on the building over its projected life cycle. The assessment covers the installation of building services and renewable systems, as well as structural and fabric resilience aspects and includes:<br>- Hazard identification - Hazard assessment<br>- Risk estimation - Risk evaluation<br>- Risk management<br>2 Develop recommendations or solutions based on the climate change adaptation strategy appraisal, before or during Concept Design (Stage 2), that aim to mitigate the identified impact.<br>3 Provide an update during Technical Design demonstrating how the recommendations or solutions proposed at Concept Design have been implemented where practical and cost effective. Omissions have been justified in writing by the assessor. | 1 | **Low** | **PA with input from RWA & Tier** |

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| **Wst06** | **Design for Disassembly and Adaptability** | | | | | | |
| Req 1-2 | Design for disassembly and adaptability - Recommendations | 1 | 0.70 | It is assumed that:<br>1. A study was conducted to explore the ease of disassembly and the functional adaptation potential of different design scenarios by the end of Concept Design (Stage 2). See full credit guidance within BREEAM 2018 NC manual for the minimum considerations within the report.<br><br>2. Recommendations or solutions were developed based on the study during or prior to Concept Design (Stage 2) that aim to enable and facilitate disassembly and functional adaptation. | 1 | Low | PA with input from RWA & Tier |
| Req 3-5 | Design for disassembly and adaptability - Implementation | 1 | 0.70 | It is assumed that:<br><br>1. The above credit is achieved.<br><br>2. An update is provided during Technical Design (Stage 3/4) on:<br>- How the recommendations or solutions proposed by Concept Design have been implemented where practical and cost effective. Omissions have been justified in writing to the assessor.<br>- Changes to the recommendations and solutions during the development of the Technical Design.<br><br>3. A building adaptability and disassembly guide will be produced to communicate the characteristics allowing functional adaptability and disassembly to prospective tenants. | 1 | Low | |
| **LAND USE & ECOLOGY** | | | | | | | |
| **LE01** | **Site Selection** | | | | | | |
| Req 1 | Previously Developed land | 1 | 1.15 | It is assumed that < 75% of the development's footprint (including building, hard landscaping, and temporary works) is on previously developed land. | 0 | | |
| Req 2-3 | Contaminated land | 1 | 1.15 | It is assumed that the site cannot be classed as contaminated, requiring remediation to enable development, unless otherwise advised | 0 | | |
| **LE02** | **Identifying and understanding the risks and opportunities for the project** | | | | | | |
| Req 1-2 | Pre-requisite | | | As the site is likely to contain complex ecological systems, route 2 is being followed.<br><br>It is assumed that the client or contractor will confirm that compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site. | | Medium | NWS/MC |
| Req 4-6 | Ecological Survey & Evaluation | 1 | 1.15 | It is assumed that:<br><br>- A Suitably Qualified Ecologist (SQE) is appointed at a project stage that ensures early involvement in site configuration and can influence planning decisions.<br>- Prior to the completion of the preparation and brief (Stage 1), an appropriate level of survey and evaluation has been carried out to determine the ecological baseline of the site, taking account of the zone of influence to establish:<br>a. Current and potential ecological value and condition of the site, and related areas within the zone of influence.<br>b. Direct and indirect risks to current ecological value.<br>c. Capacity and feasibility for enhancement of the ecological value of the site.<br><br>- Data are collated and shared with the project team to inform the site preparation, design or construction works. | 1 | Medium | TEP |
| Req 7-10 | Determining Ecological Outcome | 1 | 1.15 | It is assumed that during Stage 2, the project team liaised and collaborated with representative stakeholders to identify and consider ecological outcome for the sites (appropriate to the scale and type of development) for the project, taking into account the following hierarchy:<br>1. Avoidance.<br>2. Protection.<br>3. Reduction or limitation of negative impacts.<br>4. On site compensation.<br>5. Enhancement, considering the capacity and feasibility within the site, or where viable, off-site<br><br>It is assumed that the optimal ecological outcome for the site is selected after liaising with representative stakeholders and the project team. | 1 | Medium | TEP/Design Team |

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| **LE03** | **Managing negative impacts on ecology** | | | | | | |
| Req 1-2 | Pre-requisite | | | It is assumed that LE02 is achieved.<br><br>It is assumed that the client or contractor will confirm that compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site. | | **Medium** | **MC/NWS** |
| Req 3-4 | Planning and measures on-site | 1 | 1.15 | It is assumed that:<br><br>Further planning to avoid and manage negative ecological impacts carried out early enough to influence the concept design and design brief as well as site preparation planning. In addition, on site measures for managing negative ecological impacts during site preparation and construction are implemented in-practice. The above are based on input from the project team in collaboration with representative stakeholders and data collated as part of LE02 criteria 7-10. | 1 | **Medium** | **TEP/Design Team** |
| Req 7-8 (Route 2) | Managing negative impacts of the project | 2 | 1.15 | It has currently been assumed that the first credit can be achieved:<br>Negative impacts from site preparation and construction works have been managed according to the mitigation hierarchy (see LE 02), in line with the SQE's recommendations and the loss of ecological value has been minimised. | 1 | **Medium** | **TEP/MC** |
| **LE04** | **Change and Enhancement of Ecological Value** | | | | | | |
| Req 1-2 | Pre-requisite | | | It is assumed that LE03 req 8 is achieved.<br><br>It is assumed that the client or contractor will confirm that compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site. | | **Medium** | **NWS/MC** |
| Req 4-5 (Route 2) | Ecological enhancement | 1 | 1.15 | It is assumed that:<br><br>Measures have been implemented that enhance ecological value, which are based on input from the project team and SQE in collaboration with representative stakeholders and data collated as part of the 'Determining ecological outcomes' in LE 02 and measures are selected in a way that enhances ecological value in the following order:<br>- On site, and where this is not feasible,<br>- Off site within the zone of influence.<br><br>Where data is collected and potentially valuable, provided to the local environmental records centres nearest to, or relevant for, the site. | 1 | **Medium** | **TEP/Design Team** |
| Req 6 (Route 2) | Change and enhancement of ecology | 3 | 1.15 | It is assumed that the change in ecological value will be minimised. Credits are awarded on a scale of 1 to 3, based on the calculation of the change in ecological value occurring as a result of the project. This must be calculated in accordance with the process set out in GN 36 using the BREEAM LE04 calculator or the Defra 2.0 methodology to show a change of between 75% and 94% | 1 | **High** | **TEP/NWS** |

| LE05 | Long Term Ecology Management and Maintenance | | | | | | |
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| Req 1-2 | Pre-requisite | | | It is assumed that:<br><br>-The client or contractor confirms compliance is monitored against all relevant UK, EU or international legislation relating to the ecology of the site.<br>- Negative impacts from site preparation and construction works have been managed according to the BREEAM hierarchy and that the SQE confirms no loss of ecological value has occurred.<br>-At least one credit under LE04 req 6 is achieved | | Medium | MC/TEP/Design Team |
| Req 3-4 | Management and maintenance throughout the project | 1 | 1.15 | It is assumed that:<br><br>- Measures implemented to manage and maintain ecology throughout the project (based on input from the project team and SQE in collaboration with representative stakeholders and data collated as part of LE02 Criteria 7-10 above).<br>-Measures must monitor and review the effectiveness of the mitigation and enhancement measures in place for LE03 and LE04 to ensure they are implemented.<br><br>As part of the building owner information supplied, include a section on Ecology and Biodiversity to inform of local ecological features, value & biodiversity on/near the site. This should include detailed management and maintenance plans as well as relevant parts of handover information for occupiers written in a format that encourages understanding and supportive behaviours.<br><br>Management throughout the project should include the following:<br>- Monitoring and reporting of outcomes and successes from the project.<br>- Arrangements for ongoing management of landscape and habitat connected to the project (on and, where relevant, off site).<br>- Maintaining ecological value of the site & relationship/connection to its zone of influence<br>- Maintaining the site in line with the any sustainability linked activities, e.g. ecosystems benefits (LE 02). | 1 | Medium | TEP/MC/Design Team |
| Req 5-6 | Landscape and ecology management plan (or similar) development | 1 | 1.15 | It is assumed that a landscape and ecology management plan, or similar, will be developed in accordance with BS 42020:2013 covering at least the first five years after project completion and which includes:<br>- Actions and responsibilities, prior to handover, to give to relevant individuals.<br>- The ecological value and condition of the site over the development life.<br>- Identification of opportunities for ongoing alignment with activities external to the development project and which supports the aims of BREEAM's Strategic Ecology Framework.<br>- Identification and guidance's to trigger appropriate remedial actions to address previously unforeseen impacts.<br>- Clearly defined and allocated roles and responsibilities.<br><br>It is assumed that the landscape and management plan or similar is updated as appropriate to support maintenance of the ecological value of the site. | 1 | Medium | TEP/NWS |

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| **POLLUTION** | | | | | | | |
| **Pol01** | **Impact of Refrigerants** | | | | | | |
| Req 2 | Buildings With Refrigerants Prerequisite | | | It is assumed that all systems with electric compressors comply with the requirements of BS EN 378:2016 (parts 2 and 3), and that refrigeration systems containing ammonia comply with the Institute of Refrigeration Ammonia Refrigeration Systems Code of Practice. | | **Medium** | **M&E subs** |
| Req 3-5 | Impact of Refrigerant | 2 | 0.75 | It is assumed that the refrigerants specified will achieve Direct Effect Life Cycle $CO_2$ equivalent emissions of less than 100kg CO2e/kW cooling capacity. | 1 | **Medium** | **M&E subs** |
| Req 6-7 | Leak Detection System | 1 | 0.75 | It is currently assumed that the following will be achieved:<br>All systems are hermetically sealed or only use environmentally benign refrigerants.-.<br>OR<br>Where the systems are not hermetically sealed, they have:<br>- A permanent automated refrigerant leak detection system, that is robust and tested, and capable<br>of continuously monitoring for leaks.<br>OR<br>- An inbuilt automated diagnostic procedure for detecting leakage is enabled.<br>- In the event of a leak, the system must be capable of automatically responding and managing the remaining refrigerant charge to limit loss of refrigeration. | 1 | **Medium** | **M&E subs** |

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| **Pol02** | **Local Air Quality** | | | | | | |
| | Local Air Quality | 2 | 0.75 | It is assumed that all heating and hot water is powered by electricity. | 2 | Low | M&E subs |
| **Pol03** | **Flood and Surface Water Management** | | | | | | |
| Req 1 | Pre-requisite | | | It is assumed that an Appropriate Consultant is appointed to carry out, demonstrate and/or confirm the development's compliance with all the criteria. | | Low | HM |
| Req 2 | Flood Risk | 2 | 0.75 | It is assumed that a site specific Flood Risk Assessment will be produced which confirms that the building is situated in a low/medium flood risk area for all of the following:<br>- Fluvial - Tidal<br>- Surface Water - Groundwater<br>- Sewers - Reservoirs, canals or other artificial sources. | 1 | Low | HM |
| Req 5 | Pre-requisite | | | It is assumed that surface water run-off design solutions will be bespoke, i.e. they will take account of the specific site requirements and natural or man-made environment of and surrounding the site. Section 4.2 of the flood risk assessment includes 4 priority levels rather then 5. Justification to be provided. | | Low | HM |
| Req 6-8 | Surface Water Run-Off - Rate | 1 | 0.75 | It is assumed that:<br><br>- Drainage measures are specified to ensure that the peak rate of run-off from the site to the watercourses (natural or municipal) shows, where brownfield, a 30% improvement for developed site compared with the pre-developed site. Where greenfield, the pre-developed site run-off should be no greater than pre-developed site. This should comply at the 1-year and 100-year return period events.<br><br>- Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS are in place.<br><br>- Calculations include an allowance for climate change; this should be made in accordance with current best practice planning guidance. | 1 | Medium | HM |
| Req 9-15 | Surface Water Run-Off - Volume | 1 | 0.75 | It is assumed that all the requirements MAY be achieved:<br>- Flooding of property will not occur in the event of local drainage system failure (caused either by extreme rainfall or a lack of maintenance); AND<br><br>EITHER<br><br>- Drainage design measures ensure that the post development run-off volume, over the development lifetime, is no greater than it would have been prior to the development for the 100-year 6-hour event, including an allowance for climate change.<br>- Any additional predicted run-off is prevented from leaving the site using infiltration or other (SuDS) techniques.<br>OR (only where the above cannot be achieved):<br>- Justification from the Appropriate Consultant indicating why the above criteria cannot be achieved, i.e. where infiltration or other SuDS techniques are not technically viable options.<br>- Drainage design measures are specified to ensure that the post development peak rate of run-off is reduced to the limiting discharge. This is defined as the highest flow rate from the following options:<br>a. The pre-development 1-year peak flow rate;<br>b. The mean annual flow rate Qbar<br>c. 2L/s/ha.<br><br>- Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS are in place.<br><br>- For either option above, calculations must include an allowance for climate change; this should be made in accordance with current best practice planning guidance. mate change; this should be made in accordance with current best practice planning guidance. | | Possible | HM |

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| Req 15-2 | Minimising water course pollution | 1 | 0.75 | It is currently assumed that the following MAY all be achieved:<br>- A suitably qualified professional confirms there will be no discharge from site for up to 5mm of rainfall.-confirmed on GN38<br>- In areas with a low risk source of watercourse pollution, an appropriate level of pollution prevention treatment is provided, using appropriate SuDS techniques.<br>- Areas with a high risk of contamination or spillage of substances, such as petrol and oil, have separators installed in surface water drainage systems.<br>- water pollution prevention systems are designed and installed in accordance with the SuDS manual and other relevant industry best practice.<br>- A comprehensive, as installed drainage plan is provided for building/site occupiers.<br>- Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS must be in place.<br>- All external storage and delivery areas are designed and detailed in accordance with the current best practice planning guidance. mate change; this should be made in accordance with current best practice planning guidance. | | **Possible** | **HM** |

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| **Pol04** | **Reduction of Night Time Light Pollution** | | | | | | |
| | Reduction of Night Time Light Pollution | 1 | 0.75 | It is assumed that:<br><br>- The external lighting strategy has been designed in compliance with Table 2 of the ILP Guidance notes for the reduction of obtrusive light, 2011.<br>- All external lighting (except for safety and security lighting) can be automatically switched off between 23:00 and 07:00.<br>- Any safety or security lighting which is used between 23:00 & 07:00, complies with the lower levels of lighting recommended in Table 2 of the ILP's Guidance notes.<br>- Illuminated advertisements must be designed in compliance with ILP PLG05. | 1 | **Medium** | **M&E subs** |
| **Pol05** | **Reduction of Noise Pollution** | | | | | | |
| | Reduction of Noise Pollution | 1 | 0.75 | It is assumed that, if there are noise-sensitive areas or buildings within 800m radius of the assessed site:<br><br>- A noise impact assessment in compliance with BS 4142:2014 will be carried out by a suitably qualified acoustician and the following noise levels measured/determined:<br>i. Existing background noise levels at the nearest or most exposed noise-sensitive development to the proposed development or at a location where background conditions can be argued to be similar.<br>ii. The rating noise level resulting from the new noise source.<br><br>- The noise level from the proposed site/building, as measured in the locality of the nearest or most exposed noise-sensitive development must be at least **5dB lower** than the background noise throughout the day and night.<br>- Where the noise source(s) from the proposed site/building is greater than above, measures have been installed to attenuate the noise at its source to a level where it will comply with the above. | 1 | **Medium** | **Tetra Tech** |

| INNOVATION CREDITS | | | | | | | |
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| Man 03 Req 23 | Responsible Construction Management | 1 | 1.00 | It is assumed that the project MAY achieve a minimum of 13 points per section and 39 overall under the Considerate Constructors Scheme. | | Possible | MC |
| Hea 01 Req 15 | Daylighting | 1 | 1.00 | It is assumed that the following will **NOT** be achieved:<br>Relevant building areas must meet good practice daylighting criteria as per Table 5.8 or Table 5.9 within the BREEAM 2018 Manual. | 0 | | |
| Hea 06 Req 4 | Security of Site and Building | 1 | 1.00 | It is assumed that the following will **NOT** be achieved:<br>A compliant risk based security assessment scheme has been used, and the performance against the scheme has been confirmed by independent assessment and verification.<br>Note that SABRE is currently the only BRE recognised scheme. | 0 | | |
| Ene 01 Req 6-7 | Beyond Zero Net Regulated Carbon | 2 | 1.00 | It is assumed that the following will **NOT** be achieved:<br>Building achieves EPR of at least 0.9 and zero net regulated carbon emissions.<br>Energy generation from on-site and near-site LZC sources offsets carbon emissions from regulated energy use plus unregulated energy use.<br>1 credit - 10% 2 credits - 50% | 0 | | |
| Ene 01 Req 9 | Carbon Negative Req 9 | 1 | 1.00 | It is assumed that the following will **NOT** be achieved:<br>>100% carbon emissions from unregulated (and regulated) energy use are offset by energy generated from off-site and near-site LZC sources. | 0 | | |
| Ene 01 Req 10-12 | Post Occupancy Stage | 2 | 1.00 | It is assumed the below will **NOT** be achieved:<br>-achieve 4 No Ene 01 credits for operational energy modelling; ENE 04 Passive design analysis credit; 2 credits under Ene 02 Energy metering<br>- Funds are committed to pay for the post occupancy stage. An assessor is appointed to report on the actual energy consumption compared with targets set.<br>- Energy model is submitted to the BRE & retained by the building owner.- commit and appoint consultants for 3rd party independent verification operational energy performance . this can be demonstrated through UK NABERS (Offices only), DEC , BREEAM In-Use rating) or other specific independent validation report.<br>-there is access to Ene 01 energy model for post occupancy monitoring and ongoing modelling use | 0 | | |
| Wat 01 Req 7-8 | Water Consumption | 1 | 1.00 | It is assumed that the building will **NOT** achieve a reduction in water consumption by 65% over the notional baseline. | 0 | | |
| Mat01 | Environmental impacts from construction products - Building LCA | 3 | 1.00 | It is assumed that the building will achieve the following exemplary credits:<br>**2nd credit: LCA and LCC alignment.**<br>**3rd credit: Third party verification.**<br>The 1st credit for Core building services options appraisal during Concept Design has not been sought. | 2 | Low | R&P |
| Mat 03 Req 3 | Measuring Responsible Sourcing | 1 | 1.00 | It is assumed that manufacturers with appropriate responsible sourcing certification will **NOT** be used for the following:<br>Superstructure, internal finishes, substructure, hard landscaping and core building services (50% of available points must be achieved). | 0 | | |
| Wst 01 Req 3-4 | Construction Waste Management | 1 | 1.00 | It is assumed that the following will **NOT** be achieved:<br>Non hazardous construction waste will be less than 1.6m³ or 1.9 tonnes per 100m² GIFA.<br>Diversion from landfill:- Non Demolition - 85% by Volume or 90% by tonnage<br>- Excavation - 95% by Volume or 90% by tonnage | 0 | | |
| Wst 02 Req 7 | Project Sustainable Aggregate Points | 1 | 1.00 | It is assumed that the following will **NOT** be achieved:<br>At least 6 points will be achieved using the Wst 02 calculator. | 0 | | |
| Wst 05 Req 4-5 | Responding to Climate Change | 1 | 1.00 | The following credits are **NOT** achieved:<br>- Hea 04 - Criterion 6(not achieved);- Ene 01 - 6 credits;- Ene 04 - Passive Design Analysis credit<br>- Wat 01 - 3 credits;- Mat 05 - Criteria 2-4;- Wst 05 - Req 1-3 (full credit)<br>- Pol 03 - 1 credit for flood resilience plus 2 credits for surface water run-off | 0 | | |

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| LE 02 Req 11-13 | Determine the Ecological Outcomes for the Site | 1 | 1.00 | it is assumed that the following will be achieved:<br>- Achieve LE 02 criteria 8 to 10.<br>- When determining the optimal ecological outcome for the site consider, in addition to those outlined in criteria 8 to 10, the wider site sustainability-related activities and the potential for ecosystem service related benefits. See Methodology below for a list of the minimum areas for consideration.<br>13 Achieve the credits of the assessment issues outlined below:<br>13.a Assessment scope on page 121 - Both credits<br>13.b Assessment scope on page 332 - Achieve credits for 'Surface water run-off' and 'Minimising watercourse pollution'<br>13.c Assessment scope on page 349 | 0 | |
| LE 04 Req 7 | Change and enhancement of ecological value | 1 | 1.00 | It is assumed that the following will be achieved:<br>The change in ecological value occurring is calculated in accordance with the process set out in GN36 - BREEAM, CEEQUAL and HQM Ecology Calculation Methodology – Route 2. The credit is awarded as follows:<br>- Significant net gain of ecological value (percentage score of 110 or above) | 0 | |
| Unlisted, BRE Approved Innovations | | 10 | 1.00 | It is assumed that **NO** approved innovation credits will be achieved. | 0 | |



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