Netley Project (Educational Element_PRU & Primary)
Pre-Assessment Report
BREEAM New Construction 2011

WSP Environment & Energy

23/03/2012

QM

Issue/ Revision	Issue 1	Revision 1	Revision 2
Remarks	BREEAM New Construction 2011 Pre- Assessment	BREEAM New Construction 2011 Pre- Assessment - Stage D	
Date	16/12/2011	23/03/2012	
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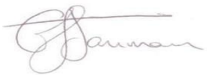
Signature			
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BRE Reference Number	TBC		

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CONTENTS

EXECUTIVE SUMMARY

WSP Environment & Energy Ltd have been appointed to provide a BREEAM New Construction pre-assessment and advice for the proposed Netley Project (Educational Element_PRU & Primary).

This report summarises the initial performance of the building when assessed against BREEAM New Construction 2011. It is understood that the scheme is now to attain a BREEAM Excellent rating, the mechanism and strategy for this will be developed further during RIBA Stage E and the following detailed design.

The following assessment summary was completed with the design team during an advisory workshop on the 30th November 2011. The initial workshop evaluated all elements within the scheme against the BREEAM New Construction 2011 requirements. This allowed the design team to understand those areas which will need consideration during the detailed design process. The BREEAM New Construction 2011 criteria has been scoped based on the characteristics of the developments and the 'education' elements of the criteria.

This report provides an indicative assessment score and a simplified explanation of that which would be required from the design team to satisfy the BREEAM Certification audit trail. Further information will be required for the full assessment.

The BREEAM rating is divided into five levels, with PASS, GOOD, VERY GOOD, EXCELLENT and OUTSTANDING being the achievable ratings. The percentage score achieved within the assessment is categorised accordingly, based on calculations in the BREEAM 2011 software:

Minimum scores required for a Design Assessment:

Rating	Percentage
PASS	30%
GOOD	45%
VERY GOOD	55%
EXCELLENT	70%
OUTSTANDING	85%

During the workshop those performance criteria which the design team expect to achieve were noted. These are recorded as "Targeted". Further to this, those criteria which the team felt could be attained with additional investigation/ consideration/ cost were also noted, those are recorded as "Additional Identified".

The credits listed below have been identified as additional credits, and require immediate attention from the design team. ***The assessor should be informed as soon as the design team have made a decision regarding the feasibility of targeting the credits which are identified as additional in this report.***

Additional credits

1) Man 1- Sustainable Procurement
a) Project Brief and Design: 1 credit
b) Construction and Handover: 1 credit

2) Hea 1 - Visual Comfort
a) Daylighting: 1 credit

3)Hea 3- Thermal Comfort
a) Thermal Zoning and Control Strategy: 1 credit

4) Hea 5- Acoustic Performance
Roof noise: 1 credit

5) Hea 6- Safety and Security
a) Safe access: 1 credit

6) Ene 4- Low or Zero Carbon Technology
a) Low or Zero carbon technology specification and installation: 1 credit

7) Tra 3- Cyclist facilities
a) Cycle spaces: 1 credit
b) Cyclist facilities: 1 credit
***8) Wat 1- Water consumption** : 1 credit*

***9)Mat 3- Responsible Sourcing of materials** : 1 credit*

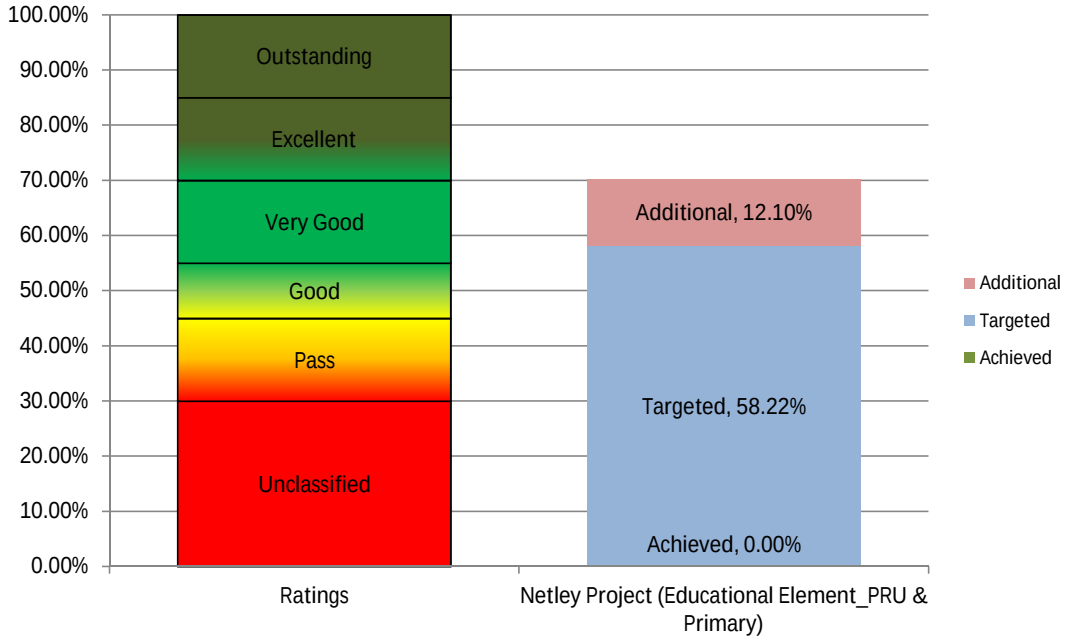
10) Pol 1- Impact of Refrigerants
a) Refrigerant leak detection and containment: 1 credit

11) Pol 3- Surface Water Run-Off
a) Flood risk: 2 credits

Based on those criteria which were identified by the design team as targeted and the subsequent evaluation by the assessor the following scoring scenarios are shown:

	Winsford Academy
Targeted	**58.22%**
Targeted resultant	**Very Good**
Additional Identified	**70.32%**
Additional Identified resultant	**Excellent**

Please note that additional mandatory items are required to achieve the various thresholds, these are listed within section 6 and discussed in detail in Appendix A.



1. DEVELOPMENT

The development under assessment is the proposed new Pupil Referral Unit, as part of the Netley Project, Camden, London.

The new building will comprise the following key areas:
- Administration
- Kitchen & dining areas
- External landscaping and car parking

This report considers the initial performance of Netley Project (Educational Element_PRU & Primary) against the BREEAM New Construction 2011 assessment criteria. At this stage there is an aspiration for a 'Very Good' rating.

2. DESIGN TEAM

Role	*Company/ Organisation*	*Contact*
Contractor:	BAM	Peter Bennett
Architects:	Pollard Thomas Edwards Architects	Cathy Buckley
M&E Consultant	WSP UK	Paul Cooper
Structural Engineer	WSP UK	Steve Dillon
Energy Consultant	WSP UK	Neville Rye
BREEAM Assessors:	WSP Environment & Energy	Gareth Sammons

3. INTRODUCTION

WSP Environment & Energy are licensed by BRE under the BREEAM New Construction Scheme.

This report provides the outcome of an advisory workshop, held on the 30th November 2011, where the proposed development was discussed against the requirements of BREEAM New Construction 2011 criteria, specifically scoped for the proposed development.

The audit requirements for achieving a BREEAM certificate can be onerous and in a change from previous versions of BREEAM, the full assessment manual is publicly available. Copies of all BREEAM manuals can be downloaded from http://www.breeam.org/

In addition, it has been recognised that the Green Guide to Specification is a dynamic document and has therefore now been released for public access on http://www.thegreenguide.org.uk/

The design team should make use of these resources where required.

4. ASSESSMENT STRATEGY

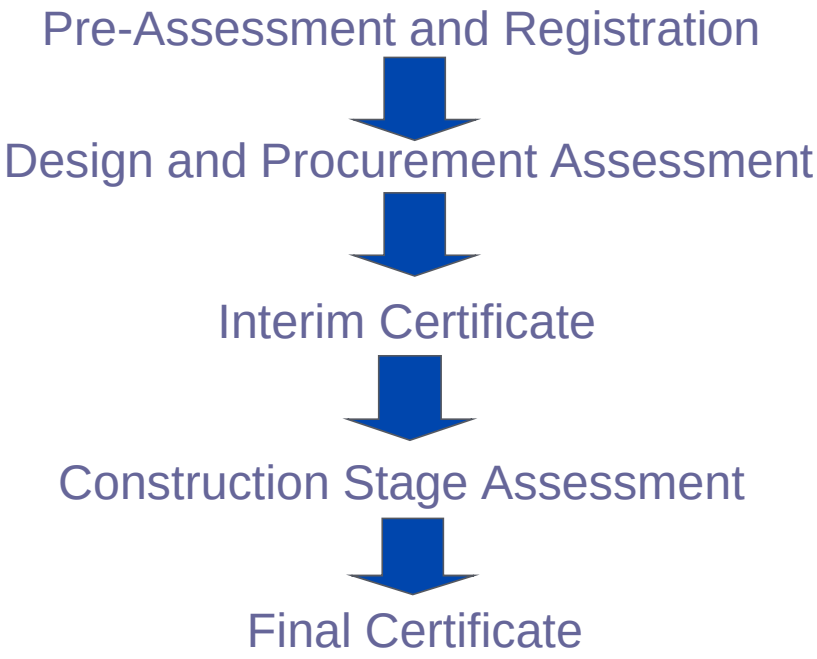
The following flow diagram shows the key stages of a BREEAM assessment for the scheme. This document is the first step and shows the pre-assessment considerations and early indicative performance against BREEAM.

The Design and Procurement (D&P) assessment will commence during detailed design. This Pre-Assessment and advice provided by the assessor during the D&P assessment will allow the design team to produce the required design and corresponding auditable material to comply with the BREEAM requirements.

Upon completion of the D&P assessment the assessor will submit a recommendation report to BRE. BRE undertake an independent quality check on that recommendation and if deemed appropriate will issue an Interim (design stage) certificate showing the rating achieved.

In order to complete the assessment and achieve a full BREEAM certificate, the assessor will be required to verify performance of the scheme throughout construction and once again submit to BRE recommending full certification.

Both the D&P and Construction stage assessments are based on information provided by the design team and construction team to demonstrate compliance with the BREEAM requirements. The production of this material and the verification by the assessor usually commences once planning permission has been agreed and the detailed design commences.



5. BACKGROUND

BREEAM is a market-focused tool aimed at encouraging significant improvements in the performance of buildings through the recognition and demonstration of improvements made to those buildings.

The BREEAM score provides a means of measuring the environmental impact of a building throughout its life and so benchmarking this against other buildings. There are a number of key uses for the methodology, which provide the following benefits:

- Maximising the building's environmental performance during the design, construction and operation of new build, refurbishment and fit out schemes.
- Specifying environmental requirements in the procurement and management of developments.
- Providing an independently verifiable measurement tool for use within Environmental Management Systems.
- Providing an independently verifiable environmental label for marketing and promotional purposes.

The BREEAM rating is divided into five levels, with PASS, GOOD, VERY GOOD, EXCELLENT and OUTSTANDING being the achievable ratings. The percentage score achieved within the assessment is categorised accordingly, based on calculations in the BREEAM 2011 software:

Minimum score required for a Design Assessment

Rating	Percentage Required
PASS	30%
GOOD	45%
VERY GOOD	55%
EXCELLENT	70%
OUTSTANDING	85%

BACKGROUND TO BREEAM NEW CONSTRUCTION 2011

Type of building projects that can be assessed using BREEAM

A BREEAM assessment can be carried out at Design Stage and Post Construction stage for the following types of building project only:

• Whole new buildings
• New build extensions to existing buildings
• Major refurbishments of existing buildings
• A combination of new-build and existing building refurbishment
• New build or refurbishments which are part of a larger mixed-use building
• Existing building fit-out

BREEAM New Construction 2011 can only be used to assess new non-domestic buildings. Other assessment methodologies currently exist for other building types as follows:
- Existing buildings (major refurbishment and fit out) BREEAM 2008
- New build residential - Code for Sustainable Homes
- Data Centres - BREEAM Data Centres 2010

A number of building types and functions can be assessed under BREEAM New Construction 2011, which are categorised as follows:
Commercial - Offices, Retail (which includes restaurants, cafes, drinking establishments and hot food takeaways) and Industrial
Public (non housing) - Education, Healthcare, Prisons, Law Courts.
Multi-Residential Accommodation - Residential Institutions (care homes, student accommodation, military barrack)
Other - Residential Institutions (hotel, training centre), Non Residential Institutions, Assembly & Leisure, Other (transport hub, research & development, crèche).

BREEAM New Construction 2011 Assessor Manual, BRE Global Ltd

6. CATEGORY WEIGHTINGS AND CREDIT PERCENTAGES

The categories within BREEAM 2011 are weighted according to importance by BRE. Within each category there are a different number of credits and therefore individual credits carry specific percentage weightings, as a percentage of the overall total.

The number of credits available is based on the scoping of appropriate assessment criteria produced within BRE's assessment tool. This is based on the type of building and room functions within.

BREEAM 2011 incorporates a mechanism whereby schemes achieving exemplar performance in a particular area or demonstrating innovation can achieve an additional 1% for each item up to a maximum of 10. The innovation section is shown at the end of the main assessment table.

MANDATORY CREDITS

To achieve a BREEAM rating, the minimum percentage score must be achieved and the mandatory standards (number of credits achieved) applicable to that rating level must be complied with. These are shown below:

BREEAM Issue	BREEAM Rating/ Minimum Number of Credits				
	Pass	Good	Very Good	Excellent	Outstanding
Man 1 - Sustainable Procurement	1	1	1	1	2
Man 2 - Responsible Construction Practices	-	-	-	1	2
Man 4 - Stakeholder Participation (Building User Information)	-	-	-	1	1
Hea 1 - Visual Comfort (High Frequency Ballasts)	1	1	1	1	1
Hea 4 - Water Quality (Minimising Risk of Legionella)	1	1	1	1	1
Ene 1 - Reduction of CO_2 emissions				6	10
Ene 2 - Energy Monitoring (first credit)			1	1	1
Ene 4 - Low or Zero Carbon Technologies				1	1
Wat 1 - Water Consumption		1	1	1	2
Wat 2 - Water Monitoring		1	1	1	1
Mat 3 - Responsible Sourcing (Timber only)	Timber Criteria	Timber Criteria	Timber Criteria	Timber Criteria	Timber Criteria
Wst 1 - Construction Site Waste Management	-	-	-	-	1
Wst 3 - Operational Waste				1	1
Le 4 - Mitigating Ecological Impact			1	1	1

7. REPORT FORMAT

The following table shows the BREEAM New Construction criteria against which the building is being assessed. The full criteria and commentary is provided in Appendix A of this report, this includes specific actions relating to the achievement of particular criteria. A summary of the actions have been shown, however the full requirements for the BREEAM audit trail can be viewed within the assessment manual or can be provided upon request.

Two scoring scenarios are presented for the assessment, showing the 'Credits Targeted' and those additional measures identified for consideration to increase the BREEAM score.

8. EVIDENCE

In order to complete the assessment and recommend certification to BRE, each credit that is targeted must be confirmed using supporting documentation. At the design stage examples of information that could be provided include copies of design drawings, specification and preliminary documents, letters of correspondence or minutes from meetings signed off by all parties.

9. DISCLAIMER

WSP Environment & Energy has undertaken the followingBREEAM New Construction 2011 Pre-Assessment Report for Netley Project (Educational Element_PRU & Primary), with the assistance of the Design Team.

All information provided has been accepted in good faith as being accurate and representative of the proposed scheme at the time of review. The credits and credit requirements are based on the BREEAM New Construction 2011 methodology.

The assessor (for itself and as agent for its staff) and its staff shall not be liable whether in Contract or in Tort or otherwise for any loss or damage sustained as a result of using or relying on the information contained in this report or the final certificate from BRE that it is based on.

10. COPYRIGHT

Netley Project (Educational Element_PRU & Primary)
11.0 Pre-Assessment Summary

	Score	Cumulative	Resultant
Targeted	58.22%	58.22%	Very Good
Additional	12.10%	70.32%	Excellent

Mandatory credit for Excellent

(Please also refer to Notes at the end of the Summary Table)

Ref	Title	Sub-Title	Max Available	% Worth (in total for each question)	Targeted	Additional	Responsibility
Management							
Man 1	Sustainable Procurement	1) Project Brief & Design	1	0.55%	1	-	BAM
			1	0.55%	1	-	
			1	0.55%	1	-	
			1	0.55%	-	1	
		2) Construction & Handover	1	0.55%	-	1	WSP M&E BAM
			1	0.55%	1	-	
		3) Aftercare	1	0.55%	1	-	BAM
			1	0.55%	-	-	
Man 2	Responsible Construction Practices		1	0.55%	1	-	BAM
			1	0.55%	1	-	
Man 3	Construction Site Impacts	Energy Consumption	1	0.55%	1	-	BAM
		Water Consumption	1	0.55%	1	-	
		Transport of Construction Materials and Waste	1	0.55%	1	-	
		Timber Procurement	1	0.55%	1	-	
		Construction Site	1	0.55%	1	-	
Man 4	Stakeholder Participation	Consultation	1	0.55%	-	-	PTEa and Design team
		Inclusive & Accessible Design	1	0.55%	1	-	
		Building User Information	1	0.55%	1	-	
		Post Occupancy Evaluation and Information Dissemination	1	0.55%	-	-	

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Mandatory credit for Excellent

(Please also refer to Notes at the end of the Summary Table)

Ref	Title	Sub-Title	Max Available	% Worth (in total for each question)	Targeted	Additional	Responsibility
Man 5	Life Cycle Cost and Service Life Planning		1	0.55%	-	-	N/A
			1	0.55%	-	-	
			1	0.55%	-	-	
Health & Wellbeing							
Hea 1	Visual Comfort	Pre-requisite	-	-	yes	-	WSP M&E
		Daylighting	1	1.00%	-	1	WSP M&E
		Glare control, view	1	1.00%	1	-	PTEa
		Internal & external	1	1.00%	1	-	WSP M&E
Hea 2	Indoor Air Quality	Indoor Air Quality	1	1.00%	-	-	N/A
		VOC (specification)	1	1.00%	-	-	N/A
		VOC (testing)	1	1.00%	-	-	N/A
		Potential for natural ventilation	1	1.00%	1	-	N/A
Hea 3	Thermal Comfort	Thermal Modelling	1	1.00%	1	-	WSP M&E
		Thermal Zoning and Control Strategy	1	1.00%	-	1	WSP M&E
Hea 4	Water Quality		1	1.00%	1	-	PTEa

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Mandatory credit for Excellent

(Please also refer to Notes at the end of the Summary Table)

Ref	Title	Sub-Title	Max Available	% Worth (in total for each question)	Targeted	Additional	Responsibility
Hea 5	Acoustic Performance	BB93	1	1.00%	1	-	Acoustician
		Roof Noise	1	1.00%	-	1	0
		Music Accommodation	1	1.00%	1	-	0
Hea 6	Safety and Security	Safe access	1	1.00%	-	1	PTEa
		Security of site & building	1	1.00%	1	-	PTEa
Energy							
Ene 1	Reduction of CO2 Emissions		15	11.88%	5	-	WSP M&E
Ene 2	Energy Monitoring	Monitoring of Major Energy Consuming Systems	1	0.79%	1	-	WSP M&E
Ene 3	External Lighting		1	0.79%	1	-	WSP M&E

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Mandatory credit for Excellent
(Please also refer to Notes at the end of the Summary Table)

Ref	Title	Sub-Title	Max Available	% Worth (in total for each question)	Targeted	Additional	Responsibility
Ene 4	Low zero carbon technologies	Feasibility Study/ Renewable Supply Contract	1	0.79%	1	-	WSP M&E
		Low or Zero Carbon Technology Specification and Installation	3	2.38%	2	1	
		Free Cooling	1	0.79%	1	-	
Ene 8	Energy efficient equipment		2	1.58%	-	-	N/A
Transport							
Tra 1	Provision of public transport		3	3.43%	3	-	PTEa
Tra 2	Proximity to amenities		1	1.14%	1	-	PTEa
Tra 3	Cyclist Facilities	Cycle Spaces	1	1.14%	-	1	PTEa
		Cyclist Facilities	1	1.14%	-	1	PTEa
Tra 5	Travel plan		1	1.14%	1	-	Transport consultant

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Mandatory credit for Excellent

(Please also refer to Notes at the end of the Summary Table)

Ref	Title	Sub-Title	Max Available	% Worth (in total for each question)	Targeted	Additional	Responsibility
Water							
Wat 1	Water Consumption		5	3.33%	1	1	PTEa and WSP M&E
Wat 2	Water Monitoring		1	0.67%	1	-	WSP M&E
Wat 3	Major leak detection & prevention	Leak Detection on Building's Mains Water supply	1	0.67%	1	-	WSP M&E
		Flow Control Device	1	0.67%	1	-	WSP M&E
Wat 4	Water efficient equipment		1	0.67%	1	-	PTEa
Materials							
Mat 1	Life cycle impacts		6	5.77%	2	-	PTEa
Mat 2	Hard landscaping and boundary protection		1	0.96%	1	-	PTEa
Mat 3	Responsible sourcing of materials		3	2.88%	1	1	BAM
Mat 4	Insulation	Embodied Impact	1	0.96%	1	-	WSP M&E and PTEa
		Responsible sourcing	1	0.96%	1	-	WSP M&E and PTEa
Mat 5	Designing For Robustness		1	0.96%	1	-	PTEa

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Mandatory credit for Excellent

(Please also refer to Notes at the end of the Summary Table)

Ref	Title	Sub-Title	Max Available	% Worth (in total for each question)	Targeted	Additional	Responsibility
Waste							
Wst 1	Construction Site Waste Management	Non-Hazardous Construction Waste	1	1.25%	1	-	BAM
			1	1.25%	1	-	
			1	1.25%	-	-	
		Waste diverted from Landfill	1	1.25%	1	-	
Wst 2	Recycled aggregates		1	1.25%	1	-	WSP Structures
Wst 3	Operational Waste		1	1.25%	1	-	BAM
Land Use & Ecology							
LE1	Site Selection	Re-use of Land	1	1.00%	1	-	PTEa
		Contaminated Land	1	1.00%	-	-	PTEa
LE2	Ecological value of site AND Protection of ecological features		1	1.00%	1	-	PTEa and SQE
LE3	Mitigating Ecological impact		1	1.00%	1	-	SQE
			1	1.00%	1	-	
LE4	Enhancing Site Ecology		1	1.00%	1	-	SQE
			1	1.00%	1	-	
			1	1.00%	-	-	N/A
LE5	Long term impact on biodiversity		1	1.00%	1	-	SQE
			1	1.00%	1	-	

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Mandatory credit for Excellent

(Please also refer to Notes at the end of the Summary Table)

Ref	Title	Sub-Title	Max Available	% Worth (in total for each question)	Targeted	Additional	Responsibility
Pollution							
Pol 1	Impact of refrigerants	Direct Effect Life Cycle CO2 Equivalent Emissions	1	0.77%	-	-	N/A
			1	0.77%	-	-	N/A
		Refrigerant Leak Detection and Containment	1	0.77%	-	1	WSP M&E
Pol 2	NOx emissions from heating source		1	0.77%	-	-	N/A
			1	0.77%	-	-	N/A
			1	0.77%	-	-	N/A
Pol 3	Surface water run off	Flood Risk	1	0.77%	-	1	Structures / Drainage engineers
			1	0.77%	-	1	
		Surface water run off	1	0.77%	1	-	
			1	0.77%	1	-	
		Minimising water course pollution	1	0.77%	1	-	
Pol 4	Reduction of Night Time Light Pollution		1	0.77%	1	-	WSP M&E
Pol 5	Noise Attenuation		1	0.77%	1	-	WSP M&E

Netley Project (Educational Element_PRU & Primary)
11.0 Pre-Assessment Summary

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Targeted	58.22%	58.22%	Very Good
Additional	12.10%	70.32%	Excellent

Mandatory credit for Excellent

(Please also refer to Notes at the end of the Summary Table)

Ref	Title	Sub-Title	Max Available	% Worth (in total for each question)	Targeted	Additional	Responsibility
Innovation							
Man 1	Sustainable Procurement		1	1.00%	-	-	N/A
Man 2	Responsible Construction Practices		1	1.00%	-	-	N/A
Hea 1	Visual Comfort		1	1.00%	-	-	N/A
Ene 1	Reduction of CO2 emissions		5	5.00%	-	-	N/A
Ene 4	Low or Zero Carbon Technologies		1	1.00%	-	-	N/A
Wat 1	Water Consumption		1	1.00%	-	-	N/A
Mat 1	Materials Specification		1	1.00%	-	-	N/A
Mat 3	Responsible Sourcing of Materials		1	1.00%	-	-	N/A
Wst 1	Construction Site Waste Management		1	1.00%	-	-	N/A

Netley Project (Educational Element_PRU & Primary)
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Additional	12.10%	70.32%	Excellent

Mandatory credit for Excellent

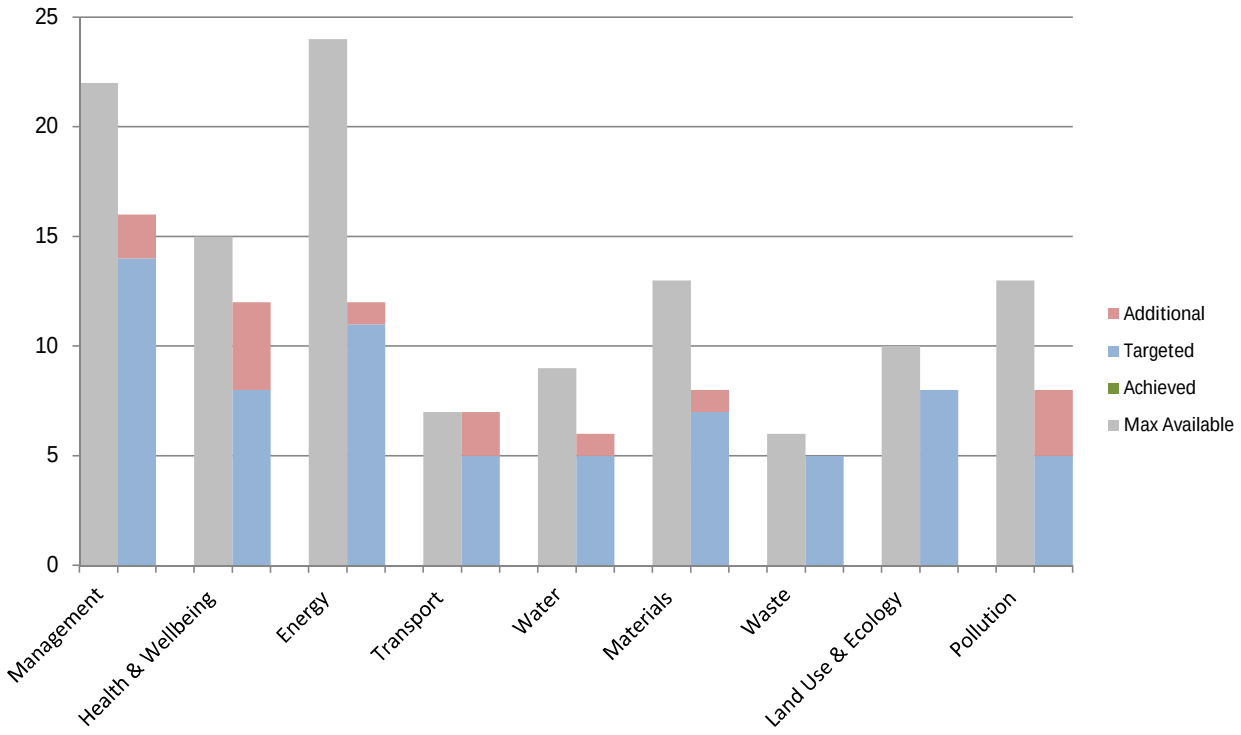
(Please also refer to Notes at the end of the Summary Table)

Ref	Title	Sub-Title	Max Available	% Worth (in total for each question)	Targeted	Additional	Responsibility
Wst 2	Recycled aggregates		1	1.00%	-	-	N/A
Additional Innovation credit - requiring application to BRE.			1	1.00%	-	-	N/A

Notes

1) It is mandatory to achieve 1 credit under the Man 1 issue to achieve a BREEAM rating of 'Excellent'
2) It is mandatory to achieve 1 credit under the Man 2 issue to achieve a BREEAM rating of 'Excellent'
3) It is mandatory to achieve a minimum of 6 credits under the Ene 1 issue to achieve a BREEAM rating of 'Excellent'
4) It is mandatory to meet the 'Timber Criteria' under the Mat 3 issue for all BREEAM ratings

Credit Achievement Tracker



Appendix A - Netley Project (Educational Element_PRU & Primary)

Key:

Mandatory for Excellent

Ref	Title	Sub-Title	BREEAM Criteria	Max Available	% Worth (in total for each question)	Targeted	Additional	Comments from Design Team 30/11/11	Headline Actions for Consideration	Indicative timeframe for Consideration	Indicative Responsibility
Management											
		1) Project Brief & Design	*One credit in Man 1 is mandatory for an Excellent* One credit where the client, building occupier, design team and contractor are involved in the project from RIBA Stage B with appropriate roles and responsibilities and a compliant training schedule needs to be produced for the building occupiers.	**1**	**0.55%**	**1**	**-**	The design team stated that the requirements to achieve this credit, as listed in **Appendix B**, would be met. **Credit targeted.**	**Project brief and design** The following documents should be provided: 1) Documentation to confirm when collaborations began 2) Training Schedule 3) BREEAM AP appointment letter, relevant contract clauses, meeting minutes and agendas.	RIBA Stage B	BAM
			One credit where a BREEAM AP is appointed at RIBA Stage C, the BREEAM performance targets have been contractually agreed and the defined BREEAM targets are achieved.	**1**	**0.55%**	**1**	**-**	The design team stated that a BREEAM Accredited Professional would be appointed at the Concept Design Stage (RIBA Stage C), and that the performance targets would be contractually agreed. **Credit targeted.**		RIBA Stage C	BAM
			One credit where the BREEAM AP monitors progress by attending design team meetings during the feasibility stages (RIBA stage B to E) and prepares regular written reports.	**1**	**0.55%**	**1**	**-**	The design team stated that the appointed BREEAM AP's scope of works would include attendance at the design team meetings and the submission of regular written reports to keep the design team updated on their progress. **Credit targeted.**		RIBA Stage C	BAM
			One credit where the BREEAM AP monitors progress during RIBA Stage F to L, the BREEAM targets form a requirement of the principal contractor, the BREEAM AP provides regular written reports and the BREEAM targets are achieved at the post construction stage.	**1**	**0.55%**	**-**	**1**	The design team thought that the appointed BREEAM AP's scope of works could include the monitoring of progress during the required RIBA stages (A-L) and perform all the tasks as listed in the adjacent column (BREEAM Criteria). Until further confirmation of the scope of works is provided, this credit has been identified as additional. **Credit identified as additional.**		RIBA Stage C	BAM

Key:

Mandatory for Excellent

Ref	Title	Sub-Title	BREEAM Criteria	Max Available	% Worth (in total for each question)	Targeted	Additional	Comments from Design Team 30/11/11	Headline Actions for Consideration	Indicative timeframe for Consideration	Indicative Responsibility
Man 1	**Sustainable Procurement**	**2) Construction & Handover**	One credit where a thermographic survey in accordance with the requirements is incorporated within the budget and undertaken upon completion. Any defects identified must be rectified. The survey should be in accordance with the appropriate standard and by a professional holding a valid Level 2 certificate in thermography (For more information please visit the UKTA website: http://www.ukta.org). The survey should confirm the following: a) Continuity of insulation in accordance with the construction drawings b) Avoidance of excessive thermal bridging c) Avoidance of air leakage paths through the fabric (except through intentional openings)	**1**	**0.55%**	**-**	**1**	The M&E engineers stated that the requirement for a thermographic survey to be carried out would be included in the specifications. However, the design team were unsure whether the costs related to the thermographic survey were included within the project budget. Until further confirmation is provided, this credit has been identified as additional. **Credit identified as additional.** *If this credit is sought at a later stage, then it should be in accordance with the appropriate standard and by a professional holding a valid Level 2 certificate in thermography (For more information please visit the UKTA website: http://www.ukta.org).* *The survey should confirm the following:* *a) Continuity of insulation in accordance with the construction drawings* *b) Avoidance of excessive thermal bridging* *c) Avoidance of air leakage paths through the fabric (except through intentional openings)* *AND Any defects identified should be rectified.*	**Construction & handover** The following documents should be provided: 1) Written confirmation that a Thermographic survey is within the project budget and the proposed scope of works. 2) Written confirmation of the commissioning responsibilities and the commissioning schedule.	RIBA Stage B	WSP M&E BAM
			One credit where an appropriate project team member has been appointed to monitor commissioning on behalf of the client to ensure commissioning will be carried out in line with current best practice.	**1**	**0.55%**	**1**	**-**	The design team stated that an appropriate team member would be appointed to complete the commissioning tasks as required by BREEAM. A specialist commissioning manager should also be appointed and their scope of works should include all the items listed in **Appendix C**. The requirements to achieve this credit are listed in **Appendix C** of this report, and the tenants' specifications should comply with those. **Credit targeted.**			

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Key:

Mandatory for Excellent

Ref	Title	Sub-Title	BREEAM Criteria	Max Available	% Worth (in total for each question)	Targeted	Additional	Comments from Design Team 30/11/11	Headline Actions for Consideration	Indicative timeframe for Consideration	Indicative Responsibility
		3) Aftercare	One credit where seasonal commissioning will be carried out for both simple and complex systems during the first year of occupation, in accordance with the requirements.	**1**	**0.55%**	**1**	**-**	The design team stated that seasonal commissioning will be undertaken as per the BREEAM requirements (please refer to **Appendix D**). **Credit targeted.**	**Aftercare** The following documents should be provided: Written confirmation of the commissioning responsibilities	RIBA Stage E	BAM
			One credit where there is a mechanism to collect energy & water data for 12 months post occupation and discrepancies are analysed. There is a commitment to provide aftercare support.	**1**	**0.55%**	**-**	**-**	The requirements for this credit were discussed and the design team decided not to target this credit. **Credit not targeted.**	No action required.	N/A	N/A

Appendix A - Netley Project (Educational Element_PRU & Primary)

Key:

Mandatory for Excellent

Ref	Title	Sub-Title	BREEAM Criteria	Max Available	% Worth (in total for each question)	Targeted	Additional	Comments from Design Team 30/11/11	Headline Actions for Consideration	Indicative timeframe for Consideration	Indicative Responsibility
Man 2		**Responsible Construction Practices**	One credit where evidence provided demonstrates that there is a commitment to comply with best practice site management principles. *One credit mandatory for an Excellent rating*	**1**	**0.55%**	**1**	**-**	BAM, the principal contractor, confirmed that they will register the project with the Considerate Construction Scheme (CCS), and their performance will be assessed against the CCS. **Credit targeted.**	A written commitment to achieve certification under the Considerate Constructors Scheme should be provided. <u>Note</u>: *To achieve both credits, the above commitment should extend to the achievement of a high score (+32 points) under the scheme.* *To achieve an innovation/ exemplar credit (see Innovations section below) greater than 36 points within CCS are required.*	RIBA Stage E	BAM
			Two credits where evidence provided demonstrates that there is a commitment to go beyond best practice site management principles.	**1**	**0.55%**	**1**	**-**	BAM confirmed verbally that they have scored 38 points in many of their previous projects. It was thought likely that a similarly high score could be achieved on the project being assessed. **Credit targeted.**			

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Key:

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Ref	Title	Sub-Title	BREEAM Criteria	Max Available	% Worth (in total for each question)	Targeted	Additional	Comments from Design Team 30/11/11	Headline Actions for Consideration	Indicative timeframe for Consideration	Indicative Responsibility
Man 3	Construction Site Impacts	**Energy Consumption**	One credit where energy consumption on site is monitored, recorded and reported using the BREEAM scoring and reporting tool.	1	0.55%	1	-	The design team stated that BAM should be able to fulfil the requirement to gain the credit under this BREEAM issue. BAM should thus ensure that the energy consumption (kWh) on site from the use of construction plant, equipment (mobile and fixed) and site accommodation are monitored and recorded. This data will then be reported via the BREEAM scoring and reporting tool. **Credit targeted.**	A written confirmation of commitment to Environmental policies for the development and supply copies of documentation where relevant for the BREEAM audit trail (Relevant section/ clauses of the building specification or contract OR A signed and dated letter of commitment to meet the relevant criteria), should be provided. Please note that this should include the following: 1) Evidence on how CO_2 and water will be monitored, targeted and reported. 2) Information on how these policies are disseminated on site. *Further detailed information on the requirements of each point can be provided upon request.*	RIBA Stage E	BAM
		Water Consumption	One credit where water consumption on site is monitored, recorded and reported using the BREEAM scoring and reporting tool.	1	0.55%	1	-	The design team thought it likely that the water consumption (m^3) from the use of construction plant, equipment (mobile or fixed) and site accommodation could be monitored by BAM . The collated data will be used to report the total net water consumption from the construction process via the BREEAM scoring and reporting tool. **Credit targeted.**		RIBA Stage E	
		Transport of Construction Materials and Waste	One credit where transport from deliveries and waste are monitored, recorded and reported using the BREEAM scoring and reporting tool.	1	0.55%	1	-	BAM stated that the requirements for this credit would be met. Requirements involve the monitoring and recording of data on transport resulting from delivery of the majority of construction materials to site and construction waste from site. Monitoring and recording should cover: a) Transport of materials from the factory gate to the building site and should cover materials used in major building elements including insulation and ground works and landscaping materials. b) Transport of construction waste from the construction gate to waste disposal processing/ recovery centre. Scope of the monitoring must be in line with the waste groups identified in the Site Waste Management Plan (SWMP). **Credit targeted.**		RIBA Stage E	
		Timber Procurement	One credit where all site timber used on the project is sourced in accordance with the UK Government's Timber Procurement Policy.	1	0.55%	1	-	BAM stated that all the site timber used on the project would be compliant with the UK Government's Timber Procurement Policy. **Credit targeted.**		RIBA Stage E	
		Construction Site Management	One credit where the principal contractor operates an EMS which is certified to ISO 14001. AND best practice pollution prevention polices are implemented (as per Environment Agency guidance).	1	0.55%	1	-	BAM confirmed verbally that they were certified under ISO 14001. **Credit targeted.**		RIBA Stage E	

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Ref	Title	Sub-Title	BREEAM Criteria	Max Available	% Worth (in total for each question)	Targeted	Additional	Comments from Design Team 30/11/11	Headline Actions for Consideration	Indicative timeframe for Consideration	Indicative Responsibility
Man 4	Stakeholder Participation	**Consultation**	One credit where evidence provided demonstrates that consultation has commenced at the brief stages and feedback given to the local community and building users. In addition, advice should also have been sought from any relevant national and local history, archaeological bodies or military history groups regarding the heritage value of the building/ site/ surroundings. For education buildings the consultation process must employ a method carried out by an independent third party at the preparation of the brief and design stages (DQI for Schools).	**1**	**0.55%**	**-**	**-**	The design team stated that thorough consultation had taken place. However, this did not include third party consultation at the preparation of the brief and design stages. As stated in the adjacent column (BREEAM Criteria), third party consultation is one of the requirements for this credit. **Credit not targeted.**	No action required.	N/A	PTEa and Design team
		Inclusive & Accessible Design	One credit where the building is designed to be fit for purpose, appropriate and accessible by all potential users.	**1**	**0.55%**	**1**	**-**	The requirements for this credit were discussed and the architects stated that they would provide a document which describes the ways in which the building has an inclusive design. **Credit targeted.**	**Inclusive & Accessible Design** 1) The access statement and drawings	RIBA Stage B	
		Building User Information	One credit where evidence provided demonstrates the provision of a simple guide that covers information relevant to the tenant/ occupiers and non-technical building manager on the operation and environmental performance of the building. (mandatory only for a BREEAM rating of Excellent and above)	**1**	**0.55%**	**1**	**-**	The design team stated that a Building User Guide (BUG) compliant with the BREEAM requirements would be provided. The BUG should be appropriate to all users of the building (staff and non technical facilities management team), should cover all functions and uses of the building and building/site related information (e.g. transport, amenities) should be made available to all future building users. The scope of the BUG is detailed in **Appendix E.** **Credit targeted.**	**Building User Information** 1) Letter of commitment that the building user guide will be produced.	RIBA Stage E	
		Post Occupancy Evaluation and Information Dissemination	One credit where there is a commitment to carry out a POE by a 3rd party, one year after building occupation to gain building performance feedback.	**1**	**0.55%**	**-**	**-**	The design team thought it unlikely that the requirements for this credit could be met. **Credit not targeted.**	No action required.	N/A	N/A

Key:

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Man 5		Life Cycle Cost and Service Life Planning	One credit where evidence provided demonstrates that a Life Cycle Cost (LCC) analysis has been undertaken on the proposals at RIBA Stage C/D, in accordance with BS ISO 15686-5:2008. The study period should be 60 years in real and discounted cash flow and include construction, operation and maintenance. PLUS a critical appraisal of the building procurement has been undertaken, in compliance with ISO 15686 Buildings and Constructed assets - Service life planning Part 1.	1	0.55%	-	-	The requirements for this credit were discussed and the design team decided not to target the credits under this BREEAM issue. **Credit not targeted.**	No action required.	N/A	N/A
			Two credits where, in addition to the first credit, the LCC study analyses two of the following components at the strategic and system levels; envelope, services, finishes and external spaces. The preferred option meets the performance criteria, the lowest discounted LCC and meets one of the following; the lowest energy consumption over the operation lifespan, a reduction in maintenance requirement, extended service lives, dismantling and recycling or reuse.	1	0.55%	-	-				
			Three credits, where, in addition to the second credit, the LCC model is updated during RIBA Work Stages D/E and the results of the study are implemented. PLUS a maintenance strategy has been developed based on the LCC analysis.	1	0.55%	-	-				

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Health & Wellbeing											
Hea 1	**Visual Comfort**	**Pre-requisite**	All fluorescent and compact fluorescent lamps are fitted with high frequency ballasts. (mandatory only for a BREEAM rating of Very Good and above)	**-**	**-**	**yes**	**-**	The design team were informed of this pre-requisite.	**Pre-requisite:** Specification clause confirming that HFL has been installed, should be provided.		WSP M&E
		Daylighting	A point daylight factor of 2% or more is achieved in 80% of occupied spaces AND either a) or b) & c) is achieved: a) Uniformity ratio of at least 0.4 or a minimum point daylight factor of 0.8% b) View of the sky from desk height c) The room depth criterion is satisfied.	**1**	**1.00%**	**-**	**1**	The architects stated that the proposed building would receive a considerable amount of daylight. The design team will investigate whether all the occupied areas (areas used for longer than 30 minutes), meet the criteria detailed in the adjacent column (BREEAM Criteria). **Credit identified as additional.** Notes: *BREEAM requires that 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 ≥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*	**For Daylighting:** 1) Design drawings 2) Daylight calculations	RIBA Stage C	WSP M&E
		Glare control, view out	One credit where a glare control has been developed and implemented in all areas with workstations. AND all areas with workstations are within 7m of a view out and the window opening is 20% of the wall area.	**1**	**1.00%**	**1**	**-**	The design team stated that building is being designed to limit the effects of glare and that the plan depth is approximately 7.7m. An indicative space planning layout should be provided by PTEa to ensure that the proposed plan meets the BREEAM requirement for this credit. Note: 1) *BREEAM advises that any incorporated glare control system should be developed with the lighting strategy to ensure that glare is minimised whilst avoiding potential conflicts with the lighting control systems, therefore avoiding higher than expected energy consumption.* *2) For a view out include areas of the building where:* *a) There are or will be workstations/benches or desks for building users* *b) Close work will be undertaken or where visual aids will be used.* *c) A view out is deemed to be of benefit to the building occupants e.g. in spaces where occupants are likely to spend a significant amount of time.* **Credit targeted.**	**Glare control and View out** Marked up drawings and specifications confirming the glare control strategy and that workstations (or similar) are within 7m distance of a window (where the window is >20% of the total inside wall area), should be provided.	RIBA Stage C	PTEa

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		Internal & external lighting	One credit where illuminance levels in internal areas are in accordance with CIBSE Code for Lighting 2009 and areas with computers comply with CIBSE Lighting Guide 7. Internal lighting is zoned for no more than 4 workstations and for workstations adjacent to windows. External lighting levels are specified in accordance with BS5489-1:2003+A2:2008	**1**	**1.00%**	**1**	**-**	The M&E engineers stated that internal and external illuminance levels will comply with the code and lighting guide stated in the adjacent column. It was also stated that the requirement to comply with those documents would be added to the specifications. **Credit targeted.**	**Internal and External lighting** The following documents should be provided: 1) Confirmation supported by the relevant sections of the specifications which show illuminance levels in all internal and external areas. 2) Marked up drawings confirming the zoning and control of lighting	RIBA Stage C	WSP M&E
Hea 2	**Indoor Air Quality**	**Indoor Air Quality**	One credit where an **indoor air quality plan** has been produced. AND intakes and exhausts are 10m apart and intakes are 20m from a source of pollution (or 10m for naturally ventilated buildings).	**1**	**1.00%**	**-**	**-**	The M&E engineers (WSP) stated that an indoor air quality plan would be produced and that an air quality assessment was being carried out. However, the M&E engineers also stated that the requirement for the distance between the intakes and extracts would not be met. **Credit not targeted.**	No action required.	N/A	N/A
		VOC (specification)	One credit where paints and varnishes meet the requirements (shown in the assessment manual; relating to testing and performance) and 5 of the remaining product categories (e.g. Panels, Ceiling tiles etc., listed in BREEAM manual) meet the requirements (dependant on the production of an indoor air quality plan)	**1**	**1.00%**	**-**	**-**	The design team decided not to target this credit. **Credit not targeted.**	No action required.	N/A	N/A
		VOC (testing)	One credit where Formaldehyde and VOC levels are measured post construction and found to be in compliance with the levels set within BREEAM (dependant on the production of an indoor air quality plan).	**1**	**1.00%**	**-**	**-**	**Credit not targeted.**	No action required.	N/A	N/A
		Potential for natural ventilation	One credit where fresh air is capable of being delivered to the occupied spaces of the building via a natural ventilation strategy, and there is sufficient user-control of the supply of fresh air.	**1**	**1.00%**	**1**	**-**	The design team stated that every room would have openable windows. However, the M&E engineers stated that the rooms which open onto the road may not comply. **Credit not targeted.**	No action required.	N/A	N/A

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Ref	Title	Sub-Title	BREEAM Criteria	Max Available	% Worth (in total for each question)	Targeted	Additional	Comments from Design Team 30/11/11	Headline Actions for Consideration	Indicative timeframe for Consideration	Indicative Responsibility
Hea 3	**Thermal Comfort**	**Thermal Modelling**	One credit where thermal comfort levels in occupied spaces of the building are assessed at the design stage to evaluate appropriate servicing options, ensuring appropriate thermal comfort levels are achieved (CIBSE Guide A) for the 'time out of range' (TOR)	**1**	**1.00%**	**1**	**-**	The design team stated that full thermal modelling would be carried out. The thermal modelling should: a) be carried out using software in accordance with CIBSE AM11 b) demonstrate that the building design and services strategy can deliver thermal comfort levels in occupied spaces in accordance with CIBSE Guide A. c) include full dynamic thermal analysis at the detailed design stage. The building should also comply with any requirement, in terms of 'time out of range' metric from the appropriate industry standard. **Credit targeted.**	A copy of the thermal comfort study and modelling results, including the TOR, should be provided. Please note that the thermal model must be in compliance with CIBSE AM11 and provide full dynamic thermal analysis.	RIBA Stage C	WSP M&E
		Thermal Zoning and Control Strategy	One credit where thermal modelling informs the temperature control strategy, which addresses thermal zoning and the amount of occupant control, based on discussions with the end user. (dependant on achieving the above credit)	**1**	**1.00%**	**-**	**1**	The design team stated that the results of the thermal modelling would inform the temperature control strategy. More information about the requirements of this credit is provided in **Appendix F**. The design team could not confirm the level of occupant control, and therefore this credit has been identified as additional until further information is provided. **Credit identified as additional.**	If sought at a later stage, the temperature control strategy and schematics / specification confirming the thermal zoning and controls, based on user feedback, should be provided.	RIBA Stage C	WSP M&E
Hea 4	**Water Quality**		One credit where evidence provided demonstrates that: **Building Services (mandatory only for a BREEAM rating of Very Good and above):** The risk of waterborne and airborne legionella contamination has been minimised. **Building Occupants:** Chilled, mains-fed point-of-use water supply or water coolers are provided in each staff kitchenette or a suitable location on each floor level.	**1**	**1.00%**	**1**	**-**	The design team stated that the following requirements would be met: a) All water systems in the building will be 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, 2000. b) Chilled, mains-fed point-of-use water cooler will be provided in a suitable location on each floor level. The proposed design currently incorporates 4-6 water coolers. *BRE states that one compliant point-of-use water cooler should be provided for every 200 building users, subject to a minimum of one water cooler being provided for any build-in with less than 200 building users.* **Credit targeted.**	The following documents should be provided: 1) A written statement OR appropriate extracts from the specification to confirm that the building systems have been designed to take into account the minimisation of risk of legionella, should be provided. 2) A statement confirming the exclusion of humidification or a failsafe humidification. 3) The specification of the water coolers and drawings highlighting their location.	RIBA Stage C/D	PTEa

Key:
Mandatory for Excellent

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Hea 5	Acoustic Performance	**BB93**	**Pre-requisite:** A suitably qualified acoustician is appointed a the pre-bid/briefing stage to provided early design advice One credit where the standards required by BB93 are achieved and sample tests are undertaken as per BB93 and ANC Good Practice Guide	**1**	**1.00%**	**1**	**-**	The design team stated that a Suitably Qualified Acoustician would be appointed and would provide early design advice. The requirements for this credit and those are listed in **Appendix G**. The design team also stated that alternative standards may be used instead of BB93. The BRE states that BB93 recognises alternative standards and details what is required should those be used within the building project, where appropriate this approach may also be used to demonstrate compliance with BREEAM criteria. **Credit targeted.**	The following should be provided: 1) Professional report / study and calculations from the acoustician. 2) Letter of appointment or other confirmation demonstrating when the acoustician was appointed. 3) Relevant section/clauses of the building specification or contract and/or formal letter from the project team regarding commitments	RIBA Stage C	Acoustician
		Roof Noise	One credit where calculations demonstrate that lightweight roofs or any roofs with glazing have a reverberant sound pressure level no more than 20db above the indoor ambient noise level in BB93 during heavy rain.	**1**	**1.00%**	**-**	**1**	The architect stated that rooflights would be installed in the hall, and that the preferred material would be plastic and not glass. The acoustician should be informed of the following BREEAM requirements: *1) For the purpose of assessing the reverberant sound pressure levels on rooms beneath light weight roofs and roofs with glazing and/or roof lights the levels should be calculated using laboratory test data from measurements conducted in accordance with BS EN ISO 140-18 2 'Heavy' rain noise excitation.* *2) Pre-completion acoustic testing should be carried out to ensure that the relevant spaces (as built) achieve the required performance standards. Where testing identifies that spaces do not meet the standards, remedial works are carried out prior to handover and occupation. Testing must be carried out in line with Section 1.3 of BB93 and the ANC Good Practice Guide recommendations. Remedial works must be carried out in line with the Section 1.3 of BB93.* The design team decided that until confirmation is provided by the acoustician, this credit should be identified as additional. **Credit identified as additional.**		RIBA Stage C	
		Music Accommodation	One credit where all music accommodation meets the performance levels set in BB93	**1**	**1.00%**	**1**	**-**	The design team stated that the music accommodation would meet the performance levels set in BB93. **Credit targeted.**		RIBA Stage C	
	curity	**Safe access**	One credit where the site layout has been designed in accordance with best practice to ensure safe and adequate pedestrian and cycle access. In addition delivery areas should be considered in accordance with the guidance **(see Appendix K for more details)**	**1**	**1.00%**	**-**	**1**	The design team stated that all the existing parking spaces related to the site would be removed. All the requirements for this credit are listed in **Appendix H** for the design team to review. At the moment, **this credit has been identified as additional.**	**Safe Access** If sought at a later stage, the following should be provided: Design drawings (including a scaled site plan), AND/OR relevant sections of the specification highlighting all necessary compliant features and dimensions.	RIBA Stage C	PTEa

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Hea 6	**Safety and Se**	**Security of site & building**	One credit where consultation has occurred with a qualified security consultant at RIBA Stage C and the final design embodies the recommendations and is in accordance with the principles and guidance of Secured by Design and/or Safer Parking Scheme.	**1**	**1.00%**	**1**	**-**	The design team stated that a suitably qualified security consultant would be appointed to consult on the proposed building's security measures. The consultation should take place prior to or during the concept design stage (RIBA Stage C). Moreover, the design should incorporate the security consultant's recommendations and be built to conform to either Secured by Design and/or Safer Parking Scheme. **Credit targeted.**	**Security** The following should be provided: 1) Correspondence / report from the ALO/CPDA/Security consultant 2) Marked up drawings confirming the requirements have been met.	RIBA Stage C	PTEa

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Energy											
Ene 1	**Reduction of CO_2 Emissions**		Up to fifteen credits where evidence provided demonstrates an improvement in the energy efficiency of the building's fabric and services and therefore achieves lower building operational related CO_2 emissions. This is based upon the Energy Performance Ratio for New Constructions. Six credits mandatory for an Excellent	**15**	**11.88%**	**5**	**-**	The design team stated that a minimum of 20% reduction in CO_2 emissions will be achieved as required by the London Plan. Various numerical values linked to the energy performance of the building fabric and services will be input in BRE's Ene 1 Calculator tool to calculate the EPR_{NC} achieved. Until more information is provided, an EPR_{NC} of 0.45 has been targeted, which is equivalent to five credits. **Five credits targeted.**	The credits are based upon the EPR_{NC} which is calculated using the following figures, which should be provided to WSPE: - Building floor area - Notional building energy demand (MJ/m2) - Actual building energy demand (MJ/m2) - Notional building energy consumption (MJ/m2) - Action building energy consumption (MJ/m2) - Target emission rate (kgCO2/m2) - Building emission rate (kgCO2/m2) The above figures are entered into the BREEAM ENE1 calculator. *A mandatory rating of 6 credits out of the 15 must be achieved for an EXCELLENT rating.*	RIBA Stage C/D	WSP M&E
Ene 2	**Energy Monitoring**	**Monitoring of Major Energy Consuming Systems**	One credit where evidence provided demonstrates the provision of direct sub-metering of energy uses within the building (**Mandatory only for BREEAM rating Very Good and above**).	**1**	**0.79%**	**1**	**-**	The design team stated that the major energy consuming systems (as listed in the adjacent 'Headline Actions' column) would be sub-metered. It should be noted that the end energy consuming use should be identifiable to the building user through labelling or data outputs. **Credit targeted.**	Please provide confirmation that the following will be separately sub-metered and identifiable through labelling or data outputs. In summary the metering should cover: 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) h. Other major energy-consuming items where appropriate	RIBA Stage D/E	WSP M&E
Ene 3	**External Lighting**		One credit where energy-efficient external lighting is specified and all light fittings are controlled for the presence of daylight. - 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 80 lumens /circuit watts when the lamp has a Ra less than 60. - all external light fittings for the car parking areas, associated roads and floodlighting have a luminous efficacy of at least 70 lamp lumens/ circuit Watt where the lamp has a Ra greater than or equal to 60 OR 80 lamp/lumens / circuit watts when the lamp ahs a Ra less than 60. - all external lighting for up lighting and signs 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. - light fittings are controlled through a time switch or daylight sensor to allow for daylight control.	**1**	**0.79%**	**1**	**-**	The design team stated that the requirements detailed in the adjacent column (BREEAM Criteria) would be met. It was noted during the meeting, that Camden Council also has separate requirements which will need to be considered. **Credit targeted.**	An extract of the specification and lighting layout drawings to confirm the requirements listed in the 'Criteria column', should be provided.	RIBA Stage C	WSP M&E

Key:

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Ene 4	**Low zero carbon technologies**	**Feasibility Study/ Renewable Supply Contract**	One credit where evidence provided demonstrates that a feasibility study considering local (on-site and/or near site) low or zero carbon (LZC) technologies has been carried out and the results implemented.	**1**	**0.79%**	**1**	**-**	The design team confirmed verbally that a feasibility study would be undertaken. The feasibility study should take into consideration all the items listed in the adjacent column (Headline Actions). The study should be carried out at RIBA stage C and the results must be implemented. **Credit targeted.**	Provide a copy of the feasibility study which shows investigation into the following: - Energy generated from LZC energy source per year - Payback - Land use - Local planning requirements - Noise - Feasibility of exporting heat/ electricity from the system - Life cycle cost/ lifecycle impact of the potential specification in terms of carbon emissions - Any available grants - All technologies appropriate to the site and energy demand of the development - Reasons for excluding other technologies If incorporated, please provide calculations which show the reduction in CO_2 emissions of the building and drawings demonstrating the proposed location of the technologies.	RIBA Stage B	WSP M&E
		Low or Zero Carbon Technology Specification and Installation	Up to Three credits where a LZC technology has been specified as a result of the study and the method of supply results in a reduction in regulated CO2 emissions as follows: 1 additional credit - 10% 2 additional credits - 20% OR where the feasibility study includes a Life Cycle Assessment of the carbon impact of the chosen LZC, 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: 1 additional credits - study only 2 additional credits - 10% 3 additional credits - 20% (dependant on achievement of above)	**3**	**2.38%**	**2**	**1**	The design team thought it likely that the installation of the LZC recommended by the LZC study would result in at least a 20% reduction in regulated CO_2 emissions. The M&E engineers would investigate the possibility of completing a Lice Cycle Assessment of the carbon impact of the chosen LZC as part of the feasibility study. At the moment, **two credits have been targeted and one credit has been identified as additional.**	Report, calculations/outputs from the manufacturer, supplier, engineer or approved modelling software confirming carbon savings as a result of the installed LZC technology.	RIBA Stage B	
		Free Cooling	One credit where the building uses any of the following free cooling strategies (& where the 1st credit in BREEAM Hea 03 has been achieved) a) Night-time cooling b) Ground coupled air cooling c) Displacement ventilation d) Ground water cooling e) Surface water cooling f) Evaporative cooling, direct or indirect. g) Desiccant dehumidification and evaporative cooling, using waste heat h) Absorption cooling, using waste heat. i) The building does not require any form of cooling.	**1**	**0.79%**	**1**	**-**	The M&E engineers confirmed verbally that a night-time cooling strategy would be used in the proposed building. **Credit targeted.**	Correspondence from the building services engineer summarising the 'purpose designed' free cooling strategy. The results from a dynamic simulation model demonstrating the feasibility of the free cooling strategy. Evidence as required for the first credit within the BREEAM issue Hea 03 Thermal Comfort	RIBA Stage B	

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Ene 8		**Energy efficient equipment**	Two credits where functions/equipment responsible for the significant majority of unregulated energy consumption are energy efficient, based on the criteria below: The following equipment EITHER qualifies for an Enhanced Capital Allowance Scheme claim OR has been awarded an Energy Star rating OR has been procured in accordance with the Government Buying Standards OR are identified as products with at least a "green tick" standard on the Buying Solutions website 1. Office equipment 2. Domestic scale white goods and other small powered equipment 3. Supplementary electric heating	**2**	**1.58%**	**-**	**-**	The design team decided not to target those credits. **Credits not targeted.**	No action required.	N/A	N/A
Transport											
Tra 1		**Provision of public transport**	Up to three credits are awarded on a sliding scale based on the assessed buildings' accessibility to the public transport network.	**3**	**3.43%**	**3**	**-**	The performance of the proposed development against this BREEAM issue is based on an accessibility index which evaluates proximity to nodes and frequency of services. The design team were confident that the three credits available under this BREEAM issue could be achieved as the site is well served by public transport. More information should be provided to the assessor about the transport nodes, distances and frequency of services. **Credits targeted.**	A scaled map identifying the location of public transport nodes and confirmation of the services for each node, should be provided.	RIBA Stage C/E	PTEa
Tra 2		**Proximity to amenities**	One credit where evidence provided demonstrates that the building is located within 500m of accessible local amenities: - Grocery shop or food outlet - Post box - Cash machine	**1**	**1.14%**	**1**	**-**	The requirements of this credit were explained to the design team stated that at least two of those amenities listed in the adjacent column (BREEAM Criteria) should be present within 500m of the proposed building's entrance, and accessible via safe walking routes. **Credit targeted.**	Please provide a location map marked to show the location of the following amenities: - grocery shop and/ or food outlet - post box - cash machine	RIBA Stage C/E	PTEa

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Tra 3	**Cyclist Facilities**	**Cycle Spaces**	One credit where evidence provided demonstrates that covered, secure and well-lit cycle storage facilities and changing facilities are provided for all building users. 5 cycle racks per form or class in yr. group	**1**	**1.14%**	**-**	**1**	There are no existing facilities and therefore the design team was informed that if this credit is sought, the new development will have to provide all the cycle spaces required. The design team stated that the school would accommodate 300 students in two form entries. BREEAM requires 5 compliant cycle spaces per form, and therefore 10 compliant cycle storage spaces should be provided. More information on the requirements to ensure compliance with BREEAM, is provided in **Appendix I**. **Credit identified as additional.**	The number of cycle storage facilities to be provided, their specification and their location, should be confirmed in a written statement.	RIBA Stage C	PTEa
		Cyclist Facilities	Two credits where, in addition to the above, two of the following three facilities are provided in sufficient quantity as per the BREEAM manual: - Showers - Changing Facilities and lockers - Drying space	**1**	**1.14%**	**-**	**1**	The design team stated that there some facilities such as showers and lockers were provided in the existing school. The design team should ensure that those are compliant with the requirements listed in **Appendix I**. Until that is confirmed, t**he credit has been identified as additional.**	For the second credit, provide at least two of the following: - showers (1 for every 10 cycle rack) - changing facilities and lockers (equal in number to the number of racks) - drying space.	RIBA Stage C	PTEa
Tra 5	**Travel plan**		One credit where evidence is provided to demonstrate that a travel plan, based on a transport survey, has been developed and tailored to the specific needs of the building users.	**1**	**1.14%**	**1**	**-**	The design team confirmed verbally that a Travel plan was being undertaken. The Travel plan should cover all the items listed in **Appendix J**, to ensure compliance with BREEAM. **Credit targeted.**	A Transport Plan for the scheme should be provided. *Please note that this study should be produced as part of the feasibility and design stages which considers all types of travel relevant to the building type and users.*	RIBA Stage B/C	Transport consultant

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Water											
Wat 1	**Water Consumption**		Up to five credits where evidence provided demonstrates that the specification includes taps, urinals, WCs and showers that consume less potable water in use than standard specifications for the same type of fittings. Credits are awarded based on the following improvement over the notional baseline: - One credit - 12.5% improvement - Two credits - 25% improvement - Three credits - 40% improvement - Four credits - 50% improvement - Five credits - 55% improvement The calculations is based upon the following sanitary fittings: a) WCs b) Urinals c) Taps d) Showers e) Baths f) Dishwashers g) Washing machine *One credit is mandatory to achieve a BREEAM rating of Very Good or above*	**5**	**3.33%**	**1**	**1**	The design team decided to target one credit under this BREEAM issue, which is equivalent to achieving an improvement in water consumption of 12.5% over the notional baseline. This is based on completion of a BRE tool which generates a notional baseline One additional credit has been identified as there could be potential for a 25% improvement of the water consumption over the notional baseline. **One credit targeted and one credit identified as additional.**	Please confirm the specification/ flow rate for the following: - WC's, effective flush volume and control - Tap flow rate and control - Shower flow rate - Urinal flow rate and control - Water use of the dishwashers and washing machines (if applicable).	RIBA Stage D	PTEa and WSP M&E
Wat 2	**Water Monitoring**		One credit where evidence provided demonstrates that a water meter with a pulsed output will be installed on the mains supply to each building/unit. The water consuming plant or areas consuming 10% or more of the building's water use need to be fitted with a sub meter or have water monitoring equipment integral to the plant or area.	**1**	**0.67%**	**1**	**-**	The design team stated that the requirement for a water meter with a pulsed output to be installed on the mains water supply, would be met. **Credit targeted.**	A written confirmation with supporting drawings the location of the water meter and its connection to the BMS, should be provided.	RIBA Stage D	WSP M&E
Wat 3	**Major leak detection & prevention**	**Leak Detection on Building's Mains Water supply**	One credit where evidence provided demonstrates that a leak detection system is specified or installed on the building's water supply. This should meet the following: a. Audible when activated; b. Activated when a continuous flow of water passes through the water meter at a flow rate above a pre-set minimum for a pre-set period of time; c. Able to identify different leakage rates, e.g. continuous, high and/or low level leaks, over set time periods; d. Programmable to suit the owner/occupiers' requirements; and e. Where applicable, designed to avoid false alarms caused by normal operation of large water consuming plant such as chillers.	**1**	**0.67%**	**1**	**-**	The M&E engineers stated that a major leak detection system compliant with the requirements listed in the adjacent column (BREEAM Criteria) would be met. **Credit targeted.**	Specification clauses and schematics showing the inclusion of the leak detection system and sanitary supply shut-off, should be provided.	RIBA Stage D	WSP M&E
		Flow Control Device to each Sanitary area/ facility	One credit where water supply in each WC area is controlled via one of the following: - A time controller - A programmed time controller - A volume controller - A presence detector and controller - A central control unit.	**1**	**0.67%**	**1**	**-**	The M&E engineers stated that the water supply to each toilet area would be controlled . The control measures will be confirmed at a later stage, but should be one of the measures listed in the adjacent column (BREEAM Criteria). **Credit targeted.**		RIBA Stage D	

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Wat 4		**Water efficient equipment**	One credit where a low-water irrigation strategy/system has been installed, or where planting and landscaping is irrigated via rainwater or reclaimed water.	**1**	**0.67%**	**1**	**-**	The design team stated that planted and landscaping would either be irrigated manually and with rainwater collected in rainwater butts. **Credit targeted.**	A written confirmation of the irrigation strategy should be provided.	RIBA Stage D	PTEa
Materials											
Mat 1		**Life cycle impacts**	Up to five credits are available, determined by the Green Guide to Specification ratings, third-party Environmental Product Declaration (EPD) and Life cycle Green House Gas emissions for the major building elements. Covering: - External Walls - Windows - Roof - Upper Floor Slabs - Internal Walls - Floor finishes/coverings	**6**	**5.77%**	**2**	**-**	The architects stated that the Green Guide to Specification (http://www.thegreenguide.org.uk/) would be used to specify materials. Highly-rated materials should be specified wherever possible. **Two credits have been targeted.**	In order to fully complete the BREEAM Mat 1 calculator please provide the following information for all of those building elements listed. Where several different specifications exist, please list all accordingly: - Summary of specification - Green Guide rating - Area of element (m^2) - Life cycle green house gas emissions ($kgCO_2eq.$) - Confirmation of any Environmental product Declarations.	RIBA Stage D	PTEa
Mat 2		**Hard landscaping and boundary protection**	One credit where evidence provided demonstrates that at least 80% of the combined area of external hard landscaping and boundary protection specifications achieve an A or A+ rating, as defined by the Green Guide to Specification.	**1**	**0.96%**	**1**	**-**	The architects stated that the Green Guide to Specification would be consulted when specifying materials for the hard landscaping and boundary protection. Highly-rated materials should be specified wherever possible. **Credit targeted.**	A written confirmation and drawings should be provided to confirm the materials to be used in the hard landscaping works and the areas and locations of these materials to be used.	RIBA Stage D	PTEa

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Mat 3	**Responsible sourcing of materials**		Up to 3 credits are available where evidence provided demonstrates that 80% of the assessed materials in the following building elements are responsibly sourced: a. Structural Frame b. Ground floor c. Upper floors (including separating floors) d. Roof e. External walls f. Internal walls g. Foundation/substructure h. Fittings i. Hard Landscaping Credits are awarded based on the following % points achieved: - 3 credits - 54% of available points achieved - 2 credits - 36% - 1 credit - 18% All timber must be sourced in accordance with the UK Government's Timber Procurement Policy **(mandatory for all ratings)**.	**3**	**2.88%**	**1**	**1**	After discussing the requirements of this credit with the design team, BAM thought there could be potential for at least one credit to be targeted under this BREEAM issue, and a second credit was identified as additional. More information about this BREEAM issue is provided in **Appendix K.** The design team is required to fill in **Table 1.5 of Appendix K.** **One credit targeted and one credit identified as additional.**	The requirements for this credit are lengthy, full requirements are therefore shown within the BREEAM assessment manual. If any credits are sought, the assessor can provide further guidance where necessary. It should be noted that the assessor will need to complete a BRE calculator based on information relating to volume of material from each supplier and the accreditation associated with each supplier. For example, a supplier who can demonstrate that they manufacture and supply their product under an EMS scheme will achieve Tier level 3, whereas a product which is reused or from an international policed scheme (e.g. FSC) will achieve Tier level 1.	RIBA Stage D	BAM
Mat 4	**Insulation**	**Embodied Impact**	Any new insulation specified for use within the external walls, ground floor, roof and building services must be assessed. One credit where the thermal insulation products used in the building have a low embodied impact relative to their thermal properties, determined by the Green Guide to Specification ratings.	**1**	**0.96%**	**1**	**-**	The architects and M&E engineers stated that they would use the Green Guide to Specification when choosing insulation materials for the proposed building's external elements. **Credit targeted.**	The assessor will require information relating to the area, thickness and thermal conductivity of each specification and the rating attained. This information will be entered into the Assessor Mat4 Calculator to determine the credits achieved.	RIBA Stage D	WSP M&E and PTEa
		Responsible sourcing	One credit where at least 80% by volume of thermal insulation products used in the building have been responsibly sourced.	**1**	**0.96%**	**1**	**-**	The design team were confident that at least 80% by volume of the thermal insulation used in the building elements would be responsibly sourced. It was noted that most major suppliers can provide responsibly sourced thermal insulation products. **Credit targeted.**	Certificates of responsible sourcing should be provided.	RIBA Stage D	WSP M&E and PTEa
Mat 5	**Designing For Robustness**		One credit where protection is given to vulnerable parts of the building (both internal and external) such as areas exposed to high pedestrian traffic, vehicular and trolley movements.	**1**	**0.96%**	**1**	**-**	The architects stated that the necessary measures to protect the building internally and externally would be incorporated in the design. **Credit targeted.**	An annotated drawing should be provided, to show the building features which contribute to long term robustness of the facility including: - protection from the effects of high pedestrian traffic - protection against any internal vehicular/ trolley movement - protection against or prevention from any potential vehicular collision where vehicular parking and manoeuvring occurs.	RIBA Stage D	PTEa

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Waste											
Wst 1	**Construction Site Waste Management**	**Non-Hazardous Construction Waste**	Up to three credits are available where evidence provided demonstrates that the amount of non-hazardous construction (excluding demolition and excavation) waste (m^3/100m^2 or tonnes 100m^2) generated on site by the development is the same as or better than good or best practice levels. This should be shown in a BREEAM compliant Site Waste Management Plan. One credit for <13.3 m^3 per 100m^2 (gross internal floor area) Note: where existing structures are to be demolished prior to development, a pre-demolition audit should be produced.	**1**	**1.25%**	**1**	**-**	The design team thought it likely that a minimum target of <13.3 m^3 per 100m^2 (gross internal floor area) could be met, which is equivalent to one credit. BAM stated that a compliant Site Waste Management Plan covering all the items listed in the adjacent column (Headline Actions) should be provided. More information regarding the requirements of this BREEAM issue is provided in **Appendix L.** *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:* *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.* **Credit targeted.**	Please confirm that the Site Waste Management Plan contains: - the target benchmark for resource efficiency as per the figures noted in the adjacent column - procedures and commitments for minimising non-hazardous waste in line with the benchmark - procedures for minimising hazardous waste - procedures for monitoring, measuring and report hazardous and non-hazardous site waste - procedures for sorting, reusing and recycling construction waste into defined waste groups either on site or through a licensed external contractor - the individual responsible for implementing this policy	RIBA Stage D	BAM
			Two credits for <7.5m^3 per 100m^2	**1**	**1.25%**	**1**	**-**	A commitment to generate <7.5m^3 per 100m^2 (gross internal floor area) of non-hazardous waste could be made. **Credit targeted.**		-	
			Three credits for < 3.4m^3 per 100m^2	**1**	**1.25%**	**-**	**-**	**Credit not targeted.**		-	
		Waste diverted from Landfill	One further credit where evidence provided demonstrates that a significant majority of non-hazardous construction waste generated by the development will be diverted from landfill and reused or recycled. 70% by volume or 80% by tonnage is required for non demolition projects, while 80% by volume or 90% by tonnage is required for demolition projects.	**1**	**1.25%**	**1**	**-**	The design team thought it likely that a significant majority of non-hazardous construction waste would be diverted from landfill as detailed in the 'BREEAM Criteria' column. **Credit targeted.**		RIBA Stage D	
Wst 2	**Recycled aggregates**		One credit where evidence provided demonstrates the significant use of recycled or secondary aggregates in 'high-grade' building aggregate uses. The % of recycled/secondary aggregates in each high-grade aggregate application, must meet the following: - Structural frame - 25% - Floor slabs incl. ground floor slab - 25% - Bitumen or hydraulically bound base, binder and surface courses for paved areas and roads - 50% - Concrete road surfaces - 25% - Pipe bedding - 50% - Building foundations - 25% - Granular fill and capping - 75% - Gravel landscaping - 100%	**1**	**1.25%**	**1**	**-**	The Structural engineers (WSP) should confirm if any recycled aggregates will be used in high-grade aggregate application (as listed in the 'BREEAM Criteria' column). The design team thought it was likely that the requirement for this credit could be met. **Credit targeted.**	The following should be provided: 1) Calculations confirming the percentages listed in the Criteria column. 2) Documentation confirming the source of recycled / secondary aggregates and that the required amount can be provided.	RIBA Stage D	WSP Structures

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Wst 3	**Operational Waste**		One credit where a central, dedicated space is provided for the storage of the building's recyclable waste streams. Where high and consistent volume of operational waste streams are likely, the following facilities should be provided: - static waste compactor or baler - vessel for composting suitable organic waste OR adequate space for storing segregated food waste. - where organic waste is to be stored/composted on site, a water outlet should be provided. Additionally for schools, there should be a school recycling policy and an outline of the procedures that are in operation or that will be in place when the building is complete. As a minimum, the policy should cover: a) Paper and magazines, cardboard, plastics, metals, printer & toner cartridges. b) Where composting facilities are provided, the policy must also cover the collection of the compost unless the compost can be used on site.	**1**	**1.25%**	**1**	**-**	The design team stated that the required facilities as listed in the 'BREEAM Criteria' column would be provided, and therefore this credit has been targeted. The design team should approach Camden Council to ensure that they provide collection services for separate, sorted waste streams. The school should also endorse a school recycling policy compliant with the requirements listed in 'BREEAM Criteria' column. **Credit targeted.**	Please confirm through the provision of marked up drawings and a supporting statement the provision of a dedicated recyclable waste storage area and any required facilities. *BRE require a recycling facility which:* *a. is clearly labelled for recycling* *b. is located within a dedicated centralised waste management unit or within easy reach of the building (<20m away from an entrance)* *c. is in a location with good vehicular access* *The size of the space allocated must be adequate to store the likely volume of recyclable waste generated by the building's occupants/ operation. The following must be complied with:* *- 2m² per 1000m² for buildings up to 5000m²*	RIBA Stage D/E	BAM

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Land Use & Ecology											
LE1	**Site Selection**	**Re-use of Land**	One credit where evidence provided demonstrates that the majority (75%) of the footprint of the proposed development falls within the boundary of previously developed land.	**1**	**1.00%**	**1**	**-**	It was verbally confirmed that the land was previously developed and that part of the existing structures would be demolished. **Credit targeted.**	A set of drawings which show the site prior to development overlaid with a site boundary for the new works, should be provided.	RIBA Stage C	PTEa
		Contaminated Land	One credit where a specialist's site investigation, risk assessment and appraisal demonstrate that the land used for the new development has, prior to development, been defined as significantly contaminated and where adequate remedial steps have been taken to decontaminate the site prior to construction.	**1**	**1.00%**	**-**	**-**	A geotechnical report is being undertaken and will confirm if the site is contaminated. The credit can only be awarded if the land is found to be contaminated and remediation measures are carried out. Until further information is provided, the credit has not been targeted. **Credit not targeted.**	The following documents should be provided: 1) 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 2) A letter from the principal contractor or remediation contractor confirming: a) The remediation strategy for the site. b) Summary details of the implementation plan. 3) 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.	RIBA Stage C	PTEa
LE2	**Ecological value of site AND Protection of ecological features**		One credit is awarded where evidence provided demonstrates that the construction zone is defined as land of low ecological value and all existing features of ecological value will be fully protected from damage during site preparation and construction works.	**1**	**1.00%**	**1**	**-**	The design team stated that the site would be of low ecological value. This should be confirmed by the appointed Suitably Qualified Ecologist (SQE). **Credit targeted.**	In order to achieve this credit please confirm the ecological value of the site through a copy of an Ecological study in conjunction with site drawings (before and after development) which demonstrate protection of features. Also please provide copies of any management plans to protect species throughout the demolition and construction.	RIBA Stage C	PTEa and SQE

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LE3	Mitigating Ecological impact		One credit where evidence provided demonstrates that the change in the site's existing ecological value, as a result of development, is minimal.	1	1.00%	1	-	The design team were confident that the existing ecological value of the site would change only minimally, and this should be confirm by the Suitably Qualified Ecologist. **Credit targeted.**	Please confirm the site make up prior to development e.g. 100m² buildings, 500m² scrub and the site make up after development, this allows the assessor to compare the site value prior to and post development. An accurate value for ecology can be gained through consultation with an ecologist.	RIBA Stage C	SQE
			Two credits where evidence provided demonstrates that there is no negative change in the site's existing ecological value as a result of development.	1	1.00%	1	-	The appointed Suitably Qualified Ecologist should confirm that there is no negative change in the site's existing ecological value. **Credit targeted.**		RIBA Stage C	
LE4	Enhancing Site Ecology		One credit where the design team (or client) has appointed a suitably qualified ecologist to advise and report on enhancing and protecting the ecological value of the site; and implemented the professional's recommendations for general enhancement and protection of site ecology.	1	1.00%	1	-	The design team confirmed verbally that the appointed Suitably Qualified Ecologist would provide a report which would also include recommendations and required protection measures. The architects stated that there would be a pond on site, which could help enhance the natural ecology of the site. **Credit targeted.**	The following documents should be provided: 1) Landscape plans and written confirmation should be provided to confirm that the recommendations provided by the ecologist will be implemented. 2) Confirmation from the ecologist of the change in species as a result of the development (based on the BREEAM Ecology report template).	RIBA Stage C	SQE
			Two credits where, in addition to the above, there is a positive increase in the ecological value of the site of up to (but not including) 6 species.	1	1.00%	1	-	The appointed Suitably Qualified Ecologist's ecology report should confirm the exact increase of species. **Credit targeted.**		RIBA Stage C	
			Three credits where, in addition to the above, evidence is provided to demonstrate a positive increase in the ecological value of the site of 6 species or greater.	1	1.00%	-	-	**Credit not targeted.**	No action required.	N/A	N/A
LE5	Long term impact on biodiversity		One credit where the client has committed to achieving the mandatory requirements listed in **Appendix P** and at least two of the additional requirements.	1	1.00%	1	-	The design team stated that the mandatory requirements and at least four of the additional requirements, as listed in **Appendix M** would be met. **Credit targeted.**	An ecologist should be appointed to provide a management plan for the development ensuring that all relevant UK and EU legislation is complied with during design and construction and subsequently covering at least the first five years after project completion with respect to: - management of any protected features on site - management of any new, existing or enhanced habitats - a reference to the current or future site level or local Biodiversity Action Plan. Additional detailed requirements exist relating to these items which are mandatory and additional for this credit, these are provided in **Appendix O**.	RIBA Stage C	SQE
			Two credits where the client has committed to achieving the mandatory requirements listed in **Appendix P** and at least four of the additional requirements.	1	1.00%	1	-	**Credit targeted.**		RIBA Stage C	

Key:

Mandatory for Excellent

Ref	Title	Sub-Title	BREEAM Criteria	Max Available	% Worth (in total for each question)	Targeted	Additional	Comments from Design Team 30/11/11	Headline Actions for Consideration	Indicative timeframe for Consideration	Indicative Responsibility
Pollution											
Pol 1	**Impact of refrigerants**	**Direct Effect Life Cycle CO2 Equivalent Emissions**	Three credits where the building does not require the use of refrigerants within it's plant / systems. One credit where systems using the refrigerants have Direct Effect Life Cycle CO2 equivalent emissions (DELC CO2e) of 1000kgCO2e/kW cooling capacity.	**1**	**0.77%**	**-**	**-**	The M&E engineers stated that cooling would be provided to the PIU classrooms. It was thought unlikely that the systems using the refrigerants would have Direct Effect Life Cycle CO_2 equivalent emissions (DELC CO_2e) of 1000kgCO_2e/kW cooling capacity. **Credit not targeted.**	No action required.	N/A	N/A
			Two credits where systems using refrigerants have DELC CO2e of 100kgCO2e/kW cooling capacity. OR where the air-conditioning or refrigeration systems use refrigerants with a GWP of less than 10.	**1**	**0.77%**	**-**	**-**	**Credit not targeted.**	No action required.	N/A	N/A
		Refrigerant Leak Detection and Containment	One credit where systems using refrigerants are contained in moderately air tight enclosure and an automated permanent refrigerant leak detection system covering high risk parts of the plant or where a refrigerant leakage/charge loss detection system is specified. AND automatic shutdown and pump down of refrigerant occurs on the detection of a leak / charge loss.	**1**	**0.77%**	**-**	**1**	The M&E engineers will confirm whether a refrigerant leak detection system could be included in the specifications. Until this is confirmed, the credit has been identified as additional. **Credit identified as additional.**	If sought, a copy of the specification clause or letter from the M&E engineer / system manufacturer confirming relevant refrigeration type and system information, should be provided.	RIBA Stage D	WSP M&E
Pol 2	**NOx emissions from heating source**		Up to Three Credits where the dry NOx emissions (at 0% excess O2) ≤100 mg/kWh (space heating & cooling)	**1**	**0.77%**	**-**	**-**	The M&E engineers stated that the dry NOx emissions from the CHP units which will be installed for space heating and cooling, will be too high to achieve any of the credits available under this BREEAM issue. **Credits not targeted.**	The following documents should be provided: 1) Relevant section/clauses of the building specification or contract 2) Manufacturer's product details 3) Calculations from the project team	N/A	N/A
			≤70 mg/kWh (space heating & cooling)	**1**	**0.77%**	**-**	**-**		No action required.	N/A	N/A
			≤40 mg/kWh (space heating & cooling)	**1**	**0.77%**	**-**	**-**		No action required.	N/A	N/A

Key:
Mandatory for Excellent

Ref	Title	Sub-Title	BREEAM Criteria	Max Available	% Worth (in total for each question)	Targeted	Additional	Comments from Design Team 30/11/11	Headline Actions for Consideration	Indicative timeframe for Consideration	Indicative Responsibility
Pol 3	Surface water run off	Flood Risk	Two credits where the development is situated in a low flood risk zone, as confirmed by a site specific Flood Risk Assessment.	1	0.77%	-	1	The design team stated that a Flood Risk Assessment (FRA), was not being carried out. In order to achieve any credits under this BREEAM issue, a compliant FRA should be commissioned. If carried out, the Flood Risk assessment should take all sources of flooding into consideration namely: - Fluvial (rivers) - Tidal - Surface water: sheet run-off from adjacent land (urban or rural) - Groundwater: most common in low-lying areas underlain by permeable rock (aquifers) - Sewers: combined, foul or surface water sewers - Reservoirs, canals and other artificial sources **Credit identified as additional.**	If sought, a site specific FRA should be provided demonstrating the flood risk and additionally the relevant local authority or statutory body should confirm satisfaction that the development is appropriately flood resilient and resistant from all sources of flooding. Provide a qualified consultants report and calculations outlining the proposed attenuation measures and pollution prevention measures in accordance with the requirements.	RIBA Stage C/D	Structures / Drainage engineers
			One credit where the development is located in a zone defined as having a medium or high annual probability of flooding AND the ground level of the building, car parking and access is 600mm above the design flood level for the site's location. The FRA confirms that the local authority & statutory body are satisfied that the development is appropriately flood resilient to all sources of flooding.	1	0.77%	-	1	The design team were confident that the FRA, if completed, is likely to conclude that the site is of low flood risk. An FRA should be urgently completed to verify whether the credits related to Surface Water Run Off can be targeted. **Credit identified as additional.**		RIBA Stage C/D	
		Surface water run off	- Pre-requisite - an appropriate consultant is appointed to carry out and demonstrate the criteria. One credit where drainage measures ensure the peak rate of run-off from the site to the watercourses is no greater post development than the pre-development site, in accordance with the 1 year and 100 year return period events. Calculations should include an allowance for climate change.	1	0.77%	1	-	The M&E engineers confirmed that petrol interceptors and SUD would be incorporated in the design. **Credit targeted.**		RIBA Stage C/D	
			One credit where flooding of property will not occur in the event of local drainage system failure AND the post run-off volume over the development lifetime is no greater than the pre-development rate. Where there is any additional predicted flow for the 100yr 6 hr. event, this is prevented from leaving the site by infiltration or other SUDS techniques. OR where this is not possible (this must be justified), the post peak rate of run-off must be reduced to a limiting discharge.	1	0.77%	1	-	The design team stated that the requirements detailed in the adjacent column (BREEAM Criteria) would be met. **Credit targeted.**		RIBA Stage C/D	
		Minimising water course pollution	One credit where there is no discharge from the site for rainfall up to 5mm and SUDS or source control systems are specified in low risk areas. Oil / petrol separators should be specified in high risk areas.	1	0.77%	1	-	The design team were confident that the requirements to achieve this credit would be met. **Credit targeted.**		RIBA Stage C/D	

Key:
Mandatory for Excellent

Ref	Title	Sub-Title	BREEAM Criteria	Max Available	% Worth (in total for each question)	Targeted	Additional	Comments from Design Team 30/11/11	Headline Actions for Consideration	Indicative timeframe for Consideration	Indicative Responsibility
Pol 4		**Reduction of Night Time Light Pollution**	One credit where evidence provided demonstrates that the external lighting design is in compliance with the guidance in the Institution of Lighting Engineers (ILE) Guidance notes for the reduction of obtrusive light, 2005. All external lighting (except safety and security) should be automatically switched off between 23:00 and 7:00 hours.	**1**	**0.77%**	**1**	**-**	The design team stated that the external lighting design would be in compliance with the guidance in the Institution of Lighting Engineers (ILE) Guidance notes for the reduction of obtrusive light, 2005 and would incorporate automatic switch off. **Credit targeted.**	An extract from the specification should be provided to show compliance with the ILE reduction of obtrusive light, 2005 document and indicative examples of how the lighting strategy complies.	RIBA Stage C/D	WSP M&E
Pol 5		**Noise Attenuation**	One credit where evidence provided demonstrates that new sources of noise from the development do not give rise to the likelihood of complaints from existing noise-sensitive premises and amenity or wildlife areas that are within the locality of the site.	**1**	**0.77%**	**1**	**-**	The design team stated that the requirements for this credit (as listed in **Appendix N**) would be met. **Credit targeted.**	Where no noise sensitive areas or buildings exist within 800m this credit can be achieved by default, however this will require explicit confirmation through provision of marked up drawings or a study as below. Please confirm through the provision of baseline noise investigations (compliant with BS 7445:1991) and plant noise values that the background noise levels will not be exceeded and the proximity of any noise sensitive receptors in the vicinity.	RIBA Stage C/D	WSP M&E
Innovation											
Man 1		**Sustainable Procurement**	There is a commitment for the following to be undertaken at quarterly intervals for the first 3 years of occupation: - Collect occupant satisfaction, energy consumption and water consumption data - Check the building is performing as expected Set targets for reducing consumption and monitor progress - Feedback any 'lessons learned' to the design team & developer - Provision of annual building energy and water consumption and occupant satisfaction data to BRE.	**1**	**1.00%**	**-**	**-**	**Credit not targeted at this stage.**	Please see Man 1 above.	N/A	N/A
Man 2		**Responsible Construction Practices**	Where post construction, a Considerate Constructors Scheme certificate can be provided demonstrating that the site achieved CCS Code of Considerate Practice with a score of at least 36. OR Where post construction, the site has complied in full with the alternative, independently assessed scheme, and the alternative scheme addresses all the mandatory and optional items in Checklist A2.	**1**	**1.00%**	**-**	**-**	**Credit not targeted at this stage.**	Please see Man 2 above.	N/A	N/A
Hea 1		**Visual Comfort**	At least 80% of the floor area (for the building spaces/room identified above in the standard requirements) has an average daylight factor of 3% in multi-storey buildings and 4% in single-storey buildings.	**1**	**1.00%**	**-**	**-**	**Credit not targeted at this stage.**	Please see Hea 1 above.	N/A	N/A

Appendix A - Netley Project (Educational Element_PRU & Primary)

Key:

Mandatory for Excellent

Ref	Title	Sub-Title	BREEAM Criteria	Max Available	% Worth (in total for each question)	Targeted	Additional	Comments from Design Team 30/11/11	Headline Actions for Consideration	Indicative timeframe for Consideration	Indicative Responsibility
Ene 1		**Reduction of CO_2 emissions**	Up to five credits are awarded based on the EPR_{NC} as follows: - Five credits where the building is 'carbon negative' in terms of it's total modelled operational energy consumption (generates surplus to its own energy demand and exports that surplus to the National Grid). - Up to four credits where the building achieves an EPRNC 0.9 and zero net CO2 emissions. Credits are based on the equivalent percentage of the buildings modelled 'regulated' operation energy consumption generated by carbon neutral on-site, near site or 'accredited external' sources and are used to meet energy demand from 'unregulated' building systems: - 4 credits 80% - 3 credits 50% - 2 credits 20% - 1 credit 10%	**5**	**5.00%**	**-**	**-**	**Credit not targeted at this stage.**	Please see Ene 1 above.	N/A	N/A
Ene 4		**Low or Zero Carbon Technologies**	A local LZC energy technology has been installed in line with the recommendations of a compliant feasibility study and this method of supply results in a 30% reduction in the building's regulated CO_2 emissions.	**1**	**1.00%**	**-**	**-**	**Credit not targeted at this stage.**	See actions for Ene 4 in the main assessment section.	N/A	N/A
Wat 1		**Water Consumption**	As per Wat 1, one exemplary credit can be achieved where there is a 65% reduction in water consumption over the notional building.	**1**	**1.00%**	**-**	**-**	**Credit not targeted at this stage.**	See actions for Wat 1 in the main assessment section.	N/A	N/A
Mat 1		**Materials Specification**	One exemplary BREEAM credit can be awarded as follows: a. Where assessing four or more applicable building elements, the building achieves at least two points additional to the total points required to achieve maximum credits under the standard BREEAM requirements. b. Where assessing fewer than four applicable building elements, the building achieves at least one point additional to the total points required to achieve maximum credits under the standard BREEAM requirements.	**1**	**1.00%**	**-**	**-**	**Credit not targeted at this stage.**	Please see Mat 1 above	N/A	N/A
Mat 3		**Responsible Sourcing of Materials**	Where, in addition to the standard BREEAM requirements, 70% of the available responsible sourcing points have been achieved.	**1**	**1.00%**	**-**	**-**	**Credit not targeted at this stage.**	Please see Mat 3 above	N/A	N/A

Key:

Mandatory for Excellent

Ref	Title	Sub-Title	BREEAM Criteria	Max Available	% Worth (in total for each question)	Targeted	Additional	Comments from Design Team 30/11/11	Headline Actions for Consideration	Indicative timeframe for Consideration	Indicative Responsibility
Wst 1		**Construction Site Waste Management**	Where non-hazardous construction waste generated by the building's development meets or exceeds the resource efficiency benchmark required to achieve three credits (as outlined in the guidance). Where at least 85% by volume and 90% by weight of non demolition waste and 85% by volume and 95% by weight of demolition waste has been diverted from landfill and either: a. Reused on site (in-situ or for new applications) b. Reused on other sites c. Salvaged/reclaimed for reuse d. Returned to the supplier via a 'take-back' scheme e. Recovered from site by an approved waste management contractor and recycled. Where all key waste groups are identified for diversion from landfill at pre-construction stage SWMP.	**1**	**1.00%**	**-**	**-**	**Credit not targeted at this stage.**	Please see Wst 1 above.	N/A	N/A
Wst 2		**Recycled aggregates**	Where 35% (by weight or volume) of the total high-grade aggregates specified in the development are recycled and/or secondary. The percentage of high-grade aggregate that is recycled and/or secondary, must meet the following levels: - Structural frame - 50% - Floor slabs incl. ground floor slab - 50% - Bitumen or hydraulically bound base, binder and surface courses for paved areas and roads - 75% - Concrete road surfaces - 50% - Pipe bedding - 100% - Building foundations - 50% - Granular fill and capping - 100% - Gravel landscaping - 100%	**1**	**1.00%**	**-**	**-**	**Credit not targeted at this stage.**	Please see Wst 2 above.	N/A	N/A
			Additional Innovation credit - requiring application to BRE.	**1**	**1.00%**	**-**	**-**	**Credit not targeted at this stage.**	An application can be made to BRE for the achievement of an innovation credit relating to a site/ design feature of sustainable benefit which is not recognised within the BREEAM framework. The assessor will advise on the application process during the course of formal assessment.	N/A	N/A

Appendix B	BREEAM 2011
Man 1	**Sustainable Procurement-** Project Brief & Design

Requirements for Project Brief and Design

First Credit

1. 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:
a.Design
b.Construction
c.Commissioning and handover
d.Occupation i.e. up to and including Stage L (Post practical completion) or equivalent.

2.The roles and responsibilities outlined above include consideration of:
a.End user requirements
b.Aims of the design and design strategy
c.Particular installation and construction requirements
d.Occupiers budget and technical expertise in maintaining any proposed systems
e.Usability and manageability of any proposals
f.Production of documentation
g.Commissioning, training and aftercare support

3.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:
a.Contents of the Building User Guide(s) (BUG) as specified in Man 04 Stakeholder Par-ticipation (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 04 to achieve this requirement)
b.Design strategy
c.Installed systems and key features (maintenance, operation, replacement, repair)
d.Documentation to be provided (e.g. user guide, log book etc.)
e.Training responsibilities

Second Credit

4.A BREEAM Accredited Professional (AP) is appointed to facilitate the setting of BREEAM related performance targets for the project, i.e. target BREEAM rating and individual assessment issues (credits). The AP is appointed no later than early RIBA Stage C (Concept Design) or equivalent.

5.The defined BREEAM performance targets have been contractually agreed between the client and design/project team no later than RIBA Stage C (or equivalent).

6.To achieve this credit at the interim design stage of certification, the defined BREEAM tar-gets (rating and credits) must be demonstrably achieved by the project. This is dem-onstrated via the BREEAM assessor's design stage certification report.

Third Credit

7.The BREEAM AP criteria 4, 5 and 6 have been achieved.

8.The appointed AP is engaged to monitor and report progress against the BREEAM targets by attending key project/design team meetings during the feasibility and design stages (RIBA Stage B up to and including RIBA Stage E, or equivalent).

9.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 design team meeting)

Fourth Credit

10.The appointed AP is engaged to monitor and report progress against the BREEAM targets by attending key project team meetings during the production information, tendering and construction stages (RIBA Stage F up to and including RIBA Stage L Post-Practical Completion or equivalent).

11.The defined BREEAM performance targets, agreed at or before RIBA Stage C (or equivalent) form a requirement of the principal contractors contract.

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).

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 asses-sor’s final post-construction stage certification report.

Appendix C	BREEAM 2011
Man 1	**Sustainable Procurement** Construction & Handover

Requirements for Construction and Handover

First Credit

1.The main contractor accounts for a thermographic survey within the project budget and programme of works.

2.Once construction is complete a thermographic survey of the building fabric is undertaken in accordance with the appropriate standard and by a professional holding a valid Level 2 certificate in thermography (as defined by the UKTA website http://www.ukta.org)

3.The survey confirms:
a.Continuity of insulation in accordance with the construction drawings
b.Avoidance of excessive thermal bridging
c.Avoidance of air leakage paths through the fabric (except through intentional openings)

4.Any defects identified via the post construction inspections are rectified

Second Credit

1. 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.

2. All building services are included in the commissioning schedule and commissioning is to be carried out in line with current Building Regulations, BSRIA1 and CIBSE1 guidelines and/or other appropriate standard, where applicable (where a BMS is specified see also relevant Compliance note BMS commissioning procedures).

3. The main contractor accounts for the commissioning programme, responsibilities and criteria within the main programme of works.

4. 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:
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.

Appendix D	BREEAM 2011
Man 1	**Sustainable Procurement** Aftercare

Requirements for Aftercare

First Credit

1.The following seasonal commissioning responsibilities will be completed over a minimum 12 month period, once the building becomes occupied:

Complex systems - Specialist commissioning manager

a.Testing of all building services under full load conditions, i.e. heating equipment in mid-winter, cooling/ventilation equipment in mid-summer, and under part load con-ditions (spring/autumn)
b.Where applicable, testing should also be carried out during periods of extreme (high or low) occupancy
c.Interviews with building occupants (where they are affected by the complex services) to identify problems or concerns regarding the effectiveness of the systems
d.Re-commissioning of systems (following any work needed to serve revised loads), and incorporating any revisions in operating procedures into the O&M manuals.

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.

Second Credit

2. Criterion 1 is achieved and there is a mechanism to:
a. Collect the energy and water consumption data for at least 12 months after occupation,
b. Compare this with what was expected and
c. Analyse any discrepancies with a view of adjusting systems if they are not operating as expected/designed.

3. There is a contract or commitment to provide aftercare support to all the building occupiers which includes the following as a minimum:
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.
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

Appendix E	BREEAM 2011
Man 4	**Stakeholder Participation** Building User Information

Requirements for Building User Information

One Credit

1. 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 man-agement team/building manager).

2. The Guides cover all functions and uses of the building, ensuring building 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.

3. 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 infra-structure/amenities effectively.

Notes

Building User Guide Scope/ content

The guide should provide information relevant to the following stakeholders:
a) The building's staff (or where relevant residents)
b) The non technical facilities management team/building manager
c) Other building users e.g. visitors / community users

The content of the guide will be specific to the building type, but should broadly include information on the following:

a) Overview of the building and its environmental strategy e.g. energy/water/waste efficiency policy/strategy and how users should engage with/deliver the policy/strategy.
b) Building services overview and access to controls (where to find them,what they control, how to operate effectively and efficiently etc.)
c) Pre-arrival information for visitors e.g. access and security procedures/provisions
d) Provision of and access to shared facilities
e) Safety and emergency information / instructions
f) Building related operational procedures specific to building type/operation e.g. labs.
g) Building related incident reporting/feedback arrangements
h) Building related training information / links
i) Provision of and access to transport facilities e.g. public transport, cyclist facilities, pedestrian routes etc.
j) Provision of and access to local amenities
k) Re-fit, refurbishment and maintenance arrangements/considerations
l) Links, references and relevant contact details

There is no requirement on what media format the Building User Guide should take.

Appendix F	BREEAM 2011
Hea 3	**Thermal Comfort** Thermal Zoning and Control Strategy

Requirements for Thermal Zoning and Control Strategy

1. The thermal modelling analysis (First credit under Thermal Comfort) has informed the temperature control strategy for the building and it's users.

2. The strategy for proposed heating / cooling system(s) demonstrates that it has addressed the following:

a) 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.

b) 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:
i) User knowledge of building services,
ii) Occupancy type, patterns and room functions (and therefore appropriate level of control required),
iii) 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.,
iv) 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).

c) 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.

d) The need or otherwise for an accessible building user actuated manual override for any automatic systems

Appendix G	BREEAM 2011
Hea 5	Acoustic Perfomance

Requirements for Acoustic Performance

Pre-requisite

1. A suitably qualified acoustician is appointed by the client at pre-bid/briefing stage of the project to provide early design advice on:
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.

2. The building meets the acoustic performance standards and testing requirements for the relevant building type and function areas as detailed below:

a) Indoor ambient noise levels comply with the “good practice” criteria levels of BS8233:1999, Tables 5 & 6 unless otherwise stated within this table. See also additional criteria below for sound insulation.
b) A suitably qualified acoustician carries out pre-completion acoustic testing to ensure that the relevant spaces (as built) achieve the required performance standards. Where testing identifies that spaces do not meet the standards, remedial works are carried out prior to handover and occupation.

Notes

For the purposes of acoustic measurement and calculation these spaces should be considered unoccupied.

Appendix H	BREEAM 2011
Hea 6	**Safety and Security** Safe Access

Requirements for the First Credit - Safe Access

Where external site areas form part of the assessed development the following apply:
1. Dedicated cycle lanes are provided and have been designed and constructed in accordance with either:
a. Local Transport Note 2/08 Cycle Infrastructure Design, Department of Transport, 2008.
b. The National Cycle Network Guidelines and Practical Details – issue 2, Sustrans and the relevant parts of Appendix VI NCN Design and Construction Checklist

2. The cycle lanes provide direct access from the site entrance(s) to any cycle storage facilities provided, without the need to deviate from the cycle path and, if relevant, connects to off-site cycle paths where these run adjacent to the development's site boundary.

3. Footpaths on site provide direct access from the site entrance(s) to the building entrance(s) and connect to public footpaths off site (where existing), providing access to local transport nodes and other offsite amenities (where existing).

4. Where a dedicated pedestrian crossing of a vehicle access route is provided, the road is raised to the pavement level (i.e. the pavement is not lowered to road level), unless pave-ment is at road level (this may be the case in some car parks)

6. For large developments with a high number of public users/visitors, pedestrian pathways must be signposted to other local amenities off site, including public transport nodes (where existing).

7. The lighting for access roads, pedestrian areas, footpaths and cycle lanes is compliant with the external lighting criteria defined in BREEAM issue Hea 01, i.e. in accordance with BS5489-1:2003+A2:2008 Lighting of roads and public amenity areas.

Where dedicated delivery access and drop-off areas form part of the assessed development the following apply:
8. Delivery areas are not directly accessed through general parking areas and do not cross or share pedestrian and cyclist routes and other outside amenity areas accessible to building users and general public.

9. There is a separate parking/waiting area for goods vehicles away from / adjacent to the manoeuvring area and staff/visitor car parking.

10. Parking and turning areas are designed for simple manoeuvring according to the type of delivery vehicle likely to access the site, thus avoiding the need for repeated shunting.

11. There is a dedicated space for the storage of refuse skips and pallets away from the deliv-ery vehicle manoeuvring area and staff/visitor car parking (if appropriate given the building type / function).

Appendix I	BREEAM 2011
Tra 3	Cyclist Facilities

Notes

1. Compliant Cycle storage space

Compliant cycle storage facilities are those that meet the following:
1. Where the calculated number of required cycle storage spaces is less than 4 total provision should be based on the lower of the following:
a) A minimum of four compliant storage spaces must be provided (unless otherwise stated) OR
b) One space per user (staff and where appropriate other user groups)

2. The space is covered overhead to protect from the weather.

3. Cycles are secured within spaces in rack(s). The rack(s) consists of fixings for one or more spaces.

4. The covered area and the cycle racks are set in or fixed to a permanent structure (building or hardstanding). Alternatively the cycle storage may be located in a locked structure fixed to or part of a permanent structure with CCTV surveillance.

5. The distance between each cycle rack, and cycle racks and other obstructions e.g. a wall, allows for appropriate access to the cycle storage space, to enable bikes to be easily stored and accessed.

6. The facilities are in a prominent site location that is viewable/overlooked from either an occupied building or a main access to a building.

7. Lighting of the cycle storage facility must be compliant with the external (or internal where relevant) lighting criteria defined in BREEAM issue Hea 01. The lighting must be controlled to avoid 'out-of-hours' use and operation during daylight hours, where there is sufficient daylight in/around the facility.

8. The majority of the cycle racks are within 100m of a building entrance (ideally within 50m). Or alternatively, in the case where the building forms part of a larger site e.g. campus, business park, hospital or prison establishment where it is not feasible to meet the 100m requirement, the assessor justifiably deems the facilities to be in an easily accessible location (within the site boundary).

2. Compliant Showers

One shower must be provided for every 10 cycle storage spaces, subject to a minimum of one shower. Any development providing eight showers or more will comply regardless the number of cycle storage spaces provided. Both male and female users must be catered for i.e. either separate showers within shared gender-specific facilities (required provision split 50-50) or single shower cubicles and changing space for mixed use. The showers do not need to be dedicated to cyclists and can be those shared with other users/uses. Please note the BREEAM requirement for showers is based on accommodating good practice levels for commuting by bicycle. The maximum number of showers level is set to avoid unnecessary specification for typical buildings. Where a high ratio of cyclists is likely or expected for the building type, the provision of showers must reflect this and not be limited to the maximum without justification.

3. Compliant changing facilities and lockers

Changing facilities and locker criteria:
1. The assessor should use their judgement to determine whether the changing area is appropriately sized given the number of cycle storage spaces/showers provided.

2. Changing areas must include adequate space and facilities to hang/store clothing and equipment whilst changing/showering e.g. bench seat and/or hooks.

3. The number of lockers is at least equal to the number of cycle spaces provided.

4. Lockers are either in or adjacent to compliant changing rooms.

5. The lockers are sized appropriately for the storage of a cyclists equipment e.g. helmet, shoes, clothing, panniers/back-pack and cyclists equipment.

6. Both male and female users are catered for i.e. either gender specific, shared facilities or individual changing cubicles in mixed use areas.

Appendix J	BREEAM 2011
Tra 5	Travel Plan

Requirements for Travel Plan

1. A travel plan has been developed as part of the feasibility and design stages which con-siders all types of travel relevant to the building type and users.

2. The travel plan is structured to meet the needs of the particular site and takes into con-sideration the findings of a site-specific transport survey and assessment that covers the following (as a minimum):

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

3.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:

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.
i) Ensuring that rural buildings are located with appropriate transport access to ensure that they adequately serve the local community

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.

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.

Appendix K	BREEAM 2011
Mat 3	Responsible Sourcing of Materials

Requirements for Responsible Sourcing of Materials

1. Each of the applicable specified materials comprising the main building elements (refer to Table 1.2) are assigned a responsible sourcing tier level and points awarded as follows:

Tier Level	Points
1	4
2	3.5
3	3
4	2.5
5	2
6	1.5
7	1
8	0

Table 1.1: Tier Levels and related Points

2. The number of points and BREEAM credits achieved is determined by the assessor, using the Mat 03 Calculator.
3. 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 1-7 (refer to Table 1.3 for applicable materials and Table 1.4 for the Tier Levels)

4. Confirmation that all timber used on the project is sourced in accordance with the UK Government's Timber Procurement Policy. It is a minimum requirement of BREEAM certification (for any rating level) that compliance with point 4 is confirmed.

Building Elements
1. Structural Frame
2. Ground Floor
3. Upper Floors (including separating floors)
4. Roof
5. External walls
6. Internal walls
7. Foundation/Structure
8. Fittings: includes staircase, windows, doors, floor finishes
9. Hard Landscaping

Table 1.2: Main building elements

Applicable materials
1. Brick
2. Pavers
3. Resin-based composites and materials
4. Concrete
5. Glass
6. Plastics and rubbers
7. Metals
8. Dressed or building stone including slate
9. Stone and gravel
10. Timber, timber composites and wood panels
11. Plasterboard and plaster
12. Bituminous materials such as roofing membranes and asphalt
13. Other mineral-based materials
14. Products with recycled content

Table 1.3: Applicable materials

Scheme	Certification Level/Scope	Tier Level
BRE Global, BES6001 Product Certification	Excellent Very Good Good Pass	2 3 4 5
BRE Global, BES6001 Standard certification	Excellent Very Good Good Pass	2 3 4 5
Canadian Standards Association's (CSA) Chain of Custody Scheme	Chain of Custody Certification	3
Environmental Management System (EMS) (certified)	Key process and supply chain extraction process	6
Environmental Management System (EMS) (certified)	Key process	7
Forest Stewardship Council (FSC)	Chain of Custody Certification	3
Green Dragon Environmental Standard	Level 4 and above	7
Recycled materials	Certified EMS for key process	6
Re-used materials	-	3
Malaysian Timber Certification Council (MTCC)	Chain of Custody Certification	6
Programme for the Endorsement of Forest Certification (PEFC)	Chain of Custody Certification	3
Sustainable Forestry Initiative (SFI)	Chain of Custody Certification	3
Societe Generale de Surveillance (SGS) 'Timber Legality and Traceability' scheme	Timber Legality & Traceability Verification (TLTV)	6
Rainforest Alliance's 'Verification of Legal Origin and Compliance' scheme	Verification of Legal Origin and Compliance (VLO/VLC)	6

Table 1.4: Schemes and Tier Levels

Table 1.5: Table to be filled by Design team

Building Element	Volume of Building Element / m^3	Applicable Material	Volume of Applicable material / m^3	Certification Scheme	Tier Level

Appendix L	BREEAM 2011
Wst 1	Construction Waste Management

Requirements for Construction Resource Efficiency
(Up to 3 credits are available)

1.Non-hazardous construction waste (excluding demolition and excavation waste) gen-erated by the building's design and construction meets or exceeds the following resource efficiency benchmarks:

13.3 m^3 per 100m^2 GIA = 1 credit
7.5 m^3 per 100m^2 GIA = 2 credits
3.4 m^3 per 100 m^2 GIA = 3 credits
where volume (m^3) is actual volume of waste (not bulk volume)

2. There is a compliant Site Waste Management Plan (SWMP).

3. Where existing buildings on the site will be demolished a pre-demolition audit of any exist-ing buildings, structures or hard surfaces is completed to determine if, in the case of dem-olition, 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 ref-erenced in the SWMP and cover:
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.

4. Requirements for Diversion of resources from landfill

The following percentages of non-hazardous construction and demolition waste (where applicable) generated by the project have been diverted from landfill:

BREEAM Credits	Type of waste	Volume	Tonnage
One credit	Non Demolition	70%	80%
	Demolition	80%	90%

5. There is a compliant Site Waste Management Plan (SWMP).

6. Waste materials will be sorted into separate key waste groups see Table 10-1(according to the waste streams generated

Appendix M	BREEAM 2011
LE 5	Long Term Impact on Biodiversity

Mandatory Criteria

1. A suitably qualified ecologist (SQE) has been appointed prior to commencement of activities on site.

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.

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 build-ing occupants and includes:
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.

Additional Criteria

1. The principal contractor nominates a 'Biodiversity Champion' with the authority to influence site activities and ensure that detrimental impacts on site biodiversity are mini-mised in line with the recommendations of a suitably qualified ecologist.

2. 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 fea-tures highlighted within a report prepared by a suitably qualified ecologist.

3.The principal contractor records actions taken to protect biodiversity and monitor their effectiveness throughout key stages of the construction process. The requirement commits the principal contractor to make such records available where publicly requested.

4.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)2 , Local Biodiversity Action Plan (LBAP), those protected within statutory sites (e.g. SSSIs), or those within non-statutory sites identified in local plans.

5. 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 land-scaping have been, or will be, scheduled at an appropriate time of year to minimise dis-turbance to wildlife.

6. 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.

Appendix N	**BREEAM 2011**
Pol 5	**Noise Attenuation**

Requirements for Noise Attenuation

One credit

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.

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 7445:199120 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).

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.

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 2300hrs) and +3dB at night (2300hrs to 0700hrs) compared to the back-ground noise level.

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 noise at its source to a level where it will comply with criterion 4.