

**BREEAM
Refurbishment 2014**

Pre-assessment

Queens Farm

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1 BREEAM Pre-assessment: Introduction

This BREEAM Pre-Assessment Report accompanies the Planning Application for the conversion of an existing agricultural building into storage/workshop units, as well as the conversion of the end bay of the neighbouring building from agricultural use to a workshop.

The project is being assessed under Parts 1, 2 and 3 of the BREEAM Refurbishment and Fit-Out scheme.

This scheme has been designed to offer flexibility, allowing the assessment to reflect the specific scope of works. For instance, where only internal finishes are being upgraded, a Part 4 assessment would be appropriate.

The scheme guidance outlines when each assessment part should be applied, depending on the nature of the refurbishment or fit-out activities.

Importantly, clients may choose which parts they wish to certify against, regardless of the project scope. This ensures flexibility where certain works fall within an assessment part but cannot feasibly meet full BREEAM compliance due to technical, economic, or other constraints.

Part 1: Fabric and Structure

This part applies when the project includes works to the building's existing structure or external envelope, such as:

- Structural alterations
- Replacement or upgrade of external walls, roofs, floors
- Improvements to thermal performance (insulation, airtightness, glazing upgrades)
- Major repairs to the building fabric

Part 2: Core Services

A Part 2 assessment may be appropriate where at least two of the following are being installed or upgraded to a level that requires compliance with the Building Regulations Compliance Guide:

- Central air handling unit Heating boiler
- More than 50% of heat distribution
- Chiller plant

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- More than 50% of chiller distribution
- Water services (sanitary fittings in core)
- Building management system Community heating system (e.g. CCHP)
- Low and zero carbon technologies

Part 3: Local Services

A Part 3 assessment may be appropriate where at least two of the following fixed local building services are being installed or upgraded e.g. a replacement or new installation of local heating/cooling units.

- Replacement of more than 50% of light fittings, system and controls
- Upgrade of zone controls
- Local ventilation
- Local heating units (including sources not connected to core services)
- Local cooling units (including sources not connected to core services)
- Point of use water heaters

BREEAM Refurbishment and Fit-out

The proposed development will fall under BREEAM Refurbishment.

The overall rating of the building's environmental performance is given using terms PASS, GOOD, VERY GOOD, EXCELLENT or OUTSTANDING.

The BREEAM rating bands are as follows:

RATING	SCORE
PASS	30
GOOD	45
VERY GOOD	55
EXCELLENT	70
OUTSTANDING	85

The rating is determined from the total number of BREEAM criteria met and their respective environmental weighting. The environmental weighting for each section is as follows:

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Issue Category	Weighting %
Management	12
Health and Wellbeing	15
Energy	19
Transport	8
Water	6
Materials	12.5
Waste	7.5
Land Use and Ecology	10
Pollution	10

To achieve a BREEAM rating, the minimum percentage score must be achieved and the minimum standards (i.e. number of credits achieved, see below) applicable to that rating level complied with.

Minimum Standards

BREEAM Issue	BREEAM Rating/ Minimum number of credits				
	Pass	Good	Very Good	Excellent	Outstanding
Man 3- Responsible Construction practices				1	2
Man 4- Commissioning and handover				1	1
Man 5- Aftercare				1	1
Ene 1- Reduction of co2 emissions				4	6
Ene 2- Energy Monitoring			1	1	1
Wat 1- Water consumption		1	1	1	2
Wat 2- Water monitoring		1	1	1	1
Mat 3- Responsible Sourcing	1	1	1	1	1
Wst 1- Construction site waste management					1
Wst 3- Operational waste				1	1

The pre-assessment for this industrial building is based on the current design intent and relates to those credits which have potential to be achieved. The following scores were achieved, resulting in a suggested score of 68.08% Very Good (the full pre-assessment can be found in Appendix 2).

Section	Credit Title	Credit No	Credits awarded	Max credits available
Management	Project brief and design	Man 1	2	2
	Life cycle cost and service planning	Man 2	1	1
	Responsible Construction practices	Man 3	3 Excellent level	4
	Commissioning and Handover	Man 4	2 Outstanding level	2
	Aftercare	Man 5	3 Very Good level	3
Health & Wellbeing	Visual comfort	Hea 1	1	6
	Indoor air quality	Hea 2	N/A	N/A
	Thermal Comfort	Hea 4	N/A	N/A
	Acoustic performance	Hea 5	N/A	N/A
	Safety and security	Hea 6	0	1
Energy	Reduction of CO2 emissions	Ene 1	?	15
	Energy monitoring	Ene 2	2	2
	External Lighting	Ene 3	1	1
	Low and zero carbon technologies	Ene 4	1	3
	Energy Efficient transportation systems	Ene 6	N/A	N/A
Transport	Sustainable Transport solutions	Tra 1	N/A	N/A
	Proximity to amenities	Tra 2	0	1
	Tarvel plan	Tra 5	N/A	N/A
Water	Water consumption	Wat 1	5 Outstanding level	5
	Water monitoring	Wat 2	1	1
	Water leak detection and prevention	Wat 3	0	2

Section	Credit Title	Credit No	Credits awarded	Max credits available
Materials	Life cycle impacts	Mat 1	1	2
	Responsible sourcing of materials	Mat 3	3 Outstanding level	4
	Insulation	Mat 4	1	1
	Designing for durability and resilience	Mat 5	1	1
	Material efficiency	Mat 6	0	1
Waste	Construction and waste management	Wst 1	3 Outstanding level	4
	Recycled aggregates	Wst 2	N/A	N/A
	Operational waste	Wst 3	1	1
	Adaption to climate change	Wst 5	1	1
	Functional Adaptability	Wst 6	1	1
Pollution	Impact of refrigerants	Pol 1	N/A	N/A
	Local air quality	Pol 2	0	1
	Surface water run off	Pol 3	N/A	N/A
	Reduction of night time light pollution	Pol 4	1	1
	Noise attenuation	Pol 5	N/A	N/A
Innovation	Innovation	Inn 1	1	
Total			68.08%	Very Good

Key

- **Green** indicates that the credit is likely to be achieved if sufficient evidence is provided.
- **Amber** indicates that there is the potential to score additional credits.
- **Red** indicates that it is very unlikely that the credit will be achieved given the design and the budget.
-

A description of the credits can be found in Appendix 1.

3 Summary

This BREEAM Pre-Assessment is based on the design information available at this stage, with the project progressed to RIBA Stages 0–2.

Appendix 2 includes a BREEAM timeline guidance note that visually sets out the credits required at Preparation & Brief and Concept Design.

The current score of 68.08% places the project at the upper end of 'Very Good'. Following receipt of the pre- and post-refurbishment EPCs, the score is anticipated to rise above 70%, achieving Excellent.

APPENDIX 1

BREEAM DETAILED CREDIT DESCRIPTION

BREEAM Refurbishment Pre-Assessment

For this proposed project to achieve a 'Very Good' rating overall the following is assumed. The black text is achievable with the current design/consent. The areas highlighted in red show the credits that cannot be met due to design constraints or RIBA Stage.

Credit Description
1. Man 01 Sustainable procurement Documentation indicating when the collaboration/procurement began and the roles and responsibilities of the project team i.e Meeting Minutes, construction programme and responsibilities schedule. Stakeholder consultation covering project delivery and relevant third parties. Credit awarded 2/2
2. Man 02 Life cycle cost and service life planning Reporting the capital cost of the projects in pounds per square metre. Credit awarded 1 /1
3. Man 04 Commissioning and Handover A Building User guide will be developed prior to handover. A Commissioning, training and responsibilities schedule will be developed for the scheme. For projects where work is being undertaken to upgrade, renovate or install new building services and systems, an appropriate project team member needs to be appointed to undertake the work. Credits awarded 2/2
4. Man 5 Aftercare Aftercare support will be provided to the building occupiers. Seasonal commissioning will be carried out twelve months after occupation. A post occupancy evaluation will be carried out one year after occupation. Credits awarded 3/3

Credit Description
5. Hea 1 Visual Comfort Internal and external lighting systems are designed to avoid flicker and provide appropriate illuminance (lux) levels Credits awarded 1/6
6. Ene 01 Reduction of CO2 Emissions Recognise improvements in the energy performance of the refurbished building over existing building performance in relation to heating and cooling energy demand, primary energy consumption and carbon dioxide emissions. Encouraging steps taken to reduce energy demand through building design and systems specification. 1. An EPC is required for the existing building and another for the proposed building No credits awarded at present as an EPC is required.
7. Ene 02 Energy Monitoring The following major energy consuming systems (where present) will need to be monitored using either a Building Energy Management System or separate accessible sub-meters with a pulsed output to enable future connection to a BMS. Space heating, domestic hot water, Humidification, cooling, fans, lighting, small power, and other major energy-consuming items where appropriate and building function areas. Credits awarded 2/2
8. Ene 03 External Lighting The average initial luminous efficacy of the external light fittings will need to be not less than 60 luminaires per circuit watt. All external light fittings are automatically controlled for prevention of operation during daylight hours and presence detection in areas of intermittent pedestrian traffic. Credits awarded 1/1
9. Ene 4 Low and Zero carbon technologies The project team analyses the proposed building design and development during Concept Design to identify opportunities for the implementation of passive design measures. A feasibility study has been carried out to establish the most appropriate recognised local low or zero carbon energy sources.

Credit Description Include a free cooling analysis in the passive design analysis. Identify opportunities for the implementation of free cooling solutions. Credits awarded 1/3
22. Wat 01 Water Consumption Reducing the demand for potable water can be achieved through efficient sanitary fittings, rainwater collection, and water-recycling systems. This project will capture rainwater that would otherwise enter the drainage system and use it for WCs, irrigation, vehicle washing, or process water. This significantly reduces potable water consumption and provides both environmental and cost benefits. The required flow rates are: • WCs: effective flush volume of 3.75 litres • Wash-hand basin taps: 2.5 litres/min • Kitchen taps: 5 litres/min Credits awarded 5/5
23. Wat 02 Water Monitoring The water meter must have a pulsed output or connection to existing BMS in accordance with the assessment criteria. Credits Awarded 1/1
24. Wat 03 Water leak detection and Prevention Mains water leak detection will be installed on the building's mains water supply. Flow control devices will be fitted in each sanitary area to regulate the supply of water to each wc area. Credits awarded 0/2
25. Mat 01 Life cycle Impacts Reductions in the building's environmental life cycle impacts through the reuse of materials and the use of tools to analyse the life cycle impact of any new materials using robust environmental information assessment of the main building elements. Credits awarded 1/2

Credit Description
26. Mat 03 Responsible sourcing of materials Selecting products that involve lower levels of negative environmental, economic, and social impact across their supply chain including extraction, processing, and manufacture. All timber used on the project will be sourced in accordance with the UK Government's Timber procurement Policy. 45% of the applicable materials comprising the following building elements will be responsibly sourced: frame, roof, external floors, upper slab, windows, and floor finishes. Credits awarded 3/4
27. Mat 4 Insulation Recognition of the use of thermal insulation which has a low embodied environmental impact relative to its thermal properties. Credits awarded 1/1
28. Mat 5 Designing for durability and resilience BREEAM requires the design team to identify areas at risk of wear, impact, or misuse, and specify materials or design features that reduce damage. Examples include: • Protective corner guards in circulation areas • Robust wall finishes in corridors or plant rooms • Hard-wearing floor surfaces in high-traffic zones • Protection from trolleys, vehicles, or equipment The aim is to extend the life of components and reduce replacement, waste, and maintenance. Credits awarded 1/1
29. Mat 06 Material Efficiency Opportunities have been identified, and appropriate measures investigated and implemented within the scope of refurbishment or fit-out works, to optimise the use of materials through building design, procurement, refurbishment, maintenance and end of life Credits awarded 1/1
30. Waste 01 Construction waste management Diverting non-hazardous construction (on-site and dedicated off-site manufacture/fabrication), demolition and excavation waste (where applicable) generated by the project from landfill Credits awarded 3/4

Credit Description
31. Adaptation to climate change BREEAM requires the design team to identify how climate change could affect the building over time. This typically includes risks such as: • Overheating • Increased rainfall and flooding • More intense storm events • Higher wind loads • Drought and water scarcity Credits awarded 1/1
32. Waste 6 Functional Adaptability To avoid unnecessary materials use, cost and disruption arising from the need for future adaptation works because 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. Credits awarded 1/1
33. Pol 2 Nox emissions Reduction in emissions of nitrous-oxides (NOx) arising from the building's space and water heating systems. Credits assumed 0/1
34. Pol 4 Reduction of night-time light pollution All external lighting (except for safety and security lighting) can be automatically switched off between 23:00 and 07:00. Credits awarded 1/1

APPENDIX 2
PRE-ASSESSMENT ESTIMATOR

BREEAM UK New Construction 2018 scheme assessment timeline

The assessment timeline tables included in the summary page of each category in the UK New Construction 2018 scheme manual have been reproduced in this Guidance Note. The timeline has been produced to assist with optimising project sustainability performance. It outlines at which stage credits should be addressed and ideally when these should be considered by the design team, planner, contractors, owners, occupiers and other members of the project team to achieve the highest possible BREEAM rating at the minimum cost. It demonstrates that where BREEAM advice is taken on too late within the design and construction phases a number of BREEAM credits may not be achieved or only at additional cost or disruption.

		Sub credits	Plan of Work						
			Strategic Definition	Preparation and Brief	Concept Design	Developed Design	Technical Design	Construction	Handover and Close Out
Management									
Man 01	Project brief and design	Project delivery planning							
		Stakeholder consultation							
		BREEAM Advisory Professional			Maximise project performance	Maximise project performance			
Man 02	Life cycle cost and service life planning	Life cycle cost			Elemental LCC		Component level LCC options appraisal		
		Capital cost reporting							
Man 03	Responsible construction practices	Environmental management							
		BREEAM Advisory Professional							
		Responsible construction management							
		Monitoring of construction site impacts							

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Man 04	Commissioning and handover	Commissioning - testing schedule and responsibilities							
		Handover						Building user guides and training schedules prepared	Building user guides and training schedules prepared
Man 05	Aftercare								
Health and Wellbeing									
Hea 01	Visual comfort								
Hea 02	Indoor air quality				Indoor air quality plan				
Hea 04	Thermal comfort								
Hea 05	Acoustic performance				Acoustician appointment				
Hea 06	Security								
Hea 07	Safe and healthy surroundings								
Energy									
Ene 01	Reduction of energy use and carbon emissions								
Ene 02	Energy monitoring								
Ene 03	External lighting								
Ene 04	Low carbon design	Passive design			Passive design analysis				
		Low and zero carbon technologies			Feasibility study				
Ene 05	Energy efficient cold storage	Refrigeration energy consumption			Strategy for design and installation				
Ene 06	Energy efficient transportation systems								

	Design/management influence
	Design/client decision
	Design/management changes at a high cost
	No further changes can be made
	RIBA stage stipulated within BREEAM criteria

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