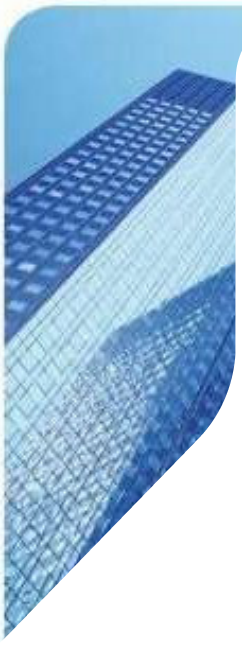
BIRDWORD & HASKINS FOREST LODGE GARDEN CENTRE

BREEAM NC 2018 V6 PRE-ASSESSMENT



LOE12086
Birdworld Haskins Farnham
24 January 2024

www.rpsgroup.com

Document Status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
Draft	BREEAM Pre-Assessment	Russell Pitter	Sarah Yates	Russell Pitter	15.09.23
Final	BREEAM Pre-Assessment	Russell Pitter	Sarah Yates	Russell Potter	24.01.24

Approval for issue

Russell Pitter		2024-01-24

Prepared by:

RPS Consulting Services Ltd

Russell Pitter
Associate Director

Lakesbury House, Hiltingbury Road
Hampshire, SO53 5SS

T 07415 411850
E russell.pitter@rpsgroup.com

Prepared for:

Birdworld Ltd

Matt Hill
Birdworld & Farnham Development Director

Holt Pound, Farnham
GU10 4LD

T 07464 546029
E matt.hill@birdworld.co.uk

Contents

EXECUTIVE SUMMARY

RPS has been commissioned by Birdworld Ltd and Haskins Garden Centres Ltd to produce a BREEAM 2018 NC V6 Pre-Assessment of the new development at Birdworld and Haskins at Forest Lodge, Farnham which consists of a new 5,684m2 Garden Centre, new 689m2 entrance building and new 1,557m2 play barn with associated external works to ascertain whether a BREEAM Excellent rating could be achieved.

This report is based on design stage information including specification, drawings and a BREEAM pre-assessment meeting held with the design team on 05.09.23.

This report outlines a strategy to achieve an Excellent BREEAM. If the strategy outlined in this report is followed it is considered that the development can achieve an 'Excellent' BREEAM rating. The full credit strategy for the report is detailed within the Section 3 of the report.

1.0 INTRODUCTION

This report outlines the sustainable design principles of the scheme in relation to the BREEAM New Construction 2018 V6 requirements.

If a formal BREEAM Assessment is required, the development will be assessed under the BREEAM New Construction 2018 V6 'Retail' version of the methodology.

BREEAM assessment and certification is generally carried out in three phases:

- A preliminary assessment to set up the strategy to meet the BREEAM target.
- An initial assessment and interim certification is carried out at the design stage
- Final assessment and certification is carried out after construction.

A BREEAM assessment measures the sustainability of a development against design categories, rating the design and construction process as a whole package. The categories included within a BREEAM assessment are:

- Management
- Health and Wellbeing
- Energy
- Transport
- Water
- Materials
- Waste
- Land Use and Ecology
- Pollution

BREEAM has a scoring system of six levels. The different levels are made up by achieving both the appropriate mandatory minimum standards together with a proportion of the other credits so that a score is achieved. The scores required for the corresponding ratings are summarised in the table below.

BREEAM rating	Points score
Unclassified	< 30
Pass	≥ 30
Good	≥ 45
Very Good	≥ 55
Excellent	**≥ 70**
Outstanding	≥ 85

Table 1: BREEAM rating scoring system

2.0 SUMMARY OF DESIGN SCORE

The tables in the following section set out the predicted BREEAM score likely to be achieved for the proposed development, based upon the reports, specifications and drawings provided.
Overall, it is predicted that the proposed baseline development should achieve a score of **75.49%**, thereby achieving an **'Excellent'** rating. Note for an 'Excellent rating a score of 70% is required.

BREEAM Rating	Credits available	Credits achieved	Credits targeted	% Credits achieved	Weighting	Category score
Man	21.0	16.0	16.0	76.19%	11.00%	8.38%
Hea	18.0	7.0	7.0	38.89%	14.00%	5.44%
Ene	21.0	17.0	17.0	80.95%	16.00%	12.95%
Tra	12.0	7.0	7.0	58.33%	10.00%	5.83%
Wat	9.0	5.0	5.0	55.56%	7.00%	3.88%
Mat	14.0	12.0	12.0	85.71%	15.00%	12.85%
Wst	10.0	8.0	8.0	80.00%	6.00%	4.80%
LE	13.0	11.0	11.0	84.62%	13.00%	11.00%
Pol	12.0	11.0	11.0	91.67%	8.00%	7.33%
Inn	10.0	3.0	3.0	30.00%	10.00%	3.00%
Total	140.0	97.0	97.0	69.29%	-	75.49%
Rating	-	-	-	-	-	★★★★☆ **Excellent**

Figure 1: Predictive Score

In addition, performance against the minimum standards required for an Excellent rating under each scenario is summarised below. If the required minimum standards are not met, then the target rating will not be achieved regardless of overall score.

Issue	Minimum / Mandatory Requirements Targeted
Man 03 – Responsible construction practices – Need to achieve at least 1 credit for responsible construction management	Yes
Man 04 – Commissioning & handover – Need to achieve the credit for commissioning test schedule & responsibilities	Yes
Man 04 – Commissioning & handover – Need to produce a Building User Guide	Yes
Man 05 – Aftercare – Need to achieve the credit for commissioning implementation	Yes
Ene 01 – Reduction of energy use and carbon emissions – Need to achieve at least 4 credits (energy performance or operational energy)	Yes
Ene 02 - Energy Monitoring - Installation of energy sub-metering that facilitates the monitoring of operational energy consumption	Yes
Wat 01 – Installation of efficient water-consuming components that result in a 12.5% improvement over baseline building water consumption	Yes
Wat 02 - Water Monitoring - Installation of a water meter on each mains water supply to each building (criterion 1).	Yes
Mat 03 - Responsible Sourcing of Materials - All timber and timber-based products used on the project are to be legally harvested and traded timber (criterion 1).	Yes
Wst 03 – Operational waste – Must achieve credit	Yes

Table 2: Minimum mandatory requirements for Excellent

Based on the information received to date, detailed within the main body of the report it is considered that the development could achieve an Excellent BREEAM rating with a predicted score of 75.49%.

It is good practice to incorporate a buffer of 5% in the design stage assessment to allow for unforeseen circumstances and credits dropping off in the construction stage assessment.

3.0 DETAILED APPRAISAL

Category assessment
Management (Man)

Man 01 Project Brief and design

To optimise final building design through recognising and encouraging an integrated design process and robust stakeholder engagement.

Assessment criteria

Stakeholder consultation (interested parties) :	Yes
Project delivery planning :	Yes
Prerequisite: Have the client and the contractor formally agreed performance targets? :	Yes
BREEAM Advisory Professional (Concept Design) :	Yes
BREEAM Advisory Professional (Developed Design) :	Yes

Credits awarded : 4

Comments :

Project delivery planning. Credit targeted. Requirement is that prior to completion of the Concept Design, the project delivery stakeholders meet to identify and define for each key phase of project delivery: 1.a Roles 1.b Responsibilities 1.c Contributions. 2 Consider each one of the following items when defining roles, responsibilities and contributions for each key phase of the project: 2.a End user requirements 2.b Aims of the design and design strategy 2.c Particular installation and construction requirements or limitations 2.d Occupiers' budget and technical expertise in maintaining any proposed systems 2.e Maintainability and adaptability of the proposals 2.f Operational energy 2.g Requirements for the production of project and end user documentation 2.h Requirements for commissioning, training and aftercare support. RPS will undertake the role of BREEAM Advisory Professional at both concept design and developed design stages.

Man 02 Life cycle cost and service life planning

To promote the business case for sustainable buildings and to deliver whole life value by encouraging the use of life cycle costing to improve design, specification, through-life maintenance and operation.

Assessment criteria

Elemental LCC :	No
Component level LCC options appraisal :	No

Capital cost reporting :	Yes
Capital cost of the project :	2300 Â£k/m^2

Credits awarded : 1

Comments :

Elemental life cycle cost plan credit not targeted. We are not aware that an elemental LCC plan will be produced before the end of concept design stage giving an indication of future replacement costs over a period of analysis of 20, 30, 50 or 60 years including service life, maintenance and operation cost estimates. Component level LCC options appraisal credit not targeted. We are not aware that a component level LCC will be carried out by the end of Process Stage 4. The capital cost for the building in pounds per square metre of gross internal floor area will be included as part of the submission to BRE for benchmarking purposes. Credit targeted.

Man 03 Responsible construction practices

To recognise and encourage construction sites which are managed in an environmentally and socially considerate, responsible and accountable manner.

Assessment criteria

Prerequisite: Are all timber and timber-based products used during the construction process of the project 'legally harvested and traded timber'? :	Yes
Environmental management :	Yes
Prerequisite: Have the client and the contractor formally agreed performance targets? :	Yes
BREEAM Advisory Professional (site) :	No
Responsible construction management :	2
Monitoring of construction site impacts :	Yes
Utility consumption :	Yes
Transport of construction materials and waste :	Yes
Exemplary level criteria - Responsible construction management :	Yes

Key Performance Indicators: Construction site energy use

Energy consumption (total) - site processes :	100 kWh
Energy consumption (intensity) - site processes :	100 kWh/project value

Key Performance Indicators: Construction site greenhouse gas emissions	
Process greenhouse gas emissions (total) - site processes :	100 $KgCO_2eq$
Carbon dioxide emissions (intensity) - site processes :	100 $KgCO_2$ eq/project value

Credits awarded : 5
Exemplary credits awarded : 1

Comments :

The principal contractor will be required to operate an Environmental Management System and achieve all items referred to in table 4.1 Responsible Construction Management items. This equates to a score of 39 under the latest Considerate Constructors Scheme. Credits have been targeted as this is also referred to in section RMW7 of East Hampshire District Council (EHDC) Sustainability Checklist which asks for a Construction Environment Management Statement or equivalent information and whether the construction company delivering the scheme are part of a Considerate Constructors Scheme. Contractor will also be required to monitor and record site related energy and water impacts on a monthly basis.

Man 04 Commissioning and handover

To encourage a properly planned handover and commissioning process that reflects the needs of the building occupants.

Assessment criteria	
Commissioning testing schedule and responsibilities :	Yes
Commissioning - design and preparation :	Yes
Testing and inspecting building fabric :	No
Handover - have a technical and a non-technical building user guide been developed prior to handover? :	Yes
Handover - have a technical and a non-technical training schedule been prepared around handover? :	Yes

Credits awarded : 3

Comments :

1 credit targeted for commissioning undertaken in accordance with Building Regulations, BSRIA and CIBSE guidelines. 1 credit targeted for undertaking design reviews and giving advice on suitability for ease of and during installation stages. Management of commissioning, performance testing and handover or post-handover stages. 1 credit available for completing post-construction testing and inspection to quality-assure the integrity of the building fabric,

including continuity of insulation, avoidance of thermal bridging and air leakage paths (thermographic survey). Not targeted at this stage. 1 credit targeted for developing two building user guides for the following users: Non-technical user guide for distribution to the building occupiers. Technical user guide for the premises facilities managers.

Man 05 Aftercare

To ensure the building operates in accordance with the design intent and operational demands, through providing aftercare to the building owner and occupants during the first year of occupation.

Assessment criteria	
Is this a speculative development? :	No
Aftercare support :	Yes
Commissioning - implementation :	Yes
Post occupancy evaluation :	Yes
The client or building occupier commits funds to pay for the POE in advance. :	Yes

Credits awarded : 3

Comments :

Aftercare support targeted - The Contractor will provide the necessary infrastructure and resources to provide aftercare support to the building occupier. Commissioning implementation credit targeted - The building occupier will commit to collecting energy and water consumption data for 12 months after occupation. Post Occupation Evaluation credit targeted - The client or building occupier commit to carrying out a post occupancy evaluation (POE) exercise one year after initial building occupation and to disseminate the findings in terms of the buildings post occupancy performance. It is anticipated that soft landings will be used.

Health and Wellbeing (Hea)

Hea 01 Visual comfort

To encourage best practice in visual performance and comfort by ensuring daylighting, artificial lighting and occupant controls are considered.

Assessment criteria	
Control of glare from sunlight :	Yes
Daylighting (building type dependent) :	0
View Out :	Yes
Internal and external lighting levels, zoning and controls :	Yes
Exemplary level criteria- Internal and external lighting levels, zoning and control :	No

Credits awarded : 3

Comments :

Visual Comfort - Credit targeted. Requirements are that a glare control strategy designs out potential glare in all relevant building areas where risk has been identified. This should be achieved through building form and layout or building design measures. The glare control strategy does not increase energy consumption used for lighting. This is achieved by: Maximising daylight levels in all weather, cloudy or sunny and ensuring the use or location of shading does not conflict with the operation of lighting control systems. A complaint system would be occupant controlled blinds to rooms where computer screens are used. Daylighting - 2 Credits available. The requirement is that daylighting calculations are undertaken which demonstrate that 80% of occupied areas achieve a daylight factor of 2%. We are not aware that daylighting calculations have been undertaken therefore these credits are not targeted at this stage. View out - Credit targeted. Requirement is that 95% of the floor area in relevant building areas will be within 8m of a wall which has a window or permanent opening that provides an adequate view out. Internal and external lighting - Credit targeted. Internal lighting to be in accordance with SLL Code for Lighting 2012. For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 7. Exemplary level criteria - Internal and external lighting levels, zoning and control. Not targeted at this stage, however identified as a potential credit. To achieve an exemplary performance credit for Internal and external lighting levels, zoning and control: Lighting in each zone can be manually dimmed by occupants down to 20% of the maximum light output using dimmer switches positioned in accessible locations. Dimming and control gear should avoid flicker and noise.

Hea 02 Indoor air quality

To encourage and support healthy internal environments with good indoor air quality.

Assessment criteria	
Prerequisite: Indoor air quality (IAQ) plan :	Yes
Are you complying with the Ventilation criteria? :	Yes
Specify the type of ventilation :	Mixed mode
Are carbon dioxide (CO_2) sensors installed in all relevant areas? :	Yes
Number of sensors :	
Net Internal Area of relevant areas covered by sensors :	
Coverage of sensors :	0.0
Emissions from construction products :	0
Sampling of TVOC and formaldehyde levels in post-construction :	No
Exemplary level criteria: Emissions from construction products :	No

Key Performance Indicators	
Formaldehyde concentration :	0.0 Î¼g/m^3
Total volatile organic compound (TVOC) concentration :	0.0 Î¼g/m^3

Credits awarded : 0

Comments :

Pre-requisite: A site-specific indoor air quality plan is required to be produced and implemented. The objective of the plan is to facilitate a process that leads to design, specification and installation decisions and actions that minimise indoor air pollution during occupation of the building. The indoor air quality plan must consider the following: 1.a Removal of contaminant sources 1.b Dilution and control of contaminant sources: 1.b.i Where present, consideration is given to the air quality requirements of specialist areas such as laboratories 1.c Procedures for pre-occupancy flush out 1.d Third party testing and analysis 1.e Maintaining good indoor air quality in-use. Ventilation credit not targeted at this stage. Requires the building to be designed to minimise the indoor concentration and recirculation of pollutants in the building as follows: Provide fresh air into the building in accordance with the criteria of the relevant standard for ventilation. In naturally ventilated buildings or spaces: sensors either have the ability to alert the building owner or manager when CO2 levels exceed the recommended set point, or are linked to controls with the ability to adjust the quantity of fresh air, i.e. automatic opening windows or roof vents. For naturally ventilated or mixed mode buildings, the design demonstrates that the ventilation strategy provides adequate cross flow of air to maintain the required thermal comfort conditions and ventilation rates in accordance with CIBSE AM10. Emissions from construction products. Not targeted at

this stage. 2 credits available, 1 credit requires 3 of the 5 of the product types to meet the emission limits, testing requirements and any additional requirements listed in Table 5.11 (Please refer to page 93 and 94 of the BREEAM Technical Manual SD5079 New Construction Version 6.1) Post construction indoor air qulaity measurement. Not targeted. Requires formaldehyde and VOC concentration in indoor air to be measured post construction.

Hea 04 Thermal comfort

To ensure the building is capable of providing an appropriate level of thermal comfort.

Assessment criteria

Thermal modelling :	Yes
Design for future thermal comfort :	No
Thermal zoning and controls :	Yes

Key Performance Indicators

PMV and PPD Indices :

Credits awarded : 2

Comments :

First credit targeted. Requires thermal modelling to be carried out using software in accordance with CIBSE AM11 Building Energy and Performance Modelling. The modelling demonstrates that for air-conditioned buildings, summer and winter operative temperature ranges in occupied spaces are in accordance with the criteria set out in CIBSE Guide A Environmental design. Second credit not targeted at this stage. Requires thermal modelling to be undertaken for a projected climate change scenario: Dynamic thermal simulation software packages provide the facility for building designs to be assessed under external climatic conditions specific to geographic location. Industry standard weather data for the UK is available in the form of Test Reference Years (TRYs) and Design Summer Years (DSYs) provided by CIBSE (2016) (https://www.cibse.org/weatherdata). This weather data enables thermal analysis of building designs under current climatic conditions, yet no account is taken of the projected variations in weather data that will occur during the building's life cycle as a result of climate change. The following probabilistic DSY weather data files should be used to establish the projected climate change environment against which the design is evaluated: Naturally ventilated buildings Time period: 2050s Emissions scenario: Medium (A1B) 50th percentile DSY 2 and DSY 3 Mechanically ventilated buildings Time period: 2050s Emissions scenario: Medium (A1B) 50th percentile DSY 2 and DSY 3 Third credit targeted which requires the thermal modelling analysis to inform the temperature control strategy for the building and its users.

Hea 05 Acoustic performance

To ensure the building is capable of providing an appropriate acoustic environment to provide comfort for building users.

Assessment criteria

Criteria performance requirements or SQA bespoke requirements? :	Criteria performance requirements
Sound insulation :	0
Indoor ambient noise level :	No
Room acoustics :	No

Credits awarded : 0

Comments :

First credit sound insulation not targeted at this stage. Requirements are that the sound insulation between rooms and other occupied areas complies with the performance criteria given in Section 7 of BS 8233:2014. Alternatively, propose performance standard based on demonstrably best practice. Second credit â Indoor ambient noise levels not targeted at this stage. Requirements are that indoor ambient noise levels that comply with the design ranges given in Section 7 of BS 8233:2014. Third credit - Room acoustics not targeted at this stage. Requirements are that the requirements relating to sound absorption and reverberation times, where applicable, set out in Section 7 of BS 8233:2014 are achieved.

Hea 06 Security

To encourage the planning and implementation of effective measures that provide an appropriate level of security to the building and site.

Assessment criteria

Security of site and building :	Yes
Exemplary level criteria :	

Credits awarded : 1

Comments :

1 credit targeted. Requirement is that a A Suitably Qualified Security Specialist (SQSS) conducts an evidence-based Security Needs Assessment (SNA) during or prior to Concept Design. The purpose of the SNA will be to identify attributes of the proposal, site and surroundings which may influence the approach to security for the development. 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. The team will either need to consult with an Architectural Liaison Office or Crime Prevention Design Advisor from the local Police Force or engage with a private security specialist regarding security measures for the project.

Hea 07 Safe and Healthy Surroundings

To encourage the provision of safe access around the site and outdoor space that enhances the wellbeing of building users. .

Assessment criteria

Safe Access :	No
Outside Space :	Yes

Credits awarded : 1

Comments :

Safe access - Credit not targeted. Requirements are as follows: 1. Dedicated and safe cycle paths are provided from the site entrance to any cycle storage, and connect to offsite cycle paths where applicable. 2. Dedicated and safe footpaths are provided on and around the site providing suitable links for the following: a The site entrance to the building entrance b Car parks (where present) to the building entrance c The building to outdoor space d Connecting to off-site paths where applicable. Pedestrian drop-off areas are designed off, or adjoining to, the access road and should provide direct access to other footpaths. 3 Pedestrian drop-off areas are designed off, or adjoining to, the access road and should provide direct access to other footpaths. Where vehicle delivery access and drop-off areas form part of the assessed development, the following apply: 4 Delivery areas are not accessed through general parking areas and do not cross or share the following: 4.a pedestrian and cyclist paths 4.b outside amenity areas accessible to building users and general public. 5 There is a dedicated parking or waiting area for goods vehicles with appropriate separation from the manoeuvring area and staff and visitor car parking. 6 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 Outside Space - Credit targeted. Requirement is that there is an outside space providing building users with an external amenity area. The space is of an appropriate size to provide enough amenity for the predicted number of building users during coffee or lunch breaks to gather, socialise, relax and connect with the natural environment. The space is predominantly intended for building staff, but can be used by other building users where relevant and beneficial to the building users. The outside space must: â be an outdoor landscaped area, for example a garden, balcony or terrace; the majority of the space should be open to the sky â have appropriate seating areas and be non-smoking, â be located to ensure it is accessible to all building users and avoids areas that will have disturbances from sources of noise (e.g. building services, car parks, busy roads, delivery areas etc.).

Energy (Ene)

Ene 01 Reduction of energy use and carbon emissions

To minimise operational energy demand, primary energy consumption and CO2 emissions.

Energy performance

Country :	England
Select how many files need to be uploaded. If more than one BRUKL output has been produced for a single assessment select the number required. :	3
File 1 :	
Upload building '_brukl.inp' file :	
Is space heating provided by a district (network) heating? :	No
File 2 :	
Upload building '_brukl.inp' file :	
Is space heating provided by a district (network) heating? :	No
File 3 :	
Upload building '_brukl.inp' file :	
Is space heating provided by a district (network) heating? :	No

Energy performance - Building score

Heating and cooling demand energy performance ratio (EPRdem) :	0.325
Primary energy consumption performance ratio (EPRpe) :	0.31
CO_2-eq energy performance ratio (EPRco2-eq) :	0.326
Overall building energy performance ratio (EPRnc) :	0.962
Total BREEAM credits achieved :	8.0
Is the primary energy consumption the same or lower than that of the notional building? :	Yes
Is the primary energy consumption at least 10% lower than that of or higher than that of the notional building? :	Yes

Prediction of operational energy consumption

Has a passive design analysis been carried out? :	Yes

Have you undertaken detailed energy modelling (including scenario analysis) to predict operational energy consumption? :	Yes
Have you reported predicted energy consumption targets? :	Yes
Have you demonstrated that scenario analysis has informed improvements to the design, operational, maintenance and handover strategies? :	Yes

Post-occupancy evaluation (exemplary credits)

Has the maximum credit score been achieved in Ene 02 Energy monitoring? :	Yes
Has the client or building occupier committed funds to pay for the post-occupancy evaluation? :	
Has the energy model been submitted to BRE or retained by the building owner/named third party? :	

Credits awarded : 12

Comments :

Up to nine credits available for energy performance. Data from the BRUKLs has been entered above which confirms that 8 credits are achieved. A further four credits targeted for prediction of operational energy consumption. Requirements are as follows: - Involve relevant members of the design team in an energy design workshop focusing on operational energy performance. - Undertake additional energy modelling during the design and post-construction stage to generate predicted operational energy consumption figures. - Report predicted energy consumption targets by end use, design assumptions and input data (with justifications). - Carry out a risk assessment to highlight any significant design, technical, and process risks that should be monitored and managed throughout the construction and commissioning process. ION to provide fee proposal.

Ene 02 Energy monitoring

To encourage the installation of energy sub-metering that facilitates the monitoring of operational energy consumption. To enable managers and consultants post-handover to compare actual performance with targets in order to inform ongoing management and help in reducing the performance gap.

Assessment criteria

Sub-metering of end use categories :	Yes
Sub-metering of high energy load and tenancy areas :	Yes

Credits awarded : 2

Comments :

Sub metering of end use categories credit targeted. Requires energy metering systems to be installed so that at least 90% of the estimated annual energy consumption of each fuel is

assigned to the end-use categories. This can be via an energy monitoring and management system or separate accessible energy sub-meters with pulsed or other open protocol communication outputs, for future connection to an energy monitoring and management system. Sub metering of high energy load or sub metering by department credit targeted.

Ene 03 External lighting

To reduce energy consumption through the specification of energy efficient light fittings for external areas of the development.

Assessment criteria

External lighting has been designed out? :	No
Is external lighting specified in accordance with the relevant criteria? :	Yes

Credits awarded : 1

Comments :

Credit targeted. Requires external light fittings within the construction zone to have: Average initial luminous efficacy of not less than 70 luminaire lumens per circuit Watt Automatic control to prevent operation during daylight hours Presence detection in areas of intermittent pedestrian traffic.

Ene 04 Low carbon design

To encourage the adoption of design measures, which reduce building energy consumption and associated carbon emissions and minimise reliance on active building services systems.

Assessment criteria

Has the first credit within Hea 04 been achieved? :	Yes
Passive design analysis :	Yes
Free cooling :	No
Low and zero carbon technologies :	Yes

KPI

Total on-site and/or near-site LZC energy generation :

Expected energy consumption and CO_2-eq emissions reduction resulting from passive design measures :

Energy consumption :
CO_2-eq emissions :

Expected energy consumption and CO_2-eq emissions reduction resulting from passive design measures as a percentage :
Energy consumption :

CO_2-eq emissions :

Expected reduction in CO_2-eq emissions resulting from the LZC technologies as a percentage :
Expected reduction in CO_2-eq emissions resulting from the LZC technologies :

Credits awarded : 2

Comments :

One credit targeted for undertaking a Passive design analysis. Requirements are that the project team analyses the proposed building design and development during Concept Design to identify opportunities for the implementation of passive design measures: 1. Site location 2. Site weather 3. Microclimate 4. Building layout 5. Building orientation 6. Building form 7. Building fabric 8. Thermal mass or other fabric thermal storage 9. Building occupancy type 10. Daylighting strategy 11. Ventilation strategy 12. Adaptation to climate change. Implement passive design measures to reduce the total heating, cooling, mechanical ventilation, lighting loads and energy consumption in line with the passive design analysis findings. EHDC Sustainability checklist sections SL1 SL2 SL3 SL4 SL5 refer to layout, orientation, passive design, shadowing, shrubs etc. One credit available for free cooling. Not targeted. Requirements are The free cooling analysis should demonstrate consideration of the following technologies: 1. Night time cooling (which could include the use of a high exposed thermal mass) 2. Ground coupled air cooling 3. Displacement ventilation (not linked to any active cooling system) 4. Ground water cooling 5. Surface water cooling 6. Evaporative cooling, direct or indirect 7. Desiccant dehumidification and evaporative cooling, using waste heat 8. Absorption cooling, using waste heat. One credit targeted for undertaking a Low and zero carbon feasibility study. Requirements are that an energy specialist is required to complete a feasibility study by the end of Concept Design to establish the most appropriate recognised local (on-site or near-site) low and zero carbon (LZC) energy sources for the building or development, based on the feasibility study. Specify local LZC technologies for the building or development in line with the feasibility study recommendations. Quantify the reduced regulated carbon dioxide emissions resulting from the feasibility study. The low and zero carbon feasibility study should cover as a minimum: 1. Energy generated from LZC energy source per year 2. Carbon dioxide savings from LZC energy source per year 3. Life cycle cost of the potential specification, accounting for payback 4. Local planning criteria, including land use and noise 5. Feasibility of exporting heat or electricity from the system 6. Any available grants 7. All technologies appropriate to the site and energy demand of the development 8. Reasons for excluding other technologies EHDC Sustainability checklist section ER3 requires10% of the developments energy needs to be met by renewables. ION have undertaken a BREEAM V6 compliant LZC Feasibility Study before the end of Concept Design stage.

Ene 05 Energy efficient cold storage

To encourage the installation of energy efficient refrigeration systems, in order to reduce operational greenhouse gas emissions resulting from the system's energy use.

Assessment criteria - N/A

Comments :

Scope of Ene 05 issue The scope of this issue covers freezer or cold storage rooms which are integral to the building, and includes cooling systems that require commissioning and optimisation for the specific requirements of the cold storage space. This applies whether the cold storage space has a dedicated cooling system serving this space, or one which is connected to wider building cooling services. Kitchen and catering facilities, are excluded from this issue. They refer to commercial-sized, but self contained, off-the-shelf units â these include large freezers, fridges, or stand-alone self-contained walk-in cold storage units. These types of units are manufactured as a self-contained product, and contain their own integral cooling systems â they operate according to manufacturer pre-sets, and do not require commissioning of the cooling system. For this reason, these are not assessed under this issue, but they may still fall within the scope of the Energy efficient equipment issue (Ene 08).

Ene 06 Energy efficient transportation systems

To encourage the specification of energy efficient transport systems within buildings.

Assessment criteria - N/A

Comments :

N/A

Ene 07 Energy efficient laboratory systems

To encourage laboratory areas that are designed to minimise their operational energy consumptionand associated CO2 emission

Assessment criteria - N/A

Comments :

N/A

Ene 08 Energy efficient equipment

To encourage installation of energy efficient equipment to ensure optimum performance and energy savings in operation

Assessment criteria

Swimming pool present? :

Laundry facilities with commercial-sized appliances present? :

Data centre present? :

IT-intensive operating areas present? :

Domestic scale appliances (individual and communal facilities) present? :

Healthcare equipment present? :

Kitchen and catering facilities present? : Yes

Major impact? : Yes

Other contributors :

Significant majority contributors BREEAM compliant :

Credits awarded : 0

Comments :

Credits not targeted at this stage. Requirements are: 1. Identify the building's unregulated energy consuming loads. Estimate their contribution to the total annual unregulated energy consumption of the building, assuming a typical or standard specification. 2. Identify the systems or processes that use a significant proportion of the total annual unregulated energy consumption of the building. 3 Demonstrate a meaningful reduction in the total annual unregulated energy consumption of the building: Kitchen and catering facilities: Incorporate at least two-thirds of the energy efficiency measures outlined in the 'section summary' boxes of each of the following sections of CIBSE Guide TM50: 1. Section 8 â Controls and sub-metering 2. Section 9 â Drainage and kitchen waste removal 3. Section 10 â Water services 4. Section 13 â Foodservice equipment specification 5. Section 14 â Commercial foodservice refrigeration equipment 6. Section 15 â Warewashing: dishwashing, glasswashing and potwashing 7. Section 16 â Cooking, hot food holding and display equipment

Transport (Tra)

Tra 01 Transport assessment and travel plan

To reward awareness of existing local transport and identify improvements to make it more sustainable.

Assessment criteria

Travel plan :	Yes

Credits awarded : 2

Comments :

Credits targeted. Requirements are that no later than Concept Design stage, a site-specific transport assessment and draft travel plan is undertaken, which can demonstrably be used to influence the site layout and built form. The site-specific travel assessment (or statement) shall cover as a minimum: a. If relevant, travel patterns and attitudes of existing building or site users towards cycling, walking and public transport, to identify relevant constraints and opportunities. b. Predicted travel patterns and transport impact of future building or site users. c. Current local environment for pedestrians and cyclists, accounting for any age-related requirements of occupants and visitors. d. Reporting of the number and type of existing accessible amenities within 500m of the site. e. Disabled access accounting for varying levels and types of disability, including visual impairment. f. Calculation of the existing public transport Accessibility Index g. Current facilities for cyclists. EHDC Sustainability checklist section DL1 requires a Travel Plan and Transport Assessment. I-Transport have undertaken a BREEAM Compliant Transport Assessment before the end of concept design stage.

Tra 02 Sustainable transport measures

To maximise the potential for local public, private and active transport through provision of sustainable transport measures appropriate to the site.

Assessment criteria

Prerequisite :	Yes
Location type (based on existing AI) :	AI <25
Number of points achieved overall :	5

Credits awarded : 5

Comments :

1 credit targeted for providing a public transport information system in a publicly accessible

area, to allow building users access to up-to-date information on the available public transport and transport infrastructure. This may include signposting to public transport, cycling, walking infrastructure or local amenities. 1 credit targeted for setting up a car sharing group or facility to facilitate and encourage building users to car share. Raise awareness of the sharing scheme with marketing and communication materials. Provide priority spaces for car sharers for at least 5% of the total car parking capacity for the development. Locate priority parking spaces nearest the development entrance used by the sharing scheme participants. 1 credit targeted for providing secure and covered cycle storage. Requirements are 1 space per 10 staff. Note that the cycle shelter will need to be located in a prominent position which is viewable and it will need to be adequately lit. EHDC Sustainable Checklist DL6 requires appropriate levels of secure cycle storage. 1 credit targeted for providing cyclist facilities. Provide at least two compliant cyclists facilities from the following 4 options: Showers, Changing facilities, Lockers, Drying spaces. 1credit targeted for proximity of food outlet, outdoor space and recreation facility within 500m. Note this can include the assessed development.

Water (Wat)

Wat 01 Water consumption

To reduce the consumption of potable water for sanitary use in new buildings through the use of water efficient components and water recycling systems.

Assessment criteria

Please select the calculation procedure used :	Standard approach
Credits awarded :	2
Exemplary performance :	

Key Performance Indicators

Standard approach data: :

Water Consumption from building micro-components :

Water demand met via greywater/rainwater sources :

Total net water consumption :

Improvement on baseline performance :

Key Performance Indicator - use of freshwater resource: :

Total net Water Consumption :

Default building occupancy :

Credits awarded : 2

Comments :

2 credits targeted. The following specification will achieve 2 credits: WC's 4 litre flush WHB taps 6 litres per minute Showers 8 litres per minute Kitchen taps 8.3 litres per minute Commercial sized dishwashers 6 litres per rack Section 5.3 of the EHDC Climate Change and Sustainable Construction Policy CP24 requires 25% improvement on baseline (2 credit in the water consumption issue (Wat 01)

Wat 02 Water monitoring

To reduce the consumption of potable water in new buildings through the effective

management and monitoring of water consumption.

Assessment criteria	
Water meter on the mains water supply to each building :	Yes
Sub-metering/monitoring equipment on supply to plant/building areas :	Yes
Pulsed output or other open protocol communication output and BMS connection :	Yes
The water monitoring strategy used enables the identification of all water consumption for sanitary uses as assessed under Wat 01 (L/person/day) :	Yes

Credits awarded : 1

Comments :

1 credit targeted for specification of a water meter with a pulsed output on the mains water supply. Section A2.3 of the O+M Manual from the main School states that the site has been supplied with a metered potable mains water (no cold water storage) from the boundary.

Wat 03 Water leak detection

To reduce the consumption of potable water in new buildings through minimising wastage due to water leaks.

Assessment criteria	
Leak detection system :	Yes
Flow control devices :	Yes

Credits awarded : 2

Comments :

One credit targeted for a leak detection system. Requirements are installation of a leak detection system capable of detecting a major water leak: On the utilities water supply within the buildings, to detect any major leaks within the buildings AND Between the buildings and the utilities water supply, to detect any major leaks between the utilities supply and the buildings under assessment. One credit targeted for flow control devices. Requires installation flow control devices that regulate the water supply to each WC area or sanitary facility according to demand, in order to minimise undetected wastage and leaks from sanitary fittings and supply pipework. A common solution is a solenoid valve linked to the PIR lighting.

Wat 04 Water efficient equipment

To reduce water consumption for uses not assessed under Wat 01 by encouraging specification of water efficient equipment.

Assessment criteria

Water efficient consumption :	No

Credits awarded : 0

Comments :

Not targeted.

Materials (Mat)

Mat 01 Life cycle impacts

To reduce the burden on the environment from construction products by recognising and encouraging measures to optimise construction product consumption efficiency and the selection of products with a low environmental impact (including embodied carbon), over the life cycle of the building.

Assessment criteria

Total Mat 01 credits achieved - taken from the Mat 01/02 Results Submission Tool :	7
Total Exemplary credits achieved - taken from the Mat 01/02 Results Submission Tool :	1

Credits awarded : 7
Exemplary credits awarded : 1

Comments :

7 standard credits and 1 exemplar credit targeted. Requires a carbon Life Cycle Assessment (LCA) options appraisal to be undertaken on 4 alternative superstructure options and 6 alterative substructure and hard landscaping options. This has to be completed and uploaded to BRE before the end of concept design stage and prior to planning submission. This is worth 8.50% towards the overall score and is essential towards achieving an excellent rating. Item 8 of the Planning Documents Tracker refers to a Carbon Reduction Statement. EHDC Sustainability Checklist RMW3 asks whether consideration has been given to embodied carbon, and/or the submission of an embodied carbon assessment. RPS have undertaken a concept design stage LCA and uploaded to BRE.

Mat 02 Environmental impacts from construction products

To encourage availability of robust and comparable data on the impacts of construction products through the provision of EPD.

Assessment criteria

Mat 02 credit achieved - Taken from the Mat 01/02 Results Submission Tool. :	0

Credits awarded : 0

Comments :

1 credit available. Requires specification of products with a recognised environmental product declaration (EPD). Architect to refer to greenbooklive.com Not targeted at this stage however has been identified as a potential credit. This is also referred to in sections 7.4 to 7.9 Materials EHDC Climate Change and Sustainable Construction Policy.

Mat 03 Responsible sourcing

To facilitate the selection of products that involve lower levels of negative environmental, economic and social impact across their supply chain including extraction, processing and manufacture.

Assessment criteria

Prerequisite: All timber and timber based products are 'Legally harvested and traded timber' :	Yes
Has the enabling sustainable procurement credit been achieved? :	Yes
Mat 03 minimum scope level :	plus Substructure and hard landscaping / Internal Finishes
Percentage of available for percentage of RSM points achieved :	20 %

Credits awarded : 3

Comments :

Prerequisite - Legal and sustainable timber. Targeted Requires 100% of timber and timber-based products used on the project are 'Legal' and 'Sustainable' as per the UK Government's Timber Procurement Policy. Sustainable Procurement Plan credit targeted. Requires a sustainable procurement plan to be used by the design team to guide specification towards sustainable construction products. The plan must: -Be in place before Concept Design. Include sustainability aims, objectives and strategic targets to guide procurement activities. -Include a requirement for assessing the potential to procure construction products locally. There must be a policy to procure construction products locally where possible. Section 7.9 of EHDC Climate Change and Sustainable Construction Policy states that the Council encourage the use of Sustainable Procurement Plans to support the use of responsibly sourced materials including from local sources. Responsible Sourcing of Materials 2 credits targeted. Requires written commitment from Contractor to commit to achieving at least 20% of the available responsible sourcing points for superstructure, internal finishes, substructure and hard landscaping. Section RMW2 of EHDC Sustainable checklist asks if a framework or certification scheme been used to establish the responsible sourcing of materials for the scheme and whether there a clear rationale for the materials selected.

Mat 05 Designing for durability and resilience

To reduce the need to repair and replace materials resulting from damage to exposed elements of the building and landscape.

Assessment criteria

Protecting vulnerable parts of the building from damage and exposed parts of the building from material degradation :	Yes

Credits awarded : 1

Comments :

Credit targeted. Requires protection measures to be incorporated into the building's design and construction to reduce damage to the building's fabric or materials in case of accidental or malicious damage occurring. These measures must provide protection against: 1.a Negative impacts of high user numbers in relevant areas of the building (e.g. corridors lifts, stairs, doors etc.). 1.b Damage from any vehicle or trolley movements within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas. 1.c External building fabric damage by a vehicle. Protection where parking or manoeuvring areas are within 1 metre of the building facade and where delivery areas or routes are within 2 metres of the facade, i.e. specifying bollards or protection rails. 1.d Potential malicious damage to building materials and finishes, in public and common areas where appropriate. Protecting exposed parts of the building from material degradation: Key exposed building elements are required to be designed and specified to limit long and short term degradation due to environmental factors.

Mat 06 Material efficiency

To avoid unnecessary materials use arising from over specification without compromising structural stability, durability or the service life of the building.

Assessment criteria

Material optimisation measures investigated and implemented at all relevant stages :	Yes

Credits awarded : 1

Comments :

Credit targeted. Requirements are as follows: 1 At the Preparation and Brief and Concept Design stages, set targets and report on opportunities and methods to optimise the use of materials. These must be done for each of the following stages. 1.a Preparation and Brief. 1.b Concept Design. 1.c Developed Design 1.d Technical Design 1.e Construction. 2 Develop and record the implementation of material efficiency, during: 2.a Developed Design 2.b Technical Design 2.c Construction. 3 Report the targets and actual material efficiencies achieved

Waste (Wst)

Wst 01 Construction waste management

To reduce construction waste by encouraging reuse, recovery and best practice waste management practicesto minimise waste going to landfill.

Assessment criteria

Is demolition occurring under the developer's ownership for the purpose of enabling the assessed development? :	Yes
Pre-demolition audit :	Yes
Compliant Resource Management Plan :	Yes
Have waste materials been sorted into separate key waste groups? :	Yes
Exemplary level criteria :	No

KPI

Measure/units for the data being reported :	m^3
Non-hazardous construction waste (excluding demolition/excavation) - fill in to award 'Construction resource efficiency' credits :	6.5 m3/100m2
Total non-hazardous construction waste generated :	
Non-hazardous non-demolition construction waste diverted from landfill - fill in to award diversion from landfill credit :	90 %
Total non-hazardous non-demolition construction waste diverted from landfill :	
Non-hazardous demolition waste diverted from landfill - fill in to award diversion from landfill credit :	90 %
Total non-hazardous demolition waste generated :	
Total non-hazardous demolition waste to disposal :	
Non-hazardous excavation waste diverted from landfill - fill in to award credit :	
Material for reuse :	
Material for recycling :	
Material for energy recovery :	
Hazardous waste to disposal :	-2 m3

Credits awarded : 4

Comments :

Pre-demolition audit credit targeted. Requires a pre-demolition audit of any existing buildings, structures or hard surfaces being considered for demolition. This must be used to determine whether refurbishment or reuse is feasible and, in the case of demolition, to maximise the recovery of material for subsequent high grade or value applications. This is also referred to in sections RMW 4, 5 and 6 of EHDC Sustainability Checklist. 2 credits targeted for construction resource efficiency. Requires main Contractor to prepare a compliant Resource Management Plan (RMP) covering: Non-hazardous waste materials (from on-site construction and dedicated off-site manufacture or fabrication. Accurate data records on waste arisings and waste management routes. Contractor to commit to achieving a construction waste benchmark of 7.5m3 or 6.5 Tonnes or less per 100m2 GIFA which will achieve 2 credits. 1 credit targeted for diversion from landfill. Requirement is that at least 70% of waste by volume or 80% by tonnage is diverted away from landfill.

Wst 02 Use of recycled and sustainably sourced aggregates

To encourage the use of more sustainably sourced aggregates, encourage reuse where appropriate and avoid waste and pollution arising from disposal of demolition and other forms of waste.

Assessment criteria

Is demolition occurring under the developer's ownership for the purpose of enabling the assessed development? :	Yes
Pre-requisite: pre-demolition audit :	Yes

Projects Sustainable Aggregate points :

KPI

Total quantity of aggregate :

% of high - grade aggregate that is recycled/ secondary aggregate by application :

Credits awarded : 0

Comments :

Credit not targeted. Requires 3.5 to 6 Project Sustainable Aggregate Points to be achieved. The Wst 02 calculator combines scores for regional mineral depletion, social cost of transport and carbon footprint.

Wst 03 Operational waste

To encourage the recycling of operational waste through the provision of dedicated storage

facilities and space.

Assessment criteria

Compliant recycling and non-recyclable waste storage allocated :	Yes
Static waste compactor(s) or baler(s) :	Yes
Vessel(s) for composting suitable organic waste and water outlet :	Yes

Credits awarded : 1

Comments :

Credit targeted. Requires a dedicated space for the segregation and storage of operational recyclable waste generated. The space needs to be: 1.a Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams 1.b Accessible to building occupants or facilities operators for the deposit of materials and collections by waste management contractors 1.c Of a capacity appropriate to the building type, size, number of units (if relevant) and predicted volumes of waste that will arise from daily or weekly operational activities and occupancy rates. 2 For consistent and large amounts of operational waste generated, provide: 2.a Static waste compactors or balers; situated in a service area or dedicated waste management space 2.b Vessels for composting suitable organic waste OR adequate spaces for storing segregated food waste and compostable organic material for collection and delivery to an alternative composting facility 2.c A water outlet provided adjacent to or within the facility for cleaning and hygiene purposes where organic waste is to be stored or composted on site. Consideration for recycling storage space is also referred to in section DL7 of EHDC Sustainability Checklist.

Wst 04 Speculative finishes (Offices only)

To minimise the wastage associated with the installation of floor and ceiling finishes in lettable areas in speculative buildings where tenants have not been involved in their selection.

Assessment criteria - N/A

Wst 05 Adaptation to climate change

To minimise the future need of carrying out works to adapt the building to take account of more extreme weather changes resulting from climate change and changing weather patterns.

Assessment criteria

Resilience of structure, fabric, building services and renewables installation :	Yes
Exemplary level - responding to climate change :	No

Credits awarded : 1

Comments :

Credit targeted. Requirements are as follows: Conduct a climate change adaptation strategy appraisal using: 1.a 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: 1.a.i Hazard identification 1.a.ii Hazard assessment 1.a.iii Risk estimation 1.a.iv Risk evaluation 1.a.v Risk management. 2 Develop recommendations or solutions based on the climate change adaptation strategy appraisal, before or during Concept Design, that aim to mitigate the identified impact. 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.

Wst 06 Design for disassembly and adaptability

To avoid unnecessary materials use, cost and disruption arising from the need for future adaptation works as a result of changing functional demands and to maximise the ability to reclaim and reuse materials at final demolition in line with the principles of a circular economy.

Assessment criteria

Design for disassembly and functional adaptability - recommendations :	Yes
Disassembly and functional adaptability - implementation :	Yes

Credits awarded : 2

Comments :

Credits targeted. Requirements are as follows: First credit - Design for disassembly and functional adaptability - recommendations: 1 Conduct a study to explore the ease of disassembly and the functional adaptation potential of different design scenarios by the end of Concept Design. 2 Develop recommendations or solutions based on the study, during or prior to Concept Design, that aim to enable and facilitate disassembly and functional adaptation. Second credit - Disassembly and functional adaptability - implementation Provide an update, during Technical Design, on: 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. Changes to the recommendations and solutions during the development of the Technical Design. Produce a building adaptability and disassembly guide to communicate the characteristics allowing functional adaptability and disassembly.

Land use and ecology (LE)

LE 01 Site selection

To encourage the use of previously occupied or contaminated land and avoid land which has not been previously disturbed.

Assessment criteria

Percentage of proposed development's footprint on previously occupied land: :
Contaminated land :

Credits awarded : 0

Comments :

Previously occupied land credit not targeted. Requirement is that at least 75% of the developments footprint is on previously developed land. Contaminated land credit not targeted as the land is not contaminated and does not require remediation.

LE 02 Ecological risks and opportunities

To determine the existing ecological value associated with the site and surrounding areas, and the risks and opportunities for ecological protection and enhancement.

Assessment criteria

Assessment route selection :	Comprehensive
Prerequisite - Statutory obligations :	Yes
Survey and Evaluation :	Yes
Determining ecological outcomes :	Yes
Exemplary level - Wider site sustainability :	No

Credits awarded : 2

Comments :

Prerequisite - Statutory obligations: The client or contractor confirms compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site. Comprehensive route (Route 2). Credit targeted. Requires a Suitably Qualified Ecologist (SQE) carries out a survey and evaluation for the site early enough to influence site preparation works, layout and, where necessary, strategic planning decisions (typically

preparation and brief stage) The SQE's survey and evaluation determines the site's ecological baseline including: Current and potential ecological value and condition of the site and related areas within the Zone of Influence. Direct and indirect risks to current ecological value from the project. Capacity and feasibility for enhancement of the site's ecological value. Determining ecological outcomes: Credit targeted. Requires the project team to liaise and collaborate with representative stakeholders early enough to influence key planning decisions (typically Concept Design stage), to: Identify the optimal ecological outcomes for the site. Identify, appraise and select measures to meet the optimal ecological outcomes for the site.

LE 03 Managing impacts on ecology

To avoid, or limit as far as possible, negative ecological impacts associated with the site and surrounding areas resulting from the project.

Assessment criteria

Assessment route :	Comprehensive
Prerequisite - Ecological risks and opportunities :	Yes

Credits awarded : 3

Comments :

Prerequisite - Ecological risks and opportunities. LE 02's 'Survey and evaluation and Determining ecological outcomes' criteria have been achieved using the Comprehensive route (Route 2). One credit targeted - Planning and measures on-site. Further planning to avoid and manage negative ecological impacts on-site is carried out early enough to influence the concept design and design brief as well as site preparation planning (typically Concept Design stage). On-site measures for managing negative ecological impacts during site preparation and construction are implemented in-practice (e.g. mitigation measures to protect existing ecological features) Criteria 2-3 are based on input from the project team in collaboration with representative stakeholders and data collated as part of the 'Determining ecological outcomes' in LE 02 Ecological risks and opportunities. Managing negative impacts 2 creditS targeted. Negative impacts from site preparation and construction works will be managed according to the mitigation hierarchy, in line with the SQE's recommendations and the loss of ecological value will be minimised.

LE 04 Ecological change and enhancement

To enhance ecological value of the area associated with the site in support of local, regional and national priorities.

Assessment criteria

Assessment route :	Comprehensive

Prerequisite - Managing negative impacts on ecology :	Yes
Ecological enhancement (Comprehensive route only) :	Yes
Change and enhancement of ecology (Comprehensive route only) :	3
Exemplary level criteria (Comprehensive route only) :	Yes

Credits awarded : 4
Exemplary credits awarded : 1

Comments :

One credit - Ecological enhancement comprehensive route. Requirements are that 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. Measures are implemented in the following order: - On site, and where this is not feasible, - Off site within the Zone of Influence. Up to three credits - Change and enhancement of ecology comprehensive route (Route 2). Up to three credits are awarded based on the change in ecological value occurring as a result of the project. This must be calculated in accordance with the process set out in GN36 - BREEAM, CEEQUAL and HQM Ecology Calculation Methodology - Route 2. Credits are awarded in line with the Reward Scale table in GN36 where there are no residual impacts on protected sites or irreplaceable habitats. Data collated are analysed and where potentially valuable, provided to the local environmental records centres nearest to, or relevant for, the site. Section GI6 of EHDC Sustainability Checklist requires at least 10% Biodiversity Net Gain.

LE 05 Long term ecology management and maintenance

To secure ongoing monitoring, management and maintenance of the site and its habitats and ecological features, to ensure intended outcomes are realised for the long term.

Assessment criteria

Assessment route :	Comprehensive
At least one credit achieved under LE 04 for 'Change and Enhancement of Ecologyâ :	Yes
Prerequisite - Statutory obligations, planning and site implementation :	Yes
Management and maintenance throughout the project :	Yes
Landscape and ecology management plan :	Yes

Credits awarded : 2

Comments :

Prerequisite - Statutory obligations, planning and site implementation: The client or contractor has confirmed that compliance is being monitored against all relevant UK, EU and international standards relating to the ecology of the site. The following must be achieved, according to the route being assessed: Comprehensive route (Route 2) - Criterion 8 in LE 03 has been achieved, and at least one credit under LE 04 for 'Change and Enhancement of Ecology' has been awarded. Management and maintenance throughout the project - credit targeted. Requires measures to be implemented to manage and maintain ecology throughout the project. Landscape and ecology management plan - credit targeted. Requires a Landscape and Ecology Management Plan to be developed in accordance with BS 42020:2013 Section 11.1 covering at least the first five years after project completion.

Pollution (Pol)

Pol 01 Impact of refrigerants

To reduce the level of greenhouse gas emissions arising from the leakage of refrigerants from building systems.

Leak detection

Are all the systems hermetically sealed? :	Yes

Assessment criteria

Total Direct Effect Life Cycle CO2eq (DELC). Emissions from the system :	999 kgCO2eq/kW
Prequisite: All systems (with electric compressors) comply with BSÂ EN 378:2016 (parts 2 and 3) and (where applicable) Institute of Refrigeration Ammonia Refrigeration Systems code of practice? :	Yes
Refrigerant containing systems installed in the assessed building? :	Yes
Global Warming Potential (GWP) of the specified refrigerant(s) 10 or less? :	No

Credits awarded : 2

Comments :

It is a prerequisite that all systems with electric compressors comply with the requirements of BS EN 378:2016. One credit awarded if systems using refrigerants to have a DELC of less than 1000kgCO2eq/kW cooling and heating capacity. One credit targeted for leak detection. Requirement is that all systems are hermetically sealed or only use environmentally benign refrigerants. OR Where the systems are not hermetically sealed, systems have: A permanent automated refrigerant leak detection system, that is robust and tested, and capable of continuously monitoring for leaks. OR An inbuilt automated diagnostic procedure for detecting leakage is enabled.

Pol 02 Local air quality

To contribute to a reduction in local air pollution through the use of low emission combustion appliances in the building.

Assessment criteria

Is the project required to connect to a District Heating system, and it supplies all heating and hot water demands to the building? :	No
How many credits have been achieved? :	2

Credits awarded : 2

Comments :

If all heating and hot water is supplied by non-combustion systems, for example, only powered by electricity then 2 credits can be awarded.

Pol 03 Flood and surface water management

To avoid, reduce and delay the discharge of rainfall to public sewers and watercourses, thereby minimising the risk and impact of localised flooding on-site and off-site, watercourse pollution and other environmental damage.

Assessment criteria

Prerequisite: Has an appropriate consultant demonstrated and confirmed the development's compliance with all criteria? :	Yes
Has a site-specific flood risk assessment been conducted? :	Yes
Annual probability of flooding :	Low
Has the pre-requisite for the Surface Water Run-Off credits been achieved? :	Yes
Has the Surface Water Run-Off - Rate credit been achieved? :	Yes
Flooding of property will not occur in the event of local drainage system failure :	Yes
Has the Surface Water Run-Off - Volume credit been achieved? :	Yes
Minimising watercourse pollution :	Yes

Credits awarded : 5

Comments :

First 2 credits targeted: Environment Agency flood map confirms that the site is in flood zone 1, an area with a low probability of flooding. To award the credits a site specific flood risk assessment is required confirming that the site has a low risk of flooding from all sources. Prerequisite for surface water run-off credits Surface water run-off design solutions must be bespoke, i.e. they must take account of the specific site requirements and natural or man-made environment of and surrounding the site. The priority levels detailed in the Methodology must be followed, with justification given by the appropriate consultant where water is allowed to leave the site. One credit - Surface Water Run-Off - Rate For Greenfield sites, drainage measures are specified so 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 pre-development site. This should comply at the 1-year and 100-year return period events. Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified Sustainable Drainage Systems (SuDS) are in place. Calculations include an allowance for climate change. This should be made in accordance with current best practice planning guidance. One credit - Surface Water Run-Off - Volume 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 EITHER Drainage design measures are specified so that the post-development run-off volume, over the development lifetime, is no greater than it would have been prior to the assessed site's development. This must be for the 100-year 6-hour event, including an allowance for climate change. Any additional predicted volume of run-off for this event is prevented from leaving the site by using infiltration or other SuDS techniques. OR 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. Drainage design measures are specified so that the post-development peak rate of run-off is reduced to the limiting discharge. The limiting discharge is defined as the highest flow rate from the following options: The pre-development one-year peak flow rate The mean annual flow rate (Qbar) 2L/s/ha. For the one-year peak flow rate, the one-year return period event criterion applies. Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS are in place. For either option, above calculations must include an allowance for climate change; this should be made in accordance with current best practice planning guidance. One credit minimising watercourse pollution. Assumed that there will be no discharge from the developed site for rainfall up to 5mm. Sustainable Drainage Systems are referred to in sections WR5 to WR9 of EHDC Sustainability Checklist.

Pol 04 Reduction of Night Time Light Pollution

To ensure that external lighting is concentrated in the appropriate areas and that upward lighting is minimised, reducing unnecessary light pollution, energy consumption and nuisance to neighbouring properties.

Assessment criteria

External lighting has been designed out? :	No
Does external lighting meet all relevant criteria? :	Yes

Credits awarded : 1

Comments :

Credit targeted. Requirement is that the external lighting strategy has been designed in compliance with Table 2 (and its accompanying notes) of the Institution of Lighting Professionals (ILP) Guidance notes for the reduction of obtrusive light, 2011. All external lighting (except for safety and security lighting) can be automatically switched off between 23:00 and 07:00. Note that the scheme will also have to comply with the local authorities dark night skies policy.

Pol 05 Noise attenuation

To reduce the likelihood of noise arising from fixed installations on the new development affecting nearby noise-sensitive buildings.

Assessment criteria

Noise-sensitive areas/buildings within 800m radius of the development : Yes

Is the site compliant with all relevant criteria? : Yes

Credits awarded : 1

Comments :

Credit targeted. Requirement is that where there are noise-sensitive areas within 800m radius of the assessed site, a noise impact assessment compliant with BS 4142:2014 is commissioned. The noise level from the assessed 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.

Innovation (Inn)

Inn 01 Innovation

To support innovation within the construction industry through the recognition of sustainability related benefits which are not rewarded by standard BREEAM issues.

Assessment criteria

Number of 'approved' innovation credits achieved? :	0

Credits awarded : 0