

BREEAM: Other Buildings 2011

Pre Assessment Report



Plender Street – Community Centre

March 2014



Contents

1. Summary	3
2. Introduction	3
3. BREEAM: Other Buildings Assessment	3
4. BREEAM Scoring	4
5. BREEAM Assessment	4
6. Online Project Management System	5
7. Assessment Summary	5
8. Credit Commentary	6
9. Mandatory Issues	6
10. Potential Additional Credits	7
11. Credit table	13
12. Credit Criteria and Responsibility Table	17
12.1. Management	17
12.3. Health and Wellbeing	23
12.4. Energy	29
12.5. Transport	35
12.6. Water	39
12.7. Materials	43
12.8. Waste	48
12.9. Land Use and Ecology	50
12.10. Pollution	56
12.11. Innovation	61
13. Tracker+	62
14. Specific Actions Required At Certain RIBA Stages	63

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1. Summary

This report has been prepared on a provisional BREEAM 2011 assessment of the proposed Community Centre at the mixed use development on Plender Street, London. This report is a summary of the outcome of a BREEAM Workshop held on the 25th of March 2014. It is important to note that the information contained within this report is primarily based upon information verbally supplied to the Assessor by the design team during this workshop and that this report should be used for guidance purposes only.

It should be noted that this is not a formal BREEAM assessment and will not be submitted to BRE for certification purposes.

The Community Centre is required by planning condition 31 set by Camden Council to achieve a BREEAM rating of '**Very Good**'. On the basis of this pre assessment it is anticipated that the overall rating for the current performance of the proposed development will be a '**Very Good**' BREEAM rating with a score of **69.14%**. Contained in Section 13 of this report is a credit criteria table which describes actions required to achieve the required BREEAM Target.

Higgins Construction are aspiring to achieve a BREEAM '**Excellent**' rating which requires a minimum score of 70%. Included in section 11 of this report is a list of potential credits to include in the assessment. In order for the development to achieve its targeted BREEAM '**Excellent**' rating the design team should select additional credits from section 11 of this report to increase the score beyond the 70% threshold.

2. Introduction

Stroma Technology has been commissioned by Higgins Construction to undertake an environmental assessment of the Community Centre at the Plender Street development, in accordance with the Building Research Establishment (BRE) methodology BREEAM (Building Research Establishment Environmental Assessment Method) for Other Buildings 2011. This report forms the pre assessment stage of the assessment, and is intended as a 'first run' to make an initial assessment and options analysis to formulate a strategy to achieve the required BREEAM '**Excellent**' Rating.

BREEAM Other Buildings 2011 is a comprehensive tool for analysing and improving the environmental performance of buildings that do not fit into any of the current BREEAM schemes. This method analyses the environmental performance against criteria set by BRE, awarding 'credits' based on the buildings individual performance.

3. BREEAM: Other Buildings Assessment

BREEAM Other Buildings (New Construction) 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 burdens of buildings by rewarding those designs that take positive steps to minimise their environmental impacts.

BREEAM Other Buildings uses a standard set of criteria applicable to the following types of Non-residential buildings:

- Art Gallery
- Museum
- Library
- Day Centre
- Civic/community hall
- Place of Worship

Projects are assessed using a system of credits. The credits are grouped within the following categories:

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 3.1: BREEAM 2011 Assessment Issues

Within each category there are a number of credit requirements that reflect the options available to designers and managers of buildings. Credits are awarded where evidence has been provided to confirm that the specific requirements have been met. The number of credits within each of the above categories 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. BREEAM Scoring

BREEAM 2011 New Construction criteria consists of forty nine individual assessment issues spanning the 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:

Unclassified	<30%
Pass	≥30%
Good	≥45%
Very Good	≥55%
Excellent	≥70%
Outstanding	≥85%

Table 4.1: BREEAM Final Score Boundaries

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

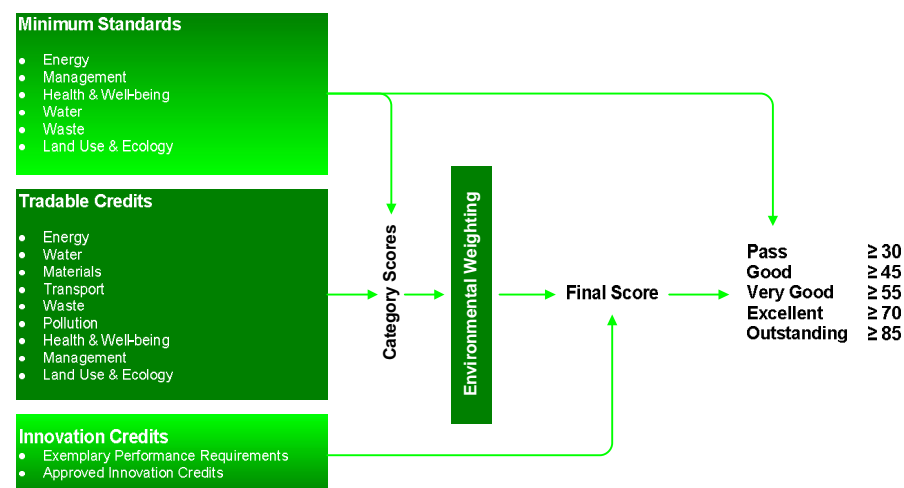


Figure 4.1: Process of calculation of overall rating under BREEAM.

5. BREEAM Assessment

Contained within Section 13 'Credit Criteria and Responsibility Table' of this report is a breakdown of the specific credit criteria and the actions required to achieve the respective credit(s). The breakdown should be referenced as guidance only and is not an exhaustive summary; should further guidance be required the BREEAM 2011 should be consulted. Credits have been awarded based on the initial information provided by the design team during the meeting held on the 25th of March 2014.

6. Online Project Management System

This project will be utilizing an online project management portal called *Tracker+*. This system will list each of the credits that are being targeted in the assessment and detail the evidence required from each of the design team in order to demonstrate compliance with each of the targeted BREEAM issues. Further information on this system is provided in Section 14 of this report.

7. Assessment Summary

The Community Centre at the Plender Street development is required to achieve an **‘Excellent’** BREEAM rating. The current overall targeted score is **69.14%** which equates to a Very Good rating. The graph below shows a summary of the percentage score available for each category of the assessment and the actual score achieved.

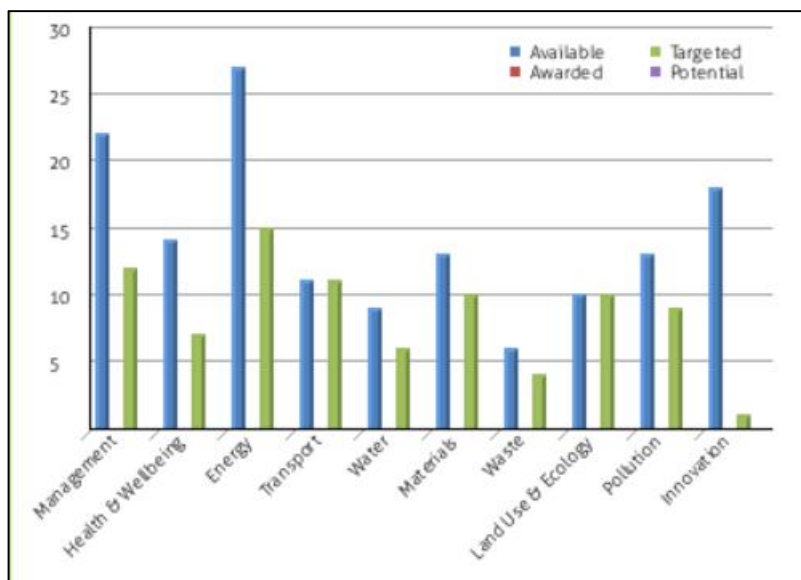


Figure 7.1: Assessed BREEAM Performance by Section

	Indicative % Score Available	Indicative % Score Achieved
Management	12%	6.60%
Health & Wellbeing	15%	7.49%
Energy	19%	10.50%
Transport	8%	8.00%
Water	6%	4.02%
Materials	12.5%	9.60%
Waste	7.5%	5.00%
Land Use & Ecology	10%	10.00%
Pollution	10%	6.93%
Innovation	10%	1.00%

Table 7.2: Environmental Weightings

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

8. Credit Commentary

The Credit Criteria and Responsibilities Commentary Table in Section 13 and the Potential Credits Table in Section 11 contain an 'action by' column which suggests members of the design team that should be responsible for supplying evidence to satisfy the credit requirements. The table below outlines the design team responsible for credits within this BREEAM assessment.

Organisation	Role	Name
Higgins Construction	Contractor	Shawn Nudd
		Keith Fisher
Pinnacle ESP	Services Engineers	Mike Scales
RPS Group	Architect	Keith Rowley
		Lynsey Barnett
Walker Associates	Drainage Engineer	Andy Greenwood
		Dale Barford
Stroma Technology	BREEAM Assessor	James Stevens

Table 8.1: Project Team

For credits which require actions at a specific RIBA stage a table in section 14 which highlights the requirements that are to be addressed at these stages along with a description of the action needed.

The credit criteria and responsibility commentary table in section 13 is intended to provide a brief introduction and overview of the credit criteria and evidence requirements. For the complete credit criteria and evidence requirements the BREEAM 2011 Technical Manual and accompany Simple Buildings Guidance should be used.

9. Mandatory Issues

The project is required to achieve an overall '**Very Good**' 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	Current
Man 01 - Sustainable Procurement	1 Credit
Man 02 - Responsible Construction Practices	First Credit
Man 04 - Stakeholder Participation	1 Credit
Hea 01 - Visual Comfort	1 Credit
Hea 04 - Water Quality	Criteria 1
Ene 01 - Reduction of CO2 Emissions	6 Credits
Ene 02 - Energy Monitoring	1 Credit
Ene 04 - Low and Zero Carbon Technologies	1 Credit
Wat 01 - Water Consumption	1 Credit
Wat 02 - Water Monitoring	Criteria 1
Mat 03 - Responsible Sourcing of Materials	Criteria 3
Wst 03 - Operational Waste	1 Credit
LE 03 - Mitigating Ecological Impact	1 Credit

Table 9.2: Mandatory Issues

10. Potential Additional Credits

The Community Centre aspect of the Plender Street Development is required to achieve a BREEAM 'Excellent' rating, however, based upon information provided at the BREEAM Pre-Assessment meeting the current score is 69.14% which equates to a 'Very Good' rating. The credits listed below are 'potential' credits which can be adopted in order to achieve the required rating. We have included the percentage contribution each credit will provide, which will allow the design team to choose credits based upon cost and feasibility. We suggest that a BREEAM 'Excellent' project aims to achieve somewhere nearer 75% to allow for a comfort barrier incase certain credits have to be dropped at the post-construction stage of the assessment. We will correspond with Higgins following the issue of this report to decide upon credits which are to be added to the targeted assessment score to achieve the BREEAM 'Excellent'. This is not an inclusive list, as throughout the early of the design stage there may be consideration given to other credits which are not in this section.

Man 01: Sustainable Procurement			
Targeted: 2 of 8 Potential: 3 of 8 (Potential additional 0.55% per credit)			
Credit 4 - 1 credit where;			Responsibility
Requirement 10	The appointed AP is engaged to monitor and report progress against the BREEAM targets by attending key project team meetings during pre-construction and construction stages (up to and including RIBA Stage L Post-Practical Completion or equivalent).	As for requirement 4	James Stevens, Rob Waiting
Requirement 11	The defined BREEAM performance targets form a requirement of the principal contractor's contract (see compliance note CN9: BREEAM related performance targets).	As for requirement 4	Rob Waiting, James Stevens
Requirement 12	The AP prepares regular written reports for the client and project team detailing progress against the defined BREEAM performance targets (as a minimum for each full project team meeting).	As for requirement 4	Rob Waiting, James Stevens
Requirement 13	To achieve all three credits at the final 'post-construction' stage of assessment, the BREEAM related performance targets for the project (as agreed at RIBA Stage C, or early) must be demonstrably achieved by the project. This is demonstrated via the BREEAM assessor's final post-construction stage certification report	As for requirement 4	Rob Waiting, James Stevens
Credit 7 - 1 credit where;			Responsibility
Requirement 22	<p>The following seasonal commissioning responsibilities will be completed over a minimum 12 month period, once the building becomes occupied:</p> <p>Complex systems - Specialist commissioning manager</p> <p>a. Testing of all building services under full load conditions, i.e. heating equipment in mid-winter, cooling/ventilation equipment in</p>	Appointment letter(s) and/or commissioning responsibilities schedule.	Mike Scales

	<p>mid-summer, and under part load conditions (spring/autumn)</p> <p>b. Where applicable, testing should also be carried out during periods of extreme (high or low) occupancy</p> <p>c. Interviews with building occupants (where they are affected by the complex services) to identify problems or concerns regarding the effectiveness of the systems</p> <p>Re-commissioning of systems (following any work needed to serve revised loads), and incorporating any revisions in operating procedures into the O&M manuals.</p> <p>Where specialist building services systems such as fume cupboards, microbiological safety cabinets and a cold storage system are present then the assessor must ensure that these systems are included in the specialist commissioning agent's responsibilities.</p> <p>Simple systems (naturally ventilated) - external consultant/facilities manager</p> <p>a. Review thermal comfort, ventilation, and lighting, at three, six and nine month intervals after initial occupation, either by measurement or occupant feedback.</p> <p>b. Take all reasonable steps to re-commission systems following the review to take account of deficiencies identified and incorporate any relevant revisions in operating procedures into the O&M manuals.</p> <p><i>Note: For Simple Buildings only simple systems requirements are applicable.</i></p>		
Credit 8 - 1 credit where;			Responsibility
Requirement 23	<p>Criterion 22 is achieved and there is a mechanism to:</p> <p>a. Collect the energy and water consumption data for at least 12 months after occupation,</p> <p>b. Compare this with what was expected and</p> <p>c. Analyse any discrepancies with a view of adjusting systems if they are not operating as expected/designed.</p>	<p>As for criteria 22 above</p> <p>Evidence of either existing procedures or a commitment/ contract to put in place a mechanism to:</p> <ol style="list-style-type: none"> 1. Collect, compare and analyse relevant data. 2. Undertake suitable adjustments if necessary. 	Mike Scales
Requirement 24	<p>There is a contract or commitment to provide aftercare support to all the building occupiers which includes the following as a minimum:</p> <p>a. A 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.</p>	Evidence of a commitment/contract to provide compliant aftercare support and training.	Mike Scales

	<ul style="list-style-type: none"> b. 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 c. On site FM training to include a walkabout of the building d. 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 <p><i>Note: For Simple Buildings refer to CNS3 for details of how to assess items b and c.</i></p>		
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Hea 03: Thermal Comfort**Targeted: 0 of 2****Potential: 2 of 2 (Potential Additional 1.07% Per Credit)**

Credit 1 - 1 credit where;			Responsibility
Requirement 1	Thermal modelling has been carried out using software in accordance with CIBSE AM11 Building Energy and Environmental Modelling	Relevant section/clauses of the building specification or contract or correspondence (e.g. letter, email or meeting minutes) from the design team Thermal modelling results TOR data from the design team	Shawn Nudd, Keith Fisher
Requirement 2	The modelling demonstrates that the building design and services strategy can deliver thermal comfort levels in occupied spaces in accordance with the criteria set out in CIBSE Guide A Environmental Design ; or other appropriate industry standard (where this sets a higher or more appropriate requirement/level for the building type).	As for requirement 1	Shawn Nudd, Keith Fisher
Requirement 3	The software used to carry out the simulation at the detailed design stage provides full dynamic thermal analysis. For smaller and more basic building designs with less complex heating / cooling systems, an alternative less complex means of analysis may be appropriate (such methodologies must still be in accordance with CIBSE AM11).	As for requirement 1	Shawn Nudd, Keith Fisher
Requirement 4	The building complies with any requirement, in terms of 'time out of range' (TOR) metric, from the appropriate industry standard (as above) OR where there is no appropriate industry standard available or TOR recommendation made, the building services engineer confirms that the TOR is acceptable for the purpose and function of the building	As for requirement 1	Shawn Nudd, Keith Fisher
Requirement 5	The TOR metric (%) is reported, via the BREEAM scoring and reporting tool, based on the modelling above (and therefore specified building servicing strategy) and includes maximum and minimum temperatures for both summer and winter settings.	As for requirement 1	Shawn Nudd, Keith Fisher

Credit 2 - 1 credit where;			Responsibility
Requirement 6	Criteria 1 to 5 are achieved.	As for requirement 1	Shawn Nudd, Keith Fisher
Requirement 7	The thermal modelling analysis (above) has informed the temperature control strategy for the building and it's users.	Thermal comfort strategy highlighting the points that have been considered and decisions taken accordingly Relevant section/clauses of the building specification or contract Design drawings	Keith Fisher , Shawn Nudd
Requirement 8	<p>The strategy for proposed heating / cooling system(s) demonstrates that it has addressed the following:</p> <ol style="list-style-type: none"> Zones within the building and how the building services could efficiently and appropriately heat or cool these areas e.g. consider the different requirements for the central core of a building compared with the external perimeter adjacent to the windows. The amount of occupant control required for these zones, based on discussions with the end user (or alternatively building type/use specific design guidance, case studies, feedback) and considers: <ol style="list-style-type: none"> User knowledge of building services, Occupancy type, patterns and room functions (and therefore appropriate level of control required), How the user is likely to operate/interact with the system(s) e.g. are they likely to open windows, access TRV's on radiators, change air conditioning settings etc., The user expectations (e.g. this may differ in the summer and winter; users tend to accept warmer internal conditions in the summer) and degree of individual control (i.e. obtaining the balance between occupant preferences, for example, some occupants like fresh air and others dislike drafts). How the proposed systems will interact with each other (where there is more than one system) and how this may affect the building occupants thermal comfort. The need or otherwise for an accessible building user actuated manual override for any automatic systems. 	As for requirement 7	Keith Fisher , Shawn Nudd

Ene 04: Low and Zero Carbon Technologies

Targeted: 2 of 5

Potential: 1 of 5 (Potential Additional 0.7%) – Dependent upon CO₂ contribution of PV.

Credit 1 - 1 credit where;	Responsibility
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Credit 2 - Up to 3 credits where;			Responsibility
Requirement 5	Criteria 1 to 3 are achieved.	Evidence (as outlined above) confirming compliance with the first credit. Report, calculations/outputs from the manufacturer, supplier, engineer or approved modelling software confirming carbon savings as a result of the installed LZC technology. A copy of the LCA study report/findings (if relevant) demonstrating the percentage carbon saving over the lifetime of the LZC system.	James Stevens, Keith Fisher , Shawn Nudd
Requirement 6	<p>A local LZC energy technology has been installed in line with the recommendations of the feasibility study and this method of supply results in a reduction in regulated CO2 emissions as follows: 10% - 1 credit 20% - 2 credits</p> <p>OR alternatively Where the feasibility study includes a Life Cycle Assessment of the carbon impact of the chosen LZC system(s), accounting for its embodied carbon emissions and operational carbon savings and emissions, and this method of supply results in a reduction in life cycle CO2 emissions as follows: Enhanced study - 1 credit 10% - 2 credits 20% - 3 credits</p> <p>The LCA study must be completed in accordance with ISO 14044:2006 Environmental Management Life Cycle Assessment - Requirements and Guidelines</p> <p>The LCA must consider a 60 year period (a typical assumption for the life of a building) and any necessary replacements/maintenance requirements within this period.</p>	As for requirement 5	James Stevens, Keith Fisher , Shawn Nudd
Requirement 7	Figures used for calculations of the percentage carbon reduction provided by LZC technology are based on the output from approved energy modelling software	As for requirement 5	Shawn Nudd, James Stevens, Keith Fisher

Wst 01: Construction Waste Management**Targeted: 3 of 4****Potential: 1 of 4 (Potential Additional 1.25%)****Credit 1 - Up to 3 credits where;****Responsibility**

Requirement 1	Non-hazardous construction waste (excluding demolition and excavation waste) generated by the building's design and construction meets or exceeds the resource efficiency benchmarks provided	A copy of the compliant Site Waste Management Plan and where relevant, a copy of the pre-demolition audit AND/OR Relevant section/clauses of the building specification or contract AND/OR A letter from the client or their representative Where relevant for multi-residential buildings: Evidence in line with the Design Stage evidence requirements of the CSH Issue Was 2 OR A copy of the Design Stage CSH certificate and report from the CSH online reporting system confirming the number of credits achieved for CSH Issue Was 2	Keith Fisher , Shawn Nudd
Requirement 2	There is a compliant Site Waste Management Plan (SWMP), see compliance notes	As for requirement 1	Keith Fisher , Shawn Nudd
Requirement 3	Where existing buildings on the site will be demolished a pre-demolition audit of any existing buildings, structures or hard surfaces is completed to determine if, in the case of demolition, refurbishment/reuse is feasible and, if not, to maximise the recovery of material from demolition for subsequent high-grade/value applications. The audit must be referenced in the SWMP and cover: <ul style="list-style-type: none"> a. Identification of the key refurbishment/demolition materials. b. Potential applications and any related issues for the reuse and recycling of the key refurbishment and demolition materials. 	As for requirement 1	Keith Fisher , Shawn Nudd
Credit 2 - 1 credit where;			Responsibility
Requirement 4	The provided percentages of non-hazardous construction and demolition waste (where applicable) generated by the project have been diverted from landfill	As for requirement 1	Keith Fisher , Shawn Nudd
Requirement 5	There is a compliant Site Waste Management Plan (SWMP), see compliance notes	As for requirement 1	Keith Fisher , Shawn Nudd
Requirement 6	Waste materials will be sorted into separate key waste groups (according to the waste streams generated by the scope of the works) either onsite or offsite through a licensed contractor for recovery.	As for requirement 1	Keith Fisher , Shawn Nudd

11. Credit table

ID	BREEAM Issue	Available Credits	Credits Currently included	Current Score %	Potential additional credits	Increased Potential Score %	Responsibility
Man01	Sustainable Procurement	8	2	1.10	3	1.65	Contractor, M+E Engineer,
Man02	Responsible Construction Practices	2	2	1.10	0	0.00	Contractor
Man03	Construction Site Impacts	5	4	2.20	0	0.00	Tender Documentation
Man04	Stakeholder Participation	4	4	2.20	0	0.00	MacDonald Egan, PTEA, Client
Man05	Life Cycle Cost and Service Life Planning	3	0	0.00	0	0.00	
Management Totals		22	12	6.60%	3	1.65%	
Hea01	Visual Comfort	3	2	2.14	0	0	M+E Engineer
Hea02	Indoor Air Quality	4	1	1.07	0	0	M+E Engineer
Hea03	Thermal Comfort	2	0	0.00	2	2.14	SBEM Assessor
Hea04	Water Quality	1	1	1.07	0	0	M+E Engineer, Architect
Hea05	Acoustic Performance	2	2	0.00	0	0	Contractor
Hea06	Safety and Security	2	1	1.07	0	0	Architect
Health and Wellbeing Totals		14	7	7.49%	2	2.14%	
Ene01	Reduction of CO2 Emissions	15	6	4.20	0	0.00	SBEM Assessor
Ene02	Energy Monitoring	2	2	1.40	0	0.00	M+E Consultant
Ene03	External Lighting	1	1	0.70	0	0.00	M+E Consultant
Ene04	Low and Zero Carbon Technologies	5	2	1.40	1	0.70	Contractor
Ene06	Energy Efficient Transportation	2	2	1.40	0	0.00	Contractor
Ene08	Energy Efficient Equipment	2	2	1.40	0	0.00	Client

	Energy Totals	27	15	10.50%	1	0.70%	
Tra01	Public Transport Accessibility	5	5	3.65	0	0.00	Stroma Technology
Tra02	Proximity to Amenities	1	1	0.73	0	0.00	Stroma Technology
Tra03	Cyclist Facilities	2	2	1.46	0	0.00	Architect
Tra04	Maximum Car Park Capacity	2	2	1.46	0	0.00	Architect
Tra05	Travel Plan	1	1	0.73	0	0.00	Contractor
	Transport Totals	11	11	8.00%	0	0.00%	
Wat01	Water Consumption	5	2	1.34	0	0.00	Contractor
Wat02	Water Monitoring	1	1	0.67	0	0.00	M+E Engineer
Wat03	Leak Detection and Prevention	2	2	1.34	0	0.00	M+ E Engineer
Wat04	Water Efficient Equipment	1	1	0.67	0	0.00	Contractor
	Water Totals	9	6	4.02%	0	0.00%	
Mat01	Life Cycle Impacts	6	4	3.84	0	0.00	Contractor
Mat02	Hard Landscaping and Boundary Protection	1	1	0.96	0	0.00	Landscape Architect
Mat03	Responsible Sourcing of Materials	3	2	1.92	0	0.00	Contractor
Mat04	Insulation	2	2	1.92	0	0.00	Contractor, M+E Engineer
Mat05	Designing for Robustness	1	1	0.96	0	0.00	Architect
	Materials Totals	13	10	9.60%	0	0.00%	
Wst01	Construction Waste Management	4	3	3.75	1	1.25	Contractor
Wst02	Recycling Aggregates	1	0	0	0	0.00	
Wst03	Operational Waste	1	1	1.25	0	0.00	Architect
	Waste Totals	6	4	5.00%	0	1.25%	

LE01	Site Selection	2	2	2.00	0	0.00	Architect, Contractor
LE02	Ecological Value of Site & Protection of Features	1	1	1.00	0	0.00	Ecologist
LE03	Mitigating Ecological Impact	2	2	2.00	0	0.00	Ecologist
LE04	Enhancing Site Ecology	3	3	3.00	0	0.00	Ecologist, Contractor
LE05	Long Term Impact on Biodiversity	2	2	2.00	0	0.00	Ecologist, Contractor
	Land Use and Ecology Totals	10	10	10.00%	0	0.00	
Pol01	Impact of Refrigerant's	3	0	0.00	0	0.00	PDA
Pol02	NOx Emissions	3	3	2.31	0	0.00	Drainage Engineer
Pol03	Surface Water Run Off	5	4	3.08	0	0.00	
Pol04	Reduction of Night Time Pollution	1	1	0.77	0	0.00	PDA
Pol05	Noise Attenuation	1	1	0.77	0	0.00	
	Pollution Totals	13	9	6.93%	0	0.00%	
Man01	Sustainable Procurement	1	1	1.00	0	0.00	Client
Man02	Responsible Construction Practices	1	0	0	0	0.00	
Man03	Construction Site Impacts	1	0	0	0	0.00	
Hea01	Visual Comfort	1	0	0	0	0.00	
Ene01	Reduction of CO2 Emissions	1	0	0	0	0.00	
Ene04	Low and Zero Carbon Technologies	1	0	0	0	0.00	
Wat01	Water Consumption	1	0	0	0	0.00	
Mat01	Life Cycle Impacts	1	0	0	0	0.00	
Mat03	Responsible Sourcing of Materials	1	0	0	0	0.00	
Wst01	Construction Waste Management	1	0	0	0	0.00	

Wst02	Recycled Aggregates	1	0	0	0	0.00	
Pol03	Surface Water Run-off	1	0	0	0	0.00	
	Innovation Totals	10	1	1.00%	0	0.00%	

12. Credit Criteria and Responsibility Table

12.1. Management

Man 01: Sustainable Procurement			
Targeted: 2 of 8 Potential: 3 of 8			
Credit 1 - 1 credit where;			Responsibility
Requirement 1	<p>From RIBA stage B (Design Brief) or equivalent the client, building occupier, design team and contractor are involved in contributing to the decision making process for the project. As a minimum this includes meeting to identify and define their roles, responsibilities and contributions during the following phases:</p> <ol style="list-style-type: none"> Design Construction Commissioning and handover Occupation i.e. up to and including Stage L (Post practical completion) or equivalent. 	<p>Documentation indicating when the collaboration began and the roles and responsibilities of the project team for the required phases. This could be either:</p> <ol style="list-style-type: none"> Meeting minutes Construction programme Responsibilities schedule Relevant section/clauses of the building specification or contract 	Shawn Nudd, Keith Fisher
Requirement 2	<p>The roles and responsibilities outlined above include consideration of:</p> <ol style="list-style-type: none"> End user requirements Aims of the design and design strategy Particular installation and construction requirements Occupiers budget and technical expertise in maintaining any proposed systems Usability and manageability of any proposals Production of documentation Commissioning, training and aftercare support 	As for requirement 1	Keith Fisher , Shawn Nudd
Requirement 3	<p>There is a schedule of training identified for relevant building occupiers/premises manager (based appropriately around handover and proposed occupation plans) which includes the following as a minimum:</p> <ol style="list-style-type: none"> Contents of the Building User Guide(s) (BUG) as specified in Man 04 Stakeholder Participation (note it is not necessary to have achieved the BUG credit within Man 04, however the training must cover the BUG issues BREEAM specifies in Man 02 to achieve this requirement) Design strategy Installed systems and key features (maintenance, operation, 	The training schedule	Keith Fisher , Shawn Nudd

	<ul style="list-style-type: none"> d. Documentation to be provided (e.g. user guide, log book etc.) e. Training responsibilities 		
Credit 6 - 1 credit where;			Responsibility
Requirement 18	An appropriate project team member(s) is appointed to monitor and programme pre-commissioning, commissioning and, where necessary, re-commissioning on behalf of the client	Appointment letter or commissioning responsibilities schedule Relevant section/clauses of the building specification or contract Principal Contractor's programme Commissioning schedule	Mike Scales
Requirement 19	All building services are included in the commissioning schedule and commissioning is to be carried out in line with current Building Regulations, BSRIA1 and CIBSE guidelines and/or other appropriate standard, where applicable (where a BMS is specified see also relevant Compliance note BMS commissioning procedures).	As for requirement 18	Mike Scales
Requirement 20	The principal contractor accounts for the commissioning programme, responsibilities and criteria within the main programme of works.	As for requirement 18	Mike Scales
Requirement 21	<p>A specialist commissioning manager is appointed during the design stage (by either client or contractor) for complex systems and the scope of their responsibility includes:</p> <ul style="list-style-type: none"> a. Design input: commissionability design reviews b. Commissioning management input to construction programming c. Commissioning management input during installation stages d. Management of commissioning, performance testing and handover/post handover stages. <p><i>Note: This criterion is not applicable to Simple Building assessments.</i></p>	As for requirement 18	Mike Scales

Man 02: Responsible Construction Practices**Targeted: 2 of 2****Potential: 0 of 2**

Credit 1 - Up to 2 credits where;			Responsibility
Requirement 1	Where the principal contractor has used a 'compliant' organisational, local or national considerate construction scheme	Relevant section/clauses of the building specification or contract OR A formal letter of commitment from the client/developer Where relevant for multi residential buildings: Evidence in line with the Design Stage evidence requirements of the CSH issue Man 2. Or a copy of the Design Stage CSH certificate and report from the CSH online reporting system.	Shawn Nudd, Keith Fisher

Requirement 2	<p>Where the principal contractor's performance against the compliant scheme has been confirmed by independent assessment and verification, the BREEAM credits can be awarded as follows:</p> <ul style="list-style-type: none"> a. One credit where the contractor achieves 'compliance' with the criteria of a compliant scheme. b. Two credits where the contractor significantly exceeds 'compliance' with the criteria of the scheme. <p>Refer to the Additional Information section for a list of compliant schemes and therefore how performance, as determined by a compliant scheme, translates into BREEAM credits</p>	As for requirement 1	Shawn Nudd, Keith Fisher
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Man 03: Construction Site Impacts**Targeted: 4 of 5****Potential: 0 of 5**

Credit 1 - 1 credit where;			Responsibility
Requirement 1	Responsibility has been assigned to an individual(s) for monitoring, recording and reporting energy, water and transport consumption data resulting from all construction processes. To ensure the robust collection of information, this individual(s) has the appropriate authority, responsibility and access to the data required.	Relevant section/clauses of the building specification or contract OR A signed and dated letter of commitment to meet the relevant criteria	Shawn Nudd, Keith Fisher
Requirement 2	Monitor and record data on energy consumption (kWh) from the use of construction plant, equipment (mobile and fixed) and site accommodation necessary for completion of all construction processes.	As for requirement 1	Shawn Nudd, Keith Fisher
Requirement 3	Using the collated data report the energy consumption (total kWh and kWh/£100k of project value) and carbon dioxide emissions (total kgCO ₂ eq and kgCO ₂ eq/£100k of project value) from the construction process via the BREEAM scoring and reporting tool.	As for requirement 1	Shawn Nudd, Keith Fisher
Credit 2 - 1 credit where;			Responsibility
Requirement 4	Monitor and record data on potable water consumption (m ³) from the use of construction plant, equipment (mobile and fixed) and site accommodation necessary for completion of all construction processes.	As for requirement 1.	Shawn Nudd, Keith Fisher
Requirement 5	Using the collated data report the total net water consumption (m ³), i.e. consumption minus any recycled water use, from the construction process via the BREEAM scoring and reporting tool.	As for requirement 1	Shawn Nudd, Keith Fisher
Credit 4 - 1 credit where;			Responsibility

Requirement 8	Confirmation that all site timber used on the project is sourced in accordance with the UK Government's Timber Procurement Policy.	As for requirement 1	Shawn Nudd, Keith Fisher
Credit 5 - 1 credit where;			Responsibility
Requirement 9	<p>The principal contractor for the project operates an Environmental Management System covering their main operations. The EMS must be either:</p> <ul style="list-style-type: none"> a. Third party certified, to ISO14001/EMAS or equivalent standard. OR b. The structure of the EMS is in compliance with BS8555 2003 and has reached phase four of the implementation stage, 'implementation and operation of the environmental management system', and completed phase audits one to four, as defined in BS8555. <p>Note: For Healthcare assessments this requirement must be completed for any credits to be able to be awarded.</p>	As for requirement 1	Keith Fisher , Shawn Nudd
Requirement 10	Implement best practice pollution prevention policies and procedures on site, demonstrated through compliance with the items in the Environmental Checklist section 2.2.5 Preventing Pollution in the England and Wales Environment Agency's 'Building a Better Environment, a guide for developers'	As for requirement 1	Keith Fisher , Shawn Nudd

Man 04: Stakeholder Participation**Targeted: 4 of 4****Potential: 0 of 4**

Credit 1 - 1 credit where;			Responsibility
Requirement 1	During the preparation of the brief, all relevant parties and relevant bodies (see Compliance notes) are identified and consulted with by the design team. The findings of the consultation influences the design and therefore must have been held before key and final design decisions were made.	<p>A list of the stakeholders consulted.</p> <p>A consultation plan setting out the process and the scope of the consultation.</p> <p>Agenda/minutes from consultation meetings.</p> <p>Documentation demonstrating consultation feedback and subsequent actions.</p>	Shawn Nudd, Keith Fisher
Requirement 2	A consultation plan has been prepared and includes a timescale and methods of consultation for all relevant parties/bodies and how the relevant parties will be kept informed about progress on the project.	As for requirement 1	Shawn Nudd, Keith Fisher
Requirement 3	The minimum consultation content has been covered (see Compliance notes).	As for requirement 1	Shawn Nudd, Keith Fisher

	<i>Note: For Simple Buildings see CNS 1.</i>		
Requirement 4	During the design stage, consultation feedback (see Compliance notes) has been given to and received by all relevant parties regarding suggestions made, including how the results of the consultation process have influenced, or resulted in modifications to, the proposed design and building operation/use.	As for requirement 1	Shawn Nudd, Keith Fisher
Requirement 5	The project team ensures that through consultation and the resulting measures taken (as agreed with the relevant bodies) any areas or features of historic/heritage value are protected.	As for requirement 1	Shawn Nudd, Keith Fisher
Requirement 6	Additionally for Education, Healthcare, Law Courts and Major Transport Node buildings only (N/A to Simple Buildings) The consultation process employs a method carried out by an independent third party at the preparation of the brief and design stages. This can include the appropriate version of the Design Quality Indicator (DQI or DQI for Schools), AEDET in Healthcare buildings, or another compliant method.	As for requirement 1	Shawn Nudd, Keith Fisher
Credit 2 - 1 credit where;			Responsibility
Requirement 7	The building is designed to be fit for purpose, appropriate and accessible by all potential users.	The access statement and/or access strategy. Design drawings AND/OR relevant section/clauses of the building specification or contract	Keith Rowley
Requirement 8	An access statement is developed in line with the CABE publication Design & Access Statements, How to write, read and use them ³ , based on the principles of inclusive design. The access statement results in a strategy that must address, as a minimum, access to and throughout the development for all users, with particular emphasis on the following: Disabled users; addressing and proposing design solutions that remove obstacles that define disability. People of different age groups, genders, ethnicity and stamina/fitness levels Parents with children (where appropriate to building use/type)	As for requirement 7	Keith Rowley
Requirement 9	Provision of facilities (see Compliance notes) is made for future building occupants and users including, where relevant, facilities that can be shared and are accessible to members of the public/community without gaining uncontrolled access to other parts of the building.	As for requirement 7	Keith Rowley
Credit 3 - 1 credit where;			Responsibility
Requirement 10	Building User Guides are provided and are appropriate to all users of the building (general users including staff and if applicable residents, as well as the non technical facilities management team/building manager).	Relevant section/clauses of the building specification or contract OR Letter of commitment from the client/developer	Mike Scales , Shawn Nudd, Keith Fisher
Requirement	The Guides cover all functions and uses of the building, ensuring building	As for requirement 10	Mike Scales ,

11	users are able to use the building effectively. Where relevant, the documents must describe the facilities to be shared and how access to them will be arranged for potential users.		Shawn Nudd, Keith Fisher
Requirement 12	Building and site related information is made readily available to all future building users, enabling them to access and use the building, site and local transport infrastructure/amenities effectively.	As for requirement 10	Mike Scales , Shawn Nudd, Keith Fisher
Credit 4 - 1 credit where;			Responsibility
Requirement 13	<p>The client makes a commitment to carry out a Post Occupancy Evaluation (POE) one year after building occupation. As a minimum, the POE must cover occupant feedback of the following items, in principle:</p> <ul style="list-style-type: none"> a. The building's internal conditions (i.e. light, temperature, noise, air quality etc.) b. The level of satisfaction of the occupants / users. Has the design solution met the needs of the occupants/users? c. The ease of commissioning, maintaining and managing the systems designed and installed d. The appropriateness of the systems/design solutions. Is the system design optimised for use i.e. not oversized? e. Are the metering arrangements appropriate and do they facilitate/improve data gathering and monitoring/detection of faults in the systems installed? 	Signed and dated commitment by the client/developer or future building occupier	Shawn Nudd, Keith Fisher – To gain confirmation from Client
Requirement 14	<p>The client makes a commitment to carry out the appropriate dissemination of information on the building's post occupancy performance in order to share any good practice and lessons learned.</p> <p>Refer to the Compliance notes for a definition of appropriate dissemination, this also provides advice on appropriate dissemination where the building or building information is commercially or security sensitive.</p>	As for requirement 13	Shawn Nudd, Keith Fisher – To gain confirmation from Client

12.3. Health and Wellbeing

Hea 01: Visual Comfort			
Targeted: 2 of 3 Potential: 0 of 3			
Credit 0 - 1 credit where;			Responsibility
Requirement 1	MANDATORY REQUIREMENT All fluorescent and compact fluorescent lamps are fitted with high frequency ballasts.		Mike Scales
Credit 2 - 1 credit where;			Responsibility
Requirement 3	<p>Glare control The potential for disabling glare has been designed out of all relevant building areas either through building layout (e.g. low eaves) and/or building design (e.g. blinds, brise soleil, bioclimatic design that provides shading from high level summer and low level winter sun). The glare control strategy should be developed in tandem with the lighting strategy to ensure that glare is minimised whilst avoiding potential conflict with the lighting control systems, therefore avoiding higher than expected energy consumption.</p> <p>View out All positions within relevant building areas are within 7m of a wall which has a window or permanent opening that provides an adequate view out. The window/opening must be at least 20% of the surrounding wall area. Where the room depth is greater than the 7m requirement, compliance is only possible where the percentage of window/opening is the same as or greater than the values in table 1.0 of BS 8206</p>	<p>Design drawings Relevant section/clauses of the building specification or contract Window schedule</p>	Keith Rowley
Credit 3 -			Responsibility
Requirement 4	<p>Internal lighting Illuminance (lux) levels in all internal relevant building areas of the building are specified in accordance with the CIBSE Code for Lighting 2009 and any other relevant industry standard.</p> <p>For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 74 sections 3.3, 4.6, 4.7, 4.8 and 4.9. This gives recommendations highlighting:</p> <ol style="list-style-type: none"> 1. Limits to the luminance of the luminaires, to avoid screen reflections. (Manufacturers' data for the luminaires should be sought to confirm this). 2. For up-lighting, the recommendations refer to the luminance of the lit ceiling rather than the luminaire; a design team calculation is usually required to demonstrate this. 3. Recommendations for direct lighting, ceiling illuminance, and 	<p>Design drawings and/or room data sheets/schedules Relevant section/clauses of the building specification or contract OR a letter of formal confirmation of compliance from the relevant design team member.</p>	Keith Rowley

	<p>average wall illuminance.</p> <p>External lighting Illuminance levels for lighting in all external areas within the construction zone are specified in accordance with BS5489-1:2003+A2:2008 Lighting of roads and public amenity areas.</p> <p>Lighting controls Zoning of lighting control allows for varying occupancy and/or uses within each space, appropriate to the usage of that space. In particular, lighting is zoned to allow separate occupant control as follows;</p> <ol style="list-style-type: none"> 1. Office and circulation spaces, 2. In office areas, zones of no more than four workplaces (see also Compliance note), 3. Workstations adjacent to windows/atria and other building areas separately zoned and controlled, 4. Seminar and lecture rooms: zoned for presentation and audience areas, 5. Library spaces: separate zoning of stacks, reading and counter areas, 6. Teaching space/demonstration area, 7. Whiteboard/display screen 8. Auditoria: zoning of seating areas, circulation space and lectern area, 9. Dining, restaurant, café areas: separate zoning of servery and seating/dining areas, 10. Retail: separate zoning of display and counter areas, 11. Bar areas: separate zoning of bar and seating areas, 12. Wards/bedded areas: zoned lighting control for individual bed spaces and control for staff over groups of bed spaces, 13. Treatment areas, dayrooms, waiting areas: zoning of seating and activity areas and circulation space with controls accessible to staff. <p>Areas used for teaching, seminar or lecture purposes have lighting controls provided in accordance with CIBSE Lighting Guide 5.</p> <p>Note, the requirements for zoning of lighting control can be excluded for prison buildings.</p> <p>The controls specified will depend on the size and use of the space but a typical auditorium or lecture theatre with stepped seating and a formal lectern/demonstration/performance area would typically be expected to have lighting controls as follows:</p> <ol style="list-style-type: none"> 1. Full normal lighting (to allow for entry/exit, cleaning etc.), 2. Demonstration area lighting off and audience area lighting reduced 		
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	<p>to a low level (for the purpose of line slide projection, but allowing enough light for the audience to take notes),</p> <ol style="list-style-type: none"> 3. All lighting off (for the projection of tone slides, colour slides, and for the purposes of visual demonstrations/performances), 4. Separate localised lectern lighting. <p>For rooms/spaces not listed above, the assessor can exercise an element of judgement when determining whether what is specified is appropriate for the space given its end use and the aim and criteria of this BREEAM issue.</p>		
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Hea 02: Indoor Air Quality**Targeted: 1 of 4****Potential: 0 of 4**

Credit 2 - 1 credit where;			Responsibility
Requirement 6	<p>Criterion 1 of the first credit is achieved, as follows; An indoor air quality plan has been produced which considers;</p> <ol style="list-style-type: none"> a. Removal of contaminant sources b. Dilution and control of contaminant sources c. Procedures for pre-occupancy flush out d. 3rd party testing and analysis. 	<p>Copy of the indoor air quality plan Relevant section/clauses of the building specification or contract</p>	Keith Rowley
Requirement 7	All decorative paints and varnishes have met the requirements listed in the table provided	As for requirement 6	Keith Rowley
Requirement 8	At least five of the eight remaining product categories listed in the table, have met the testing requirements and emission levels for Volatile Organic Compound (VOC) emissions against the relevant standards identified within this table. Where five or less products are specified within the building, all must meet the requirements in order to achieve this credit.	As for requirement 6	Keith Rowley

Hea 04: Water Quality**Targeted: 1 of 1****Potential: 0 of 1**

Credit 0 - 1 credit where;			Responsibility
Requirement 1	<p>MANDATORY REQUIREMENT All water systems in the building are designed in compliance with the measures outlined in the Health and Safety Executive's 'Legionnaires' disease - The control of legionella bacteria in water systems'. Approved Code of Practice and Guidance, 20001 and, where relevant, other industry/sector best practice guidance (see</p>	Relevant section/clauses of the building specification or contract	Mike Scales

	Compliance notes).		
Credit 1 -			Responsibility
Requirement 1	<p>All water systems in the building are designed in compliance with the measures outlined in the Health and Safety Executive's 'Legionnaires' disease - The control of legionella bacteria in water systems'. Approved Code of Practice and Guidance, 20001 and, where relevant, other industry/sector best practice guidance (see Compliance notes).</p> <p>Note:</p> <p>HTM 04-01 (Healthcare): Complimentary to the HSE ACoP, the water systems in healthcare buildings must be designed in compliance with the measures outlined in HTM 04-01 The control of Legionella, hygiene, "safe" hot water, cold water and drinking water systems2.</p> <p>CIBSE TM13: Design teams may refer to CIBSE TM13 Minimising the risk of Legionnaires disease, 20023 in demonstrating that the design meets the criteria of HSE ACoP.</p>	Relevant section/clauses of the building specification or contract	Mike Scales
Requirement 2	Where humidification is required, a failsafe humidification system is provided.	As for requirement 1	Mike Scales
Requirement 3	<p>A wholesome supply of accessible, clean and fresh drinking water is supplied, as follows:</p> <ul style="list-style-type: none"> a. Educational buildings and community use/centres: <ol style="list-style-type: none"> 1. Chilled, mains-fed point-of-use water coolers accessible to pupils/students/users/staff (as applicable) throughout the day. 2. Provision in safe and convenient locations e.g. dining/assembly halls, classrooms/common rooms, wide corridors, indoor social areas, changing rooms/gymnasias, concourse. 3. One compliant point-of-use water cooler is provided for every 200 building users, subject to a minimum of one water cooler being provided for any building with less than 200 building users. 4. All coolers must be attached to both the wall and the floor to prevent vandalism, and contain security covers to protect all water and electrical connections. b. Permanently staffed buildings/office areas: <ol style="list-style-type: none"> 1. Chilled, mains-fed point-of-use water supply or point-of-use water coolers. 2. Provision in each staff kitchenette, or in a suitable location 	Design drawings	Mike Scales

	<p>on each floor level, and in a staff canteen (if provided).</p> <p>c. Sports/fitness and recreation areas/buildings:</p> <ol style="list-style-type: none"> 1. Chilled, mains-fed point-of-use water coolers. 2. Provision in each changing area or a public concourse 3. Where point-of-use coolers are provided they must be attached to both the wall and the floor to prevent vandalism, and contain security covers to protect all water and electrical connections. 		
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Hea 05: Acoustic Performance**Targeted: 2 of 2****Potential: 0 of 2****Credit 1 - Up to 2 credits where;****Responsibility**

Requirement 1	<p>A suitably qualified acoustician (see Relevant definitions) is appointed at the appropriate stage of the project to provide early advice on influencing outline design solutions to:</p> <ol style="list-style-type: none"> a. External sources of noise impacting the chosen site b. Site layout and zoning of the building for good acoustics c. Acoustic requirements for users with special hearing and communication needs, d. Acoustic treatment of different zones and facades. 	<p>Professional report / study and calculations from the acoustician. Letter of appointment or other confirmation demonstrating when the acoustician was appointed. Relevant section/clauses of the building specification or contract and/or formal letter from the project team regarding commitments</p>	<p>Shawn Nudd, Keith Fisher – To gain information from Acoustician</p>
Requirement 2	<p>The building meets the acoustic performance standards and testing requirements for the relevant building type and function areas as detailed in the table provided</p>	<p>As for requirement 1</p>	<p>Shawn Nudd, Keith Fisher – To gain information from Acoustician</p>

Hea 06: Safety and Security**Targeted: 1 of 2****Potential: 0 of 2****Credit 2 - 1 credit where;****Responsibility**

Requirement 12	<p>The project team have accounted for security considerations in the new building design and site layout through consultation with a suitably qualified security consultant.</p>	<p>Correspondence from or a copy of the report/feedback from the ALO/CPDA/Security Consultant confirming:</p> <ol style="list-style-type: none"> 1. Scope of their advice/involvement 2. The stage of design in which their advice was sought 3. Summary of their recommendations 	<p>Keith Rowley</p>
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		<p>Where relevant for multi-residential and CSH assessed buildings: Evidence in line with the Design Stage evidence requirements of the CSH issue Man 4. OR A copy of the Design Stage CSH certificate and report from the CSH online reporting system confirming the number of credits achieved for CSH issue Man 4.</p>	
Requirement 13	Consultation with the suitably qualified security consultant occurred during or prior to the concept design stage (RIBA stage C) or equivalent.	As for requirement 12	Keith Rowley
Requirement 14	<p>The final design embodies the recommendations/solutions of the suitably qualified security consultant and is built to conform to either :</p> <ul style="list-style-type: none"> a. The principles and guidance of Secured by Design (SbD) and/or Safer Parking (SP) Scheme Or where SbD/SP is of less relevance to the building type/operation: b. A site specific security risk and threat assessment and subsequent security strategy and recommendations for security measures (as developed/recommended by the suitably qualified security consultant). 	<p>Design drawings AND/OR relevant sections of the specification or contract</p> <p>Where relevant for multi-residential and CSH assessed buildings: Evidence in line with the Design Stage evidence requirements of the CSH issue Man 4. OR A copy of the Design Stage CSH certificate and report from the CSH online reporting system confirming the number of credits achieved for CSH issue Man 4.</p>	Keith Rowley

12.4. Energy

Ene 01: Reduction of CO2 Emissions			
Targeted: 6 of 15 Potential: 0 of 15			
Credit 1 - Up to 15 credits where;			Responsibility
Requirement 1	Calculate an Energy Performance Ratio for New Constructions (EPRNC) using BREEAM's Ene 01 calculator.	A copy of the Building Regulations Output Document from the approved software. The output documents must be based on the "As designed" stage of analysis. A print-out of the results from the BREEAM New Construction 2011 Ene01 Compliance Checker website containing the ID number and EPRs generated by the Checker for the project. Where relevant for multi-residential buildings, a copy of the calculations based on design stage SAP outputs.	James Stevens
Requirement 2	<p>The EPRNC calculation takes account of the following parameters;</p> <ol style="list-style-type: none"> The building's operational energy demand, The building's primary energy consumption and The total resulting CO2 emissions. <p>The calculation is determined using the following performance data from modelling the building's specified/designed regulated fixed building services and fabric, as undertaken by an accredited energy assessor using approved building energy calculation software:</p> <ol style="list-style-type: none"> Building floor area (m2) Notional building energy demand (MJ/m2) Actual building energy demand (MJ/m2) Notional building energy consumption (kWh/m2) Actual building energy consumption (kWh/m2) Target Emission Rate (kgCO2/m2) Building Emission Rate (kgCO2/m2) 	As for requirement 1	James Stevens
Requirement 3	Compare the EPRNC achieved with the benchmarks provided and award the corresponding number of BREEAM credits	As for requirement 1	James Stevens
Requirement 4	Report the building's total modelled operational primary energy consumption in kWh/m2/yr and carbon dioxide emissions in kgCO2/m2/year via the BREEAM scoring and reporting tool	As for requirement 1	James Stevens

Ene 02: Energy Monitoring
Targeted: 2 of 2

Potential: 0 of 2			
Credit 1 - 1 credit where;			Responsibility
Requirement 1	The following major energy consuming systems (where present) are monitored using either a Building Energy Management System (BEMS) or separate accessible energy sub-meters with a pulsed output to enable future connection to a BEMS: <ul style="list-style-type: none"> 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 at each floor/department). h. Other major energy-consuming items where appropriate (see Compliance notes). 	Relevant section/clauses of the building specification or contract. Design drawings	Mike Scales
Requirement 2	The end energy consuming use is identifiable to the building user through labelling or data outputs.	As for requirement 1	Mike Scales
Credit 2 - 1 credit where;			Responsibility
Requirement 3	An accessible BEMS or accessible sub-meters are provided covering the energy supply to all tenanted, or in the case of single occupancy buildings, relevant functional areas or departments within the building/unit.	As for requirement 1	Mike Scales

Ene 03: External Lighting			
Targeted: 1 of 1 Potential: 0 of 1			
Credit 1 - 1 credit where;			Responsibility
Requirement 1	All external light fittings for the building, access ways and pathways have a luminous efficacy of at least 50 lamp lumens/circuit Watt when the lamp has a colour rendering index (Ra) greater than or equal to 60 OR 60 lamp Lumens / circuit Watt when the lamp has a colour rendering index (Ra) less than 60.	Relevant section/clauses of the building specification or contract Design drawings Where relevant for multi residential buildings; Evidence in line with the Design Stage evidence requirements of CSH issue Ene 6 OR A copy of the Design Stage CSH certificate and report from the CSH online reporting system confirming the number of credits achieved for CSH issue Ene 6.	Mike Scales
Requirement 2	All external light fittings to car parking areas, associated roads and floodlighting has a luminous efficacy of at least 70 lamp lumens/circuit Watt	As for requirement 1	Mike Scales

	when the lamp has a colour rendering index (Ra) greater than or equal to 60 OR 80 lamp Lumens / circuit Watts when the lamp has a colour rendering index (Ra) less than 60.		
Requirement 3	All external light fittings for signs and uplighting have a luminous efficacy of at least 60 lamp lumens/circuit Watt when the lamp wattage is greater than or equal to 25W OR 50 lamp lumens/circuit Watt when the lamp wattage is less than 25W.	As for requirement 1	Mike Scales
Requirement 4	External light fittings are controlled through a time switch, or daylight sensor, to prevent operation during daylight hours. Daylight sensor override on a manually switched lighting circuit is acceptable.	As for requirement 1	Mike Scales

Ene 04: Low and Zero Carbon Technologies**Targeted: 2 of 5****Potential: 1 of 5****Credit 1 - 1 credit where;****Responsibility**

Requirement 1	A feasibility study has been carried out by an energy specialist (see Compliance notes) to establish the most appropriate local (on-site or near-site) low or zero carbon (LZC) energy source for the building/development. This study covers as a minimum: <ul style="list-style-type: none"> a. Energy generated from LZC energy source per year b. Life cycle cost of the potential specification, accounting for payback c. Local planning criteria, including land use and noise d. Feasibility of exporting heat/electricity from the system e. Any available grants f. All technologies appropriate to the site and energy demand of the development. g. Reasons for excluding other technologies. h. Where appropriate to the building type, connecting the proposed building to an existing local community CHP system or source of waste heat or power OR specifying a building/site CHP system or source of waste heat or power with the potential to export excess heat or power via a local community energy scheme 	The feasibility study report. Design drawings or relevant section/clauses of the building specification or contract.	James Stevens, Shawn Nudd, Keith Fisher
Requirement 2	A local LZC energy technology has been specified for the building/development in line with the recommendations of the above feasibility study.	As for requirement 1	James Stevens, Keith Fisher , Shawn Nudd
Requirement 3	The feasibility study has been carried out at RIBA stage C (concept design) or equivalent procurement stage.	As for requirement 1	James Stevens, Keith

			Fisher , Shawn Nudd
Requirement 4	The organisation that occupies the building has in place a contract with an energy supplier to provide electricity for the assessed building/development from a 100% renewable energy source. This supply must be delivered by an accredited external renewable source. The contract must be valid for a minimum of 3 years from the date the assessed building becomes occupied.	Name and details of supplier Details of the source of supply. A copy of the contract or other formal documentation confirming the length of contract to supply 100% renewable energy.	Keith Fisher , James Stevens, Shawn Nudd
Credit 2 - Up to 3 credits where;			Responsibility
Requirement 5	Criteria 1 to 3 are achieved.	Evidence (as outlined above) confirming compliance with the first credit. Report, calculations/outputs from the manufacturer, supplier, engineer or approved modelling software confirming carbon savings as a result of the installed LZC technology. A copy of the LCA study report/findings (if relevant) demonstrating the percentage carbon saving over the lifetime of the LZC system.	James Stevens, Keith Fisher , Shawn Nudd
Requirement 6	A local LZC energy technology has been installed in line with the recommendations of the feasibility study and this method of supply results in a reduction in regulated CO2 emissions as follows: 10% - 1 credit 20% - 2 credits OR alternatively Where the feasibility study includes a Life Cycle Assessment of the carbon impact of the chosen LZC system(s), accounting for its embodied carbon emissions and operational carbon savings and emissions, and this method of supply results in a reduction in life cycle CO2 emissions as follows: Enhanced study - 1 credit 10% - 2 credits 20% - 3 credits The LCA study must be completed in accordance with ISO 14044:2006 Environmental Management Life Cycle Assessment - Requirements and Guidelines The LCA must consider a 60 year period (a typical assumption for the life of a building) and any necessary replacements/maintenance requirements within this period.	As for requirement 5	James Stevens, Keith Fisher , Shawn Nudd
Requirement 7	Figures used for calculations of the percentage carbon reduction provided by LZC technology are based on the output from approved energy modelling software	As for requirement 5	Shawn Nudd, James Stevens, Keith Fisher

Ene 06: Energy Efficient Transportation Systems			
Targeted: 2 of 2 Potential: 0 of 2			
Credit 1 - 1 credit where;			Responsibility
Requirement 1	<p>Where either lifts, escalators or moving walks (transportation types) are required:</p> <ol style="list-style-type: none"> An analysis of the transportation demand and usage patterns for the building has been carried out by the design team to determine the optimum number and size of lifts (including counter-balancing ratio), escalators and/or moving walks. The energy consumption has been estimated for one of the following: <ol style="list-style-type: none"> At least two types of system (for each transportation type required) or An arrangement of systems (e.g. for lifts, hydraulic, traction, MRL) or A system strategy which is 'fit for purpose' (scheduling) The lift/escalator/moving walk system/strategy with the lowest energy consumption is specified. <p><i>Note: For Simple Buildings, this criterion only applies to lifts.</i></p>	Professional report / study of transportation analysis AND/OR Calculations	Shawn Nudd, Keith Fisher – To gain confirmation from Lift Subcontractor
Credit 2 - 1 credit where;			Responsibility
Requirement 2	Criteria 1 is achieved.	As for requirement 1	Shawn Nudd, Keith Fisher – To gain confirmation from Lift Subcontractor
Requirement 3	<p>For lifts, of the following energy-efficient features the three that offer the greatest potential energy savings are specified:</p> <ol style="list-style-type: none"> The lifts operate in a stand-by condition during off-peak periods. For example the power side of the lift controller and other operating equipment such as lift car lighting, user displays and ventilation fans switch off when the lift has been idle for a prescribed length of time. The lift car uses energy-efficient lighting and display lighting i.e. an average lamp efficacy, across all fittings in the car, of >55 lamp lumens/ circuit watt and lighting switches off after the lift has been idle for a prescribed length of time. 	<p>Relevant section/clauses of the building specification or contract AND EITHER Manufacturers products details OR Formal letter of commitment from the system(s) manufacturer/supplier</p>	Shawn Nudd, Keith Fisher – To gain confirmation from Lift Subcontractor

	<ul style="list-style-type: none"> c. The lift uses a drive controller capable of variable-speed, variable-voltage, variable-frequency (VVVF) control of the drive motor. d. The lift has a regenerative drive unit so that any energy generated by a traction lift (due to running up loaded to less than the counterbalancing ratio or running down loaded to more than the counterbalancing ratio) or by a hydraulic lift (due to running down) is returned back to the electricity utility supplier or used elsewhere in the building. 		
Requirement 4	<p>For escalators and/or moving walks, each escalator and/or moving walk complies with EITHER of the following:</p> <ul style="list-style-type: none"> a. It is fitted with a load sensing device that synchronises motor output to passenger demand through a variable speed drive. OR b. It is fitted with a passenger sensing device for automated operation (auto walk), so the escalator operates in stand-by mode when there is no passenger demand <p><i>Note: This criterion is not applicable to Simple Buildings.</i></p>	As for requirement 4	Shawn Nudd, Keith Fisher – To gain confirmation from Lift Subcontractor

Ene 08: Energy Efficient Equipment**Targeted: 2 of 2****Potential: 0 of 2****Credit 1 - Up to 2 credits where;**

			Responsibility
Requirement 1	Identify from the list in the table provided the functions/equipment that are or will be present within the assessed building. Of those functions identify which will be responsible for the significant majority of unregulated energy consumption in the building. Two credits are then awarded for compliance with the corresponding criteria.	<p>The following where appropriate:</p> <ul style="list-style-type: none"> Relevant section/clauses of the building specification or contract Manufacturers product details Documentation confirming compliance with the relevant scheme or standard outlined in the criteria e.g. details of compliance with the ECA scheme Design drawings and/or calculations <p>Life cycle analysis report/documentation and details of how this has informed the procurement</p> <p>Documentation detailing the fit for purpose exercise and subsequent option selection.</p>	Shawn Nudd, Keith Fisher – To gain confirmation from Client

12.5. Transport

Tra 01: Public Transport Accessibility			
Targeted: 5 of 5 Potential: 0 of 5			
Credit 1 - Up to 5 credits where;			Responsibility
Requirement 1	The public transport Accessibility Index (AI) for the assessed building is calculated and BREEAM credits awarded in accordance with the table of building types, AI benchmarks and BREEAM credits provided	Scale map highlighting the location of the building and all public transport nodes in proximity of the building. Timetables for each service at each public transport node considered. The calculated Accessibility Index for the building.	James Stevens
Requirement 2	The Accessibility Index is determined by entering the following information in to the BREEAM Tra 01 calculator: <ul style="list-style-type: none"> a. The distance (m) from the main building entrance to each compliant public transport node b. The public transport type(s) serving the compliant node e.g. bus or rail c. The average number of services stopping per hour at each compliant node during the standard operating hours of the building for a typical day (see Compliance notes and Table 7-1 in the Additional Information section). 	As for requirement 1	James Stevens
Requirement 3	For buildings with a fixed shift pattern i.e. where building users will predominantly arrive/depart at set times, one credit can be awarded where the building occupier will provide a dedicated bus service to and from the building at the beginning and end of each shift/day. The bus must provide transfer to the local population centre, public transport interchange or be a door-to-door service. This credit is available on the basis that the building is unable to achieve any of the available credits using the above methodology (i.e. it has a low Accessibility Index), yet the building occupier is providing a suitable alternative transport option (alternative to the use of a private vehicle for commuting) for a majority of the building users (see also Compliance note below).	A formal letter from the future building occupier confirming provision of and details for the dedicated bus service(s).	James Stevens

Tra 02: Proximity to Amenities	
Targeted: 1 of 1 Potential: 0 of 1	
Credit 1 - 1 credit where;	Responsibility

Requirement 1	Where the building is located within close proximity and accessible to the following amenities	<p>Marked-up site plan or map highlighting:</p> <ol style="list-style-type: none"> 1. Location of assessed building 2. Location and type of amenities 3. The route to the amenities 4. Plan/map scale <p>OR</p> <p>Where the amenities do not currently exist, but are due to be developed, a letter from the client/developer confirming:</p> <ol style="list-style-type: none"> 1. The location and type of amenities to be provided 2. The timescale for development of the amenities 	James Stevens
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Tra 03: Cyclist Facilities

Targeted: 2 of 2
Potential: 0 of 2

Credit 1 - Up to 2 credits where;			Responsibility
Requirement 1	The tables provided detail the cycle facility requirements by building type and the number of credits available	<p>Design drawings and/or relevant section/clauses of the building specification or contract</p> <p>Plus (if relevant to building type):</p> <p>The location and size of the wheelchair and buggy storage facilities</p> <p>Location and no. of charging points</p> <p>Assumptions and calculations used to determine number of public users.</p>	Keith Rowley

Tra 04: Maximum Car Parking Capacity

Targeted: 2 of 2
Potential: 0 of 2

Credit 1 - Up to 2 credits where;			Responsibility
Requirement 1	<p>The building's car parking capacity is compared to the maximum car parking capacity permitted according to the benchmarks in the table below, and the relevant number of BREEAM credits awarded.</p> <p>For most building types, except those where stated, the benchmarks vary according to the buildings public transport Accessibility Index (determined in accordance with BREEAM issue Tra 01). Therefore, for these building types the AI must be determined prior to assessing this issue. This is required to ensure that the building's car parking capacity is relative to the developments' accessibility to public transport links.</p>	<p>Drawings or relevant section/clauses of the building specification or contract confirming the number and type of parking spaces provided for the building. Relevant documentation or correspondence from the design team or client confirming the number of building users.</p> <p>Where relevant, confirmation of the buildings' Accessibility Index (as per BREEAM issue Tra 01)</p> <p>For healthcare buildings, relevant documentation or correspondence from the design team or client confirming:</p> <ol style="list-style-type: none"> 1. The number of patients' and residential beds 2. The number of consulting, examination, treatment, therapy room and A&E cubicle rooms. 	Keith Rowley

Tra 05: Travel Plan			
Targeted: 1 of 1 Potential: 0 of 1			
Credit 1 - 1 credit where;			Responsibility
Requirement 1	A travel plan has been developed as part of the feasibility and design stages which considers all types of travel relevant to the building type and users.	A copy of the Travel Plan. A copy of the site-specific transport survey/assessment.	Shawn Nudd, Keith Fisher
Requirement 2	<p>The travel plan is structured to meet the needs of the particular site and takes into consideration the findings of a site-specific transport survey and assessment that covers 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. Disabled access (accounting for varying levels of disability and visual impairment) e. Public transport links serving the site f. Current facilities for cyclists 	As for requirement 1	Shawn Nudd, Keith Fisher
Requirement 3	<p>The travel plan includes a package of measures that have been used to steer the design of the development in order to meet the travel plan objectives and minimise car-based travel patterns. This is demonstrated via specific examples such as:</p> <ul style="list-style-type: none"> a. Providing parking priority spaces for car sharers b. Providing dedicated and convenient cycle storage and changing facilities c. Lighting, landscaping and shelter to make pedestrian and public transport waiting areas pleasant d. Negotiating improved bus services, i.e. altering bus routes or offering discounts e. Restricting and/or charging for car parking f. Criteria for lobby areas where information about public transport or car sharing can be made available g. Pedestrian and cycle friendly (for all types of user regardless of the level of mobility or visual impairment) via the provision of cycle lanes, safe crossing points, direct routes, appropriate tactile surfaces, well lit and signposted to other amenities, public transport nodes and adjoining offsite pedestrian and cycle routes. h. Providing suitable taxi drop-off/waiting areas. 	<p>As for requirement 1</p> <p>Design drawings demonstrating examples of design measures implemented in support the travel plan's findings.</p> <p>OR</p> <p>Where a detailed site plan is not available, a formal letter from the client confirming that measures will be implemented into the final design in support the travel plan's findings.</p>	Shawn Nudd, Keith Fisher

	i. Ensuring that rural buildings are located with appropriate transport access to ensure that they adequately serve the local community (where procured to do so e.g. community centre).		
Requirement 4	Where appropriate to the building type, size and intended operation, the travel plan includes measures tailored to minimise the impacts of operational-related transport e.g. deliveries of supplies, equipment and support services to and from the site.	As for requirement 1	Shawn Nudd, Keith Fisher
Requirement 5	Where the building's final occupier is known, they confirm that the travel plan will be implemented post construction and supported by the building's management during building operation.	A letter of confirmation from either the building's occupier, or in the case of a speculative development, the developer.	Shawn Nudd, Keith Fisher

12.6. Water

Wat 01: Water Consumption			
Targeted: 2 of 5 Potential: 0 of 5			
Credit 1 - Up to 5 credits where;			Responsibility
Requirement 1	An assessment of the efficiency of the building's domestic water consuming components is undertaken using the BREEAM Wat 01 calculator.	Completed copy of the BREEAM Wat 01 calculator Relevant section/clauses of the building specification/ design drawings confirming technical details of; 1. Sanitary components 2. Rainwater and greywater collection system OR where detailed documentary evidence is not available at this stage; Completed BREEAM Wat 01 calculator A letter of instruction to a contractor/supplier or a formal letter from the developer giving a specific undertaking, providing sufficient information to allow the water calculations to be completed.	Keith Fisher , Shawn Nudd
Requirement 2	The water consumption (litres/person/day) for the assessed building is compared against a notional baseline performance and BREEAM credits awarded as provided	As for requirement 1	Keith Fisher , Shawn Nudd
Requirement 3	The efficiency of the following 'domestic scale' water consuming components must be included in the calculation (where specified): a. WCs b. Urinals c. Taps (wash hand basins and where specified kitchen taps and waste disposal unit) d. Showers e. Baths f. Dishwashers (domestic and commercial sized) g. Washing machine (domestic and commercial/industrial sized) The BREEAM Wat 01 calculator defines the building types and activity areas for which the above components must be assessed.	As for requirement 1	Shawn Nudd, Keith Fisher

Wat 02: Water Monitoring			
Targeted: 1 of 1 Potential: 0 of 1			
Credit 0 - 1 credit where;			Responsibility
Requirement	MANDATORY REQUIREMENT The specification of a water meter on the	Relevant section/clauses of the building specification or contract	Mike Scales

1	mains water supply to each building; this includes instances where water is supplied via a borehole or other private source	Design drawings	
Credit 1 -			Responsibility
Requirement 2	Water-consuming plant or building areas, consuming 10% or more of the building's total water demand, are either fitted with sub meters or have water monitoring equipment integral to the plant or area	As for requirement 1	Mike Scales
Requirement 3	Each meter (main and sub) has a pulsed output to enable connection to a Building Management System (BMS) for the monitoring of water consumption.	As for requirement 1	Mike Scales
Requirement 4	If the site on which the building is located has an existing BMS, managed by the same occupier/owner (as the new building), the pulsed water meter(s) for the new building must be connected to the existing BMS.	As for requirement 1	Mike Scales

Wat 03: Leak Detection

Targeted: 2 of 2
Potential: 0 of 2

Credit 1 - 1 credit where;			Responsibility
Requirement 1	<p>A leak detection system which is capable of detecting a major water leak on the mains water supply within the building and between the building and the utilities water meter.</p> <p><i>Note: For Simple Buildings compliance with this criterion may be met by installing automatic excess flow valves at relevant locations to protect property from damage caused by leaking pipes or tanks.</i></p>	<p>Relevant section/clauses of the building specification or contract</p> <p>Design drawings</p> <p>Manufacturers product details</p>	Mike Scales
Requirement 2	<p>The leak detection system is:</p> <ul style="list-style-type: none"> a. Audible when activated b. Activated when the flow of water passing through the water meter/data logger is at a flow rate above a pre-set maximum for a pre-set period of time c. Able to identify different flow and therefore leakage rates, e.g. continuous, high and/or low level, over set time periods d. Programmable to suit the owner/occupiers' water consumption criteria e. Where applicable, designed to avoid false alarms caused by normal operation of large water-consuming plant such as chillers. <p><i>Note: For Simple Buildings compliance with this criterion may be met by</i></p>	As for requirement 1	Mike Scales

	<i>installing automatic excess flow valves at relevant locations to protect property from damage caused by leaking pipes or tanks.</i>		
Credit 2 - 1 credit where;			Responsibility
Requirement 3	<p>One of the following types of flow control device is fitted to each WC area/facility to ensure water is supplied only when needed (and therefore prevent minor water leaks):</p> <ol style="list-style-type: none"> A time controller i.e. an automatic time switch device to switch off the water supply after a predetermined interval A programmed time controller i.e. an automatic time switch device to switch water on and/or off at predetermined times. A volume controller i.e. an automatic control device to turn off the water supply once the maximum preset volume is reached. A presence detector and controller i.e. an automatic device detecting occupancy or movement in an area to switch water on and turn it off when the presence is removed. A central control unit i.e. a dedicated computer-based control unit for an overall managed water control system, utilising some or all of the types of control elements listed above. 	As for requirement 1	Mike Scales

Wat 04: Water Efficient Equipment**Targeted: 1 of 1****Potential: 0 of 1**

Credit 1 - 1 credit where;			Responsibility
Requirement 1	<p>Where an irrigation method specified for internal or external planting and/or landscaping, it complies with ANY ONE of the following:</p> <ol style="list-style-type: none"> Drip feed subsurface irrigation that incorporates soil moisture sensors. The irrigation control should be zoned to permit variable irrigation to different planting assemblages. Reclaimed water from a rainwater or greywater system. The storage system must be appropriately sized i.e. storage capacity is relative to the size of the soft landscaped area. External landscaping and planting that relies solely on precipitation, during all seasons of the year. All planting specified is restricted to species that thrive in hot and dry conditions. Where no dedicated, mains-supplied irrigation systems (including pop-up sprinklers and hoses) are specified and planting will rely solely on manual watering by building occupier or landlord. 	<p>Documentation detailing the planting and irrigation strategy Relevant section/clauses of the building specification or contract AND/OR design drawings (where necessary) Manufacturers product details</p>	Shawn Nudd, Keith Fisher

Requirement 2	Where a sub surface drip feed irrigation system is installed for external areas, a rainstat must also be installed to prevent automatic irrigation of the planting and the landscape during periods of rainfall.	As for requirement 1	Keith Fisher , Shawn Nudd
Requirement 3	Where a vehicle wash system is specified, it uses a full or partial reclaim unit which contains one or more of the following: a hydro-cyclone, a sand or activated carbon filter, a sump tank(s), three chamber interceptors, and a cartridge filter or bag filter. This is in line with the ECA water technology list	As for requirement 1	Keith Fisher , Shawn Nudd

12.7. Materials

Mat 01: Life Cycle Impacts			
Targeted: 4 of 6 Potential: 0 of 6			
Credit 1 - Up to 6 credits where;			Responsibility
Requirement 1	BREEAM awards credits on the basis of the building's quantified environmental life cycle impact through assessment of the main building elements, as set out in the table provided	<p>Specification providing a detailed description of each applicable element and its constituent materials specification.</p> <p>Design drawings or specification detailing the location and area (m2) of each applicable element.</p> <p>A copy of the output from the BREEAM Mat 01 calculator, including Green Guide rating and element number for each specification assessed.</p> <p>And if relevant:</p> <ol style="list-style-type: none"> 1. Copies of Environmental Product Declarations 2. A link/reference to the EPD's Product Category Rules 3. Online Green Guide calculator output 4. Environmental Profile certificate(s) (or certificate number) <p>Where relevant for multi-residential buildings: Evidence in line with the Design stage evidence requirements of the CSH Issue Mat 1 OR A copy of the Design Stage CSH certificate and report from the CSH online reporting system confirming the number of credits achieved for CSH Issue Mat 1.</p>	Shawn Nudd, Keith Fisher
Requirement 2	<p>Credits are awarded on the basis of the total number of points achieved, as set out in the table provided, and calculated using the BREEAM Mat 01 calculator. This point's score is based on the Green Guide rating(s) achieved for the specifications that make-up the main building elements (as above).</p> <p>Note: Where an independently verified third-party Environmental Product Declaration (EPD), covering part of or the whole life cycle, is available for a material/product that forms part of an assessed building element, this can be used to increase the contribution of that element to the building's Mat 01 performance (refer to Calculation procedures in the Additional Information section for more detail).</p>	As for requirement 1	Shawn Nudd, Keith Fisher
Requirement 3	Life cycle Green House Gas emissions (kgCO2 eq.) for each element are also required to be reported based on a 60-year building life. Where specific data is not available for a product or element, generic data should be used. Generic data can be obtained from the online Green Guide for each element and must be entered in to the BREEAM Mat 01 calculator.	As for requirement 1	Shawn Nudd, Keith Fisher

Mat 02: Hard Landscaping and Boundary Protection			
Targeted: 1 of 1 Potential: 0 of 1			
Credit 1 - 1 credit where;			Responsibility
Requirement 1	Where at least 80% of all external hard landscaping and boundary protection (by area) achieves an A or A+ rating, as defined in the Green Guide to Specification. Green Guide ratings for the specification(s) of each element can be found at: www.thegreenguide.org.uk	Relevant section/clauses of the building specification or contract and/or design drawings and calculations confirming: <ol style="list-style-type: none"> 1. A detailed description of each applicable element and its constituent materials. 2. Location and area (m2) of each applicable element. The Green Guide rating and element number for the assessed specifications.	Lynsey Barnett

Mat 03: Responsible Sourcing of Materials			
Targeted: 2 of 3 Potential: 0 of 3			
Credit 0 - Up to 3 credits where;			Responsibility
Requirement 1	MANDATORY REQUIREMENT Confirmation that all timber used on the project is sourced in accordance with the UK Government's Timber Procurement Policy	Written confirmation from the supplier/s that all timber is sourced in compliance with the UK Government Timber Procurement Policy for legal and sustainable sourcing OR Copies of the actual chain of custody evidence in accordance with CPET requirements OR A specification or letter of intent from the design team confirming that all timber will be procured in accordance with the policy.	Shawn Nudd, Keith Fisher
Credit 1 -			Responsibility
Requirement 1	Each of the applicable specified materials comprising the main building elements are assigned a responsible sourcing tier level and points awarded as in the table provided	Design plan and/or specification confirming: <ol style="list-style-type: none"> 1. The building elements. 2. Details of the materials specification for each element. A copy of the output from the BREEAM Mat 03 calculator AND EITHER <ol style="list-style-type: none"> 1. A letter of intent from the design team or other detailed documentary evidence confirming the product shall be sourced from suppliers capable of providing certification to the level required for the particular tier claimed OR 2. A copy of the relevant responsible sourcing scheme certificate(s) for the relevant specifications/products. Documentation may differ depending on the Environmental Scheme in question, please refer to the BREEAM 2011 Technical Manual for further	Shawn Nudd, Keith Fisher

		information.	
Requirement 2	<p>The number of BREEAM credits achieved is determined as follows: 3 credits - greater than 54% 2 credits - greater than 36% 1 credit - greater than 18% Note;</p> <ol style="list-style-type: none"> 1. The BREEAM Mat 03 calculator must be used to determine the points and credits achieved for this issue. 2. To achieve points for any given building element, at least 80% of the materials that make-up that element must be responsibly sourced i.e. classified in tier 1-6. 3. The number of building elements present and therefore applicable determines the maximum number of points available e.g. if nine elements are present and assessed the maximum number of available points will be 31.5. 4. Potential variance in tier levels achieved for materials within any one element will require a pro-rata calculation of the points total for any given element. 5. Refer to the Calculation procedures in the Additional Information section for a description of how the number of points and credits are determined. 	As criterion 1.	Shawn Nudd, Keith Fisher
Requirement 3	Confirmation that all timber used on the project is sourced in accordance with the UK Government's Timber Procurement Policy.	<p>Written confirmation from the supplier/s that all timber is sourced in compliance with the UK Government Timber Procurement Policy for legal and sustainable sourcing OR</p> <p>Copies of the actual chain of custody evidence in accordance with CPET requirements OR</p> <p>A specification or letter of intent from the design team confirming that all timber will be procured in accordance with the policy.</p>	Shawn Nudd, Keith Fisher

Mat 04: Insulation**Targeted: 2 of 2****Potential: 0 of 2****Credit 1 - 1 credit where;****Responsibility**

Requirement 1	<p>Any new insulation specified for use within the following building elements must be assessed:</p> <ol style="list-style-type: none"> a. External walls b. Ground floor c. Roof d. Building services 	<p>Design drawings AND/OR relevant section/clauses of the building specification or contract confirming:</p> <ol style="list-style-type: none"> 1. The location of insulating materials. 2. The area (m2) and thickness (m) or volume (m3) of insulation specified. <p>Manufacturer's technical details confirming the thickness and thermal conductivity of the insulating materials specified.</p> <p>A copy of the output from the BREEAM Mat 04 calculator.</p> <p>The Green Guide rating and element number for the assessed insulation</p>	Mike Scales , Shawn Nudd, Keith Fisher
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		specifications. And if relevant: <ol style="list-style-type: none"> 1. Copies of Environmental Product Declarations 2. A link/reference to the EPD's Product Category Rules 3. Online Green Guide calculator output 4. Environmental Profile certificate(s) (or certificate number) 	
Requirement 2	The Green Guide rating for the thermal insulation materials must be determined. Green Guide ratings for thermal insulation can be found at: www.thegreenguide.org.uk (please refer to the Compliance notes for guidance where specific insulation has been assessed within an element for BREEAM issue Mat 01).	As for requirement 1	Mike Scales , Shawn Nudd, Keith Fisher
Requirement 3	The Insulation Index for the building insulation is the same as or greater than 2.	As for requirement 1	Mike Scales , Shawn Nudd, Keith Fisher
Requirement 4	<p>The Insulation Index is calculated using the BREEAM Mat 04 calculator which uses the following calculation methodology: For each type of thermal insulation used in the relevant building elements, the volume weighted thermal resistance provided by each type of insulation is calculated as follows:</p> <ol style="list-style-type: none"> a. $(\text{Area of insulation (m}^2\text{)} \times \text{thickness(m)}) / \text{Thermal Conductivity (W/m.K)}$ OR b. $\text{Total volume of insulation used (m}^3\text{)} / \text{Thermal conductivity (W/m.K)}$ <p>The volume weighted thermal resistance for each insulation material is then multiplied by the relevant Green Guide point(s) from the following table to give the Green Guide Rating corrected value:</p> <p>To calculate the Insulation Index, the sum of the Green Guide rating corrected values for all insulating elements is divided by the sum of the volume weighted thermal resistance values</p> <p>Note: Where an independently verified third-party Environmental Product Declaration (EPD), covering part of or the whole life cycle, is available for an insulating material/product, this can be used to increase the contribution of that material/product to the building's Mat 04 performance (for more detail refer to the Calculation procedures in the Additional Information section).</p>	As for requirement 1	Mike Scales , Shawn Nudd, Keith Fisher
Credit 2 - 1 credit where;			Responsibility
Requirement 5	At least 80% by volume of the thermal insulation used in the building elements identified in Item 1 must be responsibly sourced i.e. each insulation product must be certified in accordance with either tier levels 1, 2, 3, 4, 5 or	Evidence as outlined in BREEAM issue Mat 03 confirming compliance for the insulating materials.	Keith Fisher , Mike Scales , Shawn Nudd

	6 as described in BREEAM issue Mat 03 . The table provided shows the key processes and supply chain processes required for common insulation products.		
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Mat 05: Designing for Robustness**Targeted: 1 of 1****Potential: 0 of 1****Credit 1 - 1 credit where;****Responsibility**

Requirement 1	Areas of the building have been identified (both internal and external) where vehicular, trolley and pedestrian movement occur.	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.	Keith Rowley
Requirement 2	<p>The design incorporates suitable durability and protection measures or design features/solutions to prevent damage to the vulnerable parts of the building. This must include, but is not necessarily limited to:</p> <ul style="list-style-type: none"> a. Protection from the effects of high pedestrian traffic in main entrances, public areas and thoroughfares (corridors, lifts, stairs, doors etc). b. Protection against any internal vehicular/trolley movement within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas. c. Protection against, or prevention from, any potential vehicular collision where vehicular parking and manoeuvring occurs within 1m of the external building façade for all car parking areas and within 2m for all delivery areas. 	As for requirement 1	Keith Rowley

12.8. Waste

Wst 01: Construction Waste Management			
Targeted: 3 of 4 Potential: 0 of 4			
Credit 1 - Up to 3 credits where;			Responsibility
Requirement 1	Non-hazardous construction waste (excluding demolition and excavation waste) generated by the building's design and construction meets or exceeds the resource efficiency benchmarks provided	A copy of the compliant Site Waste Management Plan and where relevant, a copy of the pre-demolition audit AND/OR Relevant section/clauses of the building specification or contract AND/OR A letter from the client or their representative Where relevant for multi-residential buildings: Evidence in line with the Design Stage evidence requirements of the CSH Issue Was 2 OR A copy of the Design Stage CSH certificate and report from the CSH online reporting system confirming the number of credits achieved for CSH Issue Was 2	Keith Fisher , Shawn Nudd
Requirement 2	There is a compliant Site Waste Management Plan (SWMP), see compliance notes	As for requirement 1	Keith Fisher , Shawn Nudd
Requirement 3	Where existing buildings on the site will be demolished a pre-demolition audit of any existing buildings, structures or hard surfaces is completed to determine if, in the case of demolition, refurbishment/reuse is feasible and, if not, to maximise the recovery of material from demolition for subsequent high-grade/value applications. The audit must be referenced in the SWMP and cover: <ul style="list-style-type: none"> a. Identification of the key refurbishment/demolition materials. b. Potential applications and any related issues for the reuse and recycling of the key refurbishment and demolition materials. 	As for requirement 1	Keith Fisher , Shawn Nudd
Credit 2 - 1 credit where;			Responsibility
Requirement 4	The provided percentages of non-hazardous construction and demolition waste (where applicable) generated by the project have been diverted from landfill	As for requirement 1	Keith Fisher , Shawn Nudd
Requirement 5	There is a compliant Site Waste Management Plan (SWMP), see compliance notes	As for requirement 1	Keith Fisher , Shawn Nudd
Requirement 6	Waste materials will be sorted into separate key waste groups (according to the waste streams generated by the scope of the works) either onsite or offsite through a licensed contractor for recovery.	As for requirement 1	Keith Fisher , Shawn Nudd

Wst 03: Operational Waste			
Targeted: 1 of 1 Potential: 0 of 1			
Credit 1 - 1 credit where;			Responsibility
Requirement 1	There is dedicated space(s) to cater for the segregation and storage of operational recyclable waste volumes generated by the assessed building/unit, its occupant(s) and activities.	Design drawings and/or relevant section/clauses of the building specification or contract confirming provision and scope of dedicated facilities. Project team meeting minutes / letter confirming likely building waste streams and indicative volumes.	Keith Rowley
Requirement 2	The dedicated space(s) must be: <ul style="list-style-type: none"> a. Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams b. Accessible to building occupants / facilities operators for the deposit of materials and collections by waste management contractors c. Of a capacity appropriate to the building type, size, number of units (if relevant) and predicted volumes of waste that will arise from daily/weekly operational activities and occupancy rates. 	As for requirement 1	Keith Rowley
Requirement 3	Where the consistent generation in volume of the appropriate operational waste streams is likely to exist, e.g. large amounts of packaging or compostable waste generated by the building's use and operation, the following facilities are provided as part of its waste management strategy: <ul style="list-style-type: none"> a. Static waste compactor(s) or baler(s); situated in a service area or dedicated waste management space. b. Vessel(s) for composting suitable organic waste resulting from the building's daily operation and use OR adequate space(s) for storing segregated food waste and compostable organic material prior to collection and delivery to an alternative composting facility. c. Where organic waste is to be stored/composted on site, a water outlet is provided adjacent to or within the facility for cleaning and hygiene purposes. 	As for requirement 1	Keith Rowley

12.9. Land Use and Ecology

LE 01: Site Selection			
Targeted: 2 of 2 Potential: 0 of 2			
Credit 1 - 1 credit where;			Responsibility
Requirement 1	At least 75% of the proposed development's footprint is on an area of land which has previously been developed for use by industrial, commercial or domestic purposes in the last 50 years	Design drawings (including existing site plan), report or site photographs confirming: <ol style="list-style-type: none"> 1. Type and duration of previous land use. 2. Area (m2) of previous land use. Proposed site plan showing; 3. Location and footprint (m2) of proposed development and temporary works. 	Shawn Nudd, Keith Fisher
Credit 2 - 1 credit where;			Responsibility
Requirement 2	The site is deemed to be significantly contaminated as confirmed by a contaminated land specialist's site investigation, risk assessment and appraisal, which has identified: <ol style="list-style-type: none"> a. The degree of contamination b. The contaminant sources/types c. The options for remediating sources of pollution which present an unacceptable risk to the site. 	A copy of the specialist's land contamination report. Design drawings (including existing site plan) showing contaminated areas and areas to be remediated in relation to any proposed development.	Shawn Nudd, Keith Fisher
Requirement 3	The client or principal contractor confirms that remediation of the site will be carried out in accordance with the remediation strategy and its implementation plan.	A letter from the principal contractor or remediation contractor confirming: <ol style="list-style-type: none"> 1. The remediation strategy for the site. 2. Summary details of the implementation plan. If a contractor has not yet been appointed, a letter from the client, or their representative confirming that the appointed contractor will undertake necessary remediation works to mitigate the risks identified in the specialist report.	Shawn Nudd, Keith Fisher

LE 02: Ecological Value of Site and Protection of Ecological Features			
Targeted: 1 of 1 Potential: 0 of 1			
Credit 1 - 1 credit where;			Responsibility
Requirement 1	Land within the construction zone is defined as 'land of low ecological value' using either: <ol style="list-style-type: none"> a. The BREEAM checklist for defining land of low ecological value (see Additional Information section below) OR 	A completed copy of Table 11-1 signed and dated by the client or a design team member AND EITHER Plans, site photographs and specifications confirming presence, or otherwise, of ecological features and the protection measures specified.	Shawn Nudd, Keith Fisher – To gain information from

	b. A Suitably Qualified Ecologist who has identified the land as being of 'low ecological value' within an ecological assessment report, based on a site survey.	OR Ecologist's report highlighting information required in accordance with the Appendix F 'Relating Ecology Reports to BREEAM'. Where relevant for multi residential buildings: Evidence in line with the Design stage evidence requirements of the CSH Issues Eco 1 and Eco 3 OR A copy of the Design Stage CSH certificate and report.	Ecologist
Requirement 2	All existing features of ecological value surrounding the construction zone and site boundary area are adequately protected from damage during clearance, site preparation and construction activities as listed below: <ul style="list-style-type: none"> a. Trees of over 100 mm trunk diameter, and/or of significant ecological value, are protected by barriers. Barriers must prohibit construction works in the area between itself and the tree trunk. Minimum distance between tree trunk and barriers must be either the distance of branch spread or half tree height, whichever is the greater. b. Trees are protected from direct impact and from severance or asphyxiation of the roots. c. Hedges and natural areas requiring protection must either have barriers erected and be protected, or, when remote from site works or storage areas, be protected with a prohibition of construction activity in their vicinity. d. Watercourses and wetland areas are to be protected by cut-off ditches and site drainage to prevent run-off to natural watercourses (as this may cause pollution, silting or erosion). 	As for requirement 1	Shawn Nudd, Keith Fisher – To gain information from Ecologist
Requirement 3	In all cases, the principal contractor is required to construct ecological protection prior to any preliminary site construction or preparation works (e.g. clearing of the site or erection of temporary site facilities).	As for requirement 1	Shawn Nudd, Keith Fisher – To gain information from Ecologist

LE 03: Mitigating Ecological Impact**Targeted: 2 of 2****Potential: 0 of 2****Credit 1 - Up to 2 credits where;**

			Responsibility
Requirement 1	One credit where the change in ecological value of the site is less than zero but equal to or greater than minus nine i.e. a minimal change,	Design drawings including proposed and existing (pre-development) site plan/survey. AND EITHER	Shawn Nudd, Keith Fisher – To gain

	<p>Two credits where the change in ecological value of the site is equal to or greater than zero i.e. no negative change</p> <p>using the methods outlined in either (a) or (b) below:</p> <p>a. Determine the following information and input this data in to the BREEAM LE 03/LE 04 calculator:</p> <ol style="list-style-type: none"> 1. The broad habitat type(s) that define the landscape of the assessed site in its existing pre-developed state and proposed state (see checklists and tables in the Additional Information section). 2. Area (m2) of the existing and proposed broad habitat types. <p>OR</p> <p>b. Where a suitably qualified ecologist (SQE) has been appointed and, based on their site survey they confirm the following and either the assessor or ecologist inputs this data in to the BREEAM LE 03/LE 04 calculator:</p> <ol style="list-style-type: none"> 1. The broad habitat types that define the landscape of the assessed site in its existing pre-developed state and proposed state. 2. Area (m2) of the existing and proposed broad habitat plot types. 3. Average total taxon (plant species) richness within each habitat type. 	<ol style="list-style-type: none"> 1. A completed copy of the BREEAM LE 03/LE 04 calculator OR 2. Ecologist's report highlighting information required in Appendix F OR a copy of Appendix F completed by the ecologist AND written confirmation from the client/design team detailing how the ecologist's recommendations will be implemented. <p>Where relevant for multi-residential buildings; Evidence in line with the Design stage evidence requirements of the CSH Issues Eco 4 OR A copy of the Design Stage CSH certificate and CSH compliance report confirming the change in ecological value for the site.</p>	<p>information from Ecologist</p>
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LE 04: Enhancing Site Ecology

Targeted: 3 of 3

Potential: 0 of 3

Credit 1 - 1 credit where;

			Responsibility
Requirement 1	<p>A suitably qualified ecologist (SQE) has been appointed to report on enhancing and protecting the ecology of the site and:</p> <p>a. The SQE provides an Ecology Report with appropriate recommendations for protection and enhancement of the site's ecology.</p> <p>b. The report is based on a site visit/survey by the SQE (see also compliance note 'timing of ecologists survey and report').</p>	<p>Ecologist's report highlighting information required in Appendix F or a copy of Appendix F completed by the ecologist.</p> <p>Design drawings including proposed and existing (pre-development) site plan/survey</p> <p>Written confirmation from the client/design team confirming how the ecologist's recommendations will be implemented.</p> <p>Where relevant for multi residential buildings: Evidence in line with the Design stage evidence requirements of the CSH Issues Eco 4 OR</p>	<p>Shawn Nudd, Keith Fisher – To gain information from Ecologist</p>

		A copy of the Design Stage CSH certificate and CSH compliance report confirming the change in ecological value for the site.	
Requirement 2	The general recommendations of the Ecology Report for enhancement and protection of site ecology have been, or will be, implemented.	As for requirement 1	Shawn Nudd, Keith Fisher – To gain information from Ecologist
Credit 2 - Up to 2 credits where;			Responsibility
Requirement 3	Criteria 1 and 2 are achieved.	As for requirement 1	Shawn Nudd, Keith Fisher – To gain information from Ecologist
Requirement 4	The recommendations of the Ecology Report for enhancement and protection of site ecology have been implemented, and the suitably qualified ecologist confirms that this will result in: For one credit: an increase in ecological value of the site up to (but not including) 6 plant species. For two credits: an increase in ecological value of the site of 6 plant species or greater	As for requirement 1	Shawn Nudd, Keith Fisher – To gain information from Ecologist
Requirement 5	The increase in plant species has been calculated using the BREEAM LE 03/LE 04 calculator, using actual plant species numbers	As for requirement 1	Shawn Nudd, Keith Fisher – To gain information from Ecologist

LE 05: Long Term Impact on Biodiversity

Targeted: 2 of 2
Potential: 0 of 2

Credit 1 - Up to 2 credits where;			Responsibility
Requirement 1	A suitably qualified ecologist (SQE) has been appointed prior to commencement of activities on site.	Ecologist's report highlighting information required in Appendix F – Guidance for relating ecologist's report to BREEAM Appendix F AND EITHER A copy	Shawn Nudd, Keith Fisher –

		of the site's landscape and habitat management plan. OR Relevant section/clauses of the building specification or contract confirming its development and scope. OR A letter from the client confirming a commitment to produce the management plan and its' scope.	To gain information from Ecologist
Requirement 2	The suitably qualified ecologist confirms that all relevant UK and EU legislation relating to protection and enhancement of ecology has been complied with during the design and construction process.	As requirement 1	Shawn Nudd, Keith Fisher – To gain information from Ecologist
Requirement 3	A landscape and habitat management plan, appropriate to the site, is produced covering at least the first five years after project completion. This is to be handed over to the building occupants and includes: <ul style="list-style-type: none"> a. Management of any protected features on site b. Management of any new, existing or enhanced habitats c. A reference to the current or future site level or local Biodiversity Action Plan 	As requirement 1	Shawn Nudd, Keith Fisher – To gain information from Ecologist
Requirement 4	There is a commitment to achieve the pre-requisite criteria and appropriate number of additional criteria 5-10 as follows: <ul style="list-style-type: none"> • 1 credit - 2 additional criteria • 2 credits - 4 additional criteria Where the Suitably Qualified Ecologist (SQE) confirms that some of the additional criteria listed below are not applicable to the assessed development, the credits can be awarded as set out in the Additional Guidance document.	As requirement 1	Shawn Nudd, Keith Fisher – To gain information from Ecologist
Requirement 5	The principal contractor nominates a 'Biodiversity Champion' with the authority to influence site activities and ensure that detrimental impacts on site biodiversity are minimised in line with the recommendations of a suitably qualified ecologist.	Relevant section/clauses of the building specification or contract or an appointment letter from the Contractor.	Keith Fisher , Shawn Nudd – To gain information from Ecologist
Requirement 6	The principal contractor trains the site workforce on how to protect site ecology during the project. Specific training must be carried out for the entire site workforce to ensure they are aware of how to avoid damaging site ecology during operations on site. Training should be based on the findings and recommendations for protection of ecological features highlighted within a report prepared by a suitably qualified ecologist.	Training schedule or letter of confirmation from the principal contractor committing to provide relevant training. OR A copy of the specification clause requiring the training of the site's workforce by the principal contractor.	Keith Fisher , Shawn Nudd – To gain information from Ecologist
Requirement 7	The principal contractor records actions taken to protect biodiversity and monitor their effectiveness throughout key stages of the construction	A letter from the principal contractor confirming monitoring and reporting criteria for the development.	Keith Fisher , Shawn Nudd

	process. The requirement commits the principal contractor to make such records available where publicly requested.	OR A copy of the specification clause requiring the principal contractor to undertake monitoring and reporting.	– To gain information from Ecologist
Requirement 8	Where a new ecologically valuable habitat, appropriate to the local area, is created. This includes habitat that supports nationally, regionally or locally important biodiversity, and/or which is nationally, regionally or locally important itself; including any habitat listed in the UK Biodiversity Action Plan (UK BAP), Local Biodiversity Action Plan (LBAP), those protected within statutory sites (e.g. SSSIs), or those within non-statutory sites identified in local plans.	A copy of the proposed site plan highlighting the new ecologically valuable habitat. A SQE's report or letter confirming that the habitat supports the relevant biodiversity action plan(s).	Keith Fisher , Shawn Nudd – To gain information from Ecologist
Requirement 9	Where flora and/or fauna habitats exist on site, the contractor programmes site works to minimise disturbance to wildlife. For example, site preparation, ground works, and landscaping have been, or will be, scheduled at an appropriate time of year to minimise disturbance to wildlife. Timing of works may have a significant impact on, for example, breeding birds, flowering plants, seed germination, amphibians etc. Actions such as phased clearance of vegetation may help to mitigate ecological impacts. This additional requirement will be achieved where a clear plan has been produced detailing how activities will be timed to avoid any impact on site biodiversity in line with the recommendations of a suitably qualified ecologist.	The SQE's report or letter confirming actions required with respect to programming site works to minimise disturbance. The principal contractor's programme of works. OR Relevant section/clauses of the building specification or contract confirming that the programme of site works will minimise disturbance to wildlife in accordance with the SQE's recommendations.	Keith Fisher , Shawn Nudd – To gain information from Ecologist

12.10. Pollution

Pol 02: NOx Emissions			
Targeted: 3 of 3 Potential: 0 of 3			
Credit 1 - Up to 3 credits where;			Responsibility
Requirement 1	Where the plant installed to meet the building's delivered heating demand has, under normal operating conditions, a dry NOx emission level (measured at 0% excessO ₂) as set out below: <ul style="list-style-type: none"> 1 credit ≤100mg/kWh (space heating) 2 credits ≤70mg/kWh(space heating) 3 credits ≤40mg/kWh(space heating) - in addition for Education, Healthcare, Multi-Residential & Prison building types water heating ≤100mg/kWh 	Relevant section/clauses of the building specification or contract. Manufacturer's product details. Calculations from the project team. <i>Where relevant for multi residential buildings:</i> Evidence in line with the Design Stage evidence requirements of the CSH Issue Pol 2 OR A copy of the Design Stage CSH certificate and report from the CSH online reporting system confirming the number of credits achieved for CSH Issue Pol 2.	Mike Scales
Requirement 2	Report via the BREEAM scoring and reporting tool the direct and indirect NOx emissions in mg/kWh and energy consumption in kWh/m ² /yr from meeting the building's heating, cooling and hot water demands.	As requirement 1	Mike Scales

Pol 03: Surface Water Run Off			
Targeted: 4 of 5 Potential: 0 of 5			
Credit 1 - Up to 2 credits where;			Responsibility
Requirement 1	For two credits: Where the assessed development is situated in a flood zone that is defined by the relevant planning, policy and technical guidance documents, as having a low annual probability of flooding	Flood risk assessment Design drawings Where appropriate, correspondence from the appropriate statutory body confirming reduced annual probability of flooding due to existing flood defences. Where relevant for multi residential buildings: Evidence in line with the Design or Post Construction Stage requirements of the CSH Issue Sur 2 or certificate demonstrating compliance.	Andy Greenwood, Dale Barford
Requirement 2	For two credits: A site specific Flood Risk Assessment (FRA) confirms that there is a low risk of flooding from all sources.	As for requirement 1	Andy Greenwood, Dale Barford
Requirement 3	For one credit: Where the assessed development is situated in a flood zone that is defined by the relevant planning, policy and technical guidance	As for requirement 1	Andy Greenwood,

	documents, as having a medium or high annual probability of flooding and is not within the Functional Floodplain AND		Dale Barford
Requirement 4	For one credit: A site specific Flood Risk Assessment (FRA) confirms to the satisfaction of the local authority and statutory body that the development is appropriately flood resilient and resistant from all sources of flooding AND	As for requirement 1	Andy Greenwood, Dale Barford
Requirement 5	For one credit: 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 flood zone in which the assessed development is located (see Compliance notes for further guidance).	As for requirement 1	Andy Greenwood, Dale Barford
Credit 2 - 1 credit where;			Responsibility
Requirement 6	An appropriate consultant is appointed to carry out, demonstrate and/or confirm the following criteria:	Statement from the appropriate consultant confirming that they are qualified in line with the BREEAM definition. Consultants report containing all information necessary to demonstrate compliance including. <ol style="list-style-type: none"> 1. Type and storage volume (l) of the drainage measures 2. Total area of hard surfaces (m2) 3. Peak/Volume flow rates (l/s) pre and post development for the return period events 4. Additional allowance for climate change designed in to the system 5. Impact on the building of flooding from local drainage system failure Where relevant for multi residential buildings: Evidence in line with the Design or Post Construction Stage requirements of the CSH Issue Sur 1 or certificate demonstrating compliance.	Andy Greenwood, Dale Barford
Requirement 7	Where drainage measures are specified to ensure that the peak rate of run-off from the site to the watercourses (natural or municipal) is no greater for the developed site than it was for the pre-development site. This should comply at the 1 year and 100 year return period events.	As for requirement 6	Andy Greenwood, Dale Barford
Requirement 8	Calculations include an allowance for climate change; this should be made in accordance with current best practice planning guidance	As for requirement 6	Andy Greenwood, Dale Barford
Credit 3 - 1 credit where;			Responsibility
Requirement 9	Where flooding of property will not occur in the event of local drainage system failure (caused either by extreme rainfall or a lack of maintenance) AND EITHER Requirements 10 and 11 or 12-14	As for requirement 6	Andy Greenwood, Dale Barford
Requirement 10	The post development run-off volume, over the development lifetime, is no greater than it would have been prior to the assessed site's development.	As for requirement 6	Andy Greenwood, Dale Barford
Requirement	Any additional predicted volume of run-off for the 100 year 6 hour event must	As for requirement 6	Andy

11	be prevented from leaving the site by using infiltration or other SuDS techniques		Greenwood, Dale Barford
Requirement 12	Justification from the Appropriate Consultant indicating why the above criteria cannot be achieved i.e. where infiltration or other SuDS techniques are not technically viable options.	As for requirement 6	Andy Greenwood, Dale Barford
Requirement 13	The post development peak rate of run-off is reduced to a limiting discharge. The limiting discharge is defined as the following and the option with the highest flow rate must be achieved; a. The pre development 1-year peak flow rate OR b. The mean annual flow rate Qbar OR c. 2l/s/ha Note that for the 1-year peak flow rate the 1 year return period event criterion applies (as described in the peak run off criteria above).	As for requirement 6	Andy Greenwood, Dale Barford
Requirement 14	For either option above calculations must include an allowance for climate change; this should be made in accordance with current best practice planning guidance	As for requirement 6	Dale Barford , Andy Greenwood

Pol 04: Reduction of Night Time Light Pollution

Targeted: 1 of 1
Potential: 0 of 1

Credit 1 - 1 credit where;

			Responsibility
Requirement 1	The external lighting strategy has been designed in compliance with Table 1 (and its accompanying notes) of the ILP Guidance notes for the reduction of obtrusive light, 2011, (see Additional Information - Buildings located in Scotland must also refer to the Compliance Notes for additional criteria).	Design drawings Relevant section/clauses of the building specification or contract or external lighting design data/calculations In the case of the external lighting design, the M&E engineer or lighting designer must provide indicative examples of where and how the strategy complies with the assessment criteria.	Mike Scales
Requirement 2	All external lighting (except for safety and security lighting) can be automatically switched off between 2300hrs and 0700hrs. This can be achieved by providing a timer for all external lighting set to the appropriate hours.	As for requirement 1	Mike Scales
Requirement 3	If safety or security lighting is provided and will be used between 2300hrs and 0700hrs, 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, for example by using an automatic switch to reduce the lighting levels at 2300 or earlier.	As for requirement 1	Mike Scales
Requirement	Illuminated advertisements, where specified, must be designed in	As for requirement 1	Mike Scales

4	compliance with ILE Technical Report 5 - The Brightness of Illuminated Advertisements		
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Pol 05: Noise Attenuation**Targeted: 1 of 1****Potential: 0 of 1****Credit 1 - 1 credit where;****Responsibility**

Requirement 1	The credit can be awarded by default where there are or will be no noise-sensitive areas or buildings within 800m radius of the assessed development.	Design drawings highlighting: 1. All existing and proposed noise-sensitive buildings local to, and within, the site boundary 2. Proposed sources of noise from the new development 3. Distance (m) from these buildings to the assessed development.	Shawn Nudd, Keith Fisher – To gain information from Acoustician
Requirement 2	Where there are or will be noise-sensitive areas or buildings within 800m radius of the assessed development a noise impact assessment in compliance with BS 7445:1991 has been carried out and the following noise levels measured/determined: a. Existing background noise levels at the nearest or most exposed noise-sensitive development to the proposed development or at a location where background conditions can be argued to be similar. b. The rating noise level resulting from the new noise-source (see also Compliance note: Compliance at the design stage).	The acoustician's report, acoustician's qualifications and professional status. OR Relevant section/clauses of the building specification or contract requiring a noise assessment by a suitably qualified acoustician in compliance with BS 7445:1991. OR A letter from the client or design team confirming that they will appoint an acoustician to carry out a noise assessment in compliance with BS 7445:1991.	Shawn Nudd, Keith Fisher – To gain information from Acoustician
Requirement 3	The noise impact assessment must be carried out by a suitably qualified acoustic consultant holding a recognised acoustic qualification and membership of an appropriate professional body (see Relevant definitions in the Additional Information section).	As for requirement 2	Shawn Nudd, Keith Fisher – To gain information from Acoustician
Requirement 4	The noise level from the proposed site/building, as measured in the locality of the nearest or most exposed noise-sensitive development, is a difference no greater than +5dB during the day (0700hrs to 2200hrs) and +3dB at night (2300hrs to 0700hrs) compared to the background noise level.	Acoustician's report with recommendations for noise attenuation measures. AND EITHER A marked-up design plan highlighting the specification of the acoustician's attenuation measures OR A formal letter from the client or design team confirming where relevant, that attenuation measures recommended by an appointed suitably qualified acoustician will be installed.	Shawn Nudd, Keith Fisher – To gain information from Acoustician
Requirement 5	Where the noise source(s) from the proposed site/building is greater than the levels described in criterion 4, measures have been installed to attenuate the	As for requirement 4	Shawn Nudd, Keith Fisher

	noise at its source to a level where it will comply with criterion 4.		– To gain information from Acoustician
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12.11. Innovation

Man 01: Sustainable Procurement			
Targeted: 1 of 1 Potential: 0 of 1			
Credit 1 - 1 credit where;			Responsibility
Requirement 25	<p>There is commitment or contract for the facilities manager or equivalent to undertake the following at quarterly intervals for the first 3 years after occupation:</p> <ol style="list-style-type: none"> Collect the occupant satisfaction, energy consumption and water consumption data Utilise the data to check the building is performing as expected and make any necessary adjustments Set targets for reducing water and energy consumption and monitor progress towards these Feedback any 'lessons learned' to the design team and developer for use in future projects Provision of the actual annual building energy, water consumption and occupant satisfaction data to BRE Global. 	Evidence as for standard criteria (for data collection and aftercare support credit), but from the end user.	Shawn Nudd, Keith Fisher – To gain confirmation from Client

13. Tracker+

Once the required rating has been confirmed and the number credits that are to be targeted have been agreed, the design team will be required to supply detailed documentary evidence to ensure the aspired BREEAM rating is achieved. To facilitate this, Stroma Technology uses a third party online project management and assessment system for the collection of BREEAM evidence. This system can be accessed online at www.tracker-plus.co.uk. Each Consultant on the design team will be given a username and password to log in to the tracker plus system. Once logged in, the Consultant will be able to select the credits that they are responsible for and see a full breakdown of the evidence that will need to be submitted to award those credits and allow the BREEAM assessment to progress accordingly. Once the consultant is confident they have an evidence document (e.g. a letter of intent, specification clause, drawing, report etc.) that will satisfy the BREEAM requirements for a particular credit, they may upload the particular document via the tracker plus system. The Stroma BREEAM Assessor will then be noted via the system and will review the uploaded evidence. If the evidence that has been submitted complies with the BREEAM requirements then the assessor will award the credits and the current BREEAM score will be updated accordingly. This process will be repeated until all the targeted credits have been awarded by the assessor and the assessment is ready to be submitted to the BRE to undergo their Quality Assurance Procedures.

The full BREEAM evidence requirements can be accessed online, with further copies sent to the design team individually once the design stage assessment has begun.

14. 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 a specific stages of the design and 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 B		
Credit	Requirement/s	Action Required
Man01 Sustainable Procurement	1	Define roles and responsibilities within the design team
Man04 Stakeholder Participation	Credit 1	Begin stakeholder consultation process

RIBA STAGE C		
Credit	Requirement/s	Action Required
Hea06 Safety and Security	13	There must be consultation with the suitably qualified security consultant (ALO) at stage C latest
Ene04 LZC Technologies	3	The LZC feasibility study must be carried out at this stage of the concept design

RIBA STAGE D		
Credit	Requirement/s	Action Required
Hea03 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 (liters/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 E		
Credit	Requirement/s	Action Required
Man02 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 Mitigating Ecological Impact	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 K		
Credit	Requirement/s	Action Required
Man01 Sustainable Procurement	22	A specialist commissioning manager is to be appointed at to undertake commissioning at this stage of the project

RIBA STAGE L		
Credit	Requirement	Action Required
Man01 Sustainable Procurement	24	<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