



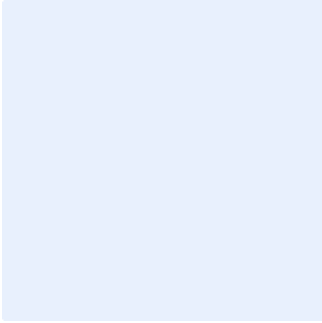
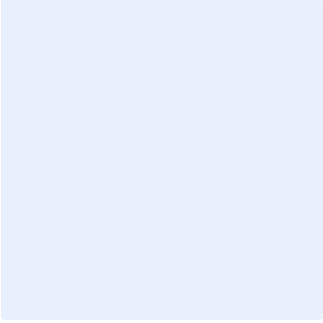
BREEAM Pre assessment report

St Catherine's School - Music and Arts Building

Prepared for: Tim Ronalds Architects



DOCUMENT CONTROL

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Appendix A – Extracts of the Full BREEAM Criteria

1.0 EXECUTIVE SUMMARY

This report has been prepared as a provisional BREEAM NCV6 assessment for the St Catherine's School. It should be noted that this report does not constitute a formal BREEAM assessment and will not yet be submitted to BRE for certification purposes.

This project is aspiring to achieve a BREEAM rating of 'Excellent' with a minimum score of 70%. Based on this pre assessment it is anticipated that the overall score of the proposed development will be **71.70% equivalent to an overall BREEAM rating of 'Excellent'**. This rating could be attained providing all elements of the current assessment route are achieved.

Early stage appointments that must be actioned immediately can be found in Section 6.2 of this report.

2.0 INTRODUCTION

Stroma Built Environment have been commissioned by Tim Ronalds Architects to undertake an environmental assessment for St Catherine's School. This development will be assessed in accordance with the Building Research Establishment Environmental Assessment Methodology (BREEAM) for Secondary Schools, under NCV6.

BREEAM New Construction V6 is a comprehensive tool for analysing and improving the environmental performance of non-domestic commercial and public buildings. This method analyses the environmental performance against criteria set by BRE, awarding 'credits' based on the buildings individual performance.

3.0 BREEAM: New Construction Assessment

New Construction V6 is part of the BREEAM family of environmental assessment methods (BRE's Environmental Assessment Method) and is a voluntary scheme that aims to quantify and reduce the environmental burden of buildings by rewarding those designs that take positive steps to minimise their environmental impact. BREEAM New Construction uses a standard set of criteria applicable to the following types of building:

- Commercial - (offices, industrial and retail)
- Public (non-housing) – (Education, Healthcare, Prisons, Law Courts)
- Multi-residential accommodation/Supported living facilities - (long term stay)
- Other – (residential short-term stay, non-residential institutions, assembly and leisure, bespoke)

Projects are assessed using a system of credits. The credits are grouped within the categories outlined in Table 1.

Category	Issues and Aims
Management	Overall policy and procedural issues
Health and Wellbeing	Indoor and external issues affecting occupants
Energy	Operational energy and CO ₂ issues
Transport	Transport related CO ₂ and location issues
Water	Consumption and leakage related issues
Materials and Waste	Environmental implications of material selection
Land-use and Ecology	Greenfield/brownfield and ecological value of site issues
Pollution	Air and water pollution (excluding CO ₂)

Table 1. BREEAM NCV6 Assessment Issues

Within each category there are a number of credit requirements that reflect the options available in relation to the design and management of buildings. Credits are awarded where evidence has been provided confirming that the specific requirements for that issue have been met. The total number of credits within each category does not reflect the relative importance of these issues; this is given by the weighting factors applied by the methodology.

The overall classification of the building's performance is given as a rating; 'Unclassified', 'Pass', 'Good', 'Very Good', 'Excellent' and 'Outstanding'.

4.0 BREEAM Scoring

New Construction V6 criteria consists of forty-nine individual assessment issues spanning nine environmental categories; Energy, Water, Materials, Transport, Waste Pollution, Health & Wellbeing, Management, Land Use & Ecology plus a tenth category called Innovation. Each issue addresses a specific building related environmental impact or issue and has a number of 'credits' assigned to it. 'BREEAM credits' are awarded where a building demonstrates that it meets the best practice performance levels defined for that issue.

The number of 'credits' available for an individual assessment issue will vary and generally the higher the number there are for a given issue, the more important that issue is in terms of mitigating its impact. In most cases, where there are multiple 'credits' available, the number awarded is based on a sliding scale or benchmark, where progressively higher standards of building performance are rewarded with a higher number of 'credits'.

Within each issue category, credits are awarded where evidence has been provided to confirm the specific requirements have been met. A score for each category is calculated based on the percentage of credits awarded within that category. An environmental weighting is applied to each category score to reflect the relative environmental importance of the category. These 'weighted' scores are then combined to give an overall single percentage score. The final BREEAM rating is awarded based on this overall score as follows:

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

Table 2. **BREEAM Final Score Boundaries**

The diagram and text below describes how BREEAM scores and rates an assessed building:

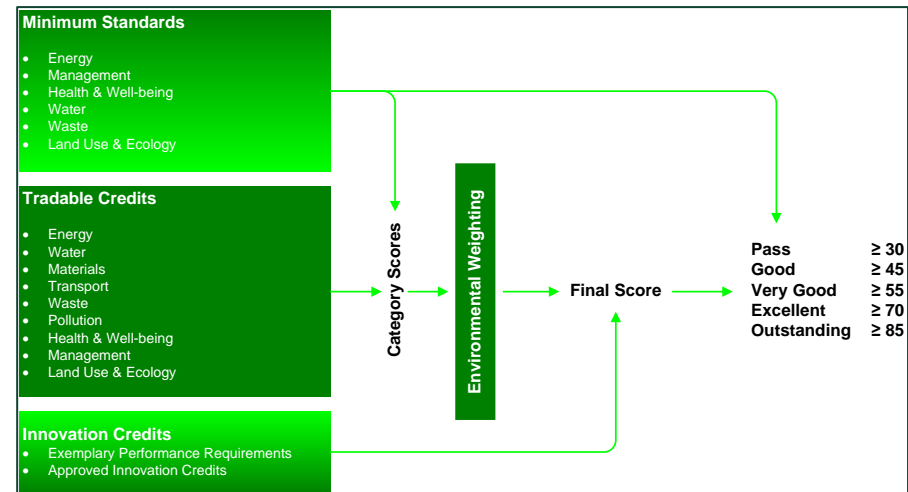


Figure 1. **Process of calculation of overall rating under BREEAM**

5.0 BREEAM Assessment

Section 6 of this report contains a Credit Commentary which shows a breakdown of the specific credit criteria and the actions required to achieve the respective credit(s). This breakdown should be referenced as guidance only and is not an exhaustive summary; should further guidance be required extracts of the full criteria are provided in Appendix A. For a comprehensive guide to the criteria the BREEAM NCV6 technical manual should be consulted.

5.1. Assessment Summary

The development is aspiring to achieve a '**Excellent**' BREEAM rating. The current overall targeted score is **71.70%** which equates to a '**Excellent**' rating. Table 3 shows a summary of the percentage score available for each category of the assessment and the actual score achieved.

	Indicative % Score Available	Indicative % Score Achieved
Management	11%	10.47%
Health & Wellbeing	14%	10.88%
Energy	16%	10.94%
Transport	10%	6.66%
Water	7%	5.44%
Materials	15%	8.57%
Waste	6%	5.40%
Land Use & Ecology	13%	6.00%
Pollution	8%	5.33%
Total	100%	71.70%
Innovation	10%	2%

Table 3. **Environmental Weightings**

It should be noted that for good practice a safety margin should be sought above the required % score to avoid potential difficulties in meeting the required rating during the construction stage

76.5

5.2. Optional credits

Credit reference	Requirements	Number of credits	%
Hea 01 Visual comfort	Daylighting calculations showing that relevant building areas have been designed to achieve appropriate daylight factors	2	1.54
Hea 02 Indoor air quality	The building has been designed to minimise the indoor concentration and recirculation of pollutants in the building	1	0.77
Mat 03 Responsible sourcing of construction products	Minimum of 20% of materials used for the super/sub structure, hard landscaping and core services have been responsibly sourced	1	1.07
Wst 05 Adaptation to climate change	A climate change adaptation strategy appraisal for structural and fabric resilience is conducted by the end of Concept Design (RIBA stage 2 or equivalent).	1	0.6
Tra 2 Sustainable transport measures	Set up a car sharing group with awareness of the scheme via marketing and communication materials. 5% of the total car parking to be allocated to car sharers, located nearest the development entrance.	1	0.83
Overall score 4.81%			

As the predicted score is more than the required 70% needed for an Excellent rating the additional credits could be considered optional at this stage. To give some margin the design team should be aiming to achieve at least 73-75% in case any credits we have assumed in this pre-assessment prove too difficult to achieve.

6.0 Credit Commentary

For credits which require action at a specific RIBA stage, a table in section 6.2 highlights the requirements that are to be addressed at each stage along with a description of the action needed.

The credit criteria table in Section 7 is intended to provide a brief introduction and overview of the credit criteria and evidence requirements. A summary of the complete credit criteria is provided in Appendix A. For a full breakdown of the criteria, the BREEAM NCV6 Technical Manual and accompanying Simple Buildings Guidance should be consulted.

6.1. Mandatory Issues

The project is required to achieve an overall 'Excellent' rating and in order to achieve this rating a number of the credit issues are mandatory. Below is a list of those requirements and whether the project is targeted to achieve it.

Issue	Mandatory element
Man03- Responsible Construction Practices	One credit (Responsible Construction Management)
Man04 – Commissioning and handover	One credit (Commissioning test schedule and responsibilities)
Man04 – Commissioning and handover	Criterion 11 (Building User Guide)
Man 05 – Aftercare	One credit (Commissioning – implementation)
Ene01- Reduction of energy use and carbon emissions	Four credits (Energy performance or prediction of operational energy consumption*)
Ene02 – Energy Monitoring	One credit (First sub-metering credit)
Wat01 - Water Consumption	One Credit

Wat02 - Water Monitoring	Criterion 1 only
Mat03 - Responsible Sourcing of Materials	Criterion 1 only
Wst03-Operational waste	One credit

Table 4. **Mandatory Issues**

6.2. Specific Actions Required At Certain RIBA Stages

Within the current BREEAM Pre Assessment there are various credits that require action by the client and design team at specific stages of the design; some of these actions require the appointment of a specialist consultant. The table below is intended to give assistance with identifying these particular actions at the various stages of the project.

RIBA STAGE 1-2		
Credit	Requirement/s	Action Required
Tra02 Sustainable transport measures	Credit 1 (Option 6 only)	Consult with local authority on state of the local cycling network & public accessible pedestrian routes.
Mat06 Material Efficiency	Credit 1	Set targets and report on opportunities and method to optimise the uses of materials/ (to be continued through RIBA stages 1-6)
Le02 Identifying and understanding the risk and opportunities for the project	Credit 1	Ecological survey & evaluation has been carried out to determine the ecological baseline of site
Le04 Enhancing Site Ecology	Credit 1	Appoint Ecologist to give advice on enhancing site ecology

RIBA STAGE 2		
Credit	Requirement/s	Action Required
Man02 Life cycle cost and service life planning	Credit 1	Carry out an elemental Life Cycle Cost Analysis
Hea02 Indoor Air Quality	Credit 1	Carry out a site-specific indoor air quality plan
Ene01 Reduction of energy use and carbon emissions	Credit 2	4 credits available for prediction of operational energy consumption Relevant design team members of design team to hold preliminary design workshop focusing on operation energy performance
Ene04 LZC Technologies	Credit 2	Carryout Low Zero Carbon (LZC) feasibility study
Tra01 Transport assessment & travel plan	Credit 1	BREEAM Travel plan to be produced
Mat03 Responsible sourcing of construction products	Credit 1	A sustainable procurement plan must be in place
Wst01 Construction waste management	Credit 1	Complete Pre-demolition audit of any existing buildings or hard surfaces being considered for demolition
Le02 Identifying and understanding the risk and opportunities for the project	Credit 1	Appoint an appropriate individual who will ensure early involvement in site configurations as well as influencing strategic planning decisions

RIBA STAGE 3		
Credit	Requirement/s	Action Required
Hea04 Thermal Comfort	All	The full dynamic insulation model for thermal comfort must be produced at this stage of the development
Ene01 Energy Consumption	All	The SBEM is to achieve the targeted credits and must be conducted before RIBA stage k, but ideally at this point of the design stage
Wat01 Water Consumption	All	The Water consumption (litres/person/day) efficiency is to be calculated and assessed against the baseline performance with the appropriate credits achieved as a result of this. This is to be conducted before RIBA stage k, but ideally at this point of the design stage
Pol03 Surface Water Run Off	All	An appropriate engineer is to be appointed to carry out the necessary site specific flood risk assessment

RIBA STAGE 4		
Credit	Requirement/s	Action Required
Man03 Responsible Construction Practices	All	The contractor must register with a compliant organization such as the Considerate Constructors Scheme before the commencement of any site activities
Le03 Minimising impact on existing site ecology	All	A suitably qualified ecologist is to be appointed before the commencement of any site activity
Le04 Enhancing Site Ecology	All	A suitably qualified ecologist is to be appointed before the commencement of any site activity

RIBA STAGE 5		
Credit	Requirement/s	Action Required
Man04 Commissioning and Handover	Credit 1	A specialist commissioning manager is to be appointed at to undertake commissioning at this stage of the project

RIBA STAGE 6		
Credit	Requirement	Action Required
Man05 Aftercare	Credit 1	<p>Aftercare support is to be provided to the building occupiers, which will include:</p> <ul style="list-style-type: none"> •Meeting (programmed to occur as soon as possible after occupation) to introduce the aftercare team (or individual) and Building User Guide (where existing), present key information about how the building operates and answer questions. •Initial aftercare e.g. on-site attendance on a weekly basis (this could be more or less frequent depending on the complexity of the building) for at least 4 weeks after handover •On site FM training to include a walkabout of the building •Longer term after care e.g. a helpline, nominated individual or other appropriate system to support building users for at least the first 12 months of occupation

6.3. Credit Table

ID	BREEAM Issue	Criteria Summary	Available Credits	Credits targeted	Potential Score	Notes
Man 01	Project brief and design	Will stakeholder consultation (project delivery) take place at RIBA 2?	1	1		
		Will stakeholder consultation (third party) take place at RIBA 2?	1	0		
		Will a BREEAM Advisory Professional (AP) (design) be assigned at RIBA 2?	1	1		
		Will a BREEAM Advisory Professional (monitoring progress) be assigned at RIBA 2?	1	1		
Man 02	Life cycle cost and service life planning	Will an elemental life cycle (LCC) analysis be carried out? RIBA 2	2	2		
		Will a component level LCC plan be developed? RIBA 4	1	1		
		Will the predicted capital cost be reported?	1	1		
Man 03	Responsible Construction Practices	Pre-requisite- Is all timber used in the project 'legally harvested and traded timber?'	-	YES		
		Will any contractor in charge of the site operate a compliant Environmental Management System?	1	1		
		Will a construction stage BREEAM AP be assigned?	1	1		
		Will the contractor responsibly manage the site?	2	2		
		Will site utility be metered/monitored (electricity, diesel, water etc.)?	1	1		
		Will the transport of construction materials and waste to/from site be measured/monitored?	1	1		
Man 04	Commissioning and handover	Will a commissioning schedule and responsibilities be developed and accounted for?	1	1		
		Will a specialist commissioning manager be appointed?	1	1		
		Will the building fabric be commissioned? An air tightness test and thermographic survey are required.	1	1		
		Will 2No training schedules for building occupiers/managers be produced AND 2No building user guides be developed?	1	1		

Man 05	Aftercare	Will aftercare support be provided to building occupants?	1	1		
		Will seasonal commissioning occur over 12 months once the building is occupied?	1	1		
		Will a post occupancy evaluation be carried out 1 year after occupation, by an independent third party?	1	1		
Management Totals			21	20	0	
Hea 01	Visual comfort	Will the design provide adequate glare control for the building users	1	1		
		Will relevant building areas be designed to achieve appropriate daylight factors?	2	0	2	
		Will the design provide adequate view out for building users?	1	1		
		Will internal/external lighting levels, zoning and controls be specified in accordance with the relevant CIBSE Guides/British Standards?	1	1		
Hea 02	Indoor air quality	Will an air quality plan be produced and the building designed to minimise air pollution?	YES	YES		
		Will the building be designed to minimise the concentration and recirculation of pollutants in the building?	1	0	1	
		Will the relevant products be specified to meet the VOC testing and emission levels required?	2	2		
		Will formaldehyde and total VOC levels be measured post construction?	1	1		
Hea 04	Thermal comfort	Will full dynamic thermal analysis be carried out in accordance with CIBSE AM11?	1	1		
		Will the building design be adapted for a projected climate change scenario?	1	1		
		Will the modelling inform the development of a thermal zoning and control strategy?	1	1		
Hea 05	Acoustic performance	Will the building meet the relevant acoustic performance standards and testing requirements for: Sound insulation	1	1		
		Indoor ambient noise level	1	1		
		Reverberation times?	1	1		

Hea 06	Security	Will a suitably qualified security consultant be appointed at RIBA 2 and security considerations accounted for?	1	1		
Hea 07	Safe and healthy surroundings	Where external site areas are present, will safe access be designed for pedestrians and cyclists?	1	0		
		Where there is an outside space for building users	1	1		
Health and Wellbeing Totals			18	13	3	
Ene 01	Reduction of energy use and carbon emissions	An improvement in the energy efficiency of the building's fabric and services and therefore achieves lower building operational related CO ₂ emissions.	9	8		
		Has additional energy modelling has been undertaken during the design and post construction stages to generate predicted operational energy consumption figures? A workshop must be carried out at RIBA	4	4		
Ene 02	Energy Monitoring	Energy monitoring systems are installed to energy consuming systems accounting for ≥90% of the estimated total annual energy consumption for each fuel to be assigned to the various end-use categories of energy consuming systems. For buildings with a total useful floor area of greater than 1000 sq.m an appropriate energy monitoring and management system must be specified e.g. Building Management System (BMS).	1	1		
		Are energy monitoring systems installed to separately monitor different tenancy or function areas in the building?	1	1		
Ene 03	External Lighting	The average initial luminous efficacy of the external light fittings within the construction zone > 70 luminaire lumens per circuit Watt. AND All external light fittings are automatically controlled for prevention of operation during daylight hours and presence detection in areas of intermittent pedestrian traffic.	1	1		
Ene 04	Low Carbon design	Will passive design measures be used in line with an analysis carried out during concept design stage (RIBA stage 2 or equivalent)?	1	1		
		Will free cooling measures be implemented in the whole building in line with the passive design analysis	1	0		
		Will an LZC technology be specified in line with a feasibility study carried out by the completion of Concept Design stage (RIBA Stage 2 or equivalent)?	1	1		
Energy Totals			19	13	0	

Tra 01	Transport assessment and travel plan	<p>Has a site-specific travel plan and transport assessment been developed? The initial transport assessment must be produced no later than RIBA 2. It must cover the following (as a minimum):</p> <ul style="list-style-type: none"> a) Where relevant, existing travel patterns and opinions of existing building or site users towards cycling and walking so that constraints and opportunities can be identified. b) Travel patterns and transport impact of future building users. c) Current local environment for walkers and cyclists (accounting for visitors who may be accompanied by young children). d) Reporting on the number and type of existing accessible amenities with 500m of the site e) Disabled access (accounting for varying levels of disability and visual impairment). f) Calculation of the existing public transport accessibility index (AI) g) Current facilities for cyclists. 	2	2		
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Tra 02	Sustainable transport measures	<p>Have any of the following measures been implemented?</p> <ul style="list-style-type: none"> • The existing AI calculated in Tra 01 achieves the following: ≥ 4 for prison or MOD sites, rural location sensitive buildings, and other building group 3 ≥ 8 for all other building types • Demonstrate an increase over the existing AI through negotiation with local bus, train or tram companies to increase the frequency of the local service provision for the development • Demonstrate an increase over the existing Accessibility Index. This could be through provision of a diverted bus route, a new or enhanced bus stop, or other similar solutions. • Provide a dedicated service, such as a bus route or service • Provide a public transport information system in a publicly accessible area • Provide electric recharging stations of a minimum of 3kw for at least 10% of the total car parking capacity for the development. • Set up a car sharing group or facility to facilitate and encourage building users to car share • Raise awareness of the sharing scheme with marketing and communication materials. • Provide priority spaces for car sharers • Locate priority parking spaces nearest the development entrance used by the sharing scheme participants. • Consult with the local authority on the state of the local cycling network and public accessible pedestrian routes, to focus on whichever the LA deems most relevant to the project, and how to improve it. • Agree and implement one proposition chosen with the local authority. • Install compliant cycle storage spaces • Provide at least two compliant cyclists' facilities for the building users: Showers – Changing facilities – Lockers – Drying spaces. • At least three existing accessible amenities are present • Ensure a minimum of one new accessible amenity is provided. • Ensure more than one new accessible amenity is provided • Implement one site-specific improvement measure, not covered by the options already listed in this issue, in line with the recommendations of the travel plan. Submit these for review by BRE. 	10	6	1	
Transport Totals			12	8	1	
Wat 01	Water Consumption	The specification includes taps, urinals, WCs, showers and kitchen water fittings that consume less potable water in use than standard specifications for the same type of fittings.	5	3		
Wat 02	Water Monitoring	<p>Will there be a water meter on the mains water supply to the building(s)</p> <p>Will metering/monitoring equipment be specified on any large water consuming items? (i.e. swimming pool, changing facilities)</p>	1	1		

		Will all specified water meters have a pulsed output? If the site/building has an existing BMS connection, will all pulsed meters be connected to the BMS?				
Wat 03	Water Leak Detection and Prevention	Will a mains water leak detection system be installed on the building's mains water supply?	1	1		
		Flow control devices that regulate the supply of water to each WC area/facility according to demand must be installed. Examples of flow control devices: - Time controllers, - Programmed time controllers, - Volume controllers, - Presence detectors and solenoid valves, - Central control unit.	1	1		
Wat 04	Water efficient equipment	Identify the building's unregulated water demands (e.g. vehicle wash or external and internal soft landscaping which requires irrigation) that could be realistically mitigated or reduced. AND Where systems/processes have been identified to reduce unregulated water demand and a meaningful reduction in the total water demand is achieved.	1	1		
Water Totals			9	7	0	
Mat 01	Environmental impacts from construction products-Building life cycle assessment (LCA)	Superstructure- building LCA carried out on the superstructure using approved tools or the BRE's Simplified Building LCA tool. Is this carried out at Concept Design RIBA 2 and Technical Design RIBA 4 ? Are options appraisals carried out?	6	2		
		Substructure and hard landscaping options appraisals during Concept Design. As above but for substructure	1	0		
Mat 02	Environmental impacts from construction products (EPDs)	Are construction products with EPDs specified?	1	1		
Mat 03	Responsible Sourcing of Materials	MANDATORY REQUIREMENT Are all timber and timber-based products 'Legally harvested and traded timber'?				
		Is there a documented sustainable procurement plan in place at RIBA 2 ?	1	1		
		Each of the applicable specified materials comprising the main building elements are assigned a responsible sourcing tier level and points awarded accordingly	3	1	1	

Mat 05	Designing for durability and resilience	<p>Will the building incorporate suitable durability and protection measures or have designed features/solutions to prevent damage to vulnerable parts of the internal and external building and landscaping elements? These measures must provide protection against:</p> <p>a. Negative impacts of high user numbers in relevant areas of the building (e.g. corridors, lifts, stairs, doors etc.).</p> <p>b. Damage from any vehicular/trolley movement within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas.</p> <p>c. External building fabric damaged by a vehicle. Protection where any parking and manoeuvring occurs within 1m of the external building façade and where delivery areas or routes are within 2m of the façade i.e. specifying bollards or protection rails.</p> <p>d. Potential malicious damage to building materials and finishes, in public or common areas where appropriate</p> <p>Will the relevant building elements incorporate appropriate design and specification measures to limit long and short-term material degradation due to environmental factors?</p>	1	1		
Mat 06	Materials efficiency	<p>Have opportunities and measures to optimise the use of materials in building design, procurement, construction, maintenance and end of life been identified, investigated and implemented by the design/construction team as appropriate in consultation with the relevant parties at each of the following RIBA stages:</p> <p>a. Preparation and Brief RIBA 1</p> <p>b. Concept Design</p> <p>c. Development Design</p> <p>d. Technical Design</p> <p>e. Construction</p>	1	1		
Materials Total			14	7	1	
Wst 01	Construction Site Waste Management	<p>Has a pre-demolition audit been carried out of any existing buildings, structures or hard surfaces been carried out to determine whether refurbishment or re-use is feasible, and to maximise the recovery of material from demolition? This must be carried out at Concept Design RIBA 2 by a competent person.</p>	1	1		
		<p>Has a compliant Construction Resource Management Plan (CRMP) been developed covering the non-hazardous waste related to onsite construction and offsite manufacture or fabrication (including demolition and excavation waste) generated by the building's design and construction? Does the waste (excluding demolition and excavation waste) related to on-site construction and off-site manufacture/fabrication meet the required benchmarks:</p> <ul style="list-style-type: none"> - 1 credit: ≤13.3m³ / ≤11.1tonnes waste generated per 100m² gross internal floor area; - 2 credits: ≤7.5m³ / ≤6.5tonnes waste generated per 100m² gross internal floor area; - 3 credits: ≤3.4m³ / ≤3.2tonnes waste generated per 100m² gross internal floor area. 	3	3		

		Will the percentage of non-hazardous construction and demolition waste generated from landfill meet the required benchmarks: - Non-demolition: 70% by volume / 80% tonnage - Demolition: 80% by volume / 90% tonnage Waste materials must be sorted into separate key waste groups either onsite or offsite through a licensed contractor for recovery	1	1		
Wst 02	Use of recycled and sustainably sourced aggregates	If demolition occurs on site, a pre-demolition audit must be carried out to encourage the re-use of site won material. Aggregates used must be assessed using the Wst 02 BREEAM tool. Credits will be awarded based on distance travelled, the region the aggregate is sourced and quantity of materials.	1	1		
Wst 03	Operational Waste	Will appropriate facilities for the storage of operational recyclable waste volumes be provided? Where there is a commercial kitchen composting/food waste bins and a water tap for wash down must also be provided.	1	1		
Wst 05	Adaptation to climate change	Will a climate change adaptation strategy appraisal for structural and fabric resilience be conducted by the end of Concept Design (RIBA stage 2 or equivalent)?	1	0	1	
Wst 06	Design for disassembly and adaptability	Will a study be conducted to explore the ease of disassembly and the functional adaptation potential of different design scenarios by the end of Concept Design RIBA 2 ? Develop recommendations or solutions based on the study during Concept Design that aim to enable and facilitate disassembly and functional adaptation.	1	1		
		Will an update during Technical Design RIBA 4 be provided? This should outline how the recommendations or solution proposed at Concept Design have been implemented where practical and cost effective. Will a building adaptability and disassembly guide be produced to communicate the characteristics allowing functional adaptability and disassembly to prospective tenants?	1	1		
Waste Totals			10	9	1	
LE 01	Site Selection	Is at least 75% of the proposed development's footprint on an area of land which has previously been occupied by industrial, commercial or domestic buildings or fixed surface infrastructure?	1	1		
		Is the site deemed to be significantly contaminated and will this be remediated? Contamination must be confirmed by a contaminated land specialist's site investigation, risk assessment and appraisal. This document must identify the degree of contamination, contaminant sources/types and options for remediating sources of pollution which present an unacceptable risk to the site.	1	0		
LE 02	Identifying and understanding the risks and opportunities for the project	Is the project following Route 1 or Route 2? Has a SQE been involved since Preparation and Brief RIBA 1 stage to determine the ecological baseline of the site? During Concept Design RIBA 2 has the project team liaised with stakeholders to identify and consider ecological outcomes for the site?	2	1		

		Will all features of ecological value surrounding the construction zone/site boundary be protected?				
LE 03	Managing negative impacts on ecology	<p>Has LE02 been achieved?</p> <p>Has the client or contractor confirmed that compliance is monitored against all relevant UK, and EU or International legislation relating to the ecology of the site?</p> <p>Have roles and responsibilities have been clearly defined, allocated and implemented to support successful delivery of project outcomes at an early enough stage to influence the concept design or design brief. Site preparation and construction works must be planned for and are implemented at an early project stage to optimise benefits and outputs.</p> <p>The project team must liaise and collaborate with representative stakeholders, taking into consideration data collated and shared, have implemented solutions, and measures have been selected during site preparation and construction works.</p>	1	1		
		<p>Have negative impacts from site preparation and construction works been managed according to the hierarchy and either:</p> <p>a) No overall loss of ecological value has occurred (2 credits)</p> <p>OR</p> <p>The loss of ecological value has been limited as far as possible (1 credit)</p>	2	1		
LE 04	Change and enhancement of ecological value	<p>Have criteria 3-4 in LE 03 been achieved?</p> <p>Has the project team liaised and collaborated with representative stakeholders, taking into consideration data collated and shared, and have they implemented the solutions and measures selected in a way that enhances ecological value in the following order:</p> <p>a) On-site, and where this is not feasible,</p> <p>b) Off site within the zone of influence.</p>	1	1		
		<p>Credits are awarded on a scale of 1 to 3, based on the calculation of the change in ecological value occurring as a result of the project.</p>	3	0		

LE 05	Long term ecology management and maintenance	<p>Route 1 – Has criteria 3-4 in LE 03 been achieved?</p> <p>Route 2 – Has criteria 3-4 in LE 03 been achieved, and at least one credit under LE 04 for 'Change and Enhancement of Ecology' been awarded?</p> <p>Has the project team liaised and collaborated with representative stakeholders, taking into consideration data collated and shared, on solutions and measures implemented to:</p> <ul style="list-style-type: none"> a) monitor and review implementation and the effectiveness b) develop and review management and maintenance solutions, actions or measures. <p>In support of the above and to help ensure their continued relevance over the period of the project the following should be considered:</p> <ul style="list-style-type: none"> a) Monitoring and reporting of on the ecological outcomes for site implemented at the design and construction stage b) Monitoring and reporting of outcomes and successes from the project c) Arrangements for the ongoing management of landscape and habitat connected to the project (on and, where relevant, off site) d) Maintaining the ecological value of the site and its relationship or connection to its zone of influence e) Maintaining the site in line with the any sustainability linked activities, e.g. ecosystems benefits (LE 02). f) Remedial or other management actions are carried out which relate to those identified in LE02, LE 03 and LE 04. <p>As part of the tenant or building owner information supplied, include a section on Ecology and Biodiversity to inform the owner or occupant of local ecological features, value and biodiversity on or near the site.</p>	1	1		
Has a landscape and ecology management plan, or similar, is developed in accordance with BS42020:2013 covering as a minimum the first five years after project completion?		1	0			
Landscape and Ecology Totals		13	6	0		

Pol 01	Impact of Refrigerants	<p>Will refrigerant containing systems be installed in the assessed building?</p> <p>Pre-requisite. Do all systems with electric compressors comply with the requirements of BS EN 378:2008 (Part 2 and 3) & where ammonia systems are installed the IoR ammonia Refrigeration Systems Code of Practice?</p> <p>TWO CREDITS. Will the systems using refrigerants have Direct Effect Life Cycle CO₂ equivalent emissions of ≤100kgCO_{2e}/kW cooling /heating capacity?</p> <p>OR</p> <p>Where air conditioning or refrigeration systems are installed the refrigerants used have a GWP of ≤10.</p> <p>ONE CREDIT Will the systems using refrigerants have Direct Effect Life Cycle CO₂ equivalent emissions of ≤1000kgCO_{2e}/kW cooling /heating capacity?</p>	2	1		
		<p>Will a refrigerant leak detection and contaminant system be specified or are all systems hermetically sealed?</p>	1	0		
Pol 02	Local Air Quality	<p>Two credits where: (low pollution location) One credit where: (high pollution location)</p>	2	1		
Pol 03	Surface Water Run Off	<p>What is the actual/likely annual probability of flooding for the assessed site? Will a Flood Risk Assessment be undertaken and, if relevant, ground level of the building/access meet BREEAM criteria?</p>	2	2		
		<p>Will the site meet the BREEAM criteria for peak rate surface water run off?</p>	1	1		
		<p>Will the site meet the criteria for surface water run off volume, attenuation and/or limiting discharge?</p>	1	1		
		<p>Will the site be designed to minimise watercourse pollution in accordance with the BREEAM criteria?</p>	1	0		
Pol 04	Reduction of night time light pollution	<p>Does the lighting strategy comply with the BREEAM requirements for the reduction of night time pollution?</p> <ol style="list-style-type: none"> The external lighting strategy has been designed in compliance with Table 2 (and its accompanying notes) of the ILP Guidance notes for the reduction of obtrusive light, 2011 All external lighting (except for safety and security lighting) can be automatically switched off between 23:00 and 07:00. 	1	1		

		<p>3. If safety or security lighting is provided and will be used between 23:00 and 07:00, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 2 of the ILP's Guidance notes.</p> <p>1. 4. Illuminated advertisements, where specified, must be designed in compliance with ILP PLG 05 The Brightness of Illuminated Advertisements</p>				
Pol 05	Noise Attenuation	New sources of noise from the development do not give rise to the likelihood of complaints from existing noise-sensitive premises and amenity or wildlife areas that are within the locality of the site. Noise assessment should be carried out in line with BS 7445.	1	1		
Pollution Totals			12	7	0	
Overall Total				71.70%	76.51%	

ID	BREEAM Issue	Criteria Summary	Available Credits	Credits targeted	Potential Credits	Notes
Inn. Man 03	Responsible Construction Management	The principal contractor signs up to the achieving all items from the responsible construction practices table.	1	1		
Inn. Hea 01	Visual Comfort	At least 80% of the floor area (for the building spaces/room identified above in the standard requirements) has an average daylight factor of 3% in multi-storey buildings and 4% in single-storey buildings. Average daylight Illuminance must be at least 300lux for 2650 hours per year or more. Minimum daylight Illuminance at worst lit point must be at least 120lux for 3000 hours per year or more.	1	0		
		Lighting in each zone can be manually dimmed by occupants down to 20% of the maximum light output using dimmer switches positioned in accessible locations. Dimming and control gear should avoid flicker and noise	1	1	1	
Inn. Hea 02	Indoor air quality	Will exemplary level VOCs (products) criteria be met?	2	0		
Inn. Hea 06	Security	A compliant risk-based security rating scheme has been used. The performance against the scheme has been confirmed by independent assessment verification.	1	0		
Inn. Ene 01	Reduction of CO ₂ emissions	Up to two credits are available where the building achieves an EPRNC ≥ 0.9 and zero net regulated CO ₂ emissions. Up to three credits are available where the building is deemed carbon negative where > 100% of carbon emissions from unregulated (and regulated) energy use are offset by energy generated from onsite and near-site LZC sources	3	0		

		<p>Post Occupancy Stage Achieve maximum available credits in Ene 02 Energy monitoring</p> <p>The client or building occupier commits funds to pay for the post occupancy stage. This requires an assessor to be appointed and to report on the actual energy consumption compared with the targets set</p>	2	0		
Inn. Wat 01	Water Consumption	The water consumption for the assessed building demonstrates a 65% improvement compared to a national baseline performance	1	0		
Inn. Mat 01	Life Cycle Impacts	One credit: For carrying out LCA options appraisals of core building services at Concept Design RIBA 2	1	0		
		One credit: For alignment of LCC and LCA	1	0		
		One credit: For third party verification of building LCA options appraisals.	1	0		
Inn. Mat 03	Responsible Sourcing of Materials	Where 50% of the available responsible sourcing points have been achieved.	1	0		
Inn. Wst 01	Construction Waste Management	<p>This credit is awarded where:</p> <ul style="list-style-type: none"> - ≤1.6m³ / ≤1.9 tonnes of waste is generated per 100m² gross internal floor area. - at least 85% volume / 90% tonnage of non-demolition waste is diverted from landfill; at least 85% volume / 95% tonnage of demolition waste is diverted from landfill; and at least 95% volume / 95% tonnage of excavation waste is diverted from landfill. <p>All key waste groups must be identified for diversion from landfill in the CRMP.</p>	1	0		
Inn. Wst 02	Recycled Aggregate	<p>If demolition occurs on site, a pre-demolition audit must be carried out to encourage the re-use of site won material.</p> <p>Aggregates used must be assessed using the Wst 02 BREEAM tool. Credits will be awarded based on distance travelled, the region the aggregate is sourced and quantity of materials.</p>	1	0		
Inn. Wst 05	Adaptation to climate change	Will exemplary level criteria-Responding to adaptation to climate change be met?	1	0		
Inn. LE02	Identifying and understanding the risks and opportunities for the project	<p>When determining the optimal ecological outcome for the site consider, in addition to those outlined in the LE02 criteria, the wider site sustainability-related activities and the potential for ecosystem service related benefits.</p> <p>13 Achieve the credits of the assessment issues outlined below: 13.a safe access & outdoor space - Both credits (Hea 07) 13.b credits for 'Surface water run-off' and 'Minimising watercourse pollution' (Pol 03)</p>	1	0		

		13.c credit for reduction of noise pollution (Pol 05)				
Inn. LE04	Change and enhancement of ecological value	Credit can be awarded where there is a significant net gain of ecological value (percentage score of 110 or above).	1	0		
		Innovation Totals	10	1	1	