



BREEAM UK New Construction 2018
Pre-Assessment

Marble Hill
Playcentres,
Richmond
Road,
Twickenham,
TW1 2NL

October 2019



19-6082

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The signatories below verify that this document has been prepared in accordance with our quality control requirements. These procedures do not affect the content and views expressed by the originator

<i>Revision</i>	<i>Initial</i>	<i>Rev A</i>	<i>Rev B</i>	<i>Rev C</i>
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Forecast cost estimates do not include such costs associated with any negotiations, appeals or other non-technical actions associated with the agreement on measures to meet the requirements of the authorities, nor are potential business loss and interruption costs considered that may be incurred as part of any technical measures.

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1. Executive Summary

Syntegra Consulting Ltd has been commissioned to undertake the Building Research Establishment Environmental Assessment Method (BREEAM) for the non-domestic development of Marble Hill Playcentres. The BREEAM pre-assessment aims to provide the outline sustainability strategy and act as a sustainable design guide for the construction works to be performed. As part of planning condition, the development will be expected to meet a BREEAM **'EXCELLENT'** rating demonstrating this way that the project is designed and built to minimise greenhouse gas emissions across their lifetime and incorporate sustainable design and construction measures.

The Marble Hill Playcentres- Inclusive Community Hub, to be further referred to as the 'Proposed Development' comprises of:

- Ground Floor
 - Adventure Play
 - Me too
 - OK Music
 - Nursery
- First Floor-
 - Music pr/multi-purp
 - Cookery
 - Therapy

The assessed areas are to be considered as Assembly and leisure under BREEAM New Construction 2018 for which the pre-assessment shows that by achieving the requirements together the most feasible credits.

The assessed areas could achieve the following ratings and scores:

- Inclusive Community Hub – score of 72.16%, **'EXCELLENT'** rating

It should be noted that the project can and is committed to achieving a minimum score of 70%, the threshold for “Excellent”. The score outlined in this report is a target to ensure the required “Excellent” threshold will be met. The current BREEAM strategy may be subject to change and therefore cannot be subjected to a specific score in order to ensure future flexibility with respect to third party verification by the BRE and any changes necessitated.

Environmental Section	Weighting	Credits Available	Credits Targeted	Weighted Score
Management	11.00%	21	17	8.90%
Health & Wellbeing	14.00%	17	15	12.35%
Energy	16.00%	23	14	9.73%
Transport	10.00%	12	6	5.00%
Water	7.00%	9	7	5.44%
Materials	15.00%	14	11	11.78%
Waste	6.00%	10	6	3.59%
Land Use & Ecology	13.00%	13	8	8.00%
Pollution	8.00%	12	11	7.33%
Innovation	10.00%	10	0	0.00%
Indicative BREEAM Score	72.16% ‘Excellent’ Rating			

Electrical, Mechanical and Fabric requirements will need to confirm compliance with the standards and requirements highlighted in this pre-assessment notes in order to achieve the estimated rating. The final score may change if during the project process it is encountered that some of the ‘Target’ credits won’t be achievable, as a good practice a number of credits have also been identified as ‘Possible’ in order to provide a range of trade-off options to still meet the desired score.

2. Introduction

This BREEAM Pre-assessment report will be included as part of European funding bid application that addresses the environmental impact of the development. This report focuses on the environmental strategy for the proposed scheme and how BREEAM measurements will be targeted to achieve the sustainability aspirations of this project and also to meet the planning policy requirements.

The development is located in the **London Borough of Richmond upon Thames Council** and it is in close proximity to St Margaret train station (approximately 0.6 miles to the North). The proposal is a new construction of an **Inclusive Community Hub at Marble Hill Playcentres, Richmond Road, Twickenham, TW1 2NL**.



Figure 1 Site Location

3. BREEAM UK New Construction 2018 Non- domestic buildings

BREEAM UK New Construction (NC) is a performance based assessment method and certification scheme for new non-domestic projects. The primary aim of BREEAM NC is to mitigate the life cycle impacts of new buildings on the environment in a robust and cost-effective manner. This is achieved through integration and use of the scheme by clients and their project teams at key stages in the design and construction process

3.1. Assessment process

The BREEAM scheme can be used to assess and rate the environmental impacts of projects at the design and construction stages.

Design Stage (DS): The performance of the building is assessed at the design stage, usually prior to the beginning of the construction process. At this stage an Interim Certificate is issued based on a provisional estimated rating.

Post-Construction (PCS): The Post- Construction assessment confirms the final performance of the building, representing the 'As-built' state in accordance with that certified at the design stage. At this stage the final BREEAM certificate is issued.

A project can opt to pursue either a DS and PCS review or a full PCR review according to what suits the project better. Assessments at both stages must be carried out by a licensed assessor, who registers the assessment with the BRE.

3.2. Environmental Issues

Projects are assessed using a system of credits under different environmental issues which are divided up into the following nine categories. Innovation credits are also available for the recognition of performance levels that go beyond best practices.

- Management
- Health and Wellbeing
- Energy
- Transport
- Water
- Materials
- Waste
- Land-use and ecology
- Pollution
- Innovation

3.3. Scoring & Rating

BREEAM Rating	Score Achieved
Outstanding	≥ 85
Excellent	≥ 70
Very Good	≥ 55
Good	≥ 45
Pass	≥ 30
Unclassified (Non-Compliant)	< 30

The BREEAM UK Non-domestic New construction 2018 scheme provides a modular set of criteria that are applied depending upon the scope of works for a particular project type including:

- Fully fitted out
- Simple building
- Shell and core
- Shell only

The number of credits achieved combined with the weighting assigned to their environmental section, determines the rating achieved by the project. Hence, each individual assessment issue and credit varies in terms of its contribution to a building’s overall score.

Environmental Section	Weighting According to Scope of Works		
	Fully fitted	Shell and Core only	Shell only
Management	12%	11%	12.5%
Health & Wellbeing	15%	10.5%	10%
Energy	15%	15%	14.5%
Transport	9%	10%	11.5%
Water	7%	7.5%	4%
Materials	13.5%	14.5%	17.5%
Waste	8.5%	9.5%	11%
Land Use & Ecology	10%	11%	13%
Pollution	10%	11%	6%
Innovation (additional)	10%	10%	10%

3.4. Minimum Standards

There are mandatory credits set which must be achieved in order to achieve the difference performance ratings. These must be achieved in addition to the optional credits to achieve the targeted ratings.

Failure to meet the mandatory criteria may restrict a development to an UNCLASSIFIED rating, regardless of the overall percentage achieved.

Category	BREEAM rating	Pass	Good	Very Good	Excellent	Outstanding
	Minimum score	<30%	<45%	<55%	<70%	<85%
Management	Man 03- Responsible construction practices	-	-	-	One credit	Two credits
	Man 04 - Commissioning and handover	-	-	One credit	One credit	One credit
	Man 04 Commissioning and handover	-	-	Criterion 11 (Building User Guide)	Criterion 11 (Building User Guide)	Criterion 11 (Building User Guide)
	Man 05 Aftercare	-	-	-	One credit (commissioning-implementation)	One credit (commissioning-implementation)
	Ene 01 Reduction of energy use and carbon emissions	-	-	-	Four credits (Energy performance or Prediction of operational energy consumption*)	Six credits (Energy performance) and Four credits (Prediction of operational energy consumption*)
	Ene 02- Energy monitoring	-	-	One credit (First sub-metering credit)	One credit (First sub-metering credit)	One credit (First sub-metering credit)
	Wat 01- Water consumption	-	One credit	One credit	One credit	Two credits
	Wat 02- Water monitoring	-	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only
	Mat 03 - Responsible sourcing of construction products	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only
	Wst 01 - Construction waste management	-	-	-	-	One credit
	Wst 03 - Operational waste	-	-	-	One credit	One credit

4. Credits Requiring Early Actions

Under the BREEAM 2018 UK New Construction criteria, there are a number of credits which require early action by the design team in order for the credits to be awarded. The relevant credits, the actions which need to be carried out and when these would be executed are listed below in Table 2.3.

Table 2.3: BREEAM 2018 Early Stage credits (RIBA Stage 1, 2 & 3)		
Credit Issue	RIBA Stage 1 Action Required	RIBA Stage 2 & 3 Actions Required
Man 01: Project Brief and Design	-	<p>One Credit – Stakeholder Consultation: Prior to completion of the Concept Design (RIBA Stage 2 or equivalent), the project delivery stakeholders should have met to identify and define their roles, responsibilities and contributions for each of the key phases of project delivery.</p> <p>One Credit – Stakeholder Consultation: By completion of Concept Design Stage</p> <p>One Credit – Sustainability Champion: the defined performance targets must be formally agreed between the client and design/project team</p>
Man 02: Life Cycle Costing and Service Life Planning	-	An elemental level Life Cycle Cost (LCC) analysis has been carried out based on the proposals developed during RIBA Stage 2
Mat 06: Material Efficiency	Consult with relevant design team members to identify and implement measures for efficient use of materials.	-
Hea 06: Security	-	Appoint security specialist to conduct a Security Needs Assessment (SNA) or consult with an Architectural Liaison office (ALO)
Ene 04: Low Carbon Design	-	Carry out a passive design analysis and a renewables feasibility study

Table 2.3: BREEAM 2018 Early Stage credits (RIBA Stage 1, 2 & 3)		
Credit Issue	RIBA Stage 1 Action Required	RIBA Stage 2 & 3 Actions Required
Wst 05: Adaption to Climate Change	-	Conduct a climate change adaption strategy appraisal for structural and fabric resistance
Wst 06: Design for disassembly and adaptability	-	Undertake a building specific functional adaption strategy study. Incorporate adaption measures into the design where practical and cost effective.

5. Specialist Reports

The pre-assessment identified a number of specialist’s reports and additional activities that are either proposed or have been considered to be commissioned at specific stages in order to satisfy the analysis and documentation necessary to meet the minimum standards (*) and the ‘Target’ credits.

Considerate Constructors Scheme (CCS) *

The scheme is a national initiative where registered sites and companies are monitored against a Code of Considerate Practice designed to encourage best practices that respect the community, protect the environment, secure everyone’s safety and value their workforce.

Building User Guide *

The purpose of the guide is to help building users to understand and operate the building efficiently, in a manner that keeps the original design intent.

Seasonal Commissioning *

Additional commissioning activities to be performed over a 12 month period after the building has been occupied in order to test and adjust building services under different load and weather conditions.

Daylight Analysis

This analysis will assess the natural light levels admitted by the building in an aim to reduce electric lighting while preventing occupant discomfort.

Thermal Model & Climate Change

A full dynamic thermal analysis using approved software to ensure that a thermally comfortable environment for occupants is achieved including future climate change scenarios.

Energy Model *

The energy performance shall be model using either the Simplified Energy Model (SBEM) or a third party approved software. It is recommended for this to be carried out as early as possible, in order to maximize the energy savings.

Low Zero Carbon (LZC) Feasibility Study *

The study will determine the most appropriate LZC technologies (on-site or near-site) capable of providing a reduction in CO2 emissions.

Sustainable Procurement Plan

It will establish the framework to source materials from responsible sources and can be adopted an organizational or site-specific level.

Resource Management Plan (RMP)

The plan shall aim to promote resource efficiency via the effective management and reduction of waste and the reuse and direct recycling of materials.

Ecology Assessment *

A suitable qualified ecologist shall conduct a site survey to identify the ecological value of the site and the necessary features to mitigate negative impacts and enhance the site's ecology.

Flood Risk Assessment (FRA)

Assessments in Wales and England shall conform to the recommendations of the Environment Agency's publication Pollution Prevention Pays Guidance, 2013.

Other specialist reports were considered although are not currently being progressed due to their incompatibility with either the scale of the development, the budget or practicality:

Capital Cost Analysis

The capital cost for a construction project includes the expenses related to the initial establishment of the facility including: Land, feasibility studies, Designs, Construction, Insurance, taxes, office overhead, equipment & furnishing and testing reported in £/m2.

Pollution Prevention Plan

The plan must describe the measures to be implemented during the construction activities to prevent soil erosion, sedimentation of storm sewers or receiving streams and pollution of the air with dust and particulate matter.

Post-Occupancy Evaluation (POE)

Survey carried out one year after the initial building occupation to gain in-use performance feedback from users to inform the operational processes (re-commissioning activities, health, safety, comfort, etc). The POE shall be carried by an independent party using the BUS or the BRE's DQM methodologies.

Occupancy Data Collection

Operational system in place in order to collect occupant satisfaction, energy and water consumption data at quarterly intervals for the first three years of building occupation to check the building performance and make any necessary adjustments.

Suitable Qualified Security Specialist (SQSS)

Consultation with an Architectural Liaison Officer (ALO) or a Crime Prevention Design Advisor (CPDA) to promote safe and secure use and access to and from the building.

6. Conclusion

In summary the project aims to adopt features to enhance the environmental performance of the existing building. As can be seen in the table below, the proposed development can achieve 'EXCELLENT' under BREEAM New Construction 2018 scheme.

Environmental Section	Weighting	Credits Available	Credits Targeted	Weighted Score
Management	11.00%	21	17	8.90%
Health & Wellbeing	14.00%	17	15	12.35%
Energy	16.00%	23	14	9.73%
Transport	10.00%	12	6	5.00%
Water	7.00%	9	7	5.44%
Materials	15.00%	14	11	11.78%
Waste	6.00%	10	6	3.59%
Land Use & Ecology	13.00%	13	8	8.00%
Pollution	8.00%	12	11	7.33%
Innovation	10.00%	10	0	0.00%
Indicative BREEAM Score	72.16% 'Excellent' Rating			

7. New construction 2018: Pre-Assessment- Education- Preschool

Assessment details

Assessment references

Registration number: 19-6082 **Date created:** 15/10/2019
Created by: Vanessa Mwenze

Site details

Site name: Marble Hill Playcentres
Address: Richmond Road

Town: Twickenham
County: Greater London
Post code: TW1 2NL
Country: United Kingdom

Certificate details

The certificate will have the name of the architect (if entered above) and the name of the developer (from above).

Any other names to appear on the certificate are listed below:

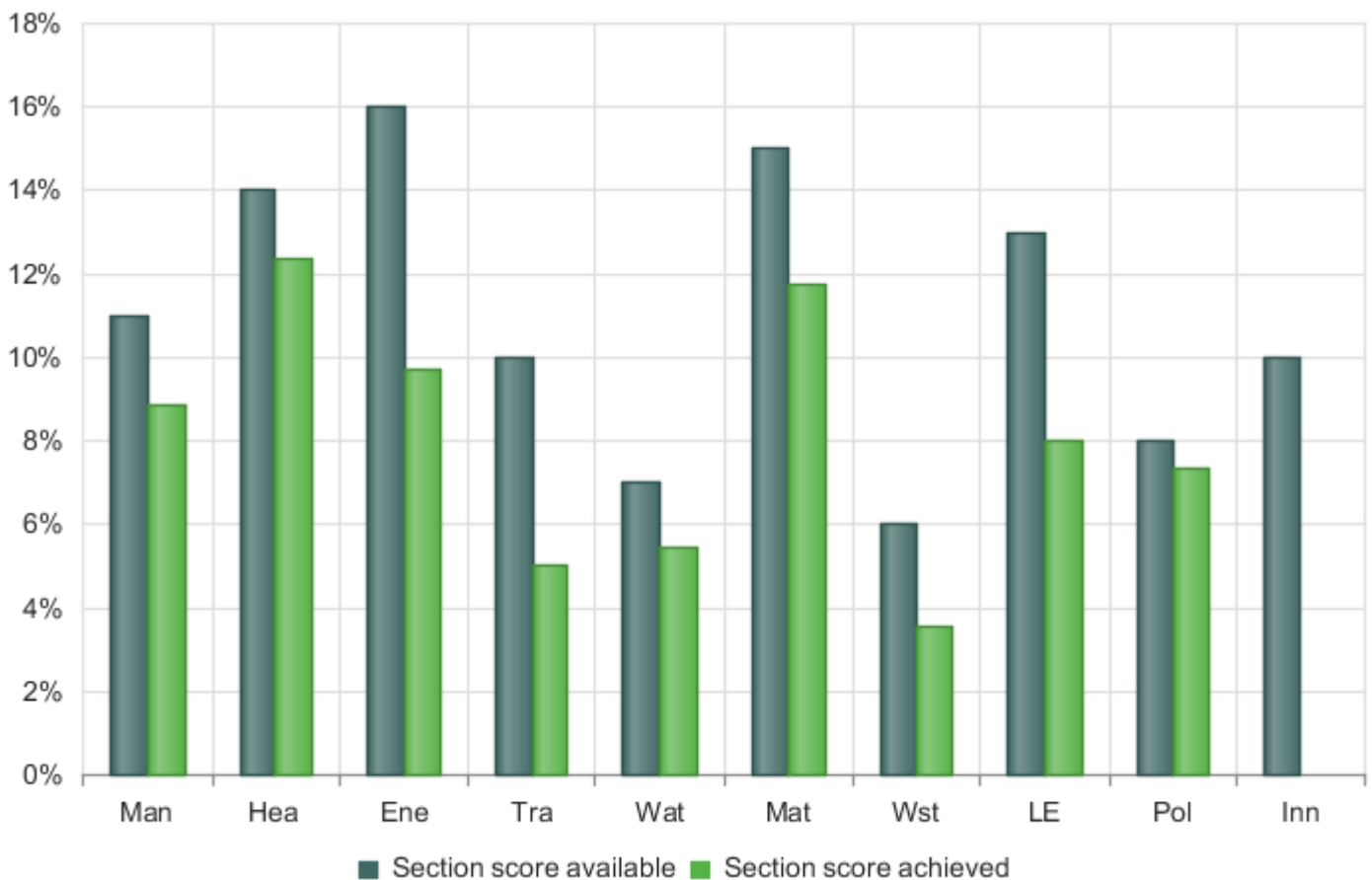
Name	Label
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BREEAM rating

BREEAM Rating

	Credits available	Credits achieved	% Credits achieved	Weighting	Category score
Man	21.0	17.0	80.95%	11.00%	8.90%
Hea	17.0	15.0	88.24%	14.00%	12.35%
Ene	23.0	14.0	60.87%	16.00%	9.73%
Tra	12.0	6.0	50.00%	10.00%	5.00%
Wat	9.0	7.0	77.78%	7.00%	5.44%
Mat	14.0	11.0	78.57%	15.00%	11.78%
Wst	10.0	6.0	60.00%	6.00%	3.59%
LE	13.0	8.0	61.54%	13.00%	8.00%
Pol	12.0	11.0	91.67%	8.00%	7.33%
Inn	10.0	0.0	0.00%	10.00%	0.00%
Total	141.0	95.0	67.38%	-	72.16%
Rating	-	-	-	-	Excellent

Performance by environmental category



Initial details

Richmond Road

Initial details

Technical manual issue number : Issue 2.0

Project scope : Fully fitted

Building type (main description) : Education

Sub-group : Preschool

Assessment stage : Design (interim)

Building floor area (GIA) : 799 m²

Building floor area (NIFA) : 799 m²

Is the building designed to be untreated? : No

Building services - heating system type : Wet system

Building services - cooling system type : Air-conditioning

Are commercial or industrial-sized refrigeration and storage systems specified? : No

Are building user lifts present? : Yes

Are building user escalators or moving walks present? : No

Are there any water demands present other than those assessed in Wat 01? : Yes

Does the building have external areas within the boundary of the assessed development? : Yes

Are there statutory requirements, or other issues outside of the control of the project, that impact the ability to provide outdoor space : Yes

Are there any systems specified that contribute to the unregulated energy load? : Yes

Are the Post-occupancy stage credits targeted in Ene 01 issue? : Yes

Laboratories

Are laboratories present? : No

Are there fume cupboard(s) and/or other containment devices present? : No

Category assessment

Management | Man

Man 01 Project Brief and design

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

Site : Richmond Road

ASSESSMENT CRITERIA

Project delivery planning :	Yes
Stakeholder consultation (interested parties) :	Yes
Prerequisite: Have the client and the contractor formally agreed performance targets? :	Yes
BREEAM Advisory Professional (Concept Design) :	No

Credits awarded : 2

Man 02 Life cycle cost and service life planning

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

Site : Richmond Road

ASSESSMENT CRITERIA

Elemental LCC :	Yes
Component level LCC options appraisal :	No
Capital cost reporting :	Yes
Capital cost of the project :	100000 Â£k/m ²

Credits awarded : 3

Man 03 Responsible construction practices

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

Site : Richmond Road

ASSESSMENT CRITERIA

Prerequisite: Are all timber and timber-based products used during the construction process of the project 'legally harvested and traded timber'? :	Yes
Environmental management :	Yes
Prerequisite: Have the client and the contractor formally agreed performance targets? :	Yes
BREEAM Advisory Professional (site) :	Yes
Responsible construction management :	2
Monitoring of construction site impacts :	Yes
Utility consumption :	Yes

Transport of construction materials and waste :	Yes
Exemplary level criteria - Responsible construction management :	No

KEY PERFORMANCE INDICATORS: CONSTRUCTION SITE ENERGY USE

Energy consumption (total) - site processes :	0 kWh
Energy consumption (intensity) - site processes :	0 kWh/project value

KEY PERFORMANCE INDICATORS: CONSTRUCTION SITE GREENHOUSE GAS EMISSIONS

Process greenhouse gas emissions (total) - site processes :
Carbon dioxide emissions (intensity) - site processes :

Credits awarded : 5

Man 04 Commissioning and handover

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

Site : Richmond Road

ASSESSMENT CRITERIA

Commissioning testing schedule and responsibilities :	Yes
Commissioning - design and preparation :	Yes
Testing and inspecting building fabric :	Yes
Handover - have a technical and a non-technical building user guide been developed prior to handover? :	Yes
Handover - have a technical and a non-technical training schedule been prepared around handover? :	Yes

Credits awarded : 4

Man 05 Aftercare

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

Site : Richmond Road

ASSESSMENT CRITERIA

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

Credits awarded : 3

Hea 01 Visual comfort

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

Site : Richmond Road

ASSESSMENT CRITERIA

Control of glare from sunlight :	Yes
Daylighting (building type dependent) :	2
View Out :	Yes
Internal and external lighting levels, zoning and controls :	Yes
Exemplary level criteria - Daylighting :	
Exemplary level criteria- Internal and external lighting levels, zoning and control :	

Credits awarded : 5

Hea 02 Indoor air quality

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

Site : Richmond Road

ASSESSMENT CRITERIA

Pre requisite: Indoor air quality (IAQ) plan :	Yes
Ventilation :	Yes
Emissions from building products :	1
Post-construction indoor air quality measurement :	Yes
Exemplary level criteria- Emissions from building products :	

KEY PERFORMANCE INDICATORS

Formaldehyde concentration :	0.5 $\hat{1}$ / ₄ g/m ³
Total volatile organic compound (TVOC) concentration :	0.5 $\hat{1}$ / ₄ g/m ³

Credits awarded : 3

Hea 04 Thermal comfort

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

Site : Richmond Road

ASSESSMENT CRITERIA

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

KEY PERFORMANCE INDICATORS

PMV and PPD Indices :

Credits awarded : 2

Hea 05 Acoustic performance

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

Site : Richmond Road

ASSESSMENT CRITERIA

Criteria performance requirements or SQA bespoke requirements? :	Criteria performance requirements
Sound insulation :	1
Indoor ambient noise level :	Yes
Room acoustics :	Yes

Credits awarded : 3

Hea 06 Security

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

Site : Richmond Road

ASSESSMENT CRITERIA

Security of site and building :	Yes
Exemplary level criteria :	

Credits awarded : 1

Hea 07 Safe and Healthy Surroundings

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

Site : Richmond Road

ASSESSMENT CRITERIA

Safe Access :	Yes
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Credits awarded : 1

Ene 01 Reduction of energy use and carbon emissions

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

Site : Richmond Road

ASSESSMENT CRITERIA

Country :	England
Energy Production by Technology :	
Energy & CO ₂ Emissions Summary :	
Actual building energy demand :	80 MJ/m ² yr
Notional building energy demand :	50 MJ/m ² yr
Actual building primary energy consumption :	15 kWh/m ² yr
Notional building primary energy consumption :	20 kWh/m ² yr
Actual building CO ₂ -eq emissions (BER) :	50 KgCO ₂ -eq/m ² yr
Notional building CO ₂ -eq emissions (TER) :	100 KgCO ₂ -eq/m ² yr

BUILDING SCORE

Total BREEAM credits achieved :	8.0
Heating and cooling demand energy performance ratio (EPR _{dem}) :	0.331
Primary consumption energy performance ratio (EPR _{pc}) :	0.332
CO ₂ -eq energy performance ratio (EPR _{co2-eq}) :	0.333
Overall building energy performance ratio (EPR _{nc}) :	0.996
% improvement BER/TER :	98.0 %

ASSESSMENT CRITERIA (EXEMPLARY CREDITS)

Zero net CO ₂ -eq emissions :	No
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ASSESSMENT CRITERIA

Has a design workshop focusing on operational energy performance been carried out? :	No
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ASSESSMENT CRITERIA (EXEMPLARY CREDITS)

Maximum credits achieved in Ene 02 Energy monitoring? :	Yes
The client or building occupier commits funds to pay for the post-occupancy stage? :	Yes
The energy model is submitted to BRE and retained by the building owner? :	No

Credits awarded : 8

Ene 02 Energy monitoring

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

Site : Richmond Road

ASSESSMENT CRITERIA

Sub-metering of end use categories : Yes

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

Credits awarded : 2

Ene 03 External lighting

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

Site : Richmond Road

ASSESSMENT CRITERIA

External lighting has been designed out? : Yes

Credits awarded : 1

Ene 04 Low carbon design

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

Site : Richmond Road

ASSESSMENT CRITERIA

Has the first credit within Hea 04 been achieved? : Yes

Passive design analysis : Yes

Free cooling : No

Low and zero carbon technologies : No

KPI

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

Expected energy demand and CO₂-eq emissions reduction resulting from passive design measures :

Expected energy demand and CO₂-eq emissions reduction resulting from passive design measures as a percentage :

Expected reduction in CO₂-eq emissions resulting from the LZC technologies :

Expected reduction in CO₂-eq emissions resulting from the LZC technologies as a percentage :

Credits awarded : 1

Ene 05 Energy efficient cold storage

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

Site : Richmond Road

Ene 06 Energy efficient transportation systems

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

Site : Richmond Road

ASSESSMENT CRITERIA

Energy consumption :

Energy efficient features - Lifts :

Credits awarded : 0

Ene 07 Energy efficient laboratory systems

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

Site : Richmond Road

ASSESSMENT CRITERIA - N/A

Ene 08 Energy efficient equipment

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

Site : Richmond Road

ASSESSMENT CRITERIA

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

Credits awarded : 2

Tra 01 Transport assessment and travel plan

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

Site : Richmond Road

ASSESSMENT CRITERIA

Travel plan :	Yes
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Credits awarded : 2

Tra 02 Sustainable transport measures

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

Site : Richmond Road

ASSESSMENT CRITERIA

Prerequisite :	Yes
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Location type (based on existing AI) :	AI <25
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Number of points achieved overall :	4
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Credits awarded : 4

Wat 01 Water consumption

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

Site : Richmond Road

ASSESSMENT CRITERIA

Please select the calculation procedure used :	Standard approach
Credits awarded :	3
Exemplary performance :	No

KEY PERFORMANCE INDICATORS

Standard approach data: :	
Water Consumption from building micro-components :	105 L/person/day
Water demand met via greywater/rainwater sources :	20 L/person/day
Total net water consumption :	105 L/person/day
Improvement on baseline performance :	40 %
Key Performance Indicator - use of freshwater resource: :	
Total net Water Consumption :	0 m3/person/yr
Default building occupancy :	0

Credits awarded : 3

Wat 02 Water monitoring

To reduce the consumption of potable water in new buildings through the effective management and monitoring of water consumption.

Site : Richmond Road

ASSESSMENT CRITERIA

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

Credits awarded : 1

Wat 03 Water leak detection

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

Site : Richmond Road

ASSESSMENT CRITERIA

Leak detection system : Yes

Flow control devices : Yes

Credits awarded : 2

Wat 04 Water efficient equipment

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

Site : Richmond Road

ASSESSMENT CRITERIA

Water efficient consumption : Yes

Credits awarded : 1

Mat 01 Life cycle impacts

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

Site : Richmond Road

ASSESSMENT CRITERIA

Total Mat 01 credits achieved - taken from the Mat 01/02 Results Submission Tool :	5
Total Exemplary credits achieved - taken from the Mat 01/02 Results Submission Tool :	0

Credits awarded : 5

Mat 02 Environmental impacts from construction products

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

Site : Richmond Road

ASSESSMENT CRITERIA

Mat 02 credit achieved - Taken from the Mat 01/02 Results Submission Tool. :	1
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Credits awarded : 1

Mat 03 Responsible sourcing

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

Site : Richmond Road

ASSESSMENT CRITERIA

Prerequisite: All timber and timber based products are 'Legally harvested and traded timber' :	Yes
Has the enabling sustainable procurement credit been achieved? :	No
Mat 03 minimum scope level :	plus Substructure and hard landscaping / Internal Finishes
Percentage of available for percentage of RSM points achieved :	70 %

Credits awarded : 3

Mat 05 Designing for durability and resilience

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

Site : Richmond Road

ASSESSMENT CRITERIA

Protecting vulnerable parts of the building from damage and exposed parts of the building from material degradation :	Yes
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Credits awarded : 1

Mat 06 Material efficiency

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

Site : Richmond Road

ASSESSMENT CRITERIA

Material optimisation measures investigated and implemented at all relevant stages :	Yes
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Credits awarded : 1

Wst 01 Construction waste management

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

Site : Richmond Road

ASSESSMENT CRITERIA

Is demolition occurring under the developer's ownership for the purpose of enabling the assessed development? :	Yes
Pre-demolition audit :	Yes
Compliant Resource Management Plan :	Yes
Have waste materials been sorted into separate key waste groups? :	Yes
Exemplary level criteria :	

KPI

Measure/units for the data being reported :	tonnes
Non-hazardous construction waste (excluding demolition/excavation) - fill in to award 'Construction resource efficiency' credits :	6.5 tonnes/100m2
Total non-hazardous construction waste generated :	80 tonnes
Non-hazardous non-demolition construction waste diverted from landfill - fill in to award diversion from landfill credit :	90 %
Total non-hazardous non-demolition construction waste diverted from landfill :	6.5 tonnes
Non-hazardous demolition waste diverted from landfill - fill in to award diversion from landfill credit :	90 %
Total non-hazardous demolition waste generated :	6.5 tonnes
Total non-hazardous demolition waste to disposal :	90 tonnes
Non-hazardous excavation waste diverted from landfill - fill in to award credit :	90 %
Material for reuse :	
Material for recycling :	
Material for energy recovery :	
Hazardous waste to disposal :	

Credits awarded : 4

Wst 02 Use of recycled and sustainably sourced aggregates

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

Site : Richmond Road

ASSESSMENT CRITERIA

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

Credits awarded : 0

Wst 03 Operational waste

To encourage the recycling of operational waste through the provision of dedicated storage facilities and space.

Site : Richmond Road

ASSESSMENT CRITERIA

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

Credits awarded : 1

Wst 04 Speculative finishes (Offices only)

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

Site : Richmond Road

ASSESSMENT CRITERIA - N/A

Wst 05 Adaptation to climate change

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

Site : Richmond Road

ASSESSMENT CRITERIA

Resilience of structure, fabric, building services and renewables installation :	No
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Credits awarded : 0

Wst 06 Design for disassembly and adaptability

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

Site : Richmond Road

ASSESSMENT CRITERIA

Design for disassembly and functional adaptability - recommendations :	Yes
Disassembly and functional adaptability - implementation :	No

Credits awarded : 1

LE 01 Site selection

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

Site : Richmond Road

ASSESSMENT CRITERIA

Percentage of proposed development's footprint on previously occupied land: :	90 %
Contaminated land :	No

Credits awarded : 1

LE 02 Ecological risks and opportunities

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

Site : Richmond Road

ASSESSMENT CRITERIA

Assessment route selection :	Comprehensive
Prerequisite - Statutory obligations :	Yes
Survey and Evaluation :	Yes
Determining ecological outcomes :	Yes
Exemplary level - Wider site sustainability :	

Credits awarded : 2

LE 03 Managing impacts on ecology

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

Site : Richmond Road

ASSESSMENT CRITERIA

Assessment route :	Comprehensive
Prerequisite - Ecological risks and opportunities :	Yes
Planning and measures on-site :	Yes
Managing negative impacts :	1

Credits awarded : 2

LE 04 Ecological change and enhancement

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

Site : Richmond Road

ASSESSMENT CRITERIA

Assessment route :	Comprehensive
LE03 'Managing negative impacts' criteria achieved :	Yes
Prerequisite - Managing negative impacts on ecology :	Yes
Ecological enhancement (Comprehensive route only) :	Yes
Change and enhancement of ecology (Comprehensive route only) :	0

Credits awarded : 1

LE 05 Long term ecology management and maintenance

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

Site : Richmond Road

ASSESSMENT CRITERIA

Assessment route :	Comprehensive
LE03 'Managing negative impacts' criteria achieved :	Yes
At least one credit achieved in LE 04 :	Yes
Prerequisite - Statutory obligations, planning and site implementation :	Yes
Management and maintenance throughout the project :	Yes
Landscape and ecology management plan :	Yes

Credits awarded : 2

Pol 01 Impact of refrigerants

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

Site : Richmond Road

ASSESSMENT CRITERIA

Refrigerant containing systems installed in the assessed building? :	Yes
Prerequisite: 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
Total Direct Effect Life Cycle CO ₂ eq (DELCO). Emissions from the system :	0 kgCO ₂ eq/kW
Global Warming Potential (GWP) of the specified refrigerant(s) 10 or less? :	

LEAK DETECTION

Are all the systems hermetically sealed? :	Yes
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Credits awarded : 3

Pol 02 Local air quality

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

Site : Richmond Road

ASSESSMENT CRITERIA

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

Credits awarded : 2

Pol 03 Flood risk management and reducing surface water run-off

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

Site : Richmond Road

ASSESSMENT CRITERIA

Prerequisite: 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 :	Medium
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
Has the Surface Water Run-Off - Volume credit been achieved? :	Yes
Minimising watercourse pollution :	Yes

Credits awarded : 4

Pol 04 Reduction of Night Time Light Pollution

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

Site : Richmond Road

ASSESSMENT CRITERIA

External lighting has been designed out? : Yes

Credits awarded : 1

Pol 05 Noise attenuation

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

Site : Richmond Road

ASSESSMENT CRITERIA

Noise-sensitive areas/buildings within 800m radius of the development : No

Credits awarded : 1

Inn 01 Innovation

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

Site : Richmond Road

ASSESSMENT CRITERIA

Number of 'approved' innovation credits achieved? :	0
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Credits awarded : 0