BUXTON STORE EXTENSION

BREEAM PRE-ASSESSMENT

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Executive Summary

This BREEAM* pre-assessment of the extension of the Morrisons Buxton store sets out the project's strategy for achieving a BREEAM rating of 'Very Good'. The expected credits to be achieved against each BREEAM issue relevant to the project are set out in this document. The resultant score achieved in each BREEAM category is shown in Figure E.a. The overall score of the project is predicted to be 59%, exceeding the 'Very Good' threshold of 55%. Minimum BREEAM standards for a 'Very Good' rating are also achieved by ensuring one credit is achieved under the following issues.

- Man 1 – Commissioning
- Hea 4 – High frequency lighting
- Hea 12 – Microbial contamination
- Ene 2 – Sub-metering of substantial energy uses
- Wat 1 – Water consumption
- Wat 2 – Water meter
- LE 4 – Mitigating ecological impact

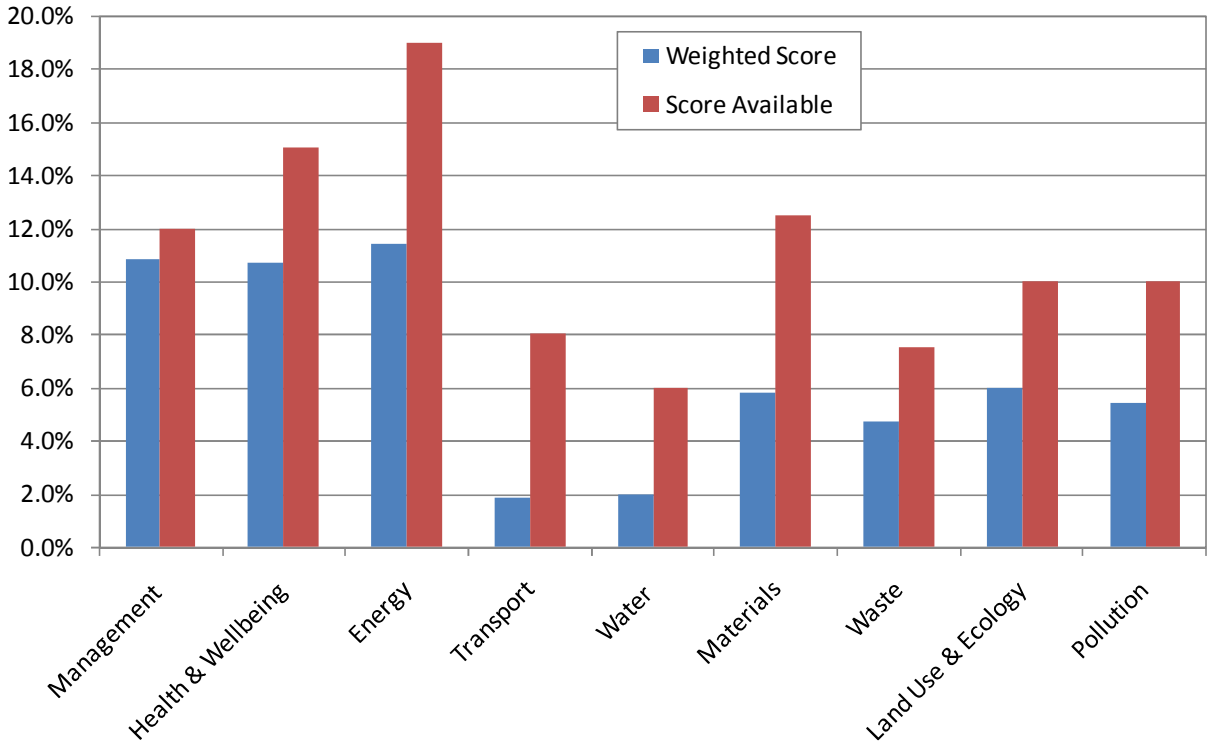

Figure E.a The expected performance of the Buxton Morrisons store extension against each BREEAM 2008 category.

* Building Research Establishment (BRE) Environmental Assessment Method.

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1 Introduction

A 1,253 m^2 extension is planned for the 3,699 m^2 Morrisons store at Buxton. Classing this project as a 'major development', High Peak Borough Council, the local planning authority, is asking for a BREEAM pre-assessment to be submitted demonstrating how the work will achieve a BREEAM rating of 'Very Good'. This report presents the credits targeted for the development, the means of achieving these credits, and the expected score and rating for the development.

BREEAM, the Building Research Establishment (BRE) Environmental Assessment Method, was first developed in 1990 to measure the sustainability of non-domestic buildings in the UK. BREEAM has been widely used as a benchmark for sustainable building design and construction by central government, private companies and local planning authorities. The rating system indicates how buildings go beyond the requirements of Building Regulations and standard practice. Morrisons is one of the companies which have taken up BREEAM as a benchmark, using it for all its new store projects.

BREEAM assesses the performance of buildings across nine categories:

- **Management (Man)** – covers the management of the design, construction, commissioning and handover process.
- **Health and Wellbeing (Hea)** – assesses the design of the internal environment to ensure the health and comfort of building occupants and visitors.
- **Energy (Ene)** – rates the building's energy efficiency, metering and the use of renewable energy to minimise carbon emissions.
- **Transport (Tra)** – assesses the effect of the site's location, landscaping and other measures on local transport through encouraging occupants and visitors to travel by bike, by public transport or on foot.
- **Water (Wat)** – rates the use of efficiency measures and recycling to minimise the building's demand for mains water.
- **Materials (Mat)** – assesses the environmental impact of the project's building materials and constructions.
- **Waste (Wst)** – provides credit for minimising waste associated with the building's construction and operation.
- **Land Use and Ecology (LE)** – scores the building project's impact on the ecology of the site.
- **Pollution (Pol)** – covers environmental issues not included under the above categories such as NO_x emissions, refrigerant loss, flood risk, water pollution and light pollution.

Under the 2008 BREEAM schemes, the building project's performance under the above categories is weighted as shown in Figure 1.a.

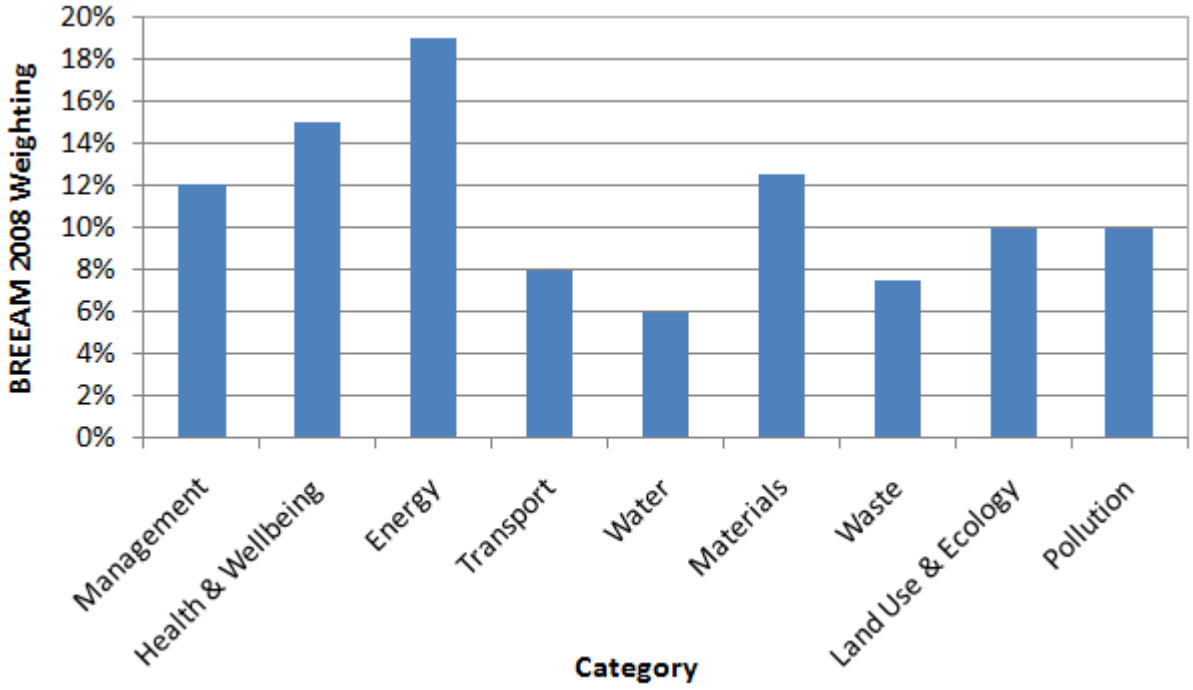

Figure 1.a Weighting of categories under the BREEAM 2008 schemes.

The achievement of a *Very Good* rating requires a score of 55% or more and a minimum standard of one credit under each of the following issues:

- Man 1 – Commissioning
- Hea 4 – High frequency lighting
- Hea 12 – Microbial contamination
- Ene 2 – Sub-metering of substantial energy uses
- Wat 1 – Water consumption
- Wat 2 – Water meter
- LE 4 – Mitigating ecological impact

Table 1.a shows the stages of a typical BREEAM assessment.

Table 1.a Stages of a typical BREEAM assessment.

Stage	Description
Pre-assessment	Identification of site constraints and opportunities. Consultation with the design team and client. Development of a feasible strategy for achieving the target BREEAM rating. Instructing members of the design team on required actions to meet credit requirements.
Design Stage	Guidance of the design team. Assessment of compliance with credit requirements. Compilation of design evidence to demonstrate the achievement of each credit's requirements. BRE auditing and interim certification.
Post Construction Stage	Review of the completed building and final documentation to assess compliance with credit requirements. Confirmation of interim certification. BRE auditing and "as built" certification.

The extension of the Morisons Buxton store will be assessed under the BREEAM 2008 Retail Scheme covering the issues described in Section 2.

2 Credits

2.1 Introduction

The sections below set out the issues of BREEAM Retail 2008 relevant to the Morrisons Buxton extension project, the credits available under each issue and the number targeted by the project. 'Measures Implemented' sets out the actions undertaken or planned to meet the requirements of each issue.

2.2 Management

Issue		Credits available	Credits targeted	Measures Implemented
Man 1	Commissioning	**2**	**2**	An appropriate project team member will be appointed to monitor commissioning on behalf of the client to ensure commissioning will be carried out in line with current best practice. Seasonal commissioning will be carried out during the first year of occupation, post construction.
Man 2	Considerate Constructors	**2**	**2**	The project will be formally certified under CCS and will achieve a score of 32 or higher
Man 3	Construction Site Impacts	**4**	**3**	It is expected that the following measures will be undertaken by the construction contractor: • Monitor, report and set targets for energy arising from site activities • Monitor, report and set targets for water consumption arising from site activities • Implement best practice policies in respect of air (dust) pollution arising from the site • Implement best practice policies in respect of water (ground and surface) pollution occurring on the site • At least 80% of site timber will be responsibly sourced and 100% will be legally sourced.
Man 4	Building user guide	**1**	**1**	A simple guide will be provided that covers information relevant to the tenant/occupants and non-technical building manager on the operation and environmental performance of the building.
Man 8	Security	**1**	**1**	Consultation has been undertaken with Derbyshire Constabulary.

2.3 Health and Wellbeing

Issue		Credits available	Credits targeted	Measures Implemented
Hea 1	Daylighting	**1**	**0**	
Hea 4	High frequency lighting	**1**	**1**	High frequency control gear will be used for all new light fittings.

Issue		Credits available	Credits targeted	Measures Implemented
Hea 5	Internal and external lighting levels	**1**	**1**	All internal and external lighting will be specified in accordance with the appropriate maintained illuminance levels (in lux) recommended by CIBSE.
Hea 8	Indoor air quality	**1**	**1**	New air intakes and outlets will be 10 m apart and air intakes will be more than 20 m from external sources of pollution (*e.g.* car park and vehicle routes).
Hea 9	Volatile Organic Compounds	**1**	**0**	
Hea 10	Thermal comfort	**1**	**1**	CIBSE AM11 compliant dynamic thermal modelling will be used to demonstrate that all new internal spaces will not overheat.
Hea 12	Microbial contamination	**1**	**1**	The risk of waterborne and airborne legionella contamination will been minimised.

2.4 Energy

Issue		Credits available	Credits targeted	Measures Implemented
Ene 1	Reduction of CO_2 Emissions	**15**	**7**	The extension will achieve an EPC rating of 37 or lower.
Ene 2	Sub-metering of Substantial Energy Uses	**1**	**1**	Major energy uses within the extension (including any services shared with the existing building) will be directly sub-metered.
Ene 3	Sub-metering of high energy load Areas and Tenancy	**1**	**1**	New tenant areas and any high energy loads will be directly sub-metered.
Ene 4	External Lighting	**1**	**1**	New external lighting will meet BREEAM's efficacy requirements, and will be daylight and timer controlled.
Ene 5	Low zero carbon technologies	**3**	**2**	Will be achieved by the renewable energy strategy submitted to meet the renewables requirement of High Peak Council.
Ene 6	Building fabric performance & avoidance of air infiltration	**1**	**0**	
Ene 7	Cold storage equipment	**3**	**3**	New refrigeration plant and the refurbishment of existing plant will ensure • Relevant components are on the ECA Energy Technology Product List. • The cold food storage plant will designed to minimise energy consumption in operation (following BREEAM's detailed requirements). • The Heat Harvester will be used to recover high grade heat from the refrigeration equipment.

2.5 Transport

Issue		Credits available	Credits targeted	Measures Implemented
Tra 1	Provision of public transport	**5**	**0**	
Tra 2	Proximity to amenities	**1**	**1**	Achieved by the store itself being a food outlet + having a cash machine and a post box within 500 m.
Tra 3	Cyclist Facilities	**2**	**1**	There are 6 cycle racks already in place. Additional racks will be provided for 10% of full time equivalent staff and for customers equivalent to 5% of standard customer parking spaces.
Tra 4	Pedestrian and cycle safety	**2**	**0**	
Tra 5	Travel plan	**1**	**1**	Travel plan developed in accordance with BREEAM requirements.
Tra 7	Travel information point	**1**	**0**	
Tra 8	Deliveries & manoeuvring	**1**	**0**	

2.6 Water

Issue		Credits available	Credits targeted	Measures Implemented
Wat 1	Water Consumption	**3**	**1**	Some measures already in place in relevant WC areas (*e.g.* push taps in customer and staff WCs). Additional alterations expected to ensure the minimum requirements are met potentially taking the form of reducing flush volumes in WCs or reducing tap flow rates and retrofitting waterless systems to urinals.
Wat 2	Water meter	**1**	**1**	Present metering will be reviewed and a new meter fitted if necessary.
Wat 3	Major leak detection	**1**	**0**	
Wat 4	Sanitary supply shut off	**1**	**0**	
Wat 5	Water recycling	**2**	**0**	
Wat 6	Irrigation systems	**1**	**1**	New planting on the site will not require watering.

2.7 Materials

Issue		Credits available	Credits targeted	Measures Implemented
Mat 1	Materials Specification (major building elements)	**4**	**3**	Wall and roof constructions expected to achieve A or A+ ratings. Further design and specification will be guided by the BRE 'Green Guide for Specification' to ensure these credits are achieved.
Mat 2	Hard landscaping and boundary protection	**1**	**1**	Limited hard landscaping provided as part of the project so 80% of material used could be A or A+ rated in the BRE Green Guide.
Mat 3	Re-use of building façade	**1**	**0**	
Mat 4	Re-use of building structure	**1**	**0**	
Mat 5	Responsible sourcing of materials	**3**	**0**	
Mat 6	Insulation	**2**	**1**	Insulation for major end-uses will be A or A+ rated in the BRE 'Green Guide'.
Mat 7	Designing For Robustness	**1**	**1**	The following durability measures will be implemented: • Bollards/barriers/raised kerbs to delivery and vehicle drop-off areas • Robust external wall construction, up to 2m high • Corridor walls specified to Severe Duty (SD) as per BS 5234-267 • Protection rails to walls of corridors • Kick plates/impact protection (from trolleys etc) on doors • Hard-wearing and easily washable floor finishes in heavily used circulation areas (i.e. main entrance, corridors, public areas etc)

2.8 Waste

Issue		Credits available	Credits targeted	Measures Implemented
Wst 1	Construction Site Waste Management	**4**	**2**	Less than 6.5 tonnes per m^2 GIFA or 12.9 m^3 per m^2 GIFA waste will be generated from construction or 75% by weight of waste will be diverted from landfill and a total of 8.5 tonnes waste per m^2 GIFA generated.
Wst 2	Recycled aggregates	**1**	**1**	25% of high grade aggregate (used in floor slabs, road surfaces and building foundations) will be recycled from on-site waste, construction sites within 30 miles or from industrial side-product.
Wst 3	Recyclable waste storage	**1**	**1**	The store provides dedicated space provided for the separation and storage of 6 types of recyclable material.
Wst 4	Compactor / Baler	**1**	**1**	A waste baler is provided.

Issue		Credits available	Credits targeted	Measures Implemented
Wst 5	Composting	**1**	**0**	

2.9 Land Use and Ecology

Issue		Credits available	Credits targeted	Measures Implemented
LE1	Re-use of land	**1**	**0**	
LE2	Contaminated land	**1**	**0**	
LE3	Ecological value of site AND Protection of ecological features	**1**	**0**	
LE4	Mitigating Ecological impact	**2**	**2**	The extension project will avoid a reduction in the number of species on site.
LE5	Enhancing Site Ecology	**3**	**2**	An appropriate ecology report will be produced and its recommendations implemented to achieve a net increase in the ecological value of the site.
LE6	Long term impact on biodiversity	**2**	**2**	The project's ecologist will provide a landscape & habitat management plan. The construction contractor will adopt appropriate measures for protecting site ecology.

2.10 Pollution

Issue		Credits available	Credits targeted	Measures Implemented
Pol 1	Refrigerant GWP - Building services	**1**	**1**	The extension will not include any comfort cooling plant
Pol 2	Preventing refrigerant leaks	**2**	**1**	Refrigerant leak detection is included in the present system and will monitor new parts of the system.
Pol 3	Refrigerant GWP - Cold storage	**1**	**0**	
Pol 4	NOx emissions from heating source	**3**	**0**	
Pol 5	Flood risk	**3**	**3**	The site has a low risk of flooding. Run-off from the site will be no greater following the extension than it would be at present.
Pol 6	Minimising watercourse pollution	**1**	**1**	The existing bypass separator in the car park will be used to prevent watercourse pollution.

Issue		Credits available	Credits targeted	Measures Implemented
Pol 7	Reduction of Night Time Light Pollution	**1**	**1**	New external lighting will be designed in compliance with Table 1 (and accompanying notes) of the ILE Guidance notes for the reduction of obtrusive light, 2005.
Pol 8	Noise Attenuation	**1**	**0**	

3 Score and Rating

Table 3.a shows the weighted score from the BREEAM pre-assessment of the extension of the Morrisons Buxton store. The achievement of an overall score greater than 55% and the minimum BREEAM standards identified in Section 1 shows the extension project can achieve a BREEAM rating of 'Very Good'.

Table 3.a The BREEAM score achieved by the extension of the Morrisons Buxton store.

	Environmental weighting	Credits available	Credits achieved	% Achieved	Weighted Score
Management	12.0%	10	9	90.0%	10.8%
Health & Wellbeing	15.0%	7	5	71.4%	10.7%
Energy	19.0%	25	15	60.0%	11.4%
Transport	8.0%	13	3	23.1%	1.8%
Water	6.0%	9	3	33.3%	2.0%
Materials	12.5%	13	6	46.2%	5.8%
Waste	7.5%	8	5	62.5%	4.7%
Land Use & Ecology	10.0%	10	6	60.0%	6.0%
Pollution	10.0%	13	7	53.8%	5.4%
				Total	**58.6%**

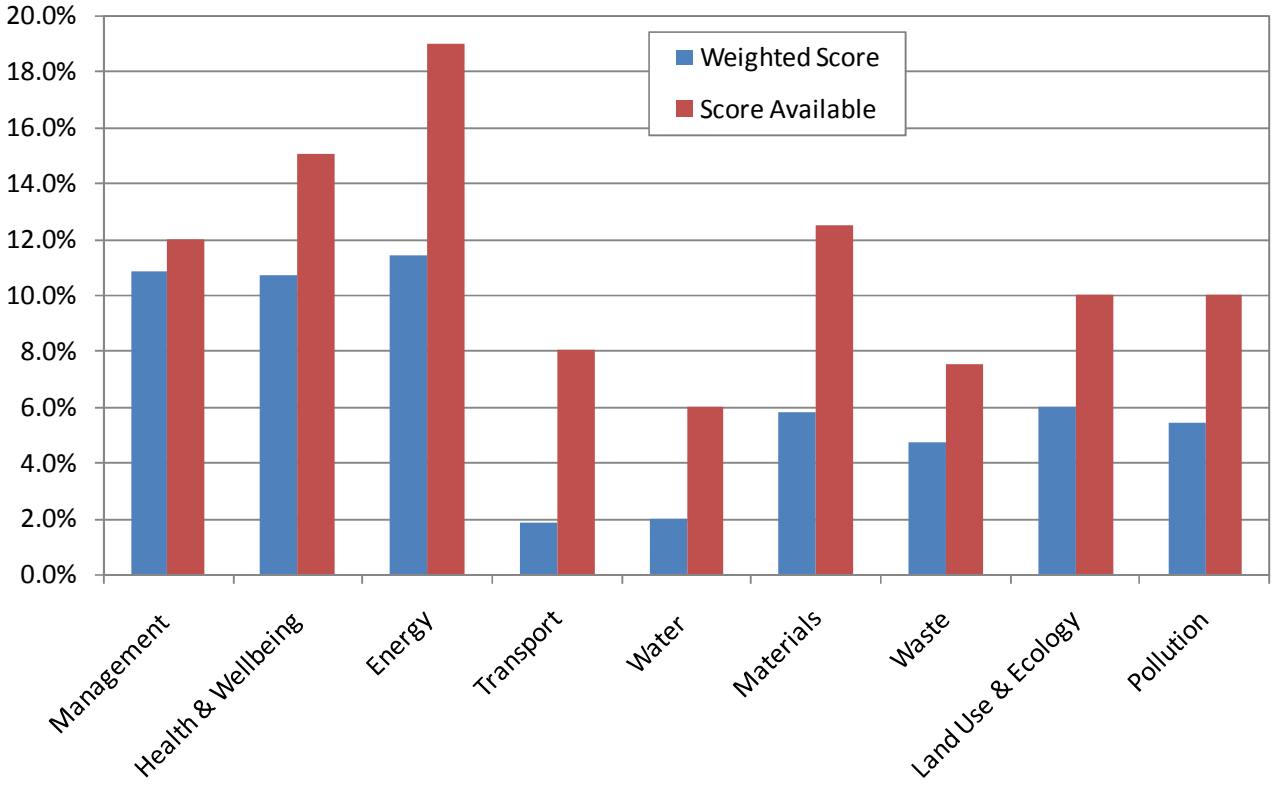

Figure 3.a The expected performance of the BREEAM extension against each BREEAM 2008 category.