

BAM CONSTRUCT

Dunsbury Hill Farm Project Chaffinch

BREEAM Pre-assessment Summary

BAM Sustainability department
February 2020

1.0 Introduction

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

Project Name	Plot 4a, Dunsbury Park (DHF) - Project Chaffinch
BREEAM Version	BREEAM 2014 NC
Assessment Stage	Design Stage
Lead Assessor	Julia Messenger
Targeted Score	57.40%
Current Rating	Very Good

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1.0 Aims of BREEAM, and project requirement

BREEAM (Building Research Establishment's Environmental Assessment Method) is the world's first sustainability rating scheme for the built environment and has contributed much to the strong focus in the UK on sustainability in building design, construction and use. BREEAM is now an international standard that is locally adapted, operated and applied through a network of international operators, assessors and industry professionals. Through its application and use BREEAM helps clients measure and reduce the environmental impacts of their buildings and in doing so create higher value, lower risk assets.

To date, BREEAM has been used to certify over 260,000 building assessments across the building life cycle and it is being applied in over 50 countries. BREEAM aims to:

- mitigate the life cycle impacts of buildings on the environment
- enable buildings to be recognised according to their environmental benefits
- provide a credible, environmental label for buildings
- stimulate demand and create value for sustainable buildings, building products and supply chains.

Plot 4A is part of the larger Dunsbury Hill Park area, a major 45-acre industrial park at junction 3 of the A3(M) near Waterlooville, and consisting of approximately 10,880 m² of space, to be used as an industrial unit for process and manufacturing.

A BREEAM requirements of Very Good has been targeted for this project.

A BREEAM feasibility review has been conducted by at BAM using our own analysis with the in-house BREEAM Assessors and BREEAM Accredited Professionals.

2.0 Pre-assessment review

Based on reviews with members of the below listed members of BAM Design team, the Design Manager, and experience of BREEAM assessors, feasible credits which could be targeted were agreed:

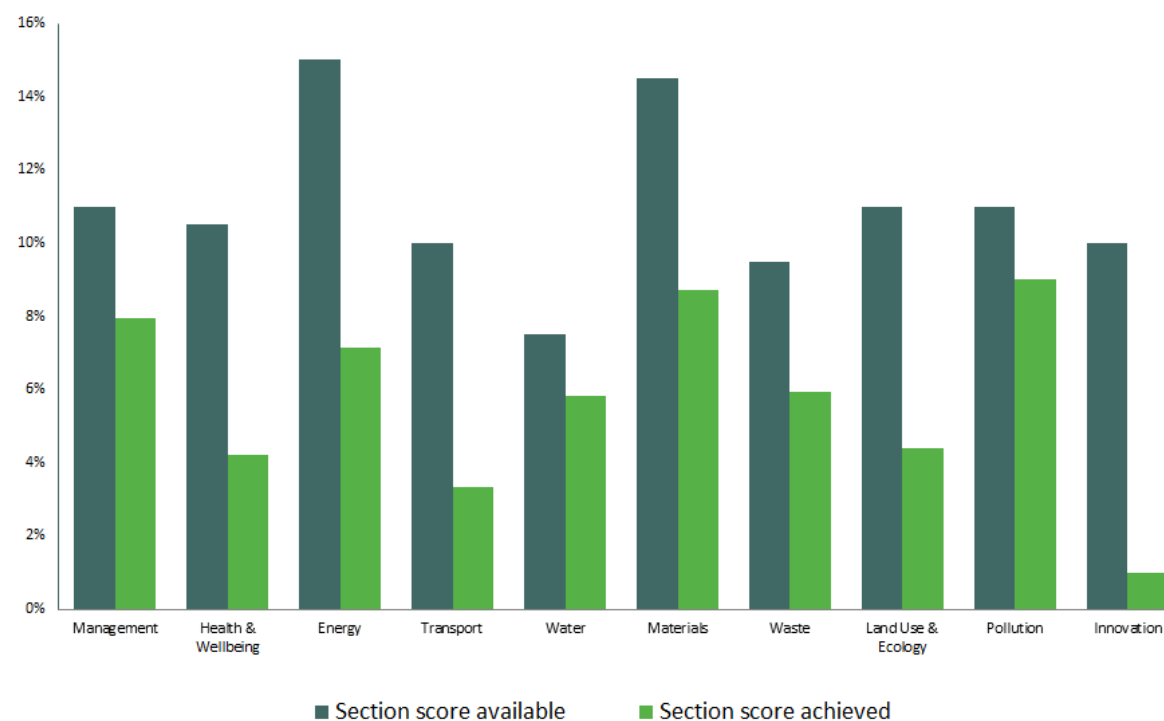
- David Burton – BAM Design – M&E
- Luke Heathcote – BAM Construction SE - Senior Design Manager
- Hardip Mann – BAM Sustainability – BREEAM AP
- Julia Messenger – BAM Sustainability - BREEAM Assessor

2.1 Pre-assessment review results

A BREEAM 2014 pre-assessment exercise was undertaken, and a basic score of 57.4% was agreed which achieves a 'Very Good' rating (the Very Good threshold is 55%). The output from the pre-assessment tool, including all of the credits targeted, are included in Appendix A, but the table below shows a summary of the credits achieved in each section.

Building name	Plot 4A
BREEAM rating	Very Good
Total Score	57.4%
Min. standards level achieved	Very Good level

Building Performance by Environmental Section



2.2 Minimum Standards for Very Good

In addition performance against the minimum standards required for Very Good are summarised below:

Issue	Very Good	Minimum standard achieved
Man04 - Commissioning and handover	Yes	Commissioning test schedule and responsibilities
Man04 – Building User Guide	Yes	A BREEAM-compliant Building User Guide must be produced
Ene 02 - Energy Monitoring	Yes	Sub-metering major energy consuming systems will be provided
Wat 01 - Water Consumption	Yes	12.5% improvement in water efficiency is required, DHF is targeting 40%
Wat02 – Water monitoring	Yes	A mains water meter to the supply to the building
Mat 03 - Responsible Sourcing of Materials	Yes	All timber used on the project will be sourced in accordance with the Government's Timber Procurement Policy.
LE 03 - Minimising impact on existing site ecology	Yes	One credit of the two available will be achieved

3.0 Recommendations

The current score targeted is only just above the 55% threshold of Very Good. We would recommend that additional credits are targeted to gain greater re-assurance that the score safely exceeds the 55%. Normally we would recommend targeting at approximately 5-10% above the threshold, in this case at least 55 to 60%. However this may translate to incorporating credits that may be at cost. The following table outlines credits which 'could' be targeted to ensure that the score safely exceeds the 55% very Good rating:

4.0 Additional potential cost credits

Credit	Comment	Approximate cost	Credit value Per credit (%)
Man 02 - Life Cycle Costing	Elemental and component life cycle costing is undertaken to improve design, specification, through-life maintenance and operation. To achieve the credits, BREEAM specific reports will need to be undertaken. (3 credits possible) Must be undertaken RIBA stage 2.	£10-15K	0.61 (per credit) – total 1.83%
Man 04 – Thermographic survey	Complete 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. (1 credit)	£5K	0.61
Hea04 – thermal comfort (for projected climate change scenario)	The thermal comfort Standard need to be met, or shown to be facilitated to be met, for a climate change scenario	£5 – 10 K	1.05
Ene 02 – energy monitoring of high energy load and tenancy areas	Energy monitoring facilities need to be provided for office areas, operational areas and catering, where present.	Project dependent	0.71
Pol 05 – Noise attenuation	Noise impact assessment and attenuation implementation for any 'noise sensitive' premises within 800m radius.	Tbc by acoustician	1.00
TOTAL further investment £ and % score uplift	The costs are estimates only, and need to be confirmed.	£20-30K plus	5.2%

5.0 Conclusions

Having reviewed targeted credits with the design team it was agreed that the most realistic BREEAM score to target was 57.4%, the threshold for a Very Good rating being 55%. A secure Very Good rating would require further investment. As a full certification is needed, we would recommend additional credits are also targeted to allow for a 5%+ 'buffer', as shown in section 4.0 above, giving a total targeted score of 62.6%. A buffer gives reassurance that in the event some credits are no longer achievable as the design progresses, then the rating required is not at risk.

Please note that the current targeted score includes credits that have been agreed based on the Design teams' and BREEAM Assessors' scheme knowledge and BREEAM experience respectively. In order to achieve the targeted credit for full BREEAM credits for full certification, would need to have 'BREEAM compliant' evidence provided for assessor assessment, and then quality assurance of this by the BRE (please note that there will be BRE audit fees).

Appendix A – full BREEAM

Pre-assessment

BREEAM UK New Construction 2014 Assessment Report: Assessment Issue Scoring



Building name	Plot 4A
Building score (%)	57.40%
Building rating	Very Good
Minimum standards level achieved	Very Good level

MANAGEMENT

Man 01 Project brief and design

No. of BREEAM credits available	4	Available contribution to overall score	2.44%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Stakeholder consultation (project delivery)	Yes	1	1
Stakeholder consultation (third party)	No	1	0
Sustainability champion (design)	Yes	1	1
Sustainability champion (monitoring progress)	Yes	1	1

Total BREEAM credits achieved	3
Total contribution to overall building score	1.83%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Assessor comments/notes:

Man 02 Life cycle cost and service life planning

No. of BREEAM credits available	4	Available contribution to overall score	2.44%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Elemental life cycle cost (LCC)	No	2	0
Component level LCC plan	No	1	0
Capital cost reporting	Yes	1	1
Capital cost of the project	£1,405	£/m ²	

Total BREEAM credits achieved	1
Total contribution to overall building score	0.61%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Assessor comments/notes:

Man 03 Responsible construction practices

No. of BREEAM credits available	6	Available contribution to overall score	3.67%
No. of BREEAM innovation credits available	1	Minimum standards applicable	Yes

Assessment Criteria

	Compliant?	Credits available	Credits achieved
Is all site timber used in the project 'legally harvested and traded timber'?	Yes		
Environmental Management	Yes	1	1
Construction stage sustainability champion	Yes	1	1
Considerate construction	2	2	2
Monitoring of construction site impact (criterion 8)	Yes		
Utility consumption (water and energy)	Yes	1	1
Transport of construction materials and waste	Yes	1	1
Exemplary level criteria - considerate construction	Yes	1	1

Key Performance Indicators: Construction site energy use

Energy consumption (total) - site processes		Information not available at design stage
Energy consumption (intensity) - site processes		Information not available at design stage
Distance (total) - materials transport to site		Information not available at design stage
Distance (total) - waste transport from site		Information not available at design stage
Energy consumption (total) - materials transport to site		Information not available at design stage
Energy consumption (total) - waste transport from site		Information not available at design stage
Energy consumption (intensity) - materials transport to site		Information not available at design stage
Energy consumption (intensity) - waste transport from site		Information not available at design stage

Key Performance Indicators: Construction site greenhouse gas emissions

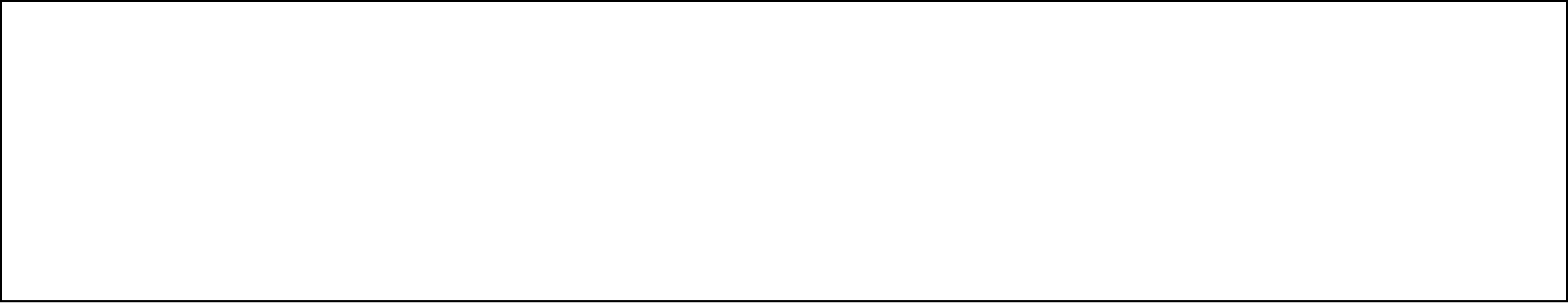
Process greenhouse gas emissions (total) - site processes		Information not available at design stage
Greenhouse gas emissions (intensity) - site processes		Information not available at design stage
Greenhouse gas emissions (total) - materials transport to site		Information not available at design stage
Greenhouse gas emissions (total) - waste transport from site		Information not available at design stage
Greenhouse gas emissions (intensity) - materials transport to site		Information not available at design stage
Greenhouse gas emissions (intensity) - waste transport from site		Information not available at design stage

Key Performance Indicators: Construction site use of freshwater resources

Use of freshwater resource (total) - site processes		Information not available at design stage
Use of freshwater resource (intensity) - site processes		Information not available at design stage

Total BREEAM credits achieved	6
Total contribution to overall building score	3.67%
Total BREEAM innovation credits achieved	1
Minimum standard(s) level	Outstanding level

Assessor comments/notes:



Man 04 Commisioning and handover

No. of BREEAM credits available	4	Available contribution to overall score	2.44%
No. of BREEAM innovation credits available	0	Minimum standards applicable	Yes

Assessment Criteria	Compliant?	Credits available	Credits achieved
Commissioning and testing schedule and responsibilities	Yes	1	1
Commissioning building services	Yes	1	1
Testing and inspecting building fabric	No	1	0
Handover - Has a Building User Guide been developed prior to handover?	Yes	1	1
Handover - Has a training schedule been prepared fo building occupiers/managers?			

Total BREEAM credits achieved	3
Total contribution to overall building score	1.83%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	Outstanding level

Assessor comments/notes:

Man 05 Aftercare

Assessment issue not applicable

No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Assessment Criteria	Compliant?	Credits available	Credits achieved
Aftercare support			
Seasonal commissioning			
Post occupancy evaluation			
Exemplary level criteria			

Total BREEAM credits achieved	N/A
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Total contribution to overall building score	N/A
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Assessor comments/notes:

HEALTH & WELLBEING

Hea 01 Visual Comfort

No. of BREEAM credits available	3	Available contribution to overall score	3.15%
No. of BREEAM innovation credits available	1	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Glare control			
Daylighting (building type dependant)	0	1	0
View out	No	1	0
Internal and external lighting levels, zoning and controls	Yes	1	1
Exemplary level daylighting	No	1	0

Total BREEAM credits achieved	1
Total contribution to overall building score	1.05%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Assessor comments/notes:

Hea 02 Indoor Air Quality

No. of BREEAM credits available	2	Available contribution to overall score	2.10%
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Indoor air quality (IAQ) plan			
Ventilation	No	1	0
VOCs (products)			
VOCs (post-construction)			

Adaptability - potential for natural ventilation	No	1	0
Exemplary level VOCs (products)			

Key Performance Indicators: Indoor air quality

Concentration levels of formaldehyde		Information not available at design stage
Total volatile organic compound (TVOC) concentration		Information not available at design stage

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Assessor comments/notes:

Hea 03 Safe containment in laboratories

Assessment issue not applicable

No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Assessment Criteria	Compliant?	Credits available	Credits achieved
Objective risk assessment of laboratory facilities			
Laboratory containment devices and containment areas			
Containment level 2 and 3 labs			
Total BREEAM credits achieved	N/A		
Total contribution to overall building score	N/A		
Total BREEAM innovation credits achieved	N/A		
Minimum standard(s) level	N/A		

Assessor comments/notes:

Hea 04 Thermal comfort

No. of BREEAM credits available	2	Available contribution to overall score	2.10%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Thermal modelling	Yes	1	1
Adaptability - for a projected climate change scenario	No	1	0

Key Performance Indicators	Thermal comfort	For a projected climate scenario
Predicted Mean Vote (PMV)	-0.10	
Predicted Percentage Dissatisfied (PPD)	5.90%	

Total BREEAM credits achieved	1
Total contribution to overall building score	1.05%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

Hea 05 Acoustic Performance

No. of BREEAM credits available	1	Available contribution to overall score	1.05%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

	Credits	Credits available	Credits achieved
Acoustic performance standards and testing requirements	1	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	1.05%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

Hea 06 Safety and Security

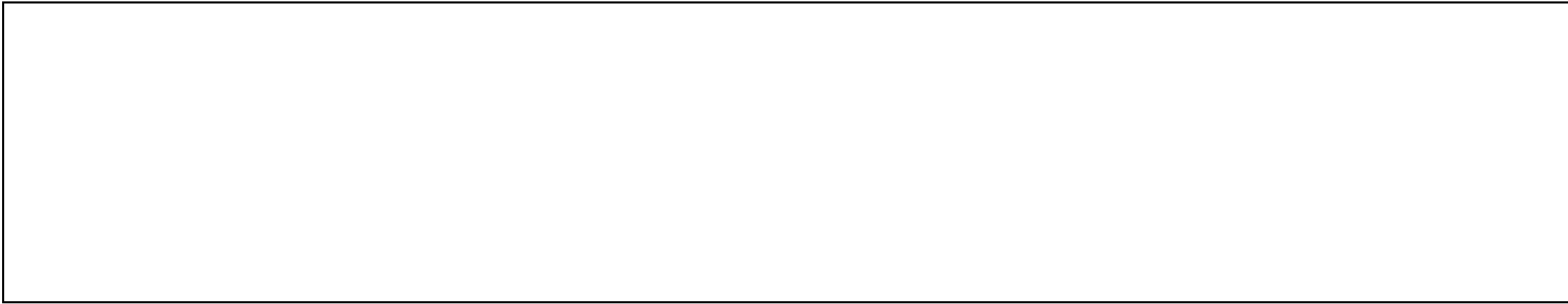
No. of BREEAM credits available	2	Available contribution to overall score	2.10%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

	Compliant?	Credits available	Credits achieved
Safe external access	Yes	1	1
Security of site and building	No	1	0

Total BREEAM credits achieved	1
Total contribution to overall building score	1.05%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:



ENERGY

Ene 01 Reduction of energy use and carbon emissions

No. of BREEAM credits available	12	Available contribution to overall score	8.57%
No. of BREEAM innovation credits available	5	Minimum standards applicable	Yes

Ene 01 Calculator

Country of the UK where the building is located	England	Confirm building regulation and version used:	England Part L2A 2013
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New Construction (shell and core)

Notional building heating and cooling energy demand	176.16	MJ/m2 yr
Actual building heating and cooling energy demand	134.53	MJ/m2 yr
Notional building primary energy consumption	223.79	kWh/m2 yr
Actual building primary energy consumption	223.97	kWh/m2 yr
Target emission rate (TER)	39.00	kgCO2/m2 yr
Building emission rate (BER)	38.90	kgCO2/m2 yr
Building emission rate improvement over TER	0.3%	
Heating & cooling demand energy performance ratio (EPR _{DEM})	0.235	
Primary consumption energy performance ratio (EPR _{PC})	0.000	
CO ₂ Energy performance ratio (EPR _{CO2})	0.004	
Overall building energy performance ratio (EPR _{NC})	0.239	

Where specified, please confirm the energy production from onsite or near site energy generation technologies	
Equivalent % of the building's 'regulated' energy consumption generated by carbon neutral sources and used to meet energy demand from 'unregulated' building systems or processes?	
Is the building designed to be 'carbon negative' ?	
If the building is defined as 'carbon negative' what is the total (modelled) renewable/carbon neutral energy generated and exported?	

Total BREEAM credits achieved	3
Total contribution to overall building score	2.14%

Total BREEAM innovation credits achieved	0
Minimum standard(s) level	Very Good level

Assessor comments/notes:

To be updated once the intial BRUKL has been undertaken. For now a comparative project has been included.

Ene 02 Energy monitoring

No. of BREEAM credits available	2	Available contribution to overall score	1.43%
No. of BREEAM innovation credits available	0	Minimum standards applicable	Yes

Assessment criteria

	Compliant?	Credits available	Credits achieved
Sub-metering of major energy consuming systems	Yes	1	1
Sub-metering of high energy load and tenancy areas	No	1	0

Total BREEAM credits achieved	1
Total contribution to overall building score	0.71%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	Outstanding level

Assessor comments/notes:

Ene 03 External lighting

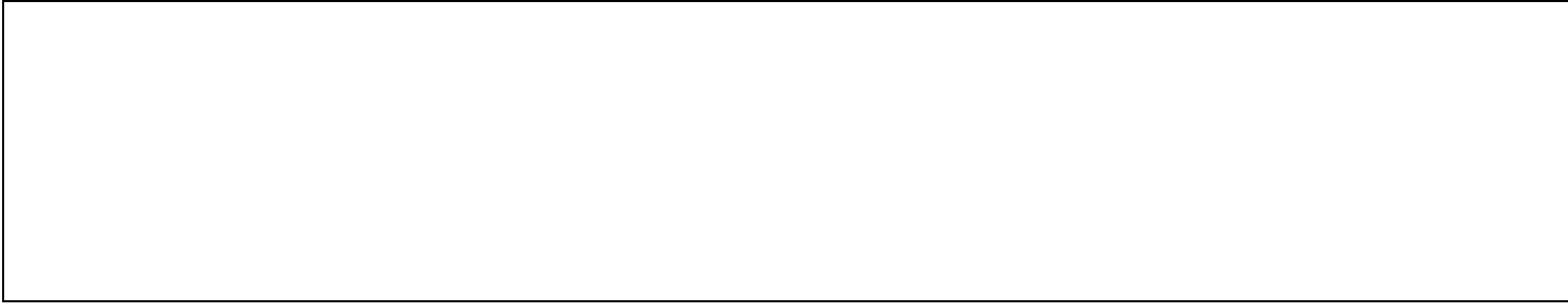
No. of BREEAM credits available	1	Available contribution to overall score	0.71%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment criteria

	Compliant?	Credits available	Credits achieved
External lighting specification	Yes	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	0.71%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:



Ene 04 Low carbon design

No. of BREEAM credits available	3	Available contribution to overall score	2.14%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment criteria	Compliant?	Credits available	Credits achieved
Passive design analysis	Yes	1	1
Free cooling	No	1	0
Low and zero carbon technologies	Yes	1	1

KPI - Low and/or zero carbon energy generation

Total on-site and/or near-site LZC energy generation kWh/yr

Total BREEAM credits achieved	2
Total contribution to overall building score	1.43%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

Ene 05 Energy efficient cold storage

Assessment issue not applicable

No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Assessment criteria	Compliant?	Credits available	Credits achieved
Refrigeration energy consumption		N/A	N/A

Indirect greenhouse gas emissions		N/A	N/A
Total BREEAM credits achieved	N/A		
Total contribution to overall building score	N/A		
Total BREEAM innovation credits achieved	N/A		
Minimum standard(s) level	N/A		

Assessor comments/notes:

Ene 06 Energy efficient transportation systems

No. of BREEAM credits available	3	Available contribution to overall score	2.14%
No. of BREEAM innovation credits available	0	Minimum standards applicable	N/A

Assessment criteria	Compliant?	Credits available	Credits achieved
Energy consumption	Yes	1	1
Energy efficient features	Yes	2	2

Total BREEAM credits achieved	3
Total contribution to overall building score	2.14%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

Ene 07 Energy efficient laboratory systems

Assessment issue not applicable

No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Assessment criteria	Compliant?	Credits available	Credits achieved
Pre-requisite: Criterion 1 of Hea 03 - risk assessment of laboratory facilities			
Design specification			
Design Specification- Containment Device Criteria			
Best Practice Energy Practices in Laboratories (table 27)			
Item b) Fan power			
Item c) Fume cupboard volume flow rates			
Item d) Grouping / isolation of high filtration/ventilation activities			
Item e) Energy recovery - heat			
Item f) Energy recovery - cooling			
Item g) Grouping of cooling loads			

	Item h) Free cooling	
	Item i) Load responsiveness	
	Item j) Cleanrooms	
	Item k) Diversity	
	Item l) Room air-change rates	

Total BREEAM credits achieved	N/A
Total contribution to overall building score	N/A
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

Ene 08 Energy efficient equipment

Assessment issue not applicable

No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Assessment criteria	Present?	Major impact
Ref A Small power and plug in equipment		
Ref B Swimming pool		
Ref C Communal laundry		
Ref D Data centre		
Ref E IT-intensive operation areas		
Ref F Residential areas		
Ref G Healthcare		
Ref H Kitchen and catering facilities		

	Compliant	Credits available	Credits achieved
Significant majority contributors BREEAM compliant			

Total BREEAM credits achieved	N/A
Total contribution to overall building score	N/A
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

Ene 09 Drying space

Assessment issue not applicable

No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Assessment criteria	Compliant?	Credits available	Credits achieved
Is there a risk of ligature for residents?			

Residential internal/external drying space and fixings provided?	
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Total BREEAM credits achieved	N/A
Total contribution to overall building score	N/A
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

TRANSPORT

Tra 01 Public Transport Accessibility

No. of BREEAM credits available	3	Available contribution to overall score	3.33%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Building type category (for purpose of Tra01 issue assessment)	Business (office/industrial)
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Assessment Criteria	Compliant	Credits available	Credits achieved
Public transport accessibility index	3.38	3	1
Building dedicated bus service			N/A
Total BREEAM credits achieved	1		
Total contribution to overall building score	1.11%		
Total BREEAM innovation credits achieved	N/A		
Minimum standard(s) level	N/A		

Assessor comments/notes:

Tra 02 Proximity to Amenities

No. of BREEAM credits available	1	Available contribution to overall score	1.11%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Close proximity and accessible to applicable amenities	No	1	0
Total BREEAM credits achieved	0		

Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

Tra 03 Cyclist facilities

No. of BREEAM credits available	2	Available contribution to overall score	2.22%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Building type category (for purpose of Tra03 issue assessment)	Business - (office/Industrial)
Number of compliant cycle storage spaces provided	10
Cyclist facilities provided	Showers and drying space

Assessment Criteria

	Compliant?	Credits available	Credits achieved
Cycle storage spaces	Yes	2	2
Cyclist facilities	Yes		

Total BREEAM credits achieved	2
Total contribution to overall building score	2.22%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

Tra 04 Maximum Car Parking Capacity

No. of BREEAM credits available	2	Available contribution to overall score	2.22%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Building type category (for purpose of Tra04 issue)	Business - (office/Industrial)
Buildings Accessibility Index (sourced from issue Tra01)	3.38

Assessment Criteria

Compliant? Credits available Credits achieved

Maximum parking capacity	No	2	
Total BREEAM credits achieved	0		
Total contribution to overall building score	0.00%		
Total BREEAM innovation credits achieved	N/A		
Minimum standard(s) level	N/A		

Assessor comments/notes:

Tra 05 Travel Plan

No. of BREEAM credits available	1	Available contribution to overall score	1.11%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

	Compliant?	Credits available	Credits achieved
Transport plan based on site specific travel survey/assessment	No	1	0

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

WATER

Wat 01 Water Consumption

No. of BREEAM credits available	5	Available contribution to overall score	4.17%
No. of BREEAM innovation credits available	1	Minimum standards applicable	Yes

Please select the calculation procedure used	Standard approach
Components are not being specified and installed by the developer, but they will be specified by the tenant.	No

Standard approach data

Water Consumption from building micro-components	17.96	L/person/day
Water demand met via greywater/rainwater sources	0.00	L/person/day
Total net water consumption	17.96	L/person/day

Improvement on baseline performance	47.90%	%
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Key Performance Indicator - use of freshwater resource

Total net Water Consumption	17.96	m3/person/yr
Default building occupancy	26.36	

Alternative approach data

Overall microcomponent performance level achieved	

Total BREEAM credits achieved	3	
Total contribution to overall building score	2.50%	
Total BREEAM innovation credits achieved	0	
Minimum standard(s) level	Outstanding level	

Assessor comments/notes:

Exact figures to be updated but for now comparative project figures have been used.

Wat 02 Water Monitoring

No. of BREEAM credits available	1	Available contribution to overall score	0.83%
No. of BREEAM innovation credits available	0	Minimum standards applicable	Yes

Assessment Criteria

	Compliant?	Credits available	Credits achieved
Water meter on the mains water supply to the building(s)	Yes	1	1
Metering/monitoring equipment on supply to plant/building areas	Yes		
Pulsed output or other open protocol communication output	Yes		
Existing BMS connection	Yes		

Total BREEAM credits achieved	1
Total contribution to overall building score	0.83%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	Outstanding level

Assessor comments/notes:

Wat 03 Water Leak Detection and Prevention

No. of BREEAM credits available	2	Available contribution to overall score	1.67%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

	Compliant?	Credits available	Credits achieved
Leak detection on building's mains water supply	Yes	1	1
Flow control device to each sanitary area/facility	Yes	1	1

Total BREEAM credits achieved	2
Total contribution to overall building score	1.67%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

Wat 04 Water Efficient Equipment

No. of BREEAM credits available	1	Available contribution to overall score	0.83%
No. of BREEAM innovation credits available	No	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Has a meaningful reduction in unregulated water demand been achieved?	Yes	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	0.83%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

MATERIALS

Mat 01 Life Cycle Impacts

No. of BREEAM credits available	2	Available contribution to overall score	2.90%
No. of BREEAM innovation credits available	3	Minimum standards applicable	No

Assessment Criteria	Total Mat01 credits achieved	2
	Total Mat01 points achieved	4.92
	Number of building elements assessed	2
	Exemplary level compliant?	No
	Has IMPACT compliant software been used?	No

This information is sourced from the Mat 01 Calculator	External walls	2748	160424	2748
	Windows	INA	INA	INA
	Roof	3156	299820	3156
	floor construction	INA	INA	INA
	Internal wall	INA	INA	INA
	finishes/coverings	INA	INA	INA

Key Performance Indicator - embodied green house gas emissions for building (assessed elements only)

Total embodied green house gas emissions for building (by assessed elements)	460244	kgCO ₂ eq.		kgCO ₂ eq./m ²
Proportion of applicable building elements that data reported covers	100%			

Total BREEAM credits achieved	2
Total contribution to overall building score	2.90%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Assessor comments/notes:

Exact figures to be updated but for now comparative figures have been used.

Mat 02 Hard Landscaping and Boundary Protection

No. of BREEAM credits available	1	Available contribution to overall score	1.45%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

	Compliant?	Credits available	Credits achieved
External hard landscaping and boundary protection	No	1	0

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

Mat 03 Responsible Sourcing

No. of BREEAM credits available	4	Available contribution to overall score	5.80%
No. of BREEAM innovation credits available	1	Minimum standards applicable	Yes

Assessment Criteria

	Compliant	Credits available	Credits achieved
All timber and timber based products are 'Legally harvested and trader timber'	Yes		
Is there a documented sustainable procurement plan	Yes	1	1
Percentage of available responsible sourcing of materials points achieved	35.00%	3	1

Please confirm the route used to assess Mat03	Please select
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Total BREEAM credits achieved	2
Total contribution to overall building score	2.90%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	Outstanding level

Assessor comments/notes:

Mat 04 Insulation

No. of BREEAM credits available	1	Available contribution to overall score	1.45%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

		Credits available	Credits achieved
Embodied impact - insulation index	3.00	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	1.45%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

Mat 05 Designing for durability and resilience

No. of BREEAM credits available	1	Available contribution to overall score	1.45%
No. of BREEAM innovation credits available	0	Minimum standards applicable	N/A

Assessment Criteria

	Compliant?	Credits available	Credits achieved
Protecting vulnerable parts of the building from damage	Yes	1	1
Protecting exposed parts of the building from material degradation	Yes		

Total BREEAM credits achieved	1
Total contribution to overall building score	1.45%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

Mat 06 Material efficiency

No. of BREEAM credits available	1	Available contribution to overall score	1.45%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

	Compliant?	Credits available	Credits achieved
Material optimisation measures investigated and implemented at relevant stages	No	1	0
Total BREEAM credits achieved		0	
Total contribution to overall building score		0.00%	
Total BREEAM innovation credits achieved		N/A	
Minimum standard(s) level		N/A	

Assessor comments/notes:

WASTE

Wst 01 Construction Waste Management

No. of BREEAM credits available	4	Available contribution to overall score	4.75%
No. of BREEAM innovation credits available	1	Minimum standards applicable	Yes

Assessment Criteria	Compliant?
Construction resource management plan	Yes
Demolition taking place on site?	No
Compliant Pre-demolition audit	
Does the excavation waste meet the exemplary level requirements?	Yes

Key Performance Indicators - Construction Waste

Measure/units for the data being reported	volume		
Non-hazardous construction waste (excluding demolition/excavation)	13.30	m3/100m2	Note: If data not available then insert
Total non-hazardous construction waste generated		m3	Note: At the design stage of assessme
Non-hazardous non-demolition const. waste diverted from landfill	92.70%	%	Note: At the design stage this will be :
Total non-hazardous non-demolition const. waste diverted from landfill		m3	Note: At the design stage of assessme
Total non-hazardous demolition waste generated	INA	m3	Note: At the design stage this will be :
Non-hazardous demolition waste diverted from landfill	INA	%	Note: At the design stage this will be :
Total non-hazardous demolition waste to disposal	INA	m3	Note: At the design stage of assessme
Material for reuse	INA	m3	Note: At the design stage this will be :
Material for recycling	INA	m3	Note: At the design stage this will be :
Material for energy recovery	INA	m3	Note: At the design stage this will be :
Hazardous waste to disposal	INA	m3	Note: At the design stage this will be :

Total BREEAM credits achieved	2
Total contribution to overall building score	2.38%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	Outstanding level

Assessor comments/notes:

Wst 02 Recycled Aggregates

No. of BREEAM credits available	1	Available contribution to overall score	1.19%
No. of BREEAM innovation credits available	1	Minimum standards applicable	No

Assessment Criteria

Assessment Criteria		Standard	Exemplary		
Total % of high-grade aggregate that is recycled/secondary aggregate		Input Required	Input Required		
		% of aggregate that is recycled / secondary	Total Quantity of Aggregate (Weight or Volume)	Aggregate Included in Calculation	
				Standard	Exemplary
Structural frame Bitumen/hydraulically bound base, binder and surface courses Building foundations Concrete road surfaces Pipe bedding Granular fill and capping				0	0
				0	0
				0	0
				0	0
				0	0
				0	0
			0	0	0
Total BREEAM credits achieved		0			
Total contribution to overall building score		0.00%			
Total BREEAM innovation credits achieved		0			
Minimum standard(s) level		N/A			

Assessor comments/notes:

Wst 03 Operational Waste

No. of BREEAM credits available	1	Available contribution to overall score	1.19%
No. of BREEAM innovation credits available	0	Minimum standards applicable	Yes

Assessment Criteria

Assessment Criteria	Compliant?	Credits available	Credits achieved
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Segregation and storage of operational recyclable waste volumes Static waste compactor(s) or baler(s) Vessel(s) for composting suitable organic waste	Yes	1	1
	N/A		
	N/A		

Total BREEAM credits achieved	1
Total contribution to overall building score	1.19%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	Outstanding level

Assessor comments/notes:

Wst 04 Speculative Floor and Ceiling Finishes**Assessment issue not applicable**

No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Assessment Criteria

Compliant?

Credits available

Credits achieved

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Total BREEAM credits achieved	N/A
Total contribution to overall building score	N/A
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

Wst 05 Adaption to climate change

No. of BREEAM credits available	1	Available contribution to overall score	1.19%
No. of BREEAM innovation credits available	1	Minimum standards applicable	N/A

Assessment Criteria

Compliant?

Credits available

Credits achieved

Adaption to climate change - structural and fabric resilience	Yes	1	1
Exemplary level - responding to adaptation to climate change	No	1	0

Total BREEAM credits achieved	1
Total contribution to overall building score	1.19%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Assessor comments/notes:

Wst 06 Functional adaptability

No. of BREEAM credits available	1	Available contribution to overall score	1.19%
No. of BREEAM innovation credits available	0	Minimum standards applicable	N/A

Assessment Criteria		Compliant?	Credits available	Credits achieved
Functional adaptability		Yes	1	1
Total BREEAM credits achieved	1			
Total contribution to overall building score	1.19%			
Total BREEAM innovation credits achieved	N/A			
Minimum standard(s) level	N/A			

Assessor comments/notes:

LAND USE & ECOLOGY

LE 01 Site Selection

No. of BREEAM credits available	2	Available contribution to overall score	2.20%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

		Compliant?	Credits available	Credits achieved
	Previously occupied land	No	1	0
	Contaminated land	No	1	0

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

LE 02 Ecological Value of Site and Protection of Ecological Features

No. of BREEAM credits available	2	Available contribution to overall score	2.20%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Ecological value of the land defined using	Please select
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Assessment Criteria	Compliant?	Credits available	Credits achieved
Land of low ecological value	No	1	0
Protection of ecological features	No	1	0

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

LE 03 Mitigating Ecological Impact

No. of BREEAM credits available	2	Available contribution to overall score	2.20%
No. of BREEAM innovation credits available	0	Minimum standards applicable	Yes

Data sourced for calculating the change in ecological value from	Suitably Qualified Ecologist site survey of plant species
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Assessment Criteria		
Change in ecological value	-9.00	Plant species richness

Total BREEAM credits achieved	1
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Total contribution to overall building score	1.10%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	Outstanding level

Assessor comments/notes:

LE 04 Enhancing Site Ecology

No. of BREEAM credits available	2	Available contribution to overall score	2.20%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Suitably Qualified Ecologist appointment (SQE) Ecologist's report and recommendations Increase in ecological value	Yes	2	1
	Yes		
	0	Plant species richness	

Total BREEAM credits achieved	1
Total contribution to overall building score	1.10%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

LE 05 Long Term Impact on Biodiversity

No. of BREEAM credits available	2	Available contribution to overall score	2.20%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Suitably qualified ecologist (SQE) appointed Landscape and habitat management plan Number of applicable measures Number of applicable measures implemented	Yes	2	2
	Yes		
	6		
	4		

Total BREEAM credits achieved	2
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Total contribution to overall building score	2.20%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

POLLUTION

Pol 01 Impact of Refrigerants

No. of BREEAM credits available	3	Available contribution to overall score	3.00%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

		Credits available	Credits achieved
Refrigerant containing systems installed in the assessed building?	No	3	3
BS EN 378:2008 and IoR Ammonia Refrigeration Systems CoP (where applicable)?			
Global Warming Potential of the specified refrigerant(s) 10 or less?			
Total Direct Effect Life Cycle CO ₂ eq. emissions from the system		kgCO ₂ eq/kW coolth capacity	
Cooling/Heating capacity of the system		kW	
BREEAM compliant refrigerant leak detection and containment		0	0

Total BREEAM credits achieved	3
Total contribution to overall building score	3.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

Pol 02 NO_x Emissions

No. of BREEAM credits available	1	Available contribution to overall score	1.00%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

Nox Emission Levels for Heating and Hot Water in Office areas	29.8	mg/kWh
NO _x emission level - space heating	29.80	mg/kWh
NO _x emission level - cooling	0.00	mg/kWh
NOx emission level - water heating		mg/kWh

Does this building meet BREEAM's definition of a highly insulated building? Energy consumption: heating and hot water	N/A	kWh/m2 yr
	38.17	

Total BREEAM credits achieved	1
Total contribution to overall building score	1.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

Pol 03 Surface Water Run off

No. of BREEAM credits available	5	Available contribution to overall score	5.00%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

	Compliant?	Credits available	Credits achieved
Annual probability of flooding	Low		
Flood Risk Assessment	Yes	2	2
Surface water run off – peak rate	Yes	1	1
Surface water run off – volume, attenuation and/or limiting discharge	Yes	1	1
Minimising watercourse pollution	No	1	0

Total BREEAM credits achieved	4
Total contribution to overall building score	4.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

Pol 04 Reduction of Night Time Light Pollution

No. of BREEAM credits available	1	Available contribution to overall score	1.00%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

	Compliant?	Credits available	Credits achieved
External lighting specification	Yes	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	1.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

Pol 05 Noise Attenuation

No. of BREEAM credits available	1	Available contribution to overall score	1.00%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant	Credits available	Credits achieved
Noise-sensitive areas/buildings within 800m radius of the development	Yes	1	0
Noise impact assessment and, if applicable, noise attenuation measures	No		

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

INNOVATION

Inn 01 Innovation

No. of BREEAM innovation credits available	10	Available contribution to overall score	10.00%
		Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Man 03 Responsible construction practices	Yes	1	1
Man 05 Aftercare	N/A	N/A	0
Hea 01 Visual Comfort	No	1	0
Hea 02 Indoor Air Quality	N/A	N/A	0
Ene 01 Reduction of energy use and carbon emissions	No	5	0
Wat 01 Water Consumption	No	1	0
Mat01 Life Cycle Impacts	No	3	0
Mat03 Responsible Sourcing of Materials	No	1	0

Wst01 Construction Waste Management	No	1	0
Wst02 Recycled Aggregates	No	1	0
Wst 05 Adaption to climate change	No	1	0

Number of 'approved' innovation credits achieved?	
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Total BREEAM innovation credits achieved	1
Total contribution to overall building score	1.00%
Minimum standard(s) level	N/A

Assessor comments/notes: