BREEAM NC 2018

Pre-Assessment Estimate

Dr Williams's Library

FOR THE SITE AT:

14 Gordon Square
Bloomsbury
London
WC1H 0AR

SRE

Current Issue:

Author	Version	Revision	Date
Sarah Beasley	1	D	26.09.2019

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SRE Limited
Greenforde Farm
Stoner Hill Road
Froxfield
Petersfield
Hampshire
GU32 1DY
Tel: 01730 710044
www.sre.co.uk

1.0 Summary

The BREEAM Pre-Assessment has been prepared by SRE Ltd for the Dr Williams's Library, Bloomsbury on behalf of the Client and the design team in support of the planning application and the ongoing development programme. The estimate has been based on details supplied by the architect, a desktop study and certain credits have been assessed on best practice and historical data[1].

Project Name	Dr Williams Library
BREEAM Version	BREEAM NC 2018
Assessment Stage	Pre-Assessment Stage
Lead Assessor	Malcolm Maclean
Target Rating	Very Good (55%)
Assessment Type	Fully Fitted
BREEAM Type	Non-Residential - Library

1.1 Scoring Scenarios

The pre-assessment score has been based on the following scoring scenario:

Scenario	Score	BREEAM Rating
SRE Proposed *(technically deliverable for the scheme)*	*68.25%*	*Very Good*

The scheme is thought to be unable to achieve an 'Excellent' rating as required by Camden Council's planning policies due to the following main reasons:

- The design of the building is very specific to the required use and function and therefore has a unique design specification. For example, no windows are to be provided to protect the materials within the archive. This has limited the number of credits able to be achieved such as glare control, natural ventilation, daylighting and view out (~13%).
- The untimely delivery of many early Stage credits has inhibited their achievement (~9.9%).

An alternative robust and realistic 'Very Good' rating is targeted, which aims to meet all 'Excellent' minimum standards.

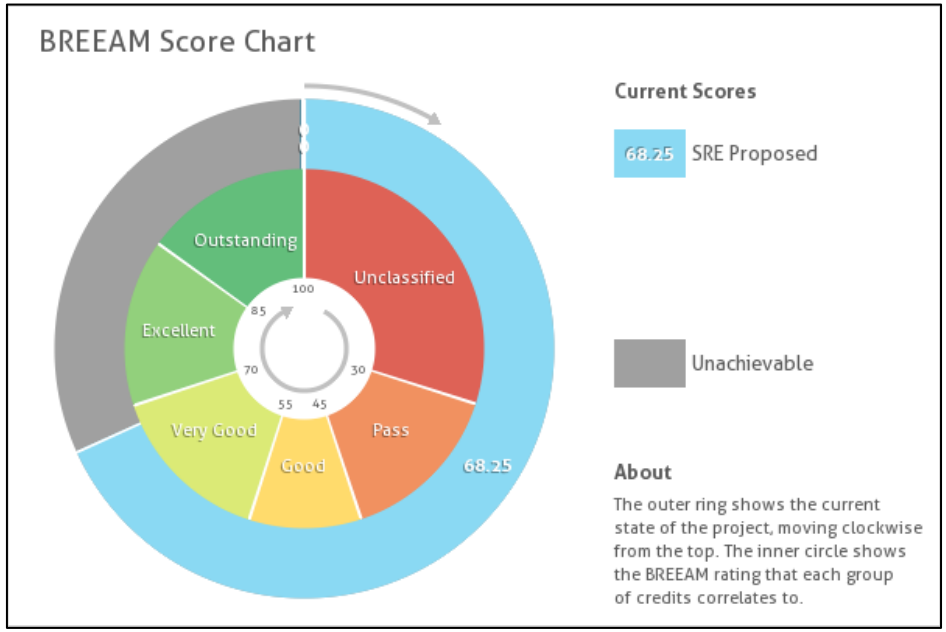

Figure 1 - Proposed and Potential BREEAM Score Chart

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1.2 BREEAM Credit Summary

In addition, performance against the minimum standards (required for the specified target rating) under SRE's Proposed scenario is summarised below. If the required minimum standards are not met, then the target rating will not be achieved regardless of the overall score.

Issue	SRE Proposed
Man 03 - Responsible construction practices	Yes
Man 04 - Commissioning and handover	Yes
Man05 - Aftercare	Yes
Ene 01 - Reduction of energy use and carbon emissions	Yes
Ene 02 - Energy monitoring	Yes
Wat 01 - Water consumption	Yes
Wat 02 - Water monitoring	Yes
Mat 03 - Responsible sourcing of construction products	Yes
Wst 01 - Construction waste management	Yes
Wst 03 - Operational waste	Yes

Table 1 – BREEAM Minimum Standards

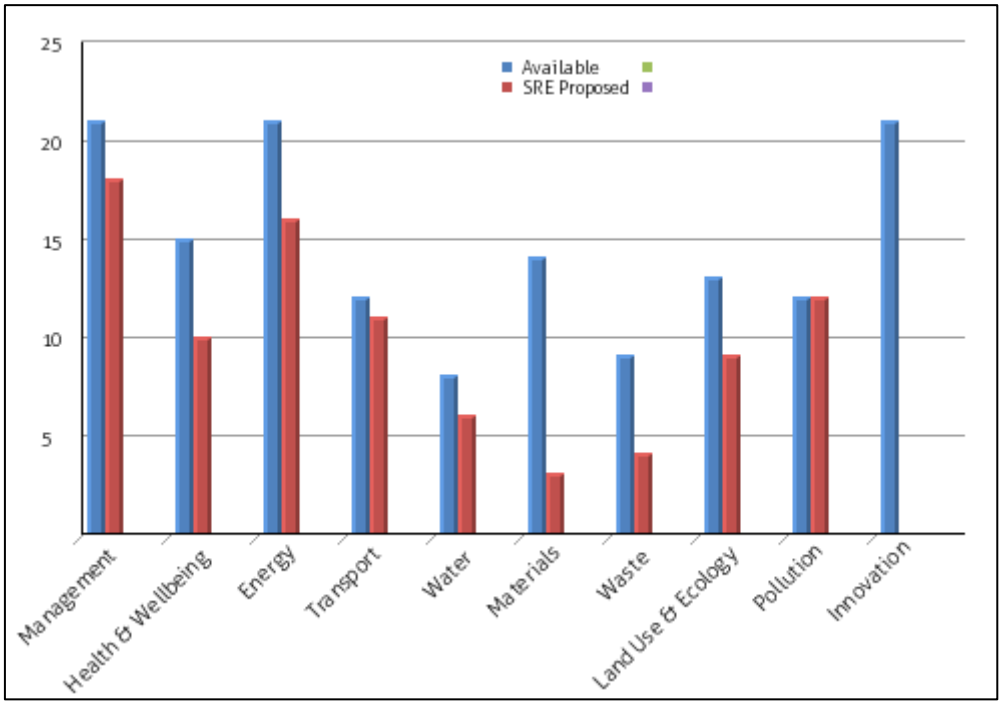

Figure 2 – Summary of available, targeted and potential credits

The overall target score for the project is currently 68.25%, which will deliver a 'Very Good' rating. The credits targeted, while challenging, are realistic and deliverable on-site. There are some credits highlighted in Section 1.3, which may be achievable and will be determined during the detailed design stage. However, the addition of these credits would not increase the overall score above the minimum requirement for an 'Excellent' rating of 70%.

BREEAM standards can be challenging to achieve, and the pre-assessment report should be carefully reviewed by the design team to ensure all targeted credits are delivered as the project is progressed. Sections 2.0 and 3.0 list the specific credits being delivered as part of the proposed BREEAM 'Very Good' rating.

1.3 Potential and Unachievable credits

The following are credits which have been identified as those that are *potentially achievable* if additional modelling and/or third-party reports are undertaken; and will be determined during the detailed design stage.

BREEAM Credit		Potential Credits	% Score	Summary of the credit requirements
Man 02	Life cycle cost and service planning	3	1.04	For these credits to be awarded an Elemental LCC (2 credits) or Component LCC (1 credit) must be undertaken for the site. It is currently thought that this is not within the project scope and is therefore not targeted.
Wat 01	Water Consumption	1	0.78	A deliverable water consumption target of a 40% improvement over the building baseline (or an overall component level of 3 or 4) has been targeted, however, a more ambitious target of 55% improvement (or an overall component level of 5) can allow for another credit to be awarded.

Table 2 - Potential Credits

The following credits have been identified as *not being* achievable. An explanation has been given for each, but the majority of these are undeliverable due to the physical constraints of the site:

BREEAM Credit		Credits NOT possible	% Score	Summary of the credit requirements
Hea 02	Visual comfort	3	2.79	There are no windows included within the design so glare control, daylight modelling and view out specifications cannot be carried out.
Ene 01	Reduction of energy use and carbon emission	4	3.04	Initial modelling is to be completed, however a major improvement over Building Regulations is thought not to be deliverable.
Ene 04	Low Carbon Design	1	0.76	Currently it is assumed that the project does not have scope to undertake 'free cooling' analysis prior to RIBA Stage 2, if this is undertaken an additional credit can be achieved.
Tra 02	Sustainable transport measures	1	2.49	As the site is in central London, the electric car charging and car sharing credits are unachievable as there is no standard car parking provided or sufficient space to allow for this, which has limited the achievement of the full amount of credits available.
Mat 01	LCA	7	7.49	Due to the cost and timely delivery of the LCAs, these credits are not achievable.
Mat 03	Responsible Sourcing of Materials	2	2.14	Additional credit unlikely to be achievable due to benchmarks being unobtainable.
Mat 06	Material Efficiency	1	1.07	Credit unlikely achievable due to the required early RIBA Stage involvement and updates required.
Wst 01	Construction waste management	2	1.2	Additional credits unlikely to be achievable due to high benchmark requirements.
Wst 02	Use of recycled and sustainably sourced aggregates	1	0.6	It has been assumed that this credit will not be achieved due to the limited amount of existing hard standing on site that could potentially be recycled into recycled aggregate and the cost implications of sourcing it externally.
Wst 05	Adaptation to climate change	1	0.67	The report is currently not within the project scope due to the nature of the building type.
Wst 06	Disassembly and adaptability	2	1.34	Due to the nature of the build and its specific unique requirements, designing for future adaptability is not within the current project scope – e.g. no windows are included within the design.
LE 01	Site Selection	1	1	Unlikely to be awarded as land is presumed to NOT be considered as extensively contaminated.

Table 3 - Unachievable credits

1.4 Development Overview

The new development located at Dr Williams Library includes the construction of an extension to the existing library to become archives for rare historical artefacts and texts; along with other associated alterations to the existing building, including upgrading sanitaryware.

This assessment only considers the extension parts of the library, which have an approximate floor area of 700m^2. The space is classified under D1, however

1.5 BREEAM Assessment Summary

A BREEAM New Construction 2018 Pre-Assessment has been undertaken to accurately determine the predicted BREEAM score.

The Pre-Assessment has been undertaken as a 'Fully fitted' assessment to reflect the scope of the works to be undertaken by the Client. The credits contained within the assessment are therefore those relevant to the scope of a 'Fully fitted' assessment and are required to satisfy the BREEAM New Construction 2018 rating.

This pre-assessment has shown that the Proposed Development can currently achieve a 'Very Good' rating under BREEAM New Construction 2018 'SRE Proposed' scenario based on the assumptions and information agreed to-date. This estimate considers what is assumed practically deliverable. Additional credits have been highlighted within the above table, although these credits will be very challenging to deliver for the Proposed Development due to the site and construction restrictions.

The delivery of the required 'Excellent' BREEAM rating as per Camden Council's planning policy is not feasible for the scheme. The size of the extension is ~700m^2 and classified under D1, however it is specialist archive storage and has no natural light or ventilation. As such, there are no windows proposed within the design, and it is not 'habitable space' as defined by BRE which has therefore limited the number of BREEAM credits that can be achieved.

It is proposed that due to the nature of the development, a maximum BREEAM certification of 'Very Good' is deliverable and should therefore satisfy the planning policy in this instance. All 'Excellent' minimum standards are aimed to be met, including the Energy performance of the development.

Camden Council, when contacted about this could not comment with advice on the scheme, hence the submission of this Pre-Assessment in support of Planning.

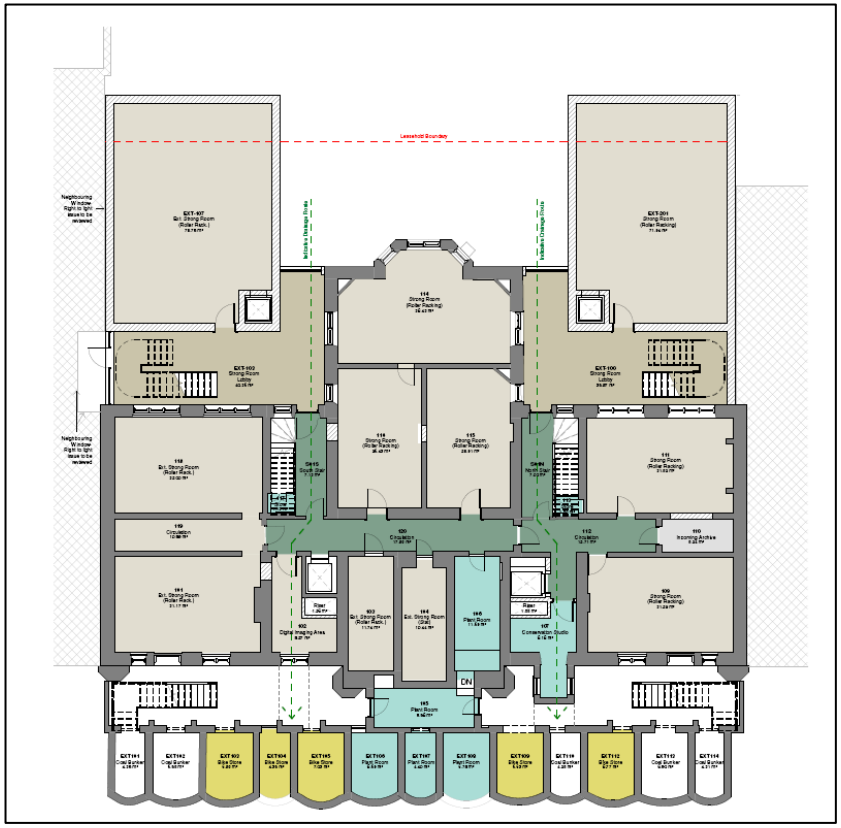

Figure 3 – Ground floor plan for the library.

2.0 Summary Score Sheet

		Available	SRE Proposed
Management			
Man 01 - Project brief and design		4	4
Man 02 - Life cycle cost and service planning		4	1
Man 03 - Responsible construction practices		7	6
Man 04 - Commissioning and handover		4	4
Man 05 - Aftercare		3	3
	Management Totals:	**22**	**18**
	% Management Score Totals:	**11**	**9**
Health & Wellbeing			
Hea 01 - Visual comfort		6	1
Hea 02 - Indoor air quality		5	3
Hea 04 - Thermal comfort		3	3
Hea 05 - Acoustic performance		3	3
Hea 06 - Security		2	0
	Health & Wellbeing Totals:	19	10
	% Health & Wellbeing Score Totals:	**14**	**7.37**
Energy			
Ene 01 - Reduction of energy use and carbon emissions		18	9
Ene 02 - Energy monitoring		2	2
Ene 03 - External Lighting		1	1
Ene 04 - Low carbon design		3	2
Ene 06 - Energy efficient transportation systems		2	2
	Energy Totals:	**26**	**16**
	% Energy Score Totals:	**16**	**9.85**
Transport			
Tra 01 - Transport assessment and travel plan		2	2
Tra 02 - Sustainable transport measures		10	9
	Transport Totals:	**12**	**11**
	% Transport Score Totals:	**10**	**9.17**

	Available	SRE Proposed
Water		
Wat 01 - Water consumption	6	3
Wat 02 - Water monitoring	1	1
Wat 03 - Water leak detection	2	2
Water Totals:	9	6
% Water Score Totals:	7	4.67
Materials		
Mat 01 - Environmental impacts from construction products - Building life cycle assessment (LCA)	10	0
Mat 02 - Mat 02 Environmental impacts from construction products - Environmental Product Declarations (EPD)	1	1
Mat 03 - Responsible sourcing of construction products	5	1
Mat 05 - Designing for durability and resilience	1	1
Mat 06 - Material efficiency	1	0
Materials Totals:	18	3
% Materials Score Totals:	15	2.5
Waste		
Wst 01 - Construction waste management	5	3
Wst 02 - Use of recycled and sustainably sourced aggregates	2	0
Wst 03 - Operational waste	1	1
Wst 05 - Adaptation to climate change	2	0
Wst 06 - Design for disassembly and adaptability	2	0
Waste Totals:	12	4
% Waste Score Totals:	6	2
Land Use & Ecology		
LE 01 - Site selection	2	1
LE 02 - Identifying and understanding the risks and opportunities for the site	3	2
LE 03 - Managing negative impacts on ecology	3	2
LE 04 - Change and enhancement of ecological value	5	2
LE 05 - Long term management and maintenance	2	2
Land Use & Ecology Totals:	15	9
% Land Use & Ecology Score Totals:	13	7.8
Pollution		
Pol 01 - Impact of refrigerants	3	3

		Available	SRE Proposed
Pol 02 - Local air quality		2	2
Pol 03 - Flood and surface water management		5	5
Pol 04 - Reduction of night time light pollution		1	1
Pol 05 - Reduction of noise pollution		1	1
	Pollution Totals:	12	12
	% Pollution Score Totals:	8	8
Innovation			
AI - Approved Innovation		1	0
	Innovation Totals:	1	0
	% Innovation Score Totals:	10	0
	OVERALL TOTALS:		88
	OVERALL SCORE TOTALS:		68.25

3.0 Detailed Pre-Assessment

		Available	SRE Proposed	Comments
Management				
Man 01	Project brief and design	4	4	**Project Delivery Planning** **Completed BEFORE Concept Design (1 credit)** **Targeted – Yes** Notes from stakeholders meeting which identify and define each key phase of the project delivery (including, roles, responsibilities and contributions). The following should be considered when defining the above: end-user requirements, aims of the design and design strategy, installation and construction requirements or limitations, budget and technical expertise, maintainability and adaptability of the proposal, operational energy, requirements for the production of project and end-user documentation, and for commissioning, training and aftercare support. The project team should also demonstrate how stakeholders' contributions have influenced Initial Project Brief, Project Execution Plan, Communication Strategy and Concept Design. **Stakeholder Consultation (interested parties) (1 credit)** **Targeted – Yes** **Complete by RIBA Stage 2** Prior to completion of the Concept Design, the design team should consult with all interested parties on matters that cover the minimum consultation content. They should demonstrate how the stakeholder contributions and consultation exercise outcomes influence the Initial Project Brief and Concept Design. Prior to completion of the detailed design (RIBA Stage 4, Technical Design or equivalent), all interested parties should give and receive consultation feedback. **BREEAM AP - (Concept & Developed Design) + Prerequisite (2 credits)** **Targeted - Yes** **Complete by RIBA Stage 2** The prerequisite (Project team, including the client) formally agree strategic performance targets early in the design process. A BREEAM AP (SRE can provide this service) has been appointed prior to the close of RIBA Stage 2, with the role formally recognised for the remainder of the Concept & Developed Design Stage. The role encompasses assisting with any BREEAM related issues the design team may have in order to maximise the chances of achieving the earlier formally agreed BREEAM target score. Feedback will be provided based upon the monitoring of the project's development along with the collating of evidence for use within the assessment. **Action:** *Design Team to provide evidence of meetings between third party stakeholders and how the outcomes of the meetings have influenced the Project Brief and early design options.* *SRE BREEAM AP to provide regular input with regards to the BREEAM performance target.*
Man 02	Life cycle cost and service planning	4	1	**Elemental Life Cycle Costing (ELCC) / Component level Life Cycle Costing (CLCC) (2 credits), Complete by RIBA Stage 2** **Targeted - No** ELCC is not currently targeted, with the requirement of it having been completed at RIBA Stage 2 and providing an analysis of future replacement costs over a period of 20, 30, 50 or 60 years (to be chosen by the client).

		Available	SRE Proposed	Comments
				Complete by RIBA Stage 4 (1 credit) **Targeted - No** CLCC has been targeted with the requirement of having completed it by the end of RIBA Stage 4. Written examples of how this has influenced the final outcome of the design are to be provided. **Capital cost reporting (1 credit)** **Targeted - Yes** The capital cost of the project will be formally stated in the BREEAM assessment, measured in £k/m^2. Written confirmation to be provided during the design stage. **Action:** *Design team to supply written confirmation of the capital cost of the project (£k/m^2).*
Man 03	Responsible construction practices	6	6	**Prerequisite - All timber and timber based products used on the project to be 'Legally harvested and traded timber'.** **Environmental Management (1 credit)** **Targeted - Yes** The principal contractor and demolition contractor must have a **certified Environmental Management System** (ISO 14001/EMAS) and implement best practice pollution prevention policies and procedures on site in accordance with PPG6. **BREEAM AP (Site) (1 credit)** **Targeted - Yes** A BREEAM AP is to have been appointed, ensuring ongoing compliance during the construction, handover and close out stages. Support and corrective actions will be provided to the project team in order to achieve the targeted BREEAM score. **Responsible construction management (2 credits)** **Targeted - Yes** Contractor must achieve the minimum 9 requirements in table 4.1 for 1 credit. Additional 6 items are required to achieve the second credit. If all items are completed the exemplary credit can also be awarded. Table 4.1 covers a number of criteria under the following 3 headings, which the principal contractor is responsible for: 1) Risk evaluation and implementation 2) Training, awareness and feedback 3) Monitoring and reporting on site incidents The use of CCS (or equivalent) in support of the delivery of the above measures will be required in addition to the site specific evidence. **Site monitoring of utilities and transport of construction and waste materials (2 credits)** **Targeted - Yes**

		Available	SRE Proposed	Comments
				The Main Contractor is to assign an individual with the appropriate authority with the responsibility of monitoring, reporting and setting performance targets against the following: - Energy consumption (kWh and litres of fuel used) and CO_2 emissions (total $kgCO_2$/project value); - Water (potable) (m^3) minus any recycled water use; and - Transport of materials from factory gate to site including transport, intermediate storage and distribution. Total fuel consumption and total carbon dioxide equivalent plus total distance travelled (km). **Action:** *Evidence of all measures met within table 4.1 must be provided.* *Appoint a Main Contractor & Demolition Contractor with a valid EMS certificate.* *Main Contractor to provide a written commitment to undertake the above - SRE can champion upon request.* *Main Contractor to assign an individual responsible for ensuring that monitoring records are maintained throughout construction.*
Man 04	Commissioning and handover	4	4	**Prerequisite - Commissioning schedule and responsibilities and BUG credits required for Excellent.** **Commissioning design, preparation, testing and responsibilities (2 credits)** **Mandatory - Credit is achieved; Targeted - Yes** An appropriate project team member is to become responsible for creating a full **commissioning and testing schedule** for all complex and non-complex systems and services, ensuring they are commissioned and tested to the appropriate Building Regulations, BSRIA, CIBSE and other standards. **Testing and inspecting building fabric (1 credit)** **Targeted - Yes** The building fabric commissioning credit, requiring air tightness testing and a **thermographic survey** to confirm the continuity of insulation. **Handover (1 Credit)** **Mandatory - Credit is achieved; Targeted - Yes** Two **Building User Guides** are to be developed prior to handover, one technical and one non-technical, in addition to a **training schedule** for the building occupiers and/or premises manager. **Action**: *Main Contractor / M&E Consultant to provide a written specification to confirm the above.* *Evidence of testing, commissioning and BUGs will all be required.*
Man 05	Aftercare	3	3	**Aftercare Support (1 credit)** **Targeted - Yes** • Provide aftercare support to the building occupiers through having in place operational infrastructure and resources.

		Available	SRE Proposed	Comments
				• Establish operational infrastructure and resources to coordinate the collection and monitoring of energy and water consumption data for a minimum of 12 months, once the building is substantially occupied. This facilitates analysis of discrepancies between actual and predicted performance, with a view to adjusting systems and user behaviours accordingly. **Commissioning – Implementation (1 credit)** **Targeted - Yes** Complete the commissioning activities (detailed in the manual), over a minimum 12-month period, once the building becomes substantially occupied. **Post-occupancy evaluation (POE) (1 credit)** **Targeted - Yes** • The client or building occupier commits to carry out a POE exercise one year after the building is substantially occupied. This gains comprehensive in-use performance feedback and identifies gaps between design intent and in-use performance. The aim is to highlight any improvements or interventions that need to be made and to inform operational processes. • An independent party carries out the POE and provides a report with lessons learned to the client and building occupiers. • The client or building occupier commits funds to pay for the POE in advance. This requires an independent party to be appointed to carry out the POE as described above. Evidence of the appointment of the independent party and schedule of responsibilities which fulfils the BREEAM criteria are acceptable to demonstrate compliance. **Action:** *Above to be confirmed by the design team and written into the M&E specification and the contractor's programme of works and schedule.*
	Management Totals: (+exemplary)	**21 (+1)**	**18**	
	Management score totals:	**11**	**9**	
Health & Wellbeing				
Hea 01	Visual comfort	5	1	**Glare Control (1 credit)** **Targeted - No** A glare control assessment is to be undertaken to aid in identifying and justifying areas where glare control measures have/haven't been included. Glare control measures should maximise daylight levels in all-weather whilst simultaneously ensuring that artificial lighting control systems are not interrupted. This is not applicable to the proposed development as there are no windows within the design due to the nature of the build. **Daylighting (2 credits)** **Targeted - No** All areas of the building occupied for a period of 30 consecutive minutes or more must achieve the minimum daylight requirements (2% daylight factor over 80% of floor area). There should be a uniformity ratio of at least 0.3 or, a minimum point daylight factor of at least 0.3 times the average daylight factor value. Spaces with glazed roofs, such as atria, must achieve a uniformity ratio of at least 0.7. Or, a minimum point daylight factor of at least 0.7 times the average daylight factor value.

		Available	SRE Proposed	Comments
				View Out (1 credit) **Targeted - No** 95% of the floor area in 95% of spaces for each relevant building area achieves adequate view out – building areas within 8m of an external wall which has a window/opening of ≥20% of the surrounding wall area and at a seated eye level, the view out should be of a landscape or buildings (rather than just the sky). **Internal/External lighting and zoning controls (1 credit)** **Targeted - Yes** **All internal lighting** to be designed to provide illuminance levels in accordance with the SLL Code for Lighting 2012 and any other relevant industry standard. **External lighting** to be provided in accordance with BS 5489-1:2013 and BS EN 12464-2:2014. **Action:** *M&E Consultant to confirm lighting requirements via specification and lighting designs.*
Hea 02	Indoor air quality	4	3	**Prerequisite** - **An IAQ is to be provided by the Design Team** The purpose of the plan is to minimise internal air pollution during the building's occupation and must, therefore, cover the following: • Removal of contaminant sources; • Dilution and control of contaminant sources; • Procedures for pre-occupancy flush out; • Third party testing and analysis; and • Maintaining good indoor air quality in-use. **Ventilation (1 credit)** **Targeted - Yes** If a naturally ventilated building, openable windows/ventilators are to be located >10m from sources of external pollution. If air-conditioned, air intakes are to be >10m from sources of external pollution and >10m from the building's exhaust and where present, HVAC systems must incorporate filtration systems in accordance with BS EN 13779:2007 Annex A3. If the Proposed Development is a naturally ventilated or mixed mode building, cross ventilation should be provided to allow thermal comfort compliance in line with CIBSE AM10. Areas of large or variable occupancy are to be fitted with air quality sensors that are linked to the appropriate controls. **VOCs (Products) (2 credits)** **Targeted - Yes - 1 credit** Three of the following categories must achieve the standards set out in the BREEAM NC 2018 Technical Manual (Table 5.11) in addition to all wood-based products being classified as formaldehyde E1: Interior paints and coatings; wood-based products; flooring materials; ceiling, wall, acoustic and thermal insulation materials; and interior adhesives and sealants. **VOCs (Testing) (1 credit)** **Targeted - Yes** Formaldehyde and TVOC concentration level are to be tested post construction. Formaldehyde concentration should be <100µg/m^3 over 30 mins. TVOC concentration

		Available	SRE Proposed	Comments
				should be <300µg/m^3 over 8 hrs. Testing should be in accordance with: BS ISO 16000-4: 2011 Diffusive sampling of formaldehyde in air, BS ISO 16000-6: 2011 VOCs in air by active sampling, BS EN ISO 16017-2: 2003 VOCs - Indoor, ambient and workplace air by diffusive sampling, BS ISO 16000-3: 2011 Formaldehyde and other carbonyls in air by active sampling. **Action:** *M&E consultants to produce compliant IAQ plan as above.* *M&E consultants to inform on the ventilation strategy and locations of intakes and exhausts.* *Main Contractor to commit to using only low VOC finishing materials as per the table provided within the commitment letter template. Datasheets to be provided by MC at design/PC stage.* *Main Contractor to commit to carrying out internal air quality testing upon completion and prior to handover. Testing to be included within the contractor's schedule and programme of works.*
Hea 04	Thermal comfort	3	3	**Thermal modelling (1 credit)** **Targeted - Yes** Modelling must be undertaken using compliant software in accordance with CIBSE AM11 Building Energy and Environmental Modelling. The simulation must provide full dynamic thermal analysis, whilst also meeting the criteria set out in CIBSE Guide A Environmental design if the building is to be mechanically/naturally ventilated in addition to CIBSE TM52 & TM59 if naturally ventilated. One credit has been awarded. (note: this is also linked to Ene04). **Design for future comfort (1 credit)** **Targeted - Yes** The above modelling criteria must be achieved. Where this is not possible, it should be demonstrated how the building has been adapted using passive design solutions to achieve compliance. Credit has been assumed. **Thermal zoning and controls (1 credit)** **Targeted - Yes** The above thermal modelling is to inform the temperature zoning and control strategy for the building. Control strategy to be based on appropriate zoning, occupant control based on discussion with the end user and system interaction. **Action:** *Design Team to supply report demonstrating compliance with the thermal modelling and Design for future comfort. SRE can complete if required.*
Hea 05	Acoustic performance	3	3	**Acoustic performance (3 credits)** **Targeted - Yes** The building's Airborne **Sound Insulation** values between multiple habitable rooms should be at least 5dB higher and Impact Sound Insulation values 5dB lower than the performance standards in the relevant building regulations in order to achieve one credit. Testing will be required to confirm this (1 credit). Achieve **indoor ambient noise levels** that comply with the design ranges given in section 7 of BS 8233:2014. Testing will be required to confirm this (1 credit).

		Available	SRE Proposed	Comments
				Room acoustics - Achieve the requirements relating to sound absorption and within the common spaces of the building described in the relevant building regulation or building standard national guidance (1 credit). Site inspection required to confirm. **Action:** *Acoustician to provide confirmation of the likelihood of the above standards being met.*
Hea 06	Security	1	0	**Security; Input by RIBA Stage 2 (1 credit)** **Targeted - No** A Suitably Qualified Security Specialist (SQSS/ALO) must conduct an evidence-based Security Needs Assessment (SNA) prior to RIBA Stage 2 and issue recommendations during Stage 2, which will be implemented. **Action:** *Design Team to supply ALO correspondence prior to Stage 2 and confirmation that their recommendations have been included in the building design, these should also be indicated on the drawings.*
	Health & Wellbeing Totals: (+exemplary)	**19**	**10**	
	Health & Wellbeing score totals:	**14**	**7.37**	
Energy				
Ene 01	Reduction of energy use and carbon emissions	13	9	**Prerequisite - at least four credits required for Excellent - an EPR_{NC} of at least 0.4 must therefore be achieved.** **Energy Performance modelling (9 credits)** **Targeted – Yes – 5 credits** Energy modelling has been undertaken and confirmed that 5 credits have been achieved. **Prediction of Operational Energy Consumption (4 credits)** **Targeted - Yes** **Prerequisite** - Prior to completion of the Concept Design, relevant members of the design team hold a preliminary design workshop focusing on operational energy performance. **Energy Modelling and Reporting** Undertake additional energy modelling during the design and post-construction stage to generate predicted operational energy consumption figures and report predicted energy consumption targets by end use, design assumptions and input data (with justifications). Lastly, a risk assessment to highlight any significant design, technical, and process risks that should be monitored and managed throughout the construction and commissioning process.

		Available	SRE Proposed	Comments
				Action: *Design and Post- Construction energy modelling to be undertaken.* *Energy workshop to be undertaken.*
Ene 02	Energy monitoring	2	2	**Prerequisite - Sub-metering of types is installed (1 credit)** **Mandatory - Credit is achieved; Targeted - Yes** Energy Metering should be installed that enables ≥90% of the estimated Energy Consumption to be assigned to an end-use category. Major energy consuming systems include (where present): a. Space Heating, b. Domestic Hot Water, c. Humidification, d. Cooling, e. Fans (major), f. Lighting, g. Small Power (lighting and small power can be on the same sub-meter where supplies are taken on each floor), h. Other major energy-consuming items (e.g. lifts). Energy consumption should be metered by end-use category with an appropriate energy monitoring and management system and end-uses made identifiable with labelling. One credit has been awarded. **Sub-metering of high Energy load and tenancy areas (1 credit)** **Targeted - Yes** Monitor a significant majority of the energy supply with: An accessible energy monitoring and management system for tenanted areas or relevant function areas or departments in single occupancy buildings. *OR* Separate accessible energy sub-meters with pulsed or other open protocol communication outputs for future connection to an energy monitoring and management system for: tenanted areas or relevant function areas or departments in single occupancy buildings. Sub-meter per floor plate in large single occupancy or single-tenancy buildings with one homogeneous function, for example hotel bedrooms, offices. **Action:** *M&E Consultant to supply specification and design drawings clearly highlighting the metering strategy.*
Ene 03	External Lighting	1	1	**External Lighting (1 credit)** **Targeted - Yes** BREEAM compliant and energy efficient external lighting to be specified in compliance with the criteria set out in *Hea01*. Lighting to have a luminous efficacy of ≥70 lumens per circuit watt, controlled through a time-switch or daylight sensor to prevent operation during daylight hours, and presence detection in areas of intermittent pedestrian traffic. **Action:** *M&E Consultant to supply drawings, specification and calculations to confirm lighting luminous efficacy and control method.*
Ene 04	Low carbon design	3	2	**Passive Design (1 credit)** **Targeted - Yes** The first credit within Hea04 must be achieved. The project team must undertake an analysis of the proposed building design and development during Concept Design to

		Available	SRE Proposed	Comments
				identify opportunities for the implementation of passive design measures. These will reduce the total heating, cooling, mechanical ventilation, lighting loads and energy consumption in line with the passive design analysis findings - these findings must also be quantified. **Free Cooling (1 credit)** **Targeted - No** It is assumed at this stage that the building is unlikely to achieve any of the free cooling strategies. Credit not currently achievable. **LZC Feasibility Study (1 credit)** **Targeted - Yes** **Complete by RIBA Stage 2** A study must be undertaken by an Energy Specialist by the end of Concept Design (SRE can provide this service) which includes LZCs being specified to provide a significant reduction in CO_2 emissions. Credit included. **Action:** *A BREEAM Compliant LZC feasibility study must be provided.* *Passive Design Analysis to be completed.*
Ene 06	Energy efficient transportation systems	2	2	**Energy consumption (1 credit)** **Targeted - Yes** Transportation demand and usage patterns for the building should be analysed to determine the optimum number and size of lifts. The energy consumption in accordance with BS EN ISO 25745 Part 2 or 3 should be calculated. Regenerative drives should be considered. The transportation system with the lowest energy consumption should be specified. **Energy efficient features (1 credit)** **Targeted - Yes** Lifts - the first credit is achieved and regenerative drives are specified where their use is demonstrated to save energy. The following should also be specified: • A standby period for off-peak periods. • The lift car lighting and display lighting provides an average luminous efficacy across all fittings in the car of >70 luminaire lumens per circuit Watt. • use of a drive controller capable of variable speed, variable-voltage, and variable-frequency control of the drive motor. **Action:** *Design team to provide the relative information regarding the above lift specifications used within the building.*
	Energy Totals: (+exemplary)	26	16	
	Energy score totals:	16	9.85	

		Available	SRE Proposed	Comments
Transport				
Tra 01	Transport assessment and travel plan	2	2	**Pre-requisite - Travel plan must be undertaken to achieve any credits within this section (2 credits)** **Targeted - Yes** A Travel Plan based upon the findings from a Transport Assessment/Statement is required in order for ANY transport section credits to be awarded. The Transport Assessment/Statement must assess the following as minimum: • Existing and future travel patterns of the site; • The local walking and cycling environment; • Disabled access; • The number and type of existing amenities within 500m of the site (at least three confirmed by SRE for this site); • Calculation of the current Accessibility Index (SRE calculated 59.61 for this site); and • Current cyclist facilities. The Travel Plan is intended to promote sustainable patterns of travel during the building's operation and use and should be prepared in conjunction with the end occupant. The credits have been assumed. **Action:** *Design Team to supply a copy of a compliant Travel Plan and Transport Assessment/Statement.*
Tra 02	Sustainable transport measures	10	9	**Pre-requisite - *Tra01* has been achieved.** **Transport options implementation (10 credits)** **Targeted - Yes - 9 credits** Credits are awarded based upon the site's Accessibility Index (AI) and the implementation of any of the following: • Existing AI ≥ 8. • Demonstrate an increase over the existing AI (calculated in *Tra01*) through either negotiating with transit companies for an increase in frequency OR provision of a diverted bus route/enhanced bus stop OR provide a dedicated bus service. • Provide a public transport information system in a publicly accessible area to allow building users access to up-to-date information on the available public transport and transport infrastructure. This may include signposting to public transport, cycling, walking infrastructure or local amenities. • Provide electric recharging stations for 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 for at least 5% of the total car parking capacity for the development and locate priority parking spaces nearest the development entrance used by the sharing scheme participants. • During preparation of the brief, the design team consults with the local authority (LA) 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 and agree and implement one proposition chosen with the local authority. The proposition supported by the development is additional to existing local plans and has a significant impact on the local cycling network or on pedestrian routes open to the public. • Install compliant cycle storage spaces to meet the minimum levels set out in the BREEAM NC 2018 technical manual (Table 7.5).

		Available	SRE Proposed	Comments

				• Provide at least two compliant cyclists' facilities for the building users for the scope of each compliant facility:
				  ○ Showers
				  ○ Changing facilities
				  ○ Lockers
				  ○ Drying spaces.
				• At least three existing accessible amenities are present.
				• Ensure a minimum of one new accessible amenity is provided OR ensure more than one new accessible amenity is provided.
				It has therefore been proposed that the following are installed to target 9 credits in this section:
				• An AI of >8 (1)
				• A public transport information system (3)
				• Planned BREEAM compliant cycle storage provision of 4 total spaces (7)
				• Compliant cyclist facilities are provided (8)
				• At least three existing accessible amenities are present (9)
				
				A total of 9 credits can be targeted, as an AI of 59.61 has been calculated.
				
				Action:
				Client to confirm the provision of a public transport information system
				Architect to confirm the installation of BREEAM compliant cycle storage and cyclist facilities.
				All above must be confirmed to be undertaken/feasible.

	Transport Totals: (+exemplary)	**12**	**11**	
	Transport score totals:	**10**	**9.17**	
Water				
Wat 01	Water consumption	5	3	**Water consumption (5 credits)** **Targeted - Yes - 3 credits** Level 3 performance has been targeted. A typical specification should be as follows, based on the current drawings: - WC - 3.75 litres effective flush volume; - Wash hand basin taps – 5 litres per min; - Showers – 6 litres per min - Kitchenette Taps - 6 litres per min - Domestic sized dishwashers - 12 litres/cycle Three credits have been included within SRE Proposed.

		Available	SRE Proposed	Comments
				Action: *Developer/M&E Consultant to confirm water specification.*
Wat 02	Water monitoring	1	1	**Water monitoring (1 credit)** **Targeted - Yes** **Mandatory - A water meter is fitted to the mains supply on each building (Criterion 1).** A water meter is to be fitted on the mains supply to each building, with additional sub-meters or water monitoring equipment fitted to water-consuming plant areas and/or building areas consuming ≥10% of the building's total water demand. All meters should be pulsed and connectable to any BMS or utility monitoring system. **Action:** *M&E Consultant to supply specification of water meters.* *M&E Consultant to supply schematics highlighting the position of mains and sub-meters at appropriate locations*
Wat 03	Water leak detection	2	2	**Leak detection system (1 credit)** **Targeted - Yes** A BREEAM Compliant leak detection system is to be installed on the mains water supply to each building to detect major leaks on the water supply within the buildings and between the buildings and water supply. The system must be: • A permanent automated water leak detection system that alerts the building occupants to the leak OR an inbuilt automated diagnostic procedure for detecting leaks; • Activated when the flow of water passing through the water meter or data logger is at a flow rate above a pre-set maximum for a pre-set period of time. This usually involves installing a system which detects higher than normal flow rates at meters or sub-meters. It does not necessarily require a system that directly detects water leakage along part or the whole length of the water supply system; • Able to identify different flow and therefore leakage rates, e.g. continuous, high or low level, over set time periods. Although high and low-level leakage rates are not specified, the leak detection equipment installed must have the flexibility to distinguish between different flow rates to enable it to be programmed to suit the building type and owner's or occupier's usage patterns; • Programmable to suit the owner's or occupier's water consumption criteria; and • Where applicable, designed to avoid false alarms caused by normal operation of large water-consuming plant such as chillers. One credit has been assumed. **Flow control devices; Targeted - Yes** Install flow control devices that regulate the water supply to each WC area or sanitary facility according to demand, in order to minimise undetected wastage and leaks from sanitary fittings and supply pipework. This credit is targeted. **Action:** *M&E Consultant to supply drawings and specification to confirm the location and specification of the leak detection and prevention systems.*

		Available	SRE Proposed	Comments
	Water Totals: (+exemplary)	9	6	
	Water score totals:	7	4.67	
Materials				
Mat 01	Environmental impacts from construction products - Building life cycle assessment (LCA)	7	0	**Superstructure Life Cycle Assessment (LCA)** **Targeted - No** **Complete by RIBA Stage 2** Carry out an LCA of 2-4 significantly different superstructure options, of which the options selected must not hinder the functional requirements previously specified by the client. The following must also be recorded in an 'Option Appraisal Summary Document': • Differences between the design options; • Reasons for selecting the chosen options; and • Reasons for not selecting the discarded options. Reasons must be given for selecting the chosen design option, with the results submitted to BRE at the end of the Concept Design Stage. This MUST be achieved in order to gain any credits within Mat01. **Substructure and hard landscaping Life Cycle Assessment (LCA) (1 credit)** **Targeted - No** **Complete by RIBA Stage 2** Carry out an LCA of ≥6 significantly different substructure and hard landscaping options (min 2 substructure & 2 hard landscaping). Results must explore the same issues as those presented for the Superstructure, with the 'Option Appraisal Summary Document' updated and submitted to BRE at the end of RIBA Stage 2. **Superstructure Life Cycle Assessment (LCA)** **Targeted - No** **Complete by RIBA Stage 4** Carry out an LCA of 2-3 significantly different superstructure options, based on that selected during the Concept Stage. Results must explore the same issues as those presented at RIBA Stage 2 with the 'Option Appraisal Summary Document' updated and submitted to BRE at the end of RIBA Stage 4. **Action:** *Architect to provide the following:* *-Superstructure LCA required and to be reported within an 'Option Appraisal Summary Document', prior to the end of RIBA Stage 2. Free BRE simplified tool allows MAX. 1 credit. Use of detailed approved LCA tools allows up to 4 credits.* *Additional 2 credits available if above is repeated at the technical design stage using detailed approved LCA tool.* *Detailed tool only (at concept and technical stages) - up to 6 credits (currently targeted, will require an additional fee for SRE to complete this)*

		Available	SRE Proposed	Comments
Mat 02	Mat 02 Environmental impacts from construction products - Environmental Product Declarations (EPD)	1	1	**Environmental impacts from construction products (1 credit)** **Targeted - Yes** To achieve the credit available, the materials listed in *Mat01* are assessed depending upon their EPDs (Environmental Product Declarations). Based upon the type of EPD, a score is given with a single credit awarded if 20 points are scored. This will need further input during the initial design stages. **Action:** *Architect to specify materials selected in Mat01 based upon the availability of products with EPDs.*
Mat 03	Responsible sourcing of construction products	4	1	**Mandatory - Criterion 1 only, Legally Harvested and traded timber.** Elements and level of responsible sourcing are currently assumed. All elements are to be EMS certified for key process or have a BES 6001 Product certification, with all timber FSC/PEFC certified and from a legal source. **Sustainable Procurement Plan (1 credit)** **Targeted - No** The Client/Design Team are also required to create and implement a Sustainable Procurement Plan by the end of RIBA Stage 2 which sets out a clear framework for the responsible sourcing of materials to guide procurement throughout a project. The plan can be adopted at an organisational level or alternatively, it can be site/project specific. **Measuring Responsible sourcing (3 credits)** **Targeted – Yes – 1 credit** A target score of 10% of the available points will be achieved regarding the superstructure. This will require the use of the Mat03 Calculator tool and methodology to determine the number of credits. **Action:** *The Client/Design Team to supply the following:* *-A written commitment to maintain records through procurement of suppliers used and responsible sourcing certification held.*
Mat 05	Designing for durability and resilience	1	1	**Designing for durability and resilience (1 credit)** **Targeted - Yes** Areas of the building fabric are to be identified which are potentially vulnerable to vehicular, trolley and pedestrian movement in addition to malicious damage, with suitable design measures to be included for protection and damage prevention. Key exposed building elements that may be subject to environmental degradation are also to be identified, with either a detailed assessment of the element's resilience or an appropriate durability standard (in line with BS 7543:2015) being installed. Convenient roof access should also be included within the plans in addition to a fabric design that prevents water damage, ingress and detrimental ponding. Overall one credit has been assumed. **Action:**

		Available	SRE Proposed	Comments
				Architect to supply *- Design drawings illustrating vulnerable areas/parts of the building;* *- Design drawings and/or relevant section/clauses of the building specification or contract confirming the durability measures specified; and* *- Written specification confirming how measures have been implemented to limit material degradation due to environmental factors.*
Mat 06	Material efficiency	1	0	**Material efficiency; Input from RIBA Stage 1 (1 credit)** **Targeted - No** Opportunities should be identified and appropriate measures investigated and implemented, to optimise the use of materials in building design, procurement, construction, maintenance and end of life. This should be carried out at each of the RIBA stages, 1,2,3,4 and 5. **Action:** *Architect to supply evidence of above at every RIBA stage of the project*.
Materials Totals: (+exemplary)		**14 (+4)**	**3**	
Materials score totals:		**15**	**2.5**	
Waste				
Wst 01	Construction waste management	5	3	**Resource Management Plan (RMP) and construction resource efficiency (3 credits)** **Targeted - Yes** A BREEAM compliant RMP must be developed covering non-hazardous waste relating to construction (including dedicated off-site manufacture), demolition and excavation. A nominated person should be identified to take responsibility for the plan and collection of data, confirming that the following targets have been met: • two credits - construction waste generated should be less than the target benchmarks which are assumed for this project at 7.5m^3 or 6.5 tonnes of waste per 100m^2 (GIFA). Where possible the lower benchmark of 3.2m^3 or 1.9 tonnes should be targeted. • one credit is targeted for diverting waste from landfill - demolition 80% by volume (90% by tonnage); non-demolition 70% by volume (80% by tonnage), with all waste sorted into the key EU waste groups. **Construction resource efficiency:** One credit – awarded when amount of waste generated per 100m^2 is < or equal to 13.3 (m^3) or 11.1 (tonnes) Two credits – awarded when the amount of waste generated per 100m^2 is < or equal to 7.5 (m^3) or 6.5 (tonnes) Three credits – awarded when the amount of waste generated per 100m^2 is < or equal to 3.4 (m^3) or 3.2 (tonnes) Exemplary level - awarded when the amount of waste generated per 100m^2 is < or equal to 1.6 (m^3) or 1.9 (tonnes) **Diversion of resources from landfill (1 credit when the below targets are met):** Type of Waste Volume Tonnage Non-demolition 70% 80% Demolition 80% 90% Excavation N/A N/A

		Available	SRE Proposed	Comments
				Current targets: • two credits - construction waste generated should be less than the target benchmarks which are assumed for this project at 7.5m³ or 6.5 tonnes of waste per 100m² (GIFA). • one credit is targeted for diverting waste from landfill - demolition 80% by volume (90% by tonnage); non-demolition 70% by volume (80% by tonnage), with all waste sorted into the key EU waste groups. **Action:** *Demolition Contractor to supply a copy of the pre-demolition waste audit.* *Main Contractor to supply a copy of a compliant Resource Management Plan that gives reference to the pre-demolition audit.* *Main Contractor to give written confirmation that the above benchmarks for waste generation, and waste diversion from landfill will be achieved.*
Wst 02	Use of recycled and sustainably sourced aggregates	1	0	**Pre-requisite; Targeted - No** The reuse of site-won material on site should be encouraged and a pre-demolition audit should be carried out in accordance with Wst 01. **Project Sustainable Aggregate Points (1 credit)** **Targeted - No** All aggregate uses, types quantities and sources should be identified. The distance (km) travelled by all aggregates by transport type should be calculated and all this information should be entered into the Wst 02 calculator. 3.5-6 points will equate to one credit. More than 6 points will achieve an exemplary credit. It has been assumed that this credit will not be achieved due to the limited amount of existing hard standing on site that could potentially be recycled into recycled aggregate and the cost implications of sourcing it from external sources. **Action:** *Main contractor to record and identify the above information so that it can be input into the Wst 02 calculator.*
Wst 03	Operational waste	1	1	**Mandatory - credit must be achieved for Excellent.** **Operational Waste (1 credit)** **Targeted - Yes** Bin-store - An appropriately sized, clearly labelled and dedicated space for the segregation and storage of operational recyclable waste is to be provided within the bin store. The store must be clearly labelled, lockable and accessible only to the building occupants and/or staff. This area should also include a drain and tap for general washing purposes. The general rule for the size of the space - as the scheme is <5000m² a minimum of 2m² must be provided for waste per 1000m². An estimated floor area of 700m² has been calculated, therefore at least 2m² recyclable waste storage must be provided. **Action:** *Architect to supply:*

		Available	SRE Proposed	Comments
				- Confirmation of floor area. *- Drawings showing dedicated space for external storage - to be at least 2m² depending on the floor area.* *-Space to be labelled to assist with segregation of waste, accessible to building occupant.* *- Compliant internal recyclable waste storage to be provided within each dwelling.*
Wst 05	Adaptation to climate change	1	0	**Completed by RIBA Stage 2 (1 credit)** **Targeted - No** A climate change adaptation strategy appraisal for structural and fabric resilience is required to have been completed by the end of Concept Design (RIBA Stage 2 or equivalent). This credit has been sought. **Action:** *Design Team to supply a Climate change adaption strategy.*
Wst 06	Design for disassembly and adaptability	2	0	**Design for disassembly and functional adaptability (recommendations) (1 credit)** **Targeted – No** **Input required from RIBA stage 2** The Design Team must undertake a study to explore the ease of disassembly and the functional adaption potential of different design scenarios by the end of Concept Design. **Design for disassembly and functional adaptability (implementation) (1 credit)** **Targeted - No** **Input required from RIBA stage 2** The above MUST be achieved, the Design Team must also (during Technical Design) provide an update on- a) How the recommendations or solutions proposed by Concept Design have been implemented where practical and cost effective. Omissions have been justified in writing to the assessor. b) changes to the recommendations and solutions during the development of the Technical Design c) A building adaptability and disassembly guide to communicate the characteristics allowing functional adaptability and disassembly to prospective tenants. **Action:** *Design Team must provide functional adaptability study with recommendations.*
	Waste Totals: (+exemplary)	**12**	**4**	
	Waste score totals:	**6**	**2**	
Land Use & Ecology				
LE 01	Site selection	2	1	**Previously Occupied Land (1 credit)** **Targeted - Yes** In order to achieve the credit, 75% of the Proposed Development's footprint must be on previously occupied land/hard standing. It has been assumed that, due to the

		Available	SRE Proposed	Comments
				construction of much of the Proposed Development being on previously occupied land, this credit will be achievable. **Contaminated Land (1 credit)** **Targeted - No** A contaminated land professional's report must confirm that the site is significantly contaminated prior to implementing the recommended remediation measures. As the site is currently located in a largely residential area, it has been assumed that no contamination will be found and that therefore, no credits can be awarded. **Action:** *Developer to supply any contamination report if land is believed to be contaminated.*
LE 02	Identifying and understanding the risks and opportunities for the site	2	2	**Prerequisite - The client or contractor confirms compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site.** **Survey and Evaluation, Determining the Ecological Outcomes (1 credit, Route 2)** **Targeted - Yes** **Complete by RIBA Stage 1** An appropriate individual is to have been appointed to ensure early involvement in site configuration and influence strategic planning decisions. An appropriate survey and evaluation must have taken place at RIBA Stage 1. A Preliminary Ecological Appraisal must be undertaken. **Determining the Ecological Outcomes (1 credit, Route 2)** **Targeted - Yes** During RIBA Stage 2, the Design Team should have met to discuss the ecological outcomes of the Proposed Development. The Ecological Assessment must outline the ecological outcomes of the assessment, making recommendations in line with the BREEAM hierarchy. One credit has therefore been awarded. **Action:** *Design Team to demonstrate discussions/plans for the ecological outcomes for the Proposed Development.* *Ecologist to be appointed.* *DT to provide evidence of the above*
LE 03	Managing negative impacts on ecology	3	2	**Prerequisite - *Le02* is achieved.** **Planning, liaison, implementation and data (1 credit, Route 2)** **Targeted - Yes** **Complete by RIBA Stage 3** Roles and responsibilities must have been clearly identified to ensure the implementation of the ecological outcomes. Site works and preparations are to have been planned and implemented at an early stage to optimise the potential benefits prior to liaising with the representative stakeholders to share data, solutions and the measures implemented. One credit has been targeted. **Managing negative impacts of the project (1 credit, Route 2)** **Targeted – Yes – 1 credit**

		Available	SRE Proposed	Comments
				For Route 2, one credit may be achieved where the loss of ecological value has been limited according to the hierarchy and therefore the loss of ecological value is minimised. **Action:** *Design Team to provide evidence of interactions and discussions, identifying responsibility and control measures for achieving the ecological outcomes.* *Design Team to appoint an Ecology Champion to ensure the delivery of outcomes.* *Design Team to provide evidence of site works and preparations having been undertaken at an early project stage.* *DT to provide evidence of the above.*
LE 04	Change and enhancement of ecological value	4	2	**Prerequisite - *LE03* is achieved** whereby the roles and responsibilities have been clearly defined and site preparation and construction works have been planned for and implemented at an early stage to optimise benefits and outputs. **Liaison, implementation and data collation (Route 2)** **Targeted – Yes** Ecology Champion liaises with the representative stakeholders to share data, solutions and the measures implemented to enhance data on site. Where this is not possible, measures are implemented that enhance the ecological value of the off-site area within the zone of influence. **Enhancement of Ecology (1 credit, Route 2)** **Targeted - Yes** Route 2 - Credits are awarded based upon the enhancement in ecological value: • Minimising loss of ecological value (one credit - percentage score of 75-94) • No net loss of ecological value (two credits - percentage score of 95-104) • Net gain of ecological value (three credits - percentage score of 105-109) It has been assumed at this stage that the loss of ecological value will be minimised. **Action:** *DT to provide evidence of the above.* *Ecology report to be produced by Ecologist.*
LE 05	Long term management and maintenance	2	2	**Prerequisite - *LE04* is achieved** whereby the roles and responsibilities have been clearly defined and site preparation and construction works have been planned for and implemented at an early stage to optimise benefits and outputs. **Planning, liaison, data, monitoring and review management and maintenance (1 credit, Route 2)** **Targeted - Yes** Ecology Champion liaises with the representative stakeholders to share data, solutions and the measures implemented to enhance data on site. Discussions must also be made with regards to the monitoring and reporting of successes and the site's continued maintenance and ecological value.

		Available	SRE Proposed	Comments
				Landscape and ecology management plan (or similar) development (1 credit) **Targeted - Yes** A five-year landscape and ecology management should be created in accordance with BS 42020:2013. **Action:** *DT to provide evidence of the above.* *Landscape and ecology management plan to be created.*
	Land Use & Ecology Totals: (+exemplary)	13 (+2)	9	
	Land Use & Ecology score totals:	13	7.8	
Pollution				
Pol 01	Impact of refrigerants	3	3	**No Refrigerant Use (3 credits)** **Targeted - Yes** There are no refrigerants proposed for the scheme, therefore three credits can be awarded. **Action:** *M&E consultant to confirm there are no refrigerants to be used in the building.*
Pol 02	Local air quality	2	2	**Local air quality (2 credits)** **Targeted - Yes** The site area has been deemed as being of high pollution, using Defra's national Pollution Climate Mapping modelling GIS tool. Therefore, assuming a gas boiler is used, NO_x emissions from all installed combustion plants that provide space heating and domestic hot water must not exceed 24 mg/kWh to achieve 2 credits. For one credit to be achieved, the gas boiler must not emit more than 27 mg/kWh. Alternative modes of heating will require different benchmarks to be met. **Action:** *M&E consultants to confirm type of heating and that the NO_x emissions do not exceed the above maximum values.*
Pol 03	Flood and surface water management	5	5	**Flood resilience (2 credits)** **Targeted - Yes** A desk study undertaken by SRE (Preliminary Drainage and Flood Risk analysis based on the Environmental Agency mapping) suggests that the site has a low risk of flooding from sea and rivers, and flooding from surface water. Detailed flood risk analysis will confirm this. If the site is found to be of high/medium risk if the below are included to increase the resilience of the site a single credit can be awarded:

		Available	SRE Proposed	Comments
				a. The ground level of the building and access to both the building and the site, are designed (or zoned) so they are at least 600mm above the design flood level of the site's flood zone (see 600mm threshold). b. The final design of the building and the wider site reflects the recommendations made by an appropriate consultant in accordance with the hierarchy approach outlined in section 5 of BS8533:2017(218). **Surface water run-off (2 credits)** **Targeted - Yes** As the area of impermeable run-off is thought to decrease the credit can be awarded by default. However, if this increases SuDs will need to be implemented to ensure that the rate of run-off remains the same as was measured prior to development. **Minimising watercourse pollution (1 credit)** **Targeted - Yes** Confirmation there is no discharge from the developed site for rainfall up to 5mm. For areas with a low risk source of watercourse pollution, an appropriate level of pollution prevention treatment must be provided (such as SuDS). Areas with a high risk of contamination or spillage of substances (oil or petrol) must have separators (or equivalent) installed in surface water drainage systems. Chemical or liquid gas storage areas have a means of shut off to the site drainage system. Any water pollution prevention systems must be installed and designed in accordance with the recommendation of documents, such as the SuDs manual (or other relevant industry best practice). They must also be bespoke solutions which consider the specific site requirements and natural/man-made environment of and surrounding the area. Additionally, a comprehensive and up to date drainage plan for the site must be made available, and any relevant maintenance agreements for the ownership (long term operation and maintenance) for all specified SuDS must be in place. Finally, all external storage and delivery areas are designed and detailed in accordance with the current best practice planning guidance. **Action:** *Drainage Engineer to supply FRA and Drainage Strategy Report & calculations clearly confirming the BREEAM credits that can be awarded.* *Drawings to be provided confirming the drainage design / SUDs solution.*
Pol 04	Reduction of night time light pollution	1	1	**Reduction of night time light pollution (1 credit)** **Targeted - Yes** Lighting to be designed in compliance to ILP Guidance note for the reduction of obtrusive light, 2011. All external lighting to be switched off between 2300hrs and 0700hrs (security/safety lighting used between these times to comply with the lower levels of light as in the ILP's guidance. Illuminated advertisements, where specified, must be compliant with ILP Technical Report 5 - The Brightness of Illuminated Advertisements **Action:** *M&E Consultant to supply marked-up design drawings, relevant sections of the building specification and/or calculations.*
Pol 05	Reduction of noise pollution	1	1	**Reduction of noise pollution (1 credit)** **Targeted - Yes** A noise impact assessment compliant with BS 4142:2014 should be commissioned. Noise levels must be measured or determined for existing background noise levels at the most sensitive area and noise rating level from the assessed building. This must be carried out by a suitably qualified acoustic consultant.

		Available	SRE Proposed	Comments
				The noise level from the assessed building, as measured in the locality of the nearest or most exposed noise-sensitive development, must be at least 5dB lower than the background noise throughout the day and night. If the noise sources from the assessed building are greater than the levels described in criterion 4, measures have been installed to attenuate the noise at its source to a level where it will comply with the criterion. **Action:** *Main contractor to commission the noise assessment and ensure the above criteria are met.*
	Pollution Totals: (+exemplary)	12	12	
	Pollution score totals:	8	8	
Innovation				
AI	Approved Innovation	1	0	
	Innovation Totals: (+exemplary)	1	0	
	Innovation score totals:	1	0	
OVERALL SCORE TOTALS:		88	68.25	

SRE Main Office:
Greenforde Farm
Stoner Hill Road
Froxfield
Petersfield
Hampshire
GU32 1DY
United Kingdom

T: +44 (0)1730 710044
F: +44 (0)1730 710043
E: info@sre.co.uk
W: www.sre.co.uk