

BAM Construction Ltd

**Ablett Redevelopment, Ysbyty
Glan Clwyd**

BREEAM Planning Report

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This report takes into account the particular instructions and requirements of our client.
It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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1 Introduction

Ablett Redevelopment, Ysbyty Glan Clwyd is a new build mental health facility replacing the existing Ablett Unit at Glan Clwyd Hospital in Bodelwyddan, Wales.

Ablett Redevelopment is being assessed under BREEAM New Construction 2018 – Healthcare (fully-fitted out). A pre-assessment was undertaken during RIBA Stage 2 to establish the BREEAM requirements for the scheme. The project has been registered with BRE.

This report provides an overview of how the BREEAM ‘Excellent’ rating will be achieved on the project.

2 Planning Policy Requirements

The BREEAM requirements from the National Assembly for Wales, and established by Building Regulations and the sustainable building design requirements set out within Planning Policy Wales (2018) and Technical Advice Note (TAN) 12, are:

‘Applications for non-residential development which will either have a floorspace of 1,000 m2 or more, or will be carried out on a site having an area of one hectare or more, are required to meet the Building Research Establishment Environmental Assessment Method (BREEAM) ‘Very Good’ standard and achieve the mandatory credits for ‘Excellent’ under issue Ene1 - Reduction of CO2 Emissions.’

The Ablett Redevelopment is targeting an ‘Excellent’ rating, well exceeding the requirements set out above.

3 Overview of BREEAM

BREEAM (Building Research Establishment’s Environmental Assessment Method) is the world’s leading and most widely used environmental assessment method for buildings. It sets the standard for best practice in sustainable design and has become the de facto measure used to describe a building’s environmental performance.

3.1 BREEAM categories

BREEAM embraces a wide range of topics which cover the whole construction process, from site selection through to handover and post-occupancy evaluation. The sustainability aspects covered within BREEAM are split into ten categories.



3.2 BREEAM weightings

Each of the categories are weighted. These weightings are designed to reflect the impact they can have on the overall sustainability of the project. Credits are awarded within each category

according to performance. Therefore, credits in each category contribute a different amount to the final score as indicated in the table below.

BREEAM category	Fully fitted weighting
Management	11%
Health and Wellbeing	14%
Energy	16%
Transport	10%
Water	7%
Materials	15%
Waste	6%
Land Use and Ecology	13%
Pollution	8%
Innovation (additional)	10%

3.3 Credit ratings

Credits are added together to produce a single overall score on a scale of Pass, Good, Very Good, Excellent and Outstanding. The rating benchmarks for BREEAM are outlined in the image below.



The Ablett project is targeting a BREEAM rating of ‘Excellent’.

4 BREEAM on Ablett Redevelopment

4.1 Pre-Assessment

A BREEAM pre-assessment workshop was carried out on 29th January 2020. During the workshop all available credits were reviewed and categorised as either ‘targeted’, ‘potential’ or ‘unachievable/not targeted’. Since the workshop, the potential credits have been reviewed to determine whether these can be targeted on the project. There is currently one potential credit that requires further review with manufacturers in the next work stage to determine whether it is considered achievable or not.

The pre-assessment and continued consultation with the design team in the intervening period, has resulted in a targeted score of 72.3% (Excellent) with a potential uplift to 73.0%. If it is determined that the remaining potential credit cannot be achieved, it is advised that other credits are reviewed at the start of RIBA Stage 3 to provide a great safety buffer above the threshold for ‘Excellent’, should credits be lost along the way. The project has been registered with BRE.

Details of the credits targeted on the project are shown in Appendix A.

4.2 Mandatory Elements

The credits shown in the table below are those that must be achieved for the ‘Excellent’ rating to be awarded.

Credit	Required Score
Man 03 Responsible construction practices	One credit (responsible construction management)
Man 04 Commissioning and handover	One credit (commissioning-test schedule and responsibilities)
Man 04 Commissioning and handover	Criterion 11 (Building User Guide)
Man 05 Aftercare	One credit (commissioning-implementation)
Ene 01 Reduction of energy use and carbon	Four credits (energy performance)
Ene 02 Energy monitoring - Sub-metering of end-use categories	One credit (first sub-metering credit)
Wat 01 Water consumption	One credit
Wat 02 Water monitoring	Criterion 1 only
Mat 03 Responsible sourcing of construction products	Criterion 1 only
Wst 03 Operational waste	One credit

5 Early Stage Actions

A number of targeted credits have time critical elements and are required to be completed during or prior to RIBA Stage 2 in order to ensure that the evidence complies with the requirements.

The table below provides a summary of the early stage actions required. The credit names include a link to the BREEAM manual where further information of the requirements can be found.

Early Stage BREEAM Actions - credits	Action required by	Summary of requirement
<u>Man 01</u> <u>Project delivery planning</u>	RIBA Stage 2	Hold a project delivery stakeholder meeting and develop project delivery plan and consultation plan.
<u>Man 01</u> <u>Stakeholder consultation</u>	RIBA Stage 2	Consult with stakeholders and record feedback.
<u>Man 01</u> <u>BREEAM AP</u>	RIBA Stage 2	Appoint a BREEAM AP and hold BREEAM AP project meeting.
<u>Man 02</u> <u>Elemental LCC</u>	RIBA Stage 2	Carry out an elemental Life Cycle Cost Analysis and produce a report.
<u>Hea 02</u> <u>Indoor air quality</u>	RIBA Stage 2	Prerequisite - Produce Indoor air quality (IAQ) plan (Guidance Note GN06 is attached)
<u>Hea 05</u> <u>Acoustic performance</u>	RIBA Stage 2	Appoint an acoustician.
<u>Hea 06</u> <u>Security of site and building</u>	RIBA Stage 2	Appoint a suitably qualified security specialist. Conduct a security needs assessment and record recommendations.

Early Stage BREEAM Actions - credits	Action required by	Summary of requirement
<u>Ene 04</u> <u>Passive design</u>	RIBA Stage 2	Carry out a passive design analysis and produce a report.
<u>Ene 04</u> <u>Low and zero carbon technologies</u>	RIBA Stage 2	Carry out a LZC feasibility study and specify appropriate LZC technology.
<u>Tra 01</u> <u>Transport assessment and travel plan</u>	RIBA Stage 2	Undertake a site-specific transport assessment (or develop a travel statement) and produce a draft travel plan.
<u>Tra 02</u> <u>Transport options implementation</u>	RIBA Stage 1	Consultation with local authority (option 6 only).
<u>Mat 01</u> <u>Superstructure</u>	RIBA Stage 2	Carry out building LCA options appraisal of 2 to 4 significantly different superstructure design options. Record results in Mat01/02 tool.
<u>Mat 03</u> <u>Enabling sustainable procurement</u>	RIBA Stage 1	Develop a sustainable procurement plan.
<u>Mat 06</u> <u>Material efficiency</u>	RIBA Stage 1	Set targets and report on opportunities and methods to optimise the use of materials.
<u>Wst 01</u> <u>Pre-demolition audit</u>	RIBA Stage 2	Complete a pre-demolition audit of any existing buildings, structures or hard surfaces being considered for demolition.
<u>Wst 05</u> <u>Adaptation to climate change</u>	RIBA Stage 2	Conduct a climate change adaptation strategy appraisal.
<u>Wst 06</u> <u>Design for disassembly and adaptability</u>	RIBA Stage 2	Conduct a study to explore the ease of disassembly and the functional adaptation potential of different design scenarios.
<u>LE 02</u> <u>Ecological risks and opportunities</u>	RIBA Stage 1	Appoint a suitably qualified ecologist. Conduct an ecology survey and evaluation.
<u>LE 03</u> <u>Managing negative impacts on ecology</u>	RIBA Stage 2	Create plan to avoid and manage negative ecological impacts on-site.

The WS1 and WS2 evidence listed in the table above should now be provided to the BREEAM Assessor for review.

6 Conclusions and actions for next Design Stage

The project is targeting a rating of ‘Excellent’ which well exceeds the planning policy requirements.

Early on in RIBA Stage 3, the remaining potential credit should be reviewed. Should this be considered unachievable, a review of the non-targeted credits is advised, and additional credits pursued as part of the BREEAM strategy for this project. This is to provide a safety buffer and help protect the project against falling below the threshold required for ‘Excellent’.

Any outstanding evidence for the early stage actions should be provided to the BREEAM Assessor.

In RIBA Stage 3, the Design Team must ensure that the BREEAM requirements targeted are addressed within their respective designs to ensure no credits are lost.

As the project moves forward, the design team have the responsibility to review the BREEAM requirements and inform the BREEAM assessor if these credits are no longer feasible. The Design Team are responsible for ensuring that the appropriate clauses are included within their discipline specifications to ensure the BREEAM credits are achieved at the construction stage.

As part of the RIBA Stage 2 BREEAM deliverables, BREEAM Employer Requirements (tender clauses) have been provided. These outline the requirements and deliverables for the Contractor.

Appendix A

BREEAM Tracker

BREEAM NC UK 2018 - Tracker Ablett Redevelopment, Ysbyty Glan Clwyd			Available	Targeted	Potential uplift	Mandatory for 'Excellent'	Comments	Responsible
Management: 0.52% per credit								
Man 01	Project brief and design	Project delivery planning	1	1			Project delivery stakeholder meetings to be held prior to end of Concept Design.	Client/PM
		Stakeholder consultation (interested parties)	1	1			Stakeholder consultation to be carried out by the end of Concept Design and feedback incorporated.	Client/PM
		Prerequisite for BREEAM AP credits (Concept and Developed Design)	Pre req.	Y			Strategic performance targets to be agreed early in design process.	Client/PM
		BREEAM AP (Concept Design)	1	1			BREEAM AP to be appointed.	Client/PM
		BREEAM AP (Developed Design)	1	1			BREEAM AP to be appointed.	Client/PM
Man 02	Life cycle cost and service life planning	Elemental LCC	2	2			LCC to be carried out at Concept Design and influence design.	QS
		Component level LCC options appraisal	1	1			LCC to be carried out at Technical Design and influence design.	QS
		Capital cost reporting	1	1			Capital costs for the building to be submitted as part of the submissions to BRE.	QS
Man 03	Responsible construction practices	Legally harvested and traded timber	Pre req.	Y			All timber and timber-based products to be 'legally harvested and traded timber'.	Contractor
		For Healthcare NHS buildings only	Pre req.	Y			Any parties managing the construction site to operate an EMS	Contractor
		Environmental management	1	1			Contractor to operate an EMS.	Contractor
		Prerequisite for the BREEAM AP credit	Pre req.	Y			Client and contractor to formally agree performance targets.	Contractor
		BREEAM AP (site)	1	1			Contractor to appoint a BREEAM AP.	Contractor
		Responsible construction management	2	2		Y	Contractor to evaluate risks and plan and implement actions to minimise identified risks. Mandatory: 1 credit mandatory for Excellent.	Contractor
		Monitoring of construction site impacts	2	2			Contractor to monitor and record construction utility consumption and transport related emissions.	Contractor
Man 04	Commissioning and handover	Commissioning - testing schedule and responsibilities	1	1		Y	Provide a schedule for commissioning and testing. Mandatory: 1 credit mandatory for Very Good and Excellent.	Contractor
		Commissioning - design and preparation	1	1			Appoint an appropriate project team member to review the design for ease of commissioning during Design Stage.	Contractor
		Testing and inspecting building fabric	1	1			Thermographic survey required post-construction. This could be added to contract documents for clarity at tender.	Contractor
		Handover	1	1		Y	Technical and non-technical building user guides and training schedules required. Mandatory: Building User Guides mandatory for Very Good and Excellent ratings.	Contractor
Man 05	Aftercare	Aftercare support	1	1			Aftercare support to the building occupier must be put in place.	Contractor
		Commissioning - implementation	1	1		Y	Commissioning activities of complex systems to be undertaken over a minimum 12-month period once the building is occupied. Mandatory: 1 credit mandatory for Excellent	Contractor
		Post-occupancy evaluation (POE)	1	1			POE exercise to be carried out one year after building is occupied.	Client/PM
			21	21	0			

Health and Wellbeing: 0.74% per credit

Hea 01	Visual comfort	Control of glare from sunlight	1	1			Glance control strategy required that does not increase lighting energy consumption.	Architect
		Daylighting (building type dependent)	2	1			Daylighting criteria to be met. Will require monitoring as design develops – risk to target.	Architect
		View out	2				Not targeted: Not achievable due to the courtyard constraints Requires 95% of the floor area in 95% of spaces to have an adequate view out plus the distance between the wall with the window or opening and nearest external solid object (e.g. buildings, screens, walls or fences) to be ≥ 10m.	Architect
		Internal and external lighting levels, zoning and control	1	1			Internal lighting to be designed to SLL Code for Lighting 2012. External lighting to be designed to BS 5489-1:2013. Office lighting to be in zones of no more than four workplaces.	M&E
Hea 02	Indoor air quality	Prerequisite - Indoor air quality (IAQ) plan	Pre req.	Y			Site-specific indoor air quality plan required.	M&E
		Ventilation	1	1			Building to be designed to minimise the indoor concentration and recirculation of pollutants.	M&E
		Emissions from construction products	2	2			All of the product types listed to meet the emission limits, testing requirements and any additional requirements.	Architect
		Post-construction indoor air quality measurement	1	1			Formaldehyde and TVOC emissions to be tested post construction.	Contractor
Hea 04	Thermal comfort	Thermal modelling	1	1			Thermal modelling to be carried out and meet CIBSE Guide A criteria. PMV and PPD to be reported.	M&E
		Design for future thermal comfort	1	1			Thermal modelling to consider projected climate change environment.	M&E

BREEAM NC UK 2018 - Tracker Ablett Redevelopment, Ysbyty Glan Clwyd			Available	Targeted	Potential uplift	Mandatory for 'Excellent'	Comments	Responsible
		Thermal zoning and controls	1	1			Thermal modelling analysis to inform the temperature control strategy for the building and its users.	M&E
Hea 05	Acoustic performance	Acoustic performance	3	2			A suitably qualified acoustician to be appointed to define a bespoke set of performance requirements. First two credits targeted.	Acoustician
		Acoustic performance for Residential institutions (short term and long term stay)	N/A					N/A
Hea 06	Security	Security of site and building	1	1			A Suitably Qualified Security Specialist (SQSS) conducts an evidence-based Security needs assessment during or prior to Concept Design. Check if internal security specialist meets the BRE requirements for SQSS. Action: Client to review scope of NHS security specialist.	Architect
Hea 07	Safe and health surroundings	Safe access	1				Provide dedicated and safe cycle paths are provided from the site entrance to any cycle storage and connect to off-site cycle paths and provide dedicated and safe footpaths are provided on and around the site providing suitable link. Not achievable, pedestrians will be crossing the delivery access (see below). Access is also required to the temporary pathology block.	Architect/ Landscape Architect
		Outside space	1	1			Outside space providing building users with an external amenity area is mandatory for the scheme.	Architect/ Landscape Architect
			19	14	0			

Energy: 0.70% per credit

Ene 01	Reduction of energy use and carbon	Energy performance	9	4		Y	4 credits targeted for now. Action: M&E team to review in more detail during energy modelling phase to understand what will be achievable. Mandatory: 4 credits mandatory for Excellent.	M&E
		Prediction of operational energy consumption	4				Workshop and energy modelling required to predict operational energy performance. Credit not targeted.	M&E
Ene 02	Energy monitoring	Sub-metering of end-use categories	1	1		Y	Energy metering systems to be installed so least 90% of the estimated annual energy consumption of each fuel is assigned to the end-use categories. Mandatory: 1 credit mandatory for Very Good and Excellent.	M&E
		Sub-metering of high energy load and tenancy areas	1	1			Sub-metering to different function areas, departments or floor plates.	M&E
Ene 03	External lighting	One credit	1	1			External light fittings to have efficacy >70 luminaire lumens per circuit Watt, automatic control and presence detection.	M&E
Ene 04	Low carbon design	Passive design	1	1			Carry out passive design analysis at Concept Design and implement passive design measures.	M&E
		Free cooling	1	-			Not targeted: Not targeted: Unlikely to be able to meet all the cooling demand via free cooling.	M&E
		Low and zero carbon technologies	1	1			Carry out a LZC feasibility study at Concept Design and specify appropriate LZC technology.	M&E
Ene 05	Energy efficient cold storage	Refrigeration energy consumption		-			N/A: Assumed issue Ene05 is out of scope. BREEAM assessor to raise TQ with BRE regarding Pharmacy vending machines/refrigerators.	N/A
		Indirect greenhouse gas emissions		-			N/A: Assumed issue Ene05 is out of scope. BREEAM assessor to raise TQ with BRE regarding Pharmacy vending machines/refrigerators.	N/A
Ene 06	Energy efficient transportation systems	Energy consumption	1	1			Analyse the transportation demand and usage patterns to determine the optimum number and size of lifts. Calculate the energy consumption in accordance with BS EN ISO 25745.	M&E
		Energy efficient features	1	1			Specify energy efficient features for each lift. Escalators not included within design.	M&E
Ene 07	Energy efficient laboratory systems	Design specification	N/A					N/A
		Best practice energy efficient measures	N/A					N/A
Ene 08	Energy efficient equipment	Two credits	2	0			Not targeted: Reduce unregulated energy demands.	M&E
			23	11	0			

Transport: 0.83% per credit

Tra 01	Transport assessment and travel plan	Two credits	2	2			Site-specific transport assessment (or travel statement) and draft travel plan required at Concept Design. Scope of the assessment to be determined. Action: Ramboll to advise on status.	Transport/ Architect
Tra 02	Sustainable transport measures	Prerequisite	Pre req.	Y			Achieve Tra 01.	Transport / Architect
		Transport options implementation	10	7			Implement sustainable transport measures. 7 credits targeted for now. Action: To be reviewed by Ramboll as the project develops.	Transport / Architect
			12	9	0			

Water: 0.88% per credit

BREEAM NC UK 2018 - Tracker Ablett Redevelopment, Ysbyty Glan Clwyd			Available	Targeted	Potential uplift	Mandatory for 'Excellent'	Comments	Responsible
Wat 01	Water consumption	Up to five credits	5	3		Y	Reduce water consumption by >40% compared to baseline. Example of how this could be achieved WC: 4/2.6 litre dual flush, WHB: 4.5 l/min, urinals: 0.65 l/use, showers: 9 l/min. Rainwater harvesting considered not feasible for this type of building. Opportunity to uplift as the project develops. Mandatory: 1 credit mandatory for Excellent.	Architect
Wat 02	Water monitoring	One credit	1	1		Y	Install water meter in mains water supply and sub-meters on water consuming plant and high usage area. Meters to connect to BMS. Mandatory: Crit 1 mandatory for Good, Very Good & Excellent.	M&E
Wat 03	Water leak detection	Leak detection system	1	1			Install leak detection system on water supply.	M&E
		Flow control devices	1	1			Install flow control devices that regulate the water supply to each WC area or sanitary facility. Note, for Healthcare buildings, this issue does not apply to toilet facilities in clinical areas. Note: A TQ raised with BRE regarding not using water flow restrictors on outlets in the building due to infection control - response from BRE: exempt with appropriate evidence from the Trust.	M&E
Wat 04	Water efficient equipment	One credit	N/A	N/A				M&E
			8	6	0			

Materials: 1.07% per credit

Mat 01	Environmental impacts from construction products - Building life cycle assessment (LCA)	Superstructure	6	4			At least 3 superstructure options to be appraised at Concept Design. 2 additional superstructure options to be appraised at Technical Design. 4 credits targeted for now but an uplift may be possible at later stage with further study.	Structures to lead, with input from Architect
		Substructure and hard landscaping options appraisal during Concept Design (all building types)	1				Not targeted: requires 6 substructure/hard landscaping options to be appraised at Concept Design and this is unlikely to add value.	Architect
Mat 02	Environmental impacts from construction products – Environmental Product Declarations (EPD)	Specification of products with a recognised environmental product declaration (EPD)	1	1			Specify construction products with EPDs.	Architect
Mat 03	Responsible sourcing of construction products	Prerequisite	Pre req.	Y		Y	All timber and timber-based products to be 'legally harvested and traded timber'. Mandatory: Crit 1 mandatory for Pass, Good, Very Good & Excellent	Architect
		Enabling sustainable procurement	1	1			A sustainable procurement plan in place before Concept Design.	QS
		Measuring responsible sourcing	3	2			Specify and procure materials and construction products under recognised responsible sourcing certification schemes. ≥ 20% of available points using Mat 03 calculator required for 2 credits.	Architect
Mat 05	Designing for durability and resilience	One Credit	1	1			Protect vulnerable parts of the building from damage and protect exposed parts of the building from material degradation.	Architect
Mat 06	Material efficiency	One Credit	1	1			Requires a record of how materials will be optimised at each design stage. The exercise typically gets done but it might not be recorded sufficiently to get the credit. Action: BAM to determine documentation for this.	All
			14	10	0			

Waste: 0.60% per credit

Wst 01	Construction waste management	Pre-demolition audit	1	1			Pre-demolition audit of any existing buildings, structures or hard surfaces being considered for demolition to be carried out at Concept Design. Targeted.	PM / Contractor
		Construction resource efficiency	3				Not targeted: requires resource Management Plan and ≤ 13.3m³ (or ≤ 11.1 tonnes) of construction waste generated per 100m² GIFA.	Contractor
		Diversion of resources from landfill	1	1			Sort waste materials into separate key waste groups and meet the diversion from landfill benchmarks.	Contractor
		Simple buildings - Pre-demolition audit	N/A					
		Simple buildings - Construction resource efficiency	N/A					
		Simple buildings - RMP measurements and reporting	N/A					
		Simple buildings - Diversion from landfill	N/A					

BREEAM NC UK 2018 - Tracker Ablett Redevelopment, Ysbyty Glan Clwyd			Available	Targeted	Potential uplift	Mandatory for 'Excellent'	Comments	Responsible
Wst 02	Use of recycled and sustainably sourced aggregates	Prerequisite	Pre req.				Pre-demolition audit required for any existing buildings, structures or hard surfaces.	PM
		Project Sustainable Aggregate Points	1	1			Use recycled or secondary aggregate or aggregate types, with lower environmental impact. Quarry located nearby. Explore the opportunity to use material from demolished car park.	Structural Engineer/ Architect
Wst 03	Operational waste	Operational waste	1	1		Y	Provide a dedicated space for the segregation and storage of operational recyclable waste generated. Mandatory: 1 credit mandatory for Excellent.	Architect / Client
Wst 04	Speculative finishes (Offices only)	Speculative floor and ceiling finishes	N/A					
Wst 05	Adaptation to climate change	Resilience of structure, fabric, building services and renewables installation	1	1			Conduct a climate change adaptation strategy appraisal at Concept Design. Action: Architect to review feasibility and develop a plan for documenting. All to input.	Architect/ M&E Engineer
Wst 06	Design for disassembly and adaptability	Design for disassembly and functional adaptability - recommendations	1	1			Conduct a study at Concept Design to explore the ease of disassembly and the functional adaptation in case of changes to the space requirements over time.	Architect/Design Team
		Disassembly and functional adaptability – implementation	1	1			Update the study and produce a guide.	Architect/ Design Team
			10	7	0			

Land Use and Ecology: 1.00% per credit

LE 01	Site selection	Previously occupied land	1	1			At least 75% of the proposed development is on previously occupied land.	Architect
		Contaminated land	1				Site investigation to be carried out to determine if land is contaminated. If it is, a remediation strategy is to be implemented. If land is not contaminated credit can not be achieved. Land not expected to be contaminated therefore credit not targeted.	Geotechnics
LE 02	Ecological risks and opportunities	Prerequisite - Assessment route selection	Pre req.	Y			Route 2 selected. Ecologist to be appointed.	Ecologist
		Survey and evaluation	1	1			A Suitably Qualified Ecologist (SQE) to carry out a survey and evaluation to determine the site’s ecological baseline. Recommendations and data collected from the survey and evaluation to be shared wit design team.	Ecologist
		Determining the ecological outcomes for the site (Routes 1 and 2)	1	1			Liaise and collaborate with representative stakeholders at Concept Design.	Ecologist
LE 03	Managing negative impacts on ecology	Identification and understanding the risks and opportunities for the site	Pre req.	Y			Achieve LE 02's 'Survey and evaluation and Determining ecological outcomes’ criteria.	Ecologist
		Planning, liaison, implementation and data	1	1			Create plan at Concept Design to avoid and manage negative ecological impacts on-site.	Ecologist
		Managing negative impacts of the project	2	1			No overall loss of ecological value to occur.	Ecologist
LE 04	Ecological change and enhancement	Prerequisite - Identifying and understanding the risks and opportunities for the project	Pre req.	Y			Achieve LE 03 'Managing negative impacts of the project'.	Ecologist
		Enhancement of ecology - Route 1	N/A				Route 2 selected.	Ecologist
		Liaison, implementation and data collation- Route 2	1	1			Implement the solutions and measures selected in a way that enhances ecological value.	Ecologist
		Enhancement of ecology - Route 2	3	1			Calculate the change in ecological value.	Ecologist
LE 05	Long term ecology management and maintenance	Roles and responsibilities, implementation, statutory obligations	Pre req.	Y			Compliance to be monitored against all relevant UK, EU and local best practice standards relating to the ecology of the site. Crit 8 in Le 03 achieved and at least 1 credit in LE 04 achieved.	Ecologist
		Planning, liaison, data, monitoring and review management and maintenance	1	1			Measures to be implemented to manage and maintain ecology throughout the project. Ecology and Biodiversity to be included as part of the tenant or building owner information.	Ecologist
		Landscape and ecology management plan (or similar) development	1	1			Develop a Landscape and Ecology Management Plan in accordance with BS 42020:201.	Ecologist
			13	9	0			

Pollution: 0.67% per credit

Pol 01	Impact of refrigerants	No refrigerant use OR	3				Not targeted: Requires no refrigerant use within the installed plant or systems.	M&E
		Prerequisite	Pre req.				All systems with electric compressors to comply with the requirements of BS EN 378:2016.	M&E
		Impact of refrigerant	2	1	1		Requires DELC of ≤100 CO ₂ -eq/kW or GWP ≤10 for two credits OR DELC of ≤1000kgCO ₂ -eq/kW for one credit. One credit targeted for now, with the second credit as a potential. Depends on equipment and manufacturers.	M&E
		Leak detection	1	1			Requires all systems are hermetically sealed or install refrigerant leak detection. This can be specified but may result in increase in cost.	M&E
Pol 02	Local air quality	Up to two credits	2	2			All heating and hot water to be supplied by non-combustion systems. All-electric systems to be used (heat pumps) there won't be any gas/oil.	M&E

BREEAM NC UK 2018 - Tracker Ablett Redevelopment, Ysbyty Glan Clwyd			Available	Targeted	Potential uplift	Mandatory for 'Excellent'	Comments	Responsible
Pol 03	Flood and surface water management	Prerequisite	Pre req.				Appoint an appropriate consultant.	Civils
		Flood resilience	2	2			A site-specific flood risk assessment to confirm the development is in a low flood risk zone.	Civils
		Surface water run-off	2	2			1st credit: Peak rate of run-off from the site to the watercourses to be a 30% improvement for the developed site compared with the pre-developed site - considered achievable and targeted however the feasibility depends on levels of existing drainage. 2nd credit: Post-development peak rate of run-off volume to be reduced to the limiting discharge - considered achievable and targeted but subject to the proposed levels allowing this.	Civils
		Minimising watercourse pollution	1				Requires no discharge from the developed site for rainfall up to 5mm. Petrol/oil separators, rainwater harvesting and/or creation of SUDs may be required. Not targeted - considered difficult to achieve even if there was a blue/green roof.	Civils
		Simple buildings - Surface water run-off	N/A					Civils
Pol 04	Reduction of night time light pollution	One credit	1	1			External lighting to be designed in compliance with ILP guidance note and to be automatically switched off between 23:00 and 07:00 (except for safety and security lighting).	M&E
Pol 05	Reduction of noise pollution	One credit	1	1			No noise-sensitive areas within 800 m radius of the assessed site or noise impact assessment to be carried out.	Acoustician
			12	10	1			

[Innovation: 1.00% per credit](#)

Man 01	Project brief and design	N/A						
Man 03	Responsible construction practices	1					Not targeted: Contractor to implement all risk actions listed.	Contractor
Hea 01	Visual comfort	1					Not targeted: Requires exemplary daylighting factors to be achieved. Difficult to achieve with current design.	Architect
Hea 02	Indoor air quality	1					Not targeted: Requires exemplary emissions criteria to be met. This will limit material selections.	Architect
Hea 06	Security	1					Not targeted: Requires a compliant risk based security rating scheme with verification by independent assessment.	Architect
Ene 01	Reduction of energy use and carbon emissions	5					Not targeted: Requires a post-occupancy stage energy model (2 credits). Not targeted: Requires the building to be zero net regulated carbon (2 credits) or carbon negative (3 credits). Requires a post-occupancy stage energy model (2 credits).	M&E
Wat 01	Water consumption	1					Not targeted: Specify more efficient fittings and install rain/grey water harvesting systems. Reduce water consumption by >65% compared to baseline.	Architect
Mat 01	Environmental impacts from construction products - Building life cycle assessment (LCA)	1					Not targeted: Requires exemplary performance credits to be achieved.	Structures
Mat 03	Responsible sourcing of construction products	1					Not targeted: ≥50% of available points using Mat 03 calculator required. This will be more onerous on the contractor.	Contractor
Wst 01	Construction waste management	1					Not targeted: Requires non-hazardous construction waste generated to be reduced and an increase in the percentage of non-hazardous construction, demolition and excavation waste diverted from landfill. This will be more onerous on the contractor.	Contractor
Wst 02	Use of recycled and sustainably sourced aggregates	1					Not targeted: Requires a higher score on Wst 02 calculator. This will be more onerous on the contractor.	Contractor
Wst 05	Adaptation to climate change	1					Not targeted: Requires the following credits to also be achieved: Hea 04 'Design for future thermal comfort', Ene 01 at least 6 credits, Ene 04 'Passive design analysis', Wat 01 at least 3 credits, Mat 05 'Designing for durability and resilience' and Pol 03 1 credit for 'Flood resilience' and two credits for 'Surface water run-off'.	BREEAM Assessor
LE 02	Identifying and understanding the risks and opportunities for the project	1					Not targeted: Requires wider site sustainability to be considered.	Ecologist
LE 04	Ecological change and enhancement	1					Not targeted: Requires a significant net gain (110% or above) of ecological value.	Ecologist
BREEAM Assessment Score (targeted and potential)		Max 10	0	72.3%	0	73.0%		