

Project

The Heights School, Reading
BREEAM New Construction 2018
Assessment

Prepared for

Kier Construction Limited

By

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01	21 Nov 2018	For comment
02	13 May 2019	Credit review and score update

Summary

SRL Technical Services Limited has been commissioned by Kier Construction Limited to provide a BREEAM pre-assessment report for their new development. The project includes the construction of a primary school in Reading comprising of 2072m² of classrooms, administrative offices and associated recreational space.

In March 2017, a pre-assessment was completed comparing the development against the criteria of BREEAM UK New Construction 2014, however it was not formally registered with BRE at this time. Since then, BREEAM UK New Construction 2018 has been released and all new projects must be registered against this scheme version.

I subsequently completed a BREEAM UK New Construction 2018 pre-assessment on 19th November 2018, based on the information provided by the design team, and predicted a score of 45.70%. This score would achieve a BREEAM rating of 'Good' (i.e. a minimum of 45%).

The development was originally aiming to achieve BREEAM 'Excellent' (i.e. a minimum of 70%) however, we believed this to be all but impossible with a predicted score of 45.70%. Instead we recommended that a BREEAM rating of 'Very Good' (i.e. a minimum of 55%) would be a more realistic rating for the development if **all** potential credits in Table 5 of the Pre-Assessment report dated 29 November 2018 were targeted.

Based on the additional credits that have since been targeted, and those removed due to associated RIBA timescales, a predicted score of 50.47% has been achieved. This would still only achieve a BREEAM 'Good' rating, as not enough additional credits have been targeted to achieve BREEAM 'Very Good'.

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For and on behalf of

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1.0 BREEAM Assessment Methodology

BREEAM (Building Research Establishment's Environmental Assessment Method) is the world's leading environmental assessment method for buildings. Buildings are assessed against the BREEAM criteria at the design and post-construction stages using nine environmental categories.

An assessment consists of two reports (Interim Design Stage and Post Construction Stage), which undergo BRE Quality Assurance checks and ultimately gain certification for the rating achieved.

The building's performance is expressed as one of the following BREEAM ratings, depending on the final score achieved:

Table 1. Percentage score required for each BREEAM rating.

BREEAM Rating	% Score
Outstanding	≥ 85
Excellent	≥ 70
Very Good	≥ 55
Good	≥ 45
Pass	≥ 30
Unclassified	<30

In addition to achieving the required percentage of credits to get the rating required, minimum standards are set by BRE for each rating level. The minimum standards for an 'Excellent' rating are outlined in Table 2 overleaf. I have also included the minimum standards for 'Very Good' which is the most realistic rating for the development.

Table 2. Mandatory Credits for each BREEAM Rating

BREEAM Issue	Good	Very Good
Man 04 - Commissioning and handover	-	I credit (Commissioning-test schedule and responsibilities)
Man 04 - Commissioning and handover	-	Criterion II (Building User Guide)
Ene 02 - Energy monitoring	-	I credit (First sub-metering credit)
Wat 01 - Water consumption	I credit	I credit
Wat 02 - Water monitoring	Criterion I	Criterion I
Mat 03 - Responsible sourcing of construction products	Criterion I (Prerequisite – Legally harvested/traded timber)	Criterion I (Prerequisite – Legally harvested/traded timber)

2.0 Pre-Assessment Outcomes

Table 3 shows a summary of the number of credits and scores you have currently agreed to target for each category. This is based on the current phase of the project, the proposed design and commitments made by the design team. Where the score has changed, we give the previous score in brackets and for two categories (Health & Wellbeing, and Materials) the potential score has reduced.

Appendix A shows a breakdown of the targets.

Table 3. Pre-Assessment Scores Summary (previous scores in brackets)

BREEAM Category	Section Weighting (%)	Credits Available	Credits Achievable	Indicative % Score
Management	11	21	17	8.90 [7.33]
Health and Wellbeing	14	18	9	7.00 [8.55]
Energy	16	22	6	4.36 [2.18]
Transport	10	12	7	5.83 [4.16]
Water	7	9	7	5.44 [4.66]
Materials	15	14	3	3.21 [4.28]
Waste	6	10	4	2.40 [1.20]
Land Use and Ecology	13	13	8	8.00
Pollution	8	12	8	5.33
Innovation	10	10	0	0
Total				50.47

Please refer to the BREEAM UK New Construction 2018 manual for further detailed credit requirements.

The total score is slightly higher than that in Appendix A because the BREEAM Scoring and Reporting Tool did not award some credits for the following issues, even though the credits were targeted. This is because data need to input in the Tool is not available yet. I have manually added on 1 credit for Man 03 (Responsible construction practices) and 2 credits for Wst 01 (Construction waste management).

Please note that this BREEAM pre-assessment provides an indicative rating and is not a formal certified BREEAM assessment or rating and must not be communicated as such. The reported score indicates the proposed building's potential performance and is based on the design intent and not final decisions.

3.0 RIBA Stage 1 and 2 Credits

It is important to note that some credits require early stage input (at RIBA Stages 1 and 2). Table 4 lists these credits that you have targeted.

Table 4. Early Stage Credits

Credit	RIBA Stage	Description
Man 01 Project delivery planning	2	The project delivery stakeholders have met to identify and define roles, responsibilities and contributions for each key phase of project delivery. This must be completed by the end of RIBA Stage 2.
Man 01 BREEAM Advisory Professional (AP)	2	There is a prerequisite for this credit; the project team, including the client, formally agree strategic performance targets early in the design process (with the support of the BREEAM AP). One credit is available at concept design, the second credit is available at developed design.
Ene 04 Low Carbon Design	2	3rd credit: a low zero carbon feasibility study is completed by an energy specialist.

4.0 Potential Credits to Target

The potential credit you have highlighted is identified below in Table 5. This would increase your predicted score to 50.99% (BREEAM 'Good').

Table 5. Potential Credits to Target

Credit	Credit Weighting (%)	Description
Man 03 BREEAM AP (Site)	0.52	There is a pre-requisite that the client and contractor formally agree BREEAM performance targets. A BREEAM AP must be involved at an appropriate time to: - maximise the project's construction progress against agreed performance targets - proactively identify risks and opportunities related to the performance targets - provide feedback to the constructors and project team and support corrective actions to achieve the performance targets - monitor and coordinate the generation of appropriate evidence by the project team for the assessor.



Appendix A

Pre-assessment spreadsheet

BREEAM UK New Construction 2018 Assessment Report: Assessment Issue Scoring



Building name	The Heights School
Building score (%)	48.70%
Building rating	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	2.10%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Project delivery planning	Yes	1	1
Stakeholder consultation (interested parties)	Yes	1	1
Prerequisite: Have the client and the contractor formally agreed performance targets?	Yes		
BREEAM Advisory Professional (Concept Design)	Yes	1	1
BREEAM Advisory Professional (Developed Design)	Yes	1	1

Total BREEAM credits achieved	4
Total contribution to overall building score	2.10%
Total BREEAM exemplary credits achieved	N/A
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	2.10%
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No. of BREEAM exemplary credits available	0	Minimum standards applicable	No
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Assessment Criteria		Compliant?	Credits available	Credits achieved
Elemental LCC Component level LCC options appraisal Capital cost reporting Capital cost of the project		No	2	0
		Yes	1	1
		Yes	1	1
	7 million		£/m ²	

Total BREEAM credits achieved	2
Total contribution to overall building score	1.05%
Total BREEAM exemplary credits achieved	N/A
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	3.14%
No. of BREEAM exemplary credits available	1	Minimum standards applicable	Yes

Assessment Criteria

	Compliant?	Credits available	Credits achieved	
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	1	1	
Prerequisite: Have the client and the contractor formally agreed performance targets?	Yes			
BREEAM Advisory Professional (site)	No	1	0	
Responsible construction management	1	2	1	
Monitoring of construction site impacts	Yes			
Utility consumption	Yes	1	0	Note: The KPI dat
Transport of construction materials and waste	Yes	1	1	Note: The KPI dat
Exemplary level criteria - Responsible construction management		1	0	

Key Performance Indicators: Construction site energy use

Energy consumption (total) - site processes		kWh
Energy consumption (intensity) - site processes		kWh/project value
Distance (total) - materials transport to site		km
Distance (total) - waste transport from site		km

Key Performance Indicators: Construction site greenhouse gas emissions

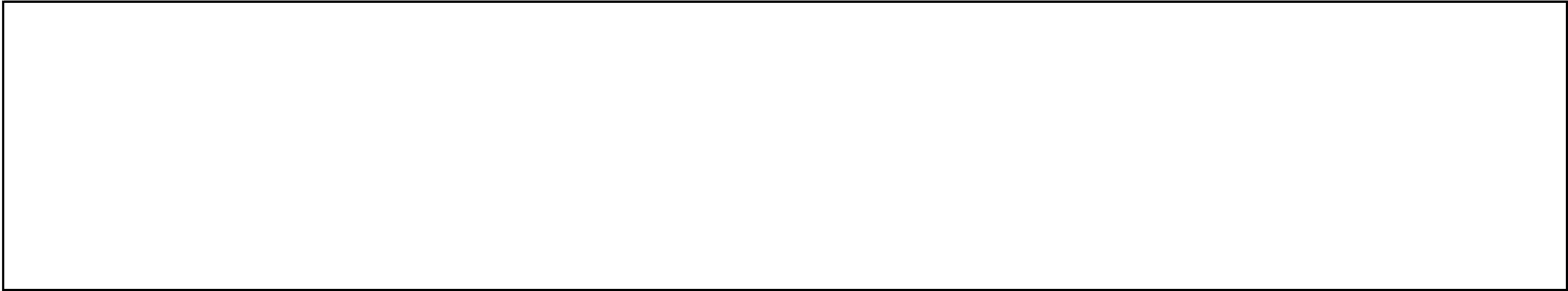
Process greenhouse gas emissions (total) - site processes		KgCO ₂ -eq
Carbon dioxide emissions (intensity) - site processes		KgCO ₂ -eq/project value
Carbon dioxide emissions (total) - materials transport to site		KgCO ₂ -eq
Carbon dioxide emissions (total) - waste transport from site		KgCO ₂ -eq
Carbon dioxide emissions (intensity) - materials transport to site		KgCO ₂ -eq/project value
Carbon dioxide emissions (intensity) - waste transport from site		KgCO ₂ -eq/project value

Key Performance Indicators: Construction site use of freshwater resources

Use of potable water resource (total) - site processes		m ³
Use of potable water resource (intensity) - site processes		m ³ /£100k

Total BREEAM credits achieved	3
Total contribution to overall building score	1.57%
Total BREEAM exemplary credits achieved	0
Minimum standard(s) level	Excellent level

Assessor comments/notes:



Man 04 Commisioning and handover

No. of BREEAM credits available	4	Available contribution to overall score	2.10%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	Yes

Assessment Criteria	Compliant?	Credits available	Credits achieved
Commissioning and testing schedule and responsibilities	Yes	1	1
Commissioning - design and preparation	Yes	1	1
Testing and inspecting building fabric	Yes	1	1
Handover - Has a Building User Guide been developed prior to handover?	Yes		
Handover - Has a training schedule been prepared for building occupiers/managers?	Yes	1	1

Total BREEAM credits achieved	4
Total contribution to overall building score	2.10%
Total BREEAM exemplary credits achieved	N/A
Minimum standard(s) level	Outstanding level

Assessor comments/notes:

Man 05 Aftercare

No. of BREEAM credits available	3	Available contribution to overall score	1.57%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	Yes

Is this a speculative development?	No
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Assessment Criteria	Compliant?	Credits available	Credits achieved
Aftercare support	Yes	1	1
Commissioning - implementation	Yes	1	1
Post occupancy evaluation	Yes	1	1
The client or building occupier commits funds to pay for the POE in advance	Yes		

Total BREEAM credits achieved	3
Total contribution to overall building score	1.57%
Total BREEAM exemplary credits achieved	N/A

Minimum standard(s) level	Outstanding level
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Assessor comments/notes:

HEALTH & WELLBEING

Hea 01 Visual Comfort

No. of BREEAM credits available	5	Available contribution to overall score	3.89%
No. of BREEAM exemplary credits available	2	Minimum standards applicable	No

Assessment Criteria

	Compliant?	Credits available	Credits achieved
Control of glare from sunlight	Yes	1	1
Daylighting (building type dependent)	0	2	0
View out	No	1	0
Internal and external lighting levels, zoning and controls	Yes	1	1

Exemplary level daylighting		1	0
Exemplary level criteria - Internal and external lighting levels, zoning and control		1	0

Total BREEAM credits achieved	2
Total contribution to overall building score	1.56%
Total BREEAM exemplary credits achieved	0
Minimum standard(s) level	N/A

Assessor comments/notes:

Hea 02 Indoor Air Quality

No. of BREEAM credits available	4	Available contribution to overall score	3.11%
No. of BREEAM exemplary credits available	1	Minimum standards applicable	No

Assessment Criteria

	Compliant?	Credits available	Credits achieved
Prerequisite: Indoor air quality (IAQ) plan	No		
Ventilation	No	1	0
Emissions from building products	0	2	0
Post-construction indoor air quality measurement	No	1	0
Exemplary level criteria - Emissions from building products		1	0

Key Performance Indicators: Indoor air quality

Formaldehyde concentration		µg/m ³
Total volatile organic compound (TVOC) concentration		µg/m ³

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

Assessor comments/notes:

Hea 04 Thermal comfort

No. of BREEAM credits available	3	Available contribution to overall score	2.33%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	No

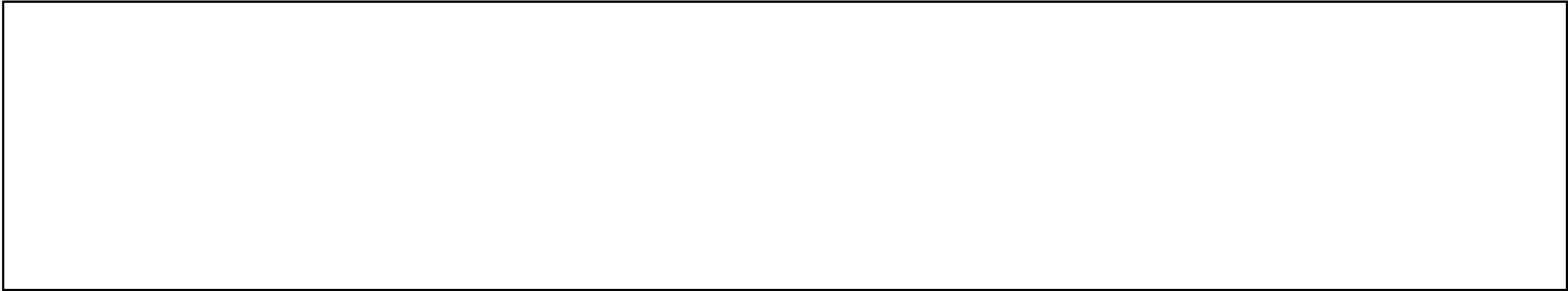
Assessment Criteria

	Compliant?	Credits available	Credits achieved
Thermal modelling	Yes	1	1
Design for future thermal comfort	Yes	1	1
Thermal zoning and control	Yes	1	1

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

Total BREEAM credits achieved	3
Total contribution to overall building score	2.33%
Total BREEAM exemplary credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:



Hea 05 Acoustic Performance

No. of BREEAM credits available	3	Available contribution to overall score	2.33%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	No

Criteria performance requirements or SQA bespoke requirements?	Criteria performance requirements
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Assessment Criteria

	Credits	Credits available	Credits achieved
Sound insulation	1	1	1
Indoor ambient noise level	Yes	1	1
Room acoustics	Yes	1	1

Total BREEAM credits achieved	3
Total contribution to overall building score	2.33%
Total BREEAM exemplary credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

Hea 06 Security

No. of BREEAM credits available	1	Available contribution to overall score	0.78%
No. of BREEAM exemplary credits available	1	Minimum standards applicable	No

Assessment Criteria

	Compliant?	Credits available	Credits achieved
Security of site and building	No	1	0
Exemplary level criteria		1	0

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

Assessor comments/notes:

Hea 07 Safe & Healthy Surroundings

No. of BREEAM credits available	2	Available contribution to overall score	0.78%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	No

Assessment Criteria		Compliant?	Credits available	Credits achieved
Safe Access Outside Space		No	1	0
		Yes	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	0.00%
Total BREEAM exemplary 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	13	Available contribution to overall score	9.45%
No. of BREEAM exemplary credits available	5	Minimum standards applicable	Yes

Country of the UK where the building is located	England	
Actual building energy demand	44.930	MJ/m ² yr
Notional building energy demand	43.470	MJ/m ² yr
Actual building primary energy consumption	64.100	kWh/m ² yr
Notional building primary energy consumption	73.210	kWh/m ² yr
Actual building CO ₂ -eq emissions (BER)	11.100	KgCO ₂ -eq /m ² yr
Notional building CO ₂ -eq emissions (TER)	12.600	KgCO ₂ -eq /m ² yr
Does this building contain areas that require a SAP assessment?	No	
What % of the building's total floor area (GIA) does it apply to?		
SAP Actual building energy demand		MJ/m ² yr

SAP Notional building energy demand		MJ/m ² yr
SAP Actual building primary energy consumption		kWh/m ² yr
SAP Notional building primary energy consumption		kWh/m ² yr
SAP Actual building CO ₂ -eq emissions (BER)		KgCO ₂ -eq /m ² yr
SAP Notional building CO ₂ -eq emissions (TER)		KgCO ₂ -eq /m ² yr

Building Score

Total BREEAM credits achieved	1
Heating and cooling demand energy performance ratio (EPRdem)	-0.031
Primary consumption energy performance ratio (EPRpc)	0.135
CO ₂ -eq energy performance ratio (EPRCO ₂ -eq)	0.090
Overall building energy performance ratio (EPRnc)	0.195
% improvement over building regulations (CO ₂ -eq)	11.90%

Assessment criteria (exemplary credits)

	Compliant?	Credits available	Credits achieved
Zero net CO ₂ -eq emissions	No	3	0
Equivalent % of additional emissions from unregulated energy that are offset by LZC			
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?		kWh/yr	

Assessment criteria

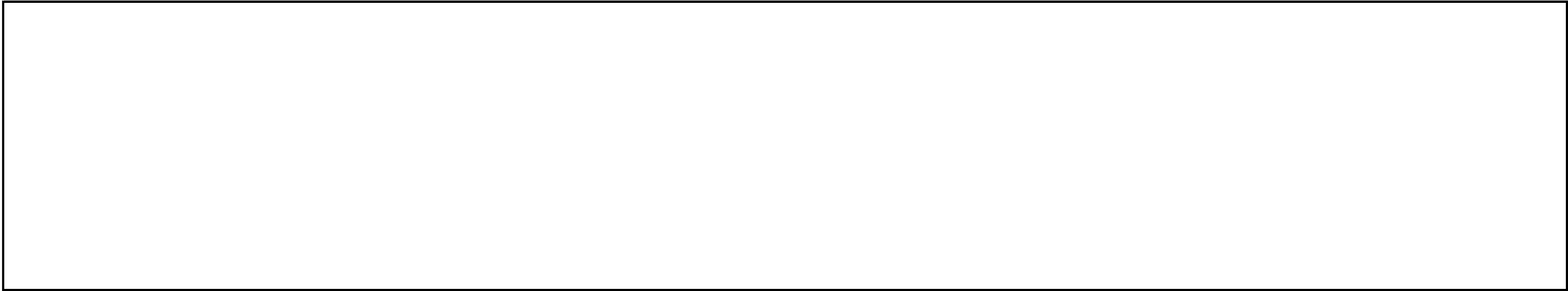
	Compliant?	Credits available	Credits achieved
Has a design workshop focusing on operational energy performance been carried out?	No		
Additional energy modelling to generate predicted operational energy consumption figures carried out?		4	0
Predicted energy consumption targets by end use, design assumptions and input data reported?			
Risk assessment to highlight any significant design, technical, and process risks?			

Assessment criteria (exemplary credits)

	Compliant?	Credits available	Credits achieved
Maximum credits achieved in Ene 02 Energy monitoring?	Yes	2	0
The client or building occupier commits funds to pay for the post-occupancy stage?			
The energy model is submitted to BRE and retained by the building owner?			

Total BREEAM credits achieved	1
Total contribution to overall building score	0.73%
Total BREEAM exemplary credits achieved	0
Minimum standard(s) level	Very Good level

Assessor comments/notes:



Ene 02 Energy monitoring

No. of BREEAM credits available	1	Available contribution to overall score	0.73%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	Yes

Assessment criteria

	Compliant?	Credits available	Credits achieved
Sub-metering of end use categories	Yes	1	1
Sub-metering of high energy load and tenancy areas		0	0

Total BREEAM credits achieved	1
Total contribution to overall building score	0.73%
Total BREEAM exemplary credits achieved	N/A
Minimum standard(s) level	Outstanding level

Assessor comments/notes:

Ene 03 External lighting

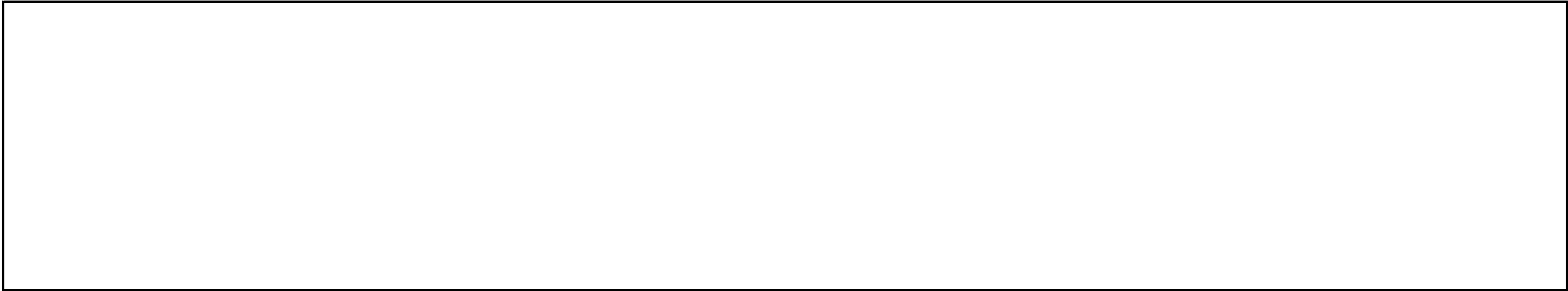
No. of BREEAM credits available	1	Available contribution to overall score	0.73%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	No

Assessment criteria

	Compliant?	Credits available	Credits achieved
External lighting has been designed out	No		
Is external lighting specified in accordance with the relevant criteria?	Yes	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	0.73%
Total BREEAM exemplary 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	2.18%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	No

Assessment criteria	Compliant?	Credits available	Credits achieved
Has the first credit within Hea 04 been achieved?	Yes		
Passive design analysis	No	1	0
Free cooling	No	1	0
Low and zero carbon technologies	Yes	1	1

Key Performance Indicators - Low and/or zero carbon energy generation

Total on-site and/or near-site LDC energy generation		kWh/yr
Expected energy demand and CO ₂ -eq emissions reduction resulting from passive design measures as a percentage	Energy 	kWh/m ² yr
	CO ₂ emissions 	KgCO ₂ -eq/m ² yr
Expected energy demand and CO ₂ -eq emissions reduction resulting from passive design measures as a percentage	Energy 	%
	CO ₂ emissions 	%
Expected reduction in CO ₂ -eq emissions resulting from the LDC technologies		KgCO ₂ -eq/m ² yr
Expected reduction in CO ₂ -eq emissions resulting from the LDC technologies as a		%

Total BREEAM credits achieved	1
Total contribution to overall building score	0.73%
Total BREEAM exemplary credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

Ene 05 Energy efficient cold storage

No. of BREEAM credits available	2	Available contribution to overall score	1.45%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	No

Assessment criteria	Compliant?	Credits available	Credits achieved
Refrigeration energy consumption	No	1	0
Indirect greenhouse gas emissions	No	1	0

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

Assessor comments/notes:

Ene 06 Energy efficient transportation systems

Assessment issue not applicable

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

Assessment criteria	Compliant?	Credits available	Credits achieved
Energy consumption			
Energy efficient features - Lifts			
Energy efficient features - Escaltors or moving walks			

Total BREEAM credits achieved	N/A
Total contribution to overall building score	N/A
Total BREEAM exemplary 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 exemplary credits available	N/A	Minimum standards applicable	N/A

Assessment criteria	Compliant?	Credits available	Credits achieved
Design specification			
Laboratory containment devices and containment areas			
Best practice energy efficient measures (table 33)			
Fume cupboard volume flow rates			
Grouping / isolation of high filtration/ventilation activities			
Energy recovery - heat			
Energy recovery - cooling			
Grouping of cooling loads			
Free cooling			
Load responsiveness			
Clean rooms			
Diversity			

	Room air-change rates	
	Fan power	

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

Assessor comments/notes:

Ene 08 Energy efficient equipment

No. of BREEAM credits available	2	Available contribution to overall score	1.45%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	No

Assessment criteria

	Present?	Major impact
Swimming pool present?	No	
Laundry facilities with commercial-sized appliances present?	Yes	
Data centre present?	No	
IT-intensive operating areas present?	Yes	
Domestic scale appliances (individual and communal facilities) present?	Yes	
Healthcare equipment present?	No	
Kitchen and catering facilities present?	Yes	
Other contributors		

	Compliant	Credits available	Credits achieved
Significant majority contributors BREEAM compliant	Yes	2	2

Total BREEAM credits achieved	2
Total contribution to overall building score	1.45%
Total BREEAM exemplary credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

TRANSPORT

Tra 01 Transport assessment and travel plan

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

Assessment Criteria

	Compliant	Credits available	Credits achieved
Travel plan	Yes	2	2

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

Assessor comments/notes:

Tra 02 Sustainable transport measures

No. of BREEAM credits available	10	Available contribution to overall score	8.33%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	No

Assessment Criteria

	Compliant?	Credits available	Credits achieved
Prerequisite - Issue Tra 01 'Transport assessment and travel plan' credits achieved	Yes		
Location type (based on existing AI)	AI <25		
Number of points achieved overall	5	10	5

Total BREEAM credits achieved	5
Total contribution to overall building score	4.17%
Total BREEAM exemplary 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	3.89%
No. of BREEAM exemplary credits available	1	Minimum standards applicable	Yes

Assessment CriteriaCompliant?Credits availableCredits achieved

Please select the calculation procedure used	Standard approach		
Credits awarded	3	5	3
Exemplary performance		1	0

Standard approach data

Water Consumption from building micro-components		L/person/day
Water demand met via greywater/rainwater sources		L/person/day
Total net water consumption		L/person/day
Improvement on baseline performance		%

Key Performance Indicator - use of freshwater resource

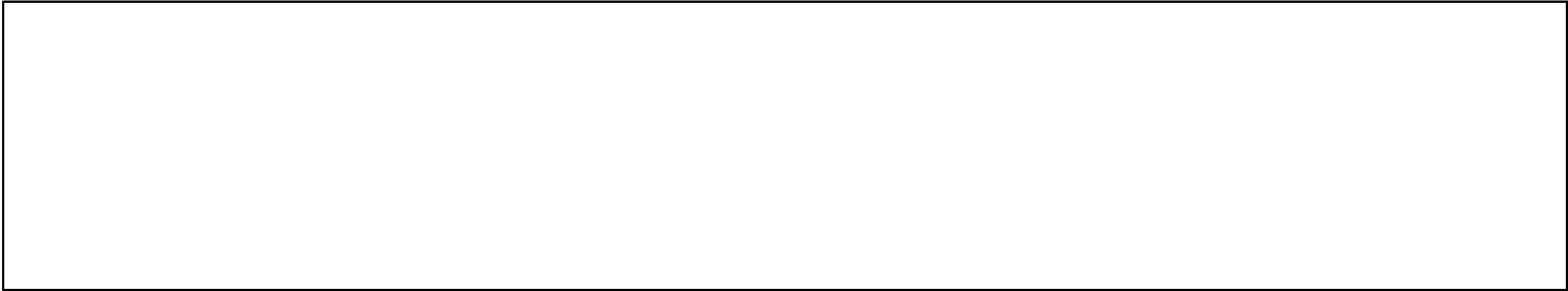
Total net Water Consumption		m ³ /person/yr
Default building occupancy		

Alternative approach data

Overall microcomponent performance level achieved	
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Total BREEAM credits achieved	3
Total contribution to overall building score	2.33%
Total BREEAM exemplary credits achieved	0
Minimum standard(s) level	Outstanding level

Assessor comments/notes:



Wat 02 Water Monitoring

No. of BREEAM credits available	1	Available contribution to overall score	0.78%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	Yes

Assessment Criteria

	Compliant?	Credits available	Credits achieved
Water meter on the mains water supply to each building	Yes	1	1
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)	No		

Total BREEAM credits achieved	1
Total contribution to overall building score	0.78%
Total BREEAM exemplary 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	1.56%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	No

Assessment Criteria

	Compliant?	Credits available	Credits achieved
Leak detection system	Yes	1	1
Flow control devices	Yes	1	1

Total BREEAM credits achieved	2
Total contribution to overall building score	1.56%
Total BREEAM exemplary 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	0.78%
No. of BREEAM exemplary credits available	No	Minimum standards applicable	No

Assessment Criteria

	Compliant?	Credits available	Credits achieved
Water efficient consumption	Yes	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	0.78%
Total BREEAM exemplary credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

MATERIALS**Mat 01 Environmental impacts from construction products - Building life cycle assessment (LCA)**

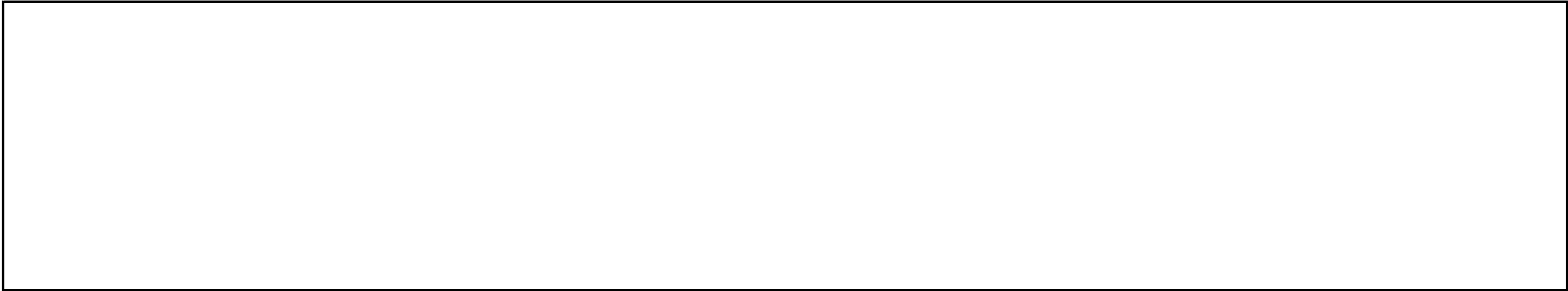
No. of BREEAM credits available	7	Available contribution to overall score	7.50%
No. of BREEAM exemplary credits available	3	Minimum standards applicable	No

Assessment Criteria

	Compliant?	Credits available	Credits achieved
Total Mat 01 credits achieved - taken from the Mat 01/02 Results Submission Tool	0	7	0
Total Exemplary credits achieved - taken from the Mat 01/02 Results Submission Tool	0	3	0

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

Assessor comments/notes:



Mat 02 Environmental impacts from construction products - Environmental Product Declarations (EPD)

No. of BREEAM credits available	1	Available contribution to overall score	1.07%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Mat 02 credit achieved - Taken from the Mat 01/02 Results Submission Tool.	1	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	1.07%
Total BREEAM exemplary credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

Mat 03 Responsible sourcing of construction products

No. of BREEAM credits available	4	Available contribution to overall score	4.29%
No. of BREEAM exemplary credits available	1	Minimum standards applicable	Yes

Assessment Criteria	Compliant	Credits available	Credits achieved
Prerequisite - All timber and timber based products are 'Legally harvested and traded timber'	Yes		
Has the enabling sustainable procurement credit been achieved?	No	1	0
Percentage of available for percentage of RSM points achieved	10.00%	3	1
Exemplary level performance		1	0

Total BREEAM credits achieved	1
Total contribution to overall building score	1.07%
Total BREEAM exemplary credits achieved	0
Minimum standard(s) level	Outstanding level

Assessor comments/notes:

Mat 05 Designing for durability and resilience

No. of BREEAM credits available	1	Available contribution to overall score	1.07%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	N/A

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

Total BREEAM credits achieved	1
Total contribution to overall building score	1.07%
Total BREEAM exemplary 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	1.07%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Material optimisation measures investigated and implemented at all relevant stages	No	1	0

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

Assessor comments/notes:

WASTE

Wst 01 Construction Waste Management

No. of BREEAM credits available	5	Available contribution to overall score	3.00%
No. of BREEAM exemplary credits available	1	Minimum standards applicable	Yes

Assessment Criteria

	Compliant?	Credits available	Credits achieved
Is demolition occurring under the developer's ownership for the purpose of enabling the assessed development?	Yes		
Pre-demolition audit	Yes	1	1
Compliant Resource Management Plan	Yes	3	0
Have waste materials been sorted into separate key waste groups?	Yes	1	0
Exemplary level criteria			
BREEAM exemplary level benchmark		1	0

Simple Buildings - Assessment Criteria

	Compliant?	Credits available	Credits achieved
Pre-demolition audit			
Construction resource efficiency - compliant Resource Management Plan			
RMP measurements and reporting			
Diversion of resources from landfill			
Exemplary level criteria			
BREEAM exemplary level benchmark			

Key Performance Indicators - Construction Waste

Measure/units for the data being reported	
Non-hazardous construction waste (excluding demolition/excavation)	
- fill in to award "Construction resource efficiency" credits	
Total non-hazardous construction waste generated	
Non-hazardous non-demolition construction waste diverted from landfill - fill in to award	%
diversion from landfill credit	
Total non-hazardous non-demolition construction waste diverted from landfill	
Non-hazardous demolition waste diverted from landfill - fill in to award diversion of landfill	%
credit	
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	

Total BREEAM credits achieved	1
Total contribution to overall building score	0.60%
Total BREEAM exemplary credits achieved	0

Minimum standard(s) level	Outstanding level
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Assessor comments/notes:

Wst 02 Use of recycled and sustainably sourced aggregates

No. of BREEAM credits available	1	Available contribution to overall score	0.60%
No. of BREEAM exemplary credits available	1	Minimum standards applicable	No

Assessment Criteria

	Compliant?	Credits available	Credits achieved
Is demolition occurring under the developer's ownership for the purpose of enabling the assessed development?	Yes		
Pre-demolition audit	Yes		
Projects Sustainable Aggregate points	0	1	0
Exemplary performance credit		1	0

Key Performance Indicators

Total quantity of aggregate		Units - tonnes
% of high - grade aggregate that is recycled/ secondary aggregate by application		%

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM exemplary 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	0.60%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	Yes

Assessment Criteria

	Compliant?	Credits available	Credits achieved
Compliant recycling and non-recyclable waste storage allocated	Yes	1	1
Static waste compactor(s) or baler(s)	N/A		
Vessel(s) for composting suitable organic waste and water outlet	N/A		

Total BREEAM credits achieved	1
Total contribution to overall building score	0.60%
Total BREEAM exemplary credits achieved	N/A
Minimum standard(s) level	Outstanding level

Assessor comments/notes:

Wst 04 Speculative finishes (Offices only)

Assessment issue not applicable

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

Assessment Criteria	Compliant?	Credits available	Credits achieved

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

Assessor comments/notes:

Wst 05 Adaptation to climate change

No. of BREEAM credits available	1	Available contribution to overall score	0.60%
No. of BREEAM exemplary credits available	1	Minimum standards applicable	N/A

Assessment Criteria	Compliant?	Credits available	Credits achieved
Resilience of structure, fabric, building services and renewables installation	No	1	0
Exemplary level - responding to climate change		1	0

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

Assessor comments/notes:

Wst 06 Design for disassembly and adaptability

No. of BREEAM credits available	2	Available contribution to overall score	0.60%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	N/A

Assessment Criteria	Compliant?	Credits available	Credits achieved
Design for disassembly and functional adaptability - recommendations	No	1	0
Disassembly and functional adaptability - implementation	No	1	0

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM exemplary 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	2.00%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
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Percentage of proposed development's footprint on previously occupied land: Contaminated land	0.00%	1	0
	No	1	0

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

Assessor comments/notes:

LE 02 Identifying and understanding the risks and opportunities for the site

No. of BREEAM credits available	2	Available contribution to overall score	2.00%
No. of BREEAM exemplary credits available	1	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Prerequisite - Assessment route selection	Route 2		
Prerequisite - The client or contractor confirms monitoring of compliance with all relevant UK and EU or international legislation	Yes		
Survey and Evaluation	Yes	2	2
Determining the ecological outcomes of the site	Yes		
Exemplary level - Determining the ecological outcomes of the site		1	0
Total BREEAM credits achieved	2		
Total contribution to overall building score	2.00%		
Total BREEAM exemplary credits achieved	0		
Minimum standard(s) level	N/A		

Assessor comments/notes:

LE 03 Managing negative impacts on ecology

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

Assessment Criteria	Compliant?	Credits available	Credits achieved
Which assessment route is being followed?	Route 2		
Prerequisite - Identification and understanding the risks and opportunities for the site	Yes		
Planning, liaison and implementation	Yes	1	1
Managing negative impacts of the project	1	2	1
Total BREEAM credits achieved	2		
Total contribution to overall building score	2.00%		

Total BREEAM exemplary credits achieved	N/A
Minimum standard(s) level	N/A

Assessor comments/notes:

LE 04 Change and enhancement of ecological value

No. of BREEAM credits available	4	Available contribution to overall score	4.00%
No. of BREEAM exemplary credits available	1	Minimum standards applicable	No

Assessment Criteria

Assessment Criteria	Compliant?	Credits available	Credits achieved
Prerequisite - Assessment route selection	Route 2		
Prerequisite - Identification and understanding the risks and opportunities for the site	Yes		
Change and enhancement of ecology (Route 1 only)		0	0
Liaison, implementation and data collation (Route 2 only)	Yes	1	1
Change and enhancement of ecology (Route 2 only)	1	3	1
Exemplary level criteria (Route 2 only)		1	0

Total BREEAM credits achieved	2
Total contribution to overall building score	2.00%
Total BREEAM exemplary credits achieved	0
Minimum standard(s) level	N/A

Assessor comments/notes:

LE 05 Long term ecology management and maintenance

No. of BREEAM credits available	2	Available contribution to overall score	2.00%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	No

Assessment Criteria

Assessment Criteria	Compliant?	Credits available	Credits achieved
Prerequisite - Assessment route selection	Route 2		
Prerequisite - Roles and responsibilities, implementation, statutory obligations	Yes		
Liaison, monitoring implementation, evolving management and maintenance solutions	Yes	1	1
Landscape and ecology management plan development	Yes	1	1

Total BREEAM credits achieved	2
Total contribution to overall building score	2.00%
Total BREEAM exemplary 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	2.00%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Refrigerant containing systems installed in the assessed building? All systems (with electric compressors) comply with BS EN 378:2016 (parts 2 and 3) and (where applicable) Institute of Refrigeration Ammonia Refrigeration Systems code of practice?	Yes	2	0
	No		
Total Direct Effect Life Cycle CO ₂ -eq/kW emissions from the system		kgCO ₂ eq/kW heating and cooling capacity	
Global Warming Potential of the specified refrigerant(s) 10 or less?			

Leak Detection	Are all the systems hermetically sealed?		1	0
	BREEAM compliant automatic refrigerant leak detection system installed and able to manage the remaining refrigerant charge			

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

Assessor comments/notes:

Pol 02 Local air quality

No. of BREEAM credits available	2	Available contribution to overall score	1.33%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant	Credits available	Credits achieved
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How many credits have been achieved?	1	2	1
Total BREEAM credits achieved	1		
Total contribution to overall building score	0.67%		
Total BREEAM exemplary credits achieved	N/A		
Minimum standard(s) level	N/A		

Assessor comments/notes:

Pol 03 Flood and surface water management

No. of BREEAM credits available	5	Available contribution to overall score	3.33%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Has an appropriate consultant demonstrated and confirmed the development's compliance with all sought credits?	Yes		
Has a site-specific flood risk assessment been conducted?	Yes		
Annual probability of flooding	Low	2	2
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	1	1
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	1	1
Minimising watercourse pollution	Yes	1	1

Total BREEAM credits achieved	5
Total contribution to overall building score	3.33%
Total BREEAM exemplary 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	0.67%
No. of BREEAM exemplary credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
External lighting has been designed out	No		

Does external lighting meet all relevant criteria?	Yes	1	1
Total BREEAM credits achieved	1		
Total contribution to overall building score	0.67%		
Total BREEAM exemplary credits achieved	N/A		
Minimum standard(s) level	N/A		

Assessor comments/notes:

Pol 05 Reduction of noise pollution

No. of BREEAM credits available	1	Available contribution to overall score	0.67%
No. of BREEAM exemplary 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		
Is the site compliant with all relevant criteria?	Yes	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	0.67%
Total BREEAM exemplary 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 01 BREEAM AP - Simply Buildings only	N/A	N/A	N/A
Man 03 Responsible construction practices	No	1	0
Hea 01 Visual Comfort	No	2	0
Hea 02 Indoor Air Quality	No	1	0
Hea 06 Security	No	1	0
Ene 01 Reduction of energy use and carbon emissions	No	5	0
Wat 01 Water Consumption	No	1	0
Mat 01 Environmental impacts from construction products - Building LCA	No	3	0
Mat 03 Responsible Sourcing of Materials	No	1	0
Wst 01 Construction Waste Management	No	1	0

Wst 01 Construction Waste Management - Simple Buildings only	N/A	N/A	N/A
Wst02 Recycled Aggregates	No	1	0
Wst 05 Adaptation to climate change	No	1	0
LE 02 Identifying and understanding the risks and opportunities for the site	No	1	0
LE 04 Change and enhancement of ecological value (Route 2 only)	No	1	0
Pol 03 Flood and surface water management - Simply Buildings only	N/A	N/A	N/A

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

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