Richmond College and Sports Centre

BREEAM New Construction 2014

Design Stage Pre-Assessment

Based on the BREEAM New Construction 2014 Design Stage Criteria (Issue 2.0)

Education Buildings (Further Education)

Revision P4, 11th June 2015

BRE Reference Number: TBC

BREEAM Pre-Assessment Summary

BREEAM, the UK's Building Research Establishment's Environmental Assessment Method, is used to rate the environmental performance of new or existing buildings, as designed and constructed and/or in operation. A BREEAM rating of 'Pass', 'Good', 'Very Good', 'Excellent' or 'Outstanding' can be awarded where sufficient credits have been gained on the basis of meeting environmental performance criteria in each of the categories: Management, Health and Wellbeing, Energy, Transport, Water, Materials, Waste, Land Use and Ecology, Pollution and Innovation.

This pre-assessment has been carried out based on the BREEAM 2014 New Construction Design Stage Criteria for Education buildings. This scheme is applicable to new build projects. In addition to a range of standard issues assessed for all building types, this also includes requirements specific to Education buildings which have been included in the pre-assessment.

Please note that this pre-assessment includes a summary of the requirements for each credit but the BREEAM Technical Manual should be referred to for full details.

Scoring and mandatory requirements

BREEAM requires the achievement of a minimum percentage score in order to achieve a particular rating. This is determined through achieving credits which are assigned to issues under each of the sections noted above. These sections are all weighted differently so credits in different sections equate to a different percentage score to those in other sections. The percentage contribution of each credit to the final score is noted at the end of each section in the following pages.

In addition to the achievement of a minimum score, BREEAM also contains mandatory credits/requirements which MUST be achieved in order to obtain a particular rating. If these are not achieved, the required rating cannot be obtained regardless of the percentage score achieved. In BREEAM 2014, there are also 'pre-requisites' which do not carry a score, but must be achieved in order to award a credit and/or rating. Where a pre-requisite or mandatory credit is present, this is clearly highlighted in the main summary spreadsheet below.

The following table shows the mandatory credits and requirements for the project and indicates whether these have been met in the targets below. Please note that sufficient evidence will need to be provided to demonstrate that each of these requirements is achieved.

Credit Title	Summary of mandatory requirements	Rating level (based on targets)
Man 03 Responsible Construction Practices.	CCS scores of 25-34 (one credit) or 35-39 (two credits).	Outstanding
Man 04 Commissioning and Handover	A Building User Guide is produced	Outstanding
Man 05 Aftercare	Seasonal Commissioning	Outstanding
Ene 01 Reduction of Energy Use and Carbon Emissions	Minimum Energy Performance Ratio (EPR) calculations	Excellent
Ene 02 Energy Monitoring	Sub-metering of major energy consuming systems	Outstanding
Wat 01 Water Consumption	Efficiency of building's domestic water consuming components	Outstanding
Wat 02 Water Monitoring	A water meter on the mains supply to each building.	Outstanding
Mat 03 Responsible Sourcing of Materials	All timber used on the project is 'legally harvested and traded timber'.	Outstanding
Wst 01 Construction Waste Management	A compliant Construction Resource Management Plan (CRMP) is produced and the relevant resource efficiency and/or diversion from landfill benchmarks are met.	Outstanding
Wst 03 Operational Waste	A compliant dedicated space for storage and segregating recyclable waste is provided.	Outstanding
LE 03 Mitigating Ecological Impact	The change in ecological value of the site is no less than minus nine i.e. a minimal change.	Outstanding

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MINIMUM BREEAM RATING REQUIRED: Excellent. This equates to a score of 70% and requires the achievement of certain mandatory credits.

It should be noted that until sufficient evidence is provided by the project team to the BREEAM Assessor to demonstrate that the full requirements have been met, none of these scores can be assumed to have been achieved, but remain as targets until the assessor confirms otherwise.

Base Target	This column shows the minimum credits anticipated to be achieved for the development. This column gives a score of 71.96% which is a BREEAM rating of Excellent.

Credit Title	CREDITS		Summary of Requirements (refer to the BREEAM Guidance Notes for the full credit requirements)	Comments/ Actions
	Credits Available	Base Target		
MANAGEMENT				
Man 01	Project Brief and Design		To recognise and encourage an integrated design process that optimises building performance	
Project brief and design				
Stakeholder Consultation (Project Delivery) (1-3)	1	1	Credit awarded where, prior to completion of the RIBA Stage 2 (Concept Design), the client, building occupier, design team and contractor contribute to the decision making process for the project. As a minimum this includes meeting to identify and define their roles, responsibilities and contributions during each phase of the project. Show that consideration was given to all topics as listed in the guidance (requirements 2a-g). The project team should demonstrate how the project delivery stakeholder contributions and outcomes of the consultation process have influenced or changed the Initial Project Brief, including if appropriate, the Project Execution Plan, Communication Strategy, and the Concept Design.	It was confirmed (11.05.15) that this credit is targeted. Method have provided PM with guidance as how to meet all of the BREEAM requirements (email 29.04.15).
Stakeholder Consultation (Third Party) (4-7)	1	0	Credit awarded where, prior to completion of the RIBA Stage 2 (Concept Design), all relevant third party stakeholders have been consulted by the design team on the minimum consultation content. Refer to the guidance for full details. The project must demonstrate how the stakeholder contributions and outcomes of the consultation exercise have influenced or changed the Initial Project Brief and Concept Design. Prior to completion of RIBA Stage 4 (Technical Design), consultation feedback must be given to, and received by, all relevant parties. Note that for Education projects the Consultation exercise must use a method carried out by a independent party.	It was confirmed (11.05.15) that this credit is a potential target. It was noted that although considerable consultation had been carried out, this credit can only be achieved if the consultation was carried out using a DQI methodology by an independent third party. Information on DQI methodologies can be found at www.dqi.org.uk and www.socratestree.co.uk.
Sustainability Champion (BREEAM AP) (Design) (8-10)	1	1	Credit awarded where a Sustainability Champion is appointed to facilitate the setting and achievement of BREEAM performance target(s) for the project during project preparation and brief stages (RIBA Stage 1). There should be a contractual agreement of BREEAM performance targets between the client and design team by RIBA Stage 2 (Concept Design). To achieve this credit at the interim (design) assessment stage, the agreed BREEAM performance target(s) must be demonstrably achieved by the project design. This is demonstrated via the BREEAM Assessor's design stage assessment report.	It was confirmed (11.05.15) that as Georgie James (a BREEAM AP) has been appointed to the project, this enables this credit to be targeted.
Sustainability Champion (BREEAM AP) (Monitoring Progress) (11-12)	1	0	If the previous credit (criteria 8, 9 and 10) have been achieved, credit awarded where the Sustainability Champion is appointed to monitor progress against the agreed BREEAM performance target(s) throughout the design process, and formally reports progress to the client and design team. The Sustainability Champion must attend key project/design team meetings during the design stages (RIBA Stages 2, 3 & 4), reporting during, and prior to, completion of each stage, as a minimum.	It was confirmed (11.05.15) that this credit was not targeted at present, but if the scope of the AP's appointment is considerably enhanced this credit could be achieved.

Credit Title	CREDITS		Summary of Requirements (refer to the BREEAM Guidance Notes for the full credit requirements)	Comments/ Actions
	Credits Available	Base Target		
Man 02	**Life cycle cost and service life planning**		**To deliver whole life value from investment and promote economic sustainability by recognising and encouraging the use of life cycle costing and service life planning to improve design, specification and through-life maintenance and operation.**	
Elemental Life Cycle Cost (LCC) (1-2)	2	0	Two credits awarded where an Elemental LCC analysis and design option appraisal is carried out in line with 'Standardized method of life cycle costing for construction procurement' PD 156865:2008, at RIBA Stage 2. The LCC analysis must show an outline LCC based on buildings basic structure and envelope, a range of options and based on multiple cash flow scenarios (e.g. 20, 30, 50+ years) It must also show the fabric and servicing strategy, outlining services component and fit-out options over a 15yr period in an 'elemental LCC Plan'.	It was confirmed (11.05.15) that this is a potential target at present until the BREEAM requirements and the cost/timing are reviewed by Adrian Wilkins. Method will provide extract from the BREEAM manual and a checklist to demonstrate the requirements of this issue.
Component Level LCC Plan (3-4)	1	1	Credit awarded where a component LCC plan is developed to include envelope, services, finishes and external spaces, where present, before the end of RIBA Stage 4. Demonstrate how the component level LCC plan has influenced building and systems design/specifications to minimise life cycle costs and maximise critical value.	It was confirmed (11.05.15) that this credit is targeted as part of the strategy to achieve an Excellent rating.
Capital Cost Reporting (5)	1	1	Credit awarded where the project team reports the predicted capital cost for the building in £k/m2. At the design stage, this can be awarded based on confirmation of the predicted cost, and a client commitment to provide the information on the final cost at the end of the project.	It was confirmed (11.05.15) that this credit is targeted and a letter of commitment is to be provided at design stage with an approximate figure.
Man 03	**Responsible Construction Practices**		**To recognise and encourage construction sites which are managed in an environmentally and socially considerate, responsible and accountable manner.**	**Mandatory minimum requirement: One credit for Excellent and two credits for Outstanding for Considerate Construction.**
Pre-requisite	0	Y	**All timber and timber based products used in the project must be "Legally harvested and traded timber".**	It was confirmed (11.05.15) that the Contractor will be required to achieve this mandatory pre-requisite.
Environmental Management (1-2)	1	1	Credit awarded where the principal contractor operates an EMS covering main operations. The EMS must be either third party certified to ISO14001/EMAS standard, or structured in compliance with BS 8555 2003, having reached phase four of implementation stage. The principal contractor must implement best practice pollution prevention policies on site, in line with PPG 6.	It was confirmed (11.05.15) that this credit is targeted and that the appointed Contractor will be required to have ISO 14001 certification.
Sustainability Champion (BREEAM AP/BRE SSM) (Construction) (3-5)	1	0	Credit awarded when a Sustainability Champion is appointed to monitor the project to ensure compliance with performance/process criteria and BREEAM targets during Construction, Handover and Close Out stages (RIBA stages 5 and 6). Defined BREEAM performance targets form a requirement of the principal contractors contract. BREEAM related targets must be demonstrably achieved via BREEAM Assessor's final post-construction stage assessment report. Note that to achieve this, the Sustainability Champion must be site based or visit the site regularly to carry out spot checks, with sufficient frequency. They will attend regular progress meetings and report progress against the BREEAM targets.	It was confirmed (11.05.15) that if the the appointed Contractor has an SSM, this credit may be achievable.
Considerate Construction (6)	2	2	Credit awarded where the principal contractor has used an independently assessed 'compliant' organisational, local or national considerate construction scheme. One credit awarded where a CCS score of 25-34 is achieved with 5 in each section. Two credits awarded where the score is between 35-39 with 7 in each section.	It was confirmed (11.05.15) that the Contractor will be required to achieve two credits and one exemplary credit.
Monitoring of Construction Site Impacts (Utility Consumption) (7-13)	1	1	Responsibility for monitoring all on-site energy use and potable water consumption from construction processes (and dedicated off-site monitoring) should be assigned to an individual. Monitor and record principal and sub-contractor potable water consumption (m^3) and energy consumption (kWh/litres of fuel) used by construction plant, equipment (fixed and mobile) and site accommodation. Report the CO_2 emissions (total $kgCO_2$/project value) and total net potable water consumption (m^3) from construction processes.	It was confirmed (11.05.15) that the Contractor will be required to achieve this credit.

Credit Title	CREDITS		Summary of Requirements (refer to the BREEAM Guidance Notes for the full credit requirements)	Comments/ Actions
	Credits Available	Base Target		
Monitoring of Construction Site Impacts (Transport) (7, 14-16)	1	1	Responsibility should be assigned to an individual to monitor and record transport movements and impacts data from delivery of the majority of construction materials to, and waste from, site. Transport, intermediate storage and distribution of materials from factory gate to building site to be included as minimum. The scope of monitoring must cover materials used in major building elements, groundworks and landscaping materials. Transport of waste groups, outlined in projects WMP, from construction gate to waste disposal processing/recovery centre gate included as minimum. Report separately for materials and waste, the total fuel consumption (litres) and total CO_2 emissions ($kgCO_2$ eq), plus distance travelled (km).	It was confirmed (11.05.15) that the Contractor will be required to achieve this credit.
Man 04	Commissioning and Handover		To encourage a properly planned handover and commissioning process that reflects the needs of the building occupants.	Mandatory minimum requirement: Criterion 9 (Building User Guide) for Excellent and Outstanding.
Commissioning and Testing Schedule and Responsibilities (1-4)	1	1	Credit awarded where there is a schedule of commissioning, identifying a suitable timescale for commissioning and re-commissioning of all complex and non-complex building services, control systems and building fabric. All commissioning activities should be in accordance with current Building Regulations, BSRIA and CIBSE guidelines and/or other appropriate standards where applicable. Commissioning of BMS, where specified, should cover criteria in guidance notes. An appropriate project team member(s) should be appointed to monitor and programme pre-commissioning, commissioning and, where necessary, re-commissioning activities on behalf of the client. The principal contractor should account for the commissioning programme, responsibilities and criteria within their budget and programme of works, allowing for time to complete activities prior to handover.	It was confirmed (11.05.15) that this credit is targeted as part of best practice.
Commissioning Building Services (5)	1	1	Credit awarded where the commissioning criteria above have been achieved and when a specialist commissioning manager is appointed by the client/principal contractor during RIBA Stage 4 for buildings with complex building services and systems. Responsibility should cover: 1. Undertaking design reviews and giving advice on suitability for ease of commissioning. 2. Providing commissioning management input to construction programming and during installation stages. 3. Management of commissioning, performance testing and handover/post hand-over stages. Where there are simple building services, this role can be carried out by an appropriate project team member (see criterion 3 above), provided they are not involved in the general installation works for the building services system(s).	It was confirmed (11.05.15) that this credit is targeted as part of best practice.
Testing and Inspecting Building Fabric (6-8)	1	1	Credit awarded where the commissioning and testing schedule and responsibilities credit above is achieved, and a post construction thermographic survey and airtightness testing and inspection is completed to assure the quality of the building fabric, including insulation continuity, avoidance of thermal bridging and air leakage paths. Defects identified through testing must be rectified prior to building handover and close out. All testing must be carried out by a Suitably Qualified Professional, in line with the relevant standard.	It was confirmed (11.05.15) that this credit is targeted as part of the strategy to achieve an Excellent rating.
Handover (9-10)	0	Y	**Pre-requisite:** A Building User Guide is developed prior to handover, for distribution to building occupiers and premises managers, covering all functions and uses of the building.	It was confirmed (11.05.15) that this pre-requisite is targeted and the BREEAM-compliant BUG would be put together by the PM with input from the M&E.
	1	1	A training schedule is prepared for building occupiers/premises managers, timed appropriately around handover and proposed occupation plans, which includes the following content as a minimum: a) The building's design intent. b) The available aftercare provision and aftercare team main contact(s), including any scheduled seasonal commissioning and post-occupancy evaluation. c) Introduction to, and demonstration of, installed systems and key features, particularly building management systems, controls and their interfaces. d) Introduction to the BUG and other relevant building documentation (see guidance). e) Maintenance requirements, including any maintenance contracts and regimes in place.	It was confirmed (11.05.15) that the Contractor will be required to achieve this credit.

Credit Title	CREDITS		Summary of Requirements (refer to the BREEAM Guidance Notes for the full credit requirements)	Comments/ Actions
	Credits Available	Base Target		
Man 05	Aftercare		**To provide post-handover aftercare to the building owner/occupants during the first year of occupation to ensure the building operates and adapts, where relevant, in accordance with the design intent and operational demands.**	**Mandatory minimum requirement: One credit (Seasonal Commissioning) for Excellent and Outstanding.**
Aftercare Support (1-2)	1	1	Credit awarded where there is operational infrastructure and resources in place to provide aftercare support to the building occupier(s), which includes the following as a minimum: a) A meeting programmed to occur between the aftercare team/individual and the building occupier/management (prior to initial occupation, or as soon as possible thereafter) to: i. Introduce the aftercare team or individual to the aftercare support available, including the Building User Guide (where existing) and training schedule/content. ii. Present key information about the building including the design intent and how to use the building to ensure it operates as efficiently and effectively as possible. b) On-site facilities management training, to include a walkabout of the building and introduction to and familiarisation with the building systems, their controls and how to operate them in accordance with the design intent and operational demands. c) Initial aftercare support provision for at least the first month of building occupation, e.g. on-site attendance on a weekly basis to support building users and management (this could be more or less frequent depending on the complexity of the building and building operations). d) Longer term aftercare support provision for occupants for at least the first 12 months from occupation, e.g. a helpline, nominated individual or other appropriate system to support building users/management. There is operational infrastructure and resources in place to co-ordinate the collection and monitoring of energy and water consumption data for a minimum of 12 months, once the building is occupied. This is done to facilitate analysis of discrepancies between actual and predicted performance, with a view to adjusting systems and/or user behaviours accordingly.	It was confirmed (11.05.15) that this credit is targeted, with initial support to be provided by the Contractor and ongoing support likely to be provided by a central facilities management team.
Seasonal Commissioning (3)	1	1	**Complex systems - Specialist commissioning manager (over a minimum 12 month period after occupation)** 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 conditions (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); Recommissioning of systems (following any work needed to serve revised loads), and incorporating any revisions in operating procedures into the O&M manuals. **Simple systems (naturally ventilated) - external consultant/ facilities manager** a. Review thermal comfort, ventilation, and lighting, at three, six and nine month intervals after initial occupation, either by measurement or occupant feedback; take all reasonable steps to recommission systems following the review to take account of deficiencies identified and incorporate any relevant revisions in operating procedures into the O&M manuals.	It was confirmed (11.005.15) that this credit is targeted. Seasonal commissioning for complex systems would be provided by a specialist systems manager and seasonal commissioning of simple systems would be carried out by the facilities management.
Post Occupancy Evaluation (4-5)	1	1	The client makes a commitment to carry out a Post Occupancy Evaluation (POE) one year after building occupation, to gain building performance feedback. The POE should be carried out by an independent party. It should include the following: a review of the design intent and construction process, feedback from building users on the design and environmental conditions of the building, sustainability performance. See guidance notes for full list of what should be included. The client makes a commitment to carry out the appropriate dissemination of information on the building's post occupancy performance in order to share any good practice and lessons learned, and inform changes in user behaviour, building operational processes and procedures, and system controls. Refer to the compliance notes for a definition of appropriate dissemination, this also provides advice on appropriate dissemination where the building or building information is commercially or security sensitive.	It was confirmed (11.05.15) that this credit is targeted and that there certain requirements for POE on the project whcih may align with those for BREEAM. Method confirmed they offer POE using BUS methodology.
Sub-Total	21	16		
Weighted Sub-Total	12	9.14	**One management credit equals 0.57%**	

Credit Title	CREDITS		Summary of Requirements (refer to the BREEAM Guidance Notes for the full credit requirements)	Comments/ Actions
	Credits Available	Base Target		
HEALTH & WELLBEING				
Hea 01	**Visual comfort**		**To ensure daylighting and occupant controls are considered at the design stage to ensure best practice visual performance and comfort for building occupants.**	
Glare Control (1-2)	1	1	Credit awarded when the potential for disabling glare has been designed out of all relevant building areas either through building layout (e.g. low eaves) or building design (e.g. brise soleil, bioclimatic design). The glare control strategy avoids increasing lighting energy consumption by maximising daylight levels whilst avoiding disabling glare. System should not inhibit daylight entering the space under cloudy conditions, and the location of shading should not conflict with operating lighting controls.	It was confirmed (11.05.15) that this credit is targeted.
Daylighting (3)	2	0	Two credits awarded where calculations have been carried out which demonstrate that at least 80% of floor area in occupied spaces is adequately daylit. Note: For all education buildings, where the Education Funding Agency daylighting criteria have been achieved for all relevant rooms within the building, two credits can be awarded by default. Evidence would need to be provided that the EFA requirements have been met. An additional Innovation credit available - see below	It was confirmed (11.05.15) that these credits are a potential target. Based on the latest layouts it is unlikely that these credits will be achieved due to the number of internal rooms and those with room depths over 7m (such as Sports Hall), although will be reviewed as the detailed design develops.
View Out (4-6)	1	0	Credit awarded when 95% of floor space within relevant building areas (inc. workstations, close work areas or areas where a view out is deemed beneficial to occupants of the space) are within 7m of a wall which has a window or permanent opening that provides an adequate view out. The window/opening must be equal to, or greater than, 20% of the surrounding wall area. Where the room depth is greater than the 7m requirement, compliance is only possible where the % of window/opening is ≥ the values in table 1.0 of BS 8206.	It was confirmed (11.05.15) that based on the latest layouts it is unlikely that this credit will be achieved due to the number of internal rooms, although will be reviewed as the detailed design develops.
Internal and External Lighting Levels, Zoning and Control (7-13)	1	1	Credit awarded where high frequency ballasts are fitted to all fluorescent and compact fluorescent lamps. AND All internal and external lighting is designed to provide illuminance levels appropriate to tasks undertaken, recommended by SLL Code for Lighting 2012, CIBSE LG 7 or other relevant industry standard for internal lighting, and BS 5489-1:2013 and BS EN 12464-2:2014 for external lighting. AND Lighting must be appropriately zoned and allow for occupant control. Areas used for teaching, seminar or lecture purposes must have controls specified in accordance with CIBSE LG5. Manual lighting controls should be easily accessible for the teacher whilst teaching and on entering/leaving the teaching space.	It was confirmed (11.05.15) that this credit is targeted. Method noted that special attention should be given to the zoning and manual controls criteria for indoor lighting. External lighting will need to be considered on a site-wide basis.
Hea 02	**Indoor air quality**		**To recognise and encourage a healthy internal environment through the specification and installation of appropriate ventilation, equipment and finishes.**	
Indoor Air Quality Plan (1)	1	1	Credit awarded where an Indoor Air Quality (IAQ) plan has been produced, with the objective of facilitating a process that leads to design, specification and installation decisions and actions that minimise indoor air pollution during occupation of the building. The indoor air quality plan must consider the following: a. Removal of contaminant sources b. Dilution and control of contaminant sources c. Procedures for pre-occupancy flush out d. Third party testing and analysis e. Maintaining indoor air quality in-use	It was confirmed (11.05.15) that this credit is targeted.

Credit Title	CREDITS		Summary of Requirements (refer to the BREEAM Guidance Notes for the full credit requirements)	Comments/ Actions
	Credits Available	Base Target		
Ventilation (2-5)	1	0	Credit awarded where the building has been designed to minimise the concentration and recirculation of pollutants in the building by providing fresh air in to the building in accordance with relevant standards for ventilation. **1. In air-conditioned and mixed-mode buildings/spaces:** The building's air intakes and exhausts are over 10m apart and intakes are over 20m from sources of external pollution. OR The location of the building's air intakes and exhausts, in relation to each other and external sources of pollution, is designed in accordance with BS EN 13779:2007 Annex A2. **2. In naturally-ventilated buildings/spaces**: openable windows/ventilators are over 10m from sources of external pollution. Where present, HVAC systems must incorporate suitable filtration to minimise external air pollution, in line with BS EN 13779:2007. Areas of the building subject to large and unpredictable/variable occupancy patterns should have CO_2 or air quality sensors specified and meet the detailed requirements relating to natural or mechanically ventilated spaces.	It was confirmed (11.05.15) that this credit is not achievable. Due to the proximity of the main road and potential pollution issues, a mechanical ventilation strategy is required. It will be challenging to design intakes and exhausts to be located in accordance with criterion 1, as detailed left, although this will be reviewed as he detailed design develops.
Volatile Organic Compounds (Emission levels) (6-7)	1	1	Credit awarded where all decorative paints and varnishes specified meet the criteria in the EU Directive 2004/42/CE ('Paints Directive'). At least five of the other seven remaining product categories meet the testing requirements and emission level criteria for Volatile Organic Compound (VOC) emissions.	It was confirmed (11.05.15) that this credit is targeted as part of the strategy to achieve an Excellent rating.
Volatile Organic Compounds (Testing) (8-12)	1	1	Credit awarded where formaldehyde and total volatile organic compound (TVOC) concentrations meet the required standards and are measured via post construction (but pre-occupation) testing in accordance with the relevant standards, and reported using the BRE scoring tool.	It was confirmed that this credit is targeted as part of the strategy to achieve an Excellent rating, and the Contractor will be required to carry out testing.
Adaptability - Potential for Natural Ventilation (13-14)	1	0	Credit awarded when the ventilation strategy is flexible and adaptable to potential occupant needs and climatic scenarios, and the design shows that occupied spaces are capable of providing fresh air entirely via natural ventilation. Either, room depths are designed in accordance with CIBSE AM10, and the openable window area in each occupied space is 5% of GIFA of that floor plate. OR The natural ventilation strategy provides adequate cross flow of air to maintain required thermal comfort/ventilation rates. Demonstrated using design tool types recommended by CIBSE AM10. For strategies that do not rely on openable windows, or with occupied spaces greater than 15m, the design must demonstrate that the strategy can provide an adequate cross flow of air, in line with BB101. The natural ventilation strategy should provide at least two levels of user-control on fresh air supply. Any opening mechanisms must be easily accessible, and avoid draughts.	It was confirmed (11.05.15) that due to the proximity of the main road and potential pollution issues, a natural ventilation strategy is not feasible, so this credit cannot be achieved.
Hea 04	**Thermal Comfort**		**To ensure that appropriate thermal comfort levels are achieved through design, and controls are selected to maintain a thermally comfortable environment for occupants within the building.**	
Thermal Modelling (1-4)	1	1	Credit awarded when thermal modelling has been carried out using software in accordance with CIBSE AM11, and provides full dynamic thermal analysis. . The modelling should show the building design and services strategy can deliver thermal comfort levels in occupied spaces as follows: a) **In air-conditioned buildings:** Summer and Winter operative temperature ranges in accordance with the criteria set out in BB101. b) **Naturally ventilated/free running buildings:** Winter operative temperature ranges in accordance with BB101 AND the building is designed to limit the risk of overheating in accordance with CIBSE TM52. For air-conditioned buildings, the PMV and PPD indices should be provided as evidence.	It was confirmed (11.05.15) that this credit is targeted.

Credit Title	CREDITS		Summary of Requirements (refer to the BREEAM Guidance Notes for the full credit requirements)	Comments/ Actions
	Credits Available	Base Target		
Adaptability - For a projected climate change scenario (5-8)	1	0	Credit awarded when the Hea 04 Thermal modelling credit has been achieved, and the thermal modelling demonstrates that the building design and services strategy can deliver the same thermal comfort levels in occupied spaces under a projected climate change environment. Where thermal comfort criteria are not met for the projected climate change environment, the project team should demonstrate how the building has been adapted, or is adaptable in future using passive design solutions to achieve above criteria. For air-conditioned buildings, the PMV and PPD indices are reported, based on the modelling.	It was confirmed (11.05.15) that the potential to achieve this credit would be reviewed.
Thermal Zoning and Controls (9-11)	1	1	Credit awarded when the Hea 04 Thermal modelling credit has been achieved, and the thermal modelling analysis has informed the temperature control strategy for the building and its users. 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. b. The degree of occupant control required for these zones based on discussions with the end user. c. How proposed systems will interact with each other and how this may affect thermal comfort of building users. d. The need or otherwise for an accessible building user actuated manual override for any automatic systems.	It was confirmed (11.05.15) that ASHPs were specified, although this was to be finalised. It was noted that occupant controls should be reviewed to confirm that the criteria are met.
Hea 05	**Acoustic performance**		**To ensure the buildings' acoustic performance including sound insulation meet the appropriate standards for its purpose.**	
Acoustic Performance (1)	3	3	Credits awarded where a programme of pre-completion acoustic testing is carried out by a compliant test body to ensure the relevant building areas meet the appropriate acoustic performance standards and testing requirements. First credit: Sound Insulation -Achieve performance standards set out in Section 2 of the Acoustic Performance Standards for the Priority Schools Building Programme (APS) or other relevant standard relating to airborne and impact sound insulation of walls and floors. Second credit: Internal Ambient Noise Levels - Achieve the ambient noise standards in Section 2 of the APS for all room types. For roofs with a mass per unit less than 150km/m^2 or roofs with glazing/rooflights, calculations using laboratory data with 'heavy' rain noise excitation as defined in BS EN ISO 140-183 are required for teaching/learning spaces to demonstrate that the reverberant sound pressure level in these rooms are not more than 20 dB above the appropriate limits presented within Section 2 of APS. Third credit - Reverberation - Where teaching and study spaces achieve the requirements relating to reverberation in table 5 in Section 2 of the APS. Open plan teaching spaces achieve the performance standards relating to speech transmission index in Section 2.8 of the APS, and corridor and stairwells that give direct access to teaching/study spaces achieve the performance requirements for sound absorption.	It was confirmed (11.05.15) that an acoustician has been appointed and that 3 credits are targeted.
Hea 06	**Safety and security**		**To recognise and encourage effective measures that promote safe and secure use and access to and from the building.**	
Safe Access (1-10)	1	0	Credit awarded where the site is designed to allow for safe access for pedestrians and cyclists. Level of detail is comprehensive - refer to compliance notes for details. Points to consider include: cycle paths and footpaths connecting to any off site paths, drop off areas to be located off/adjoining access road with direct access to footpath, road raised to pavement level at crossings, lighting in line with BS 5489-1:2013. Where delivery access areas and drop off areas exist: 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, provide a separate parking/waiting area for goods vehicles, ensure parking/turning areas are designed for simple manoeuvring and provide a dedicated space for refuse skips and pallets, away from delivery areas and staff/visitor parking.	It was confirmed (11.05.15) that the requirements for this credit will be reviewed as the design develops.

Credit Title	CREDITS		Summary of Requirements (refer to the BREEAM Guidance Notes for the full credit requirements)	Comments/ Actions
	Credits Available	Base Target		
Security of Site and Building (11-13)	1	1	Credit awarded where an evidence-based Security Needs Assessment (SNA) is conducted by a Suitably Qualified Security Specialist (SQSS) by the end of RIBA Stage 2. The SQSS develops a set of recommendations or solutions during or prior to RIBA Stage 2 which aim to ensure that the design of buildings, public and private car parks and public or amenity space are planned, designed and specified to address the issues identified in the SNA. The recommendations from the SQSS are implemented. Any deviations from the recommendations will need to be justified, documented and agreed in advance with a SQSS.	It was confirmed (11.05.15) that this credit is targeted. The local CPDA team for South West London can be contacted on 0208 247 5834 or DOCOMailbox.SW@met.police.uk.
Sub-Total	18	11		
Weighted Sub-Total	15	9.17	One health & wellbeing credit equals 0.83%	
ENERGY				
Ene 01	Reduction of Energy use and Carbon Emissions		To recognise and encourage buildings designed to minimise operational energy demand, consumption and CO_2 emissions.	Mandatory minimum requirements: Five credits for Excellent and eight credits for Outstanding.
Energy Performance (1)	12	5	Up to 12 credits can be awarded where there is an improvement in the building operational related CO_2 emissions. The number of credits is based on the Energy Performance Ratio for New Constructions (using the BREEAM calculator).	It was confirmed (11.05.15) that a minimum of five credits will be achieved in order to achieve an Excellent rating.
Ene 02	Energy monitoring		To recognise and encourage the installation of energy sub-metering that facilitates the monitoring of operational energy consumption.	Mandatory minimum requirements: One credit (sub-metering of major energy consuming systems) for Very Good, Excellent and Outstanding.
Sub-metering of Major energy Consuming Systems (1-4)	1	1	Credit awarded where energy metering systems are installed that enable 90% of the estimated annual energy consumption of each fuel to be assigned to the various end-use categories of energy consuming systems. This includes the following: Space heating; Domestic Hot Water; Humidification; Cooling; Ventilation; Pumps; Lighting; Small power; Renewable or low carbon systems (separately); Controls and other major energy-consuming systems/plant. The energy consuming systems in buildings with a total useful floor area >1000m^2 are metered using an appropriate energy monitoring and management system. Smaller buildings are metered either with an energy monitoring and management system or separate accessible sub-meters with pulsed outputs or other open protocol communication output to enable future connection to energy monitoring system. The end energy consuming use should be identifiable to the building user, for example through labelling or data outputs.	It was confirmed (11.05.15) that this credit is targeted.
Sub-metering of High Energy Load and Tenancy Areas (5)	1	1	Credit awarded where an accessible energy monitoring and management system or separate accessible energy sub-meters with pulsed outputs or other protocol communication outputs which enable future connection to an energy monitoring and management system, are provided, covering a significant majority of the energy supply to all relevant function areas or departments within the building/unit.	It was confirmed (11.05.15) that this credit is achievable and is targeted. The relevant areas for sub-metering are kitchens (excluding small staff kitchens and food tech. rooms), computer suites, workshops, conference/lecture rooms, drama studios, sports hall, process areas, animal accomodation areas, data centres, IT work areas (incl. IT-equipped libraries or areas with ≥1 computer per 5m^2).

Credit Title	CREDITS		Summary of Requirements (refer to the BREEAM Guidance Notes for the full credit requirements)	Comments/ Actions
	Credits Available	Base Target		
Ene 03	**External Lighting**		**To recognise and encourage the specification of energy-efficient light fittings for external areas of the development.**	
External lighting (1-3)	1	1	Credit awarded by default where the building has been designed to operate without external lighting. OR Credit awarded where the average initial luminous efficacy of the external light fittings within the construction zone is not less than 60 luminaire lumens per circuit Watt. All external light fittings should be automatically controlled for prevention of operation during daylight hours and presence detection in areas of intermittent pedestrian traffic.	It was confirmed (11.05.15) that this credit is targeted.
Ene 04	**Low Carbon Design**		**To encourage the adoption of design measures, which reduce building energy consumption and associated carbon emissions and minimise reliance on active building services systems.**	
Passive Design (Passive Design analysis) (1-3)	1	1	Credit awarded when Hea 04 Thermal comfort has been achieved; and the design team conduct an analysis of building design/development by RIBA Stage 2, to identify opportunities for passive design solutions to reduce energy consuming services. Additionally the building should use passive design measures to reduce the total heating, cooling, mechanical ventilation and lighting loads and energy consumption in line with the findings of the passive design analysis and the analysis should demonstrate a reduction in the total energy demand as a result (as a guide, passive design measures should contribute at least 5% of total energy demand).	It was confirmed (11.05.15) that this credit is targeted.
Passive Design (Free cooling) (4-6)	1	0	Credit awarded where the Ene 04 passive design analysis credit is achieved, and the passive design analysis includes an analysis of free cooling and identifies opportunities for the implementation of free cooling solutions. These include: night-time cooling, ground coupled air cooling, displacement ventilation (not linked to any active cooling mechanism), ground water cooling, surface water cooling, evaporative cooling (direct of indirect), desiccant dehumidification and evaporative cooling using waste heat, and absorption cooling using waste heat. The building uses any of the free cooling strategies listed and achieves a meaningful reduction in active cooling. Note: The free cooling criteria apply to ICT areas.	It was confirmed (11.05.15) that the potential to employ a free cooling strategy will be reviewed as the design develops, although with so many specialist spaces it may not be possible to achieve for all spaces.
Low and Zero Carbon Technologies (LZC Feasibility Study) (7-8)	1	1	Credit awarded when an energy specialist conducts a feasibility study by the end of RIBA Stage 2, to establish the most appropriate recognised local (on-site or near-site) LZC energy sources for the development. A local LZC energy technology/technologies must be specified for the building/development in line with the recommendations of this feasibility study, and this results in a meaningful reduction in regulated CO_2 emissions (as a guide, this should be at least 5%).	It was confirmed (11.05.15) that this credit is targeted. An LZC feasibility study will be undertaken to determine the most viable technologies for specification. It was noted that PV and ASHPs were likely to be specified.
Ene 06	**Energy Efficient Transport Systems**		**To recognise and encourage the specification of energy efficient transportation systems.**	
Energy Consumption (1)	1	1	Where either lifts, escalators or moving walks (transportation types) are specified, credit awarded where: a) An analysis of the transportation demand and usage patterns for the building has been carried out to determine the optimum number and size of lifts (including counter-balancing ratio), escalators and/or moving walks. b) The energy consumption has been estimated in accordance with ISO BS EN 25745 Part 2 - Lifts and/or Part 3 - Escalators and Travelling Walkways for one of the following: i) At least two types of system (for each transportation type required); OR ii) An arrangement of systems (e.g. for lifts, hydraulic, traction, machine room-less lift (MRL)); OR iii) A system strategy which is 'fit for purpose'. c) The use of regeneration drives should be considered, where it produces an energy saving greater than the additional standby energy used to support the drives (typically for lifts with high travel and intensity use). d) The transportation system with the lowest energy consumption is specified.	It was confirmed (11.05.15) that this credit is targeted. A lift analysis should be undertaken to consider the most energy-efficient option.

Credit Title	CREDITS		Summary of Requirements (refer to the BREEAM Guidance Notes for the full credit requirements)	Comments/ Actions
	Credits Available	Base Target		
Energy Efficient Features (2-6)	2	2	Where the Ene 06 energy consumption credit has been achieved, credit awarded where: For lifts, the following three energy-efficient features are specified: 1. The lifts operate in a stand-by condition during off-peak periods. For example the power side of the lift controller and other operating equipment such as lift car lighting, user displays and ventilation fans switch off when the lift has been idle for a prescribed length of time. 2. The lift car lighting and display lighting provides an average lamp efficacy, (across all fittings in the car) of > 55 lamp lumens/circuit Watt and lighting switches off after the lift has been idle for a prescribed length of time. 3. The lift uses a drive controller capable of variable-speed, variable-voltage, and variable-frequency (VVVF) control of the drive motor. 4. Regeneration drives are specified where they are shown to save energy. For escalators and/or moving walks, each escalator and/or moving walk complies with at least one of the following: 1. It is fitted with a load sensing device that synchronises motor output to passenger demand through a variable speed drive; OR 2. It is fitted with a passenger sensing device for automated operation (auto walk), so the escalator operates in stand-by mode when there is no passenger demand.	It was confirmed (11.05.15) that these credits are targeted. The specified lift should have 3 of the 4 energy efficient features outlined left.
Ene 08	**Energy Efficient Equipment**		**To recognise and encourage procurement of energy efficient equipment to ensure optimum performance and energy savings in operation.**	
Energy Efficient Equipment (1-3)	2	2	Credit awarded where the building's unregulated energy consuming loads are identified and their contribution to the total annual unregulated energy consumption of the building is estimated, assuming a typical/standard specification. Identify which of the following systems/process that will be responsible for a significant proportion of total annual unregulated energy consumption of the building and demonstrate a meaningful reduction in energy consumption. Small power, plug in equipment; swimming pool; communal laundry facilities with commercial sized appliances; data centre; IT intensive operating area; residential areas with domestic scale appliances; kitchen and catering equipment.	It was confirmed (11.05.15) that two credits are targeted. It was noted that it is likely that the kitchens will represent the highest unregulated energy load, and both credits should be achievable via specification of appropriate equipment.
Sub-Total	**23**	**15**		
Weighted Sub-Total	**15**	**9.78**	**One energy credit equals 0.65%**	
TRANSPORT				
Tra 01	**Public Transport Accessibility**		**To recognise and encourage development in proximity of good public transport networks, thereby helping to reduce transport-related pollution and congestion.**	
Accessibility Index (1-2)	5	2	Up to 5 credits are available where the public transport Accessibility Index (AI) for the assessed building is calculated based on the mode of transport, frequency of services and distance from building entrance to accessible public transport nodes. Where a development is unable to achieve any of the available credits using the AI, one credit is achieved when the building occupier provides, or commits to providing a dedicated bus service to and from the building relating to shift patterns.	It was confirmed (11.05.15) that two credits are targeted. The current Accessibility Index will enable one or two credits to be achieved, but as improvements to public transport are planned this should ensure that at least 2 credits will be achieved.
Tra 02	**Proximity to Amenities**		**To encourage and reward a building location that facilitates easy access to local services and so reduces the environmental, social and economic impacts resulting from multiple or extended building user journeys, including transport related emissions and traffic congestion.**	
Proximity to Amenities (1)	1	1	Credit is awarded where the building is located within 500m, via a safe pedestrian route, of 4 local amenities likely to be frequently required by the occupants. This should include at least 2 of the 3 core amenities: Appropriate food outlet, access to cash, and access to a recreation/leisure facility for fitness/sports, plus one other amenity. This can be either a core amenity, or one of the following additional amenities: Publicly available posting facilities, community facility; over-the-counter pharmacy; access to an outdoor open space (public or private and suitably sized and accessible to building users). Note: Further Education developments are 'Building Type 3'.	It was confirmed (11.05.15) that this credit is targeted. Relevant amenities will be available either on site or nearby to achieve this credit.

Credit Title	CREDITS		Summary of Requirements (refer to the BREEAM Guidance Notes for the full credit requirements)	Comments/ Actions
	Credits Available	Base Target		
Tra 03	Cyclist Facilities		To encourage building users to cycle, so promoting exercise and helping reduce congestion and emissions, by ensuring adequate provision of cyclist facilities,	
Cycle Storage (1)	1	1	Credit awarded where compliant cycle storage facilities are provided. This requires the following: **Further Education:** 1 space per 10 staff and pupils/students in total. (N.B. a sliding scale applies as follows: 1-200 users @ 1:10 201-300 users @ 1:15 301-400 users @ 1:20 401+ users @ 1:25 i.e. the 1:10 ratio applies to the first 200 users, 1:15 then applies to the next 100 users etc.).	It was confirmed (11.05.15) that this credit is targeted. It was confirmed that for planning a ratio of 1 spaces per 8 staff and students was required and so there should be enough spaces for BREEAM. Method noted that spaces should be covered and lit in order to be BREEAM compliant. The maximum number of staff and students on site on a typical day is used to calculate the number of cycle space required. It was confirmed that there are likely to be 3000 students and 150+ staff so at least 142 spaces will be required for BREEAM.
Cyclist Facilities (2-3)	1	1	If the first Tra 03 credit has been achieved above, one credit can be awarded where at least two types of the following compliant cyclist facilities have been provided; Showers; Changing facilities; Lockers or Drying Spaces.	It was confirmed (11.05.15) that this credit is targeted and at least 8 showers and changing rooms should be provided. It was agreed that the required number of lockers would not be included.
Tra 04	Maximum car parking capacity		To encourage the use of alternative means of transport other than the private car to and from the building, thereby helping to reduce the transport related emissions and traffic congestion associated with the building's operation.	
Car Parking Capacity (1)	2	1	Depending on the building's Accessibility Index (AI) one credit is awarded based on the maximum car parking capacity in relation to the number of building users AI <4 = 1 space per 15 building users AI ≥ 4 - <8 = 1 space per 20 building users AI ≥ 8 = 1 space per 25 building users To achieve the second credit, the requirements increase as follows: AI <4 = 1 space per 20 building users AI ≥ 4 - <8 = 1 space per 25 building users AI ≥ 8 = 1 space per 30 building users	Based on 3150 staff and students at the college and 150 car parking spaces, 1 credit is targeted.
Tra 05	Travel Plan		To recognise the consideration given to accommodating a range of travel options for building users, thereby encouraging the reduction of user reliance on forms of travel that have the highest environmental impact.	
Travel plan (1-4)	1	1	Credit awarded where the development of a travel plan and site specific travel assessment or statement has been undertaken (involving occupier, if known) to ensure the travel plan is structured to meet the needs of the particular site and covers the following (as a minimum): the existing patterns and opinions of occupiers cycling and walking to the site/building, to identify issues; the travel patterns and transport impact of future building users; the current environment and facilities of walkers/cyclists; the current public transport and disabled access to the site (accounting for varying levels of disability and visual impairment). The travel plan should include a package of measure to encourage the use of sustainable modes of transport and the movement of people and goods during the buildings operation and use. The occupier must confirm that the plan will be implemented post-construction.	It was confirmed (11.05.15) that a travel survey and assessment has been carried out. Method noted that the transport opportunities and access to the site for disabled users should be included.
Sub-Total	11	7	One transport credit equals 0.82%	
Weighted Sub-Total	9	5.73		

Credit Title	CREDITS		Summary of Requirements (refer to the BREEAM Guidance Notes for the full credit requirements)	Comments/ Actions
	Credits Available	Base Target		
WATER				
Wat 01	Water Consumption		**To reduce the consumption of potable water for sanitary use in new buildings from all sources through the use of water efficient components and water recycling systems.**	**Mandatory minimum requirement: One credit for Good, Very Good and Excellent. Two credits for Outstanding.**
Water Consumption (1-5)	5	5	Up to five credits are awarded, determined by an assessment of the efficiency of the buildings domestic water consuming components, where the water consumption (l/person/day) is compared against a baseline performance. The efficiency of the following 'domestic scale' components should be included: WCs, urinals, taps (wash hand basins, kitchen taps/waste disposal unit where specified), showers, baths, dishwashers and washing machines (domestic/commercial/industrial sized). Where a greywater and/or rainwater system is specified, its yield (l/person/day) should be used to off-set non potable water demand from components that would otherwise be supplied using potable water. Any greywater systems should be specified and installed in compliance with BS 8525-1:2010 Greywater Systems - Part 1 Code of Practice. Any rainwater systems should be specified and installed in compliance with BS 8515:2009+A1:2013 Rainwater Harvesting Systems - Code of Practice.	It was confirmed (11.05.15) that the proposed rainwater harvesting systems off-sets potable water demand in WCs, and together with other low water consuming components will enable five credits to be achieved. It was noted that water use of dishwashers/washing machines should also be assessed. **N.B. Method can advise on appropriate specifications for flow rates etc. to achieve five credits.**
Wat 02	Water Monitoring		**To ensure water consumption can be monitored and managed and therefore encourage reductions in water consumption.**	**Mandatory minimum requirement: Criterion 1 (water meter on mains supply) for Good, Very Good, Excellent and Outstanding.**
Pre-requisite (1)	0	Y	**Mandatory pre-requisite - A water meter is specified on the mains water supply to each building, including where water is supplied via a borehole or other private source.**	It was confirmed (11.05.15) that the pre-requisite is targeted in order to achieve any rating for BREEAM. The credit is also targeted. The mains water supply should have a pulsed output meter and those areas consuming 10% or more of the buildings total water demand should also be sub-metered.
Water Monitoring (2-4)	1	1	Credit awarded where water consuming plant or building areas, consuming 10% or more of the buildings total water demand, should be fitted with either; easily accessible sub meters or have water monitoring equipment integral to the plant or area. Each main and sub meter should have a pulsed output or other open protocol communication output enabling connection to a Building Management System (BMS) for monitoring consumption. If the site has an existing BMS managed by the same occupier/owner, the pulsed/digital water meter(s) for the new building should be connected to existing BMS.	
Wat 03	Water Leak Detection		**To reduce the impact of water leaks that may otherwise go undetected.**	
Leak Detection System (1)	1	1	Credit awarded where a leak detection system, capable of detecting a major leak on the mains supply within the building and between the building and the utilities water meter, is installed. It must be a permanent automated water leak detection system capable of alerting occupants to a leak OR an in-built automated diagnostic procedure for detecting leaks. It must be programmable by the occupier, avoid false alarms and be capable of identifying different flow/leakage rates. Activation should occur when flow through the meter is at a rate above a pre-set maximum over a pre-set period of time.	It was confirmed (11.05.15) that this credit is targeted and a major leak detection system will be specified on the mains supply to achieve this credit.

Credit Title	CREDITS		Summary of Requirements (refer to the BREEAM Guidance Notes for the full credit requirements)	Comments/ Actions
	Credits Available	Base Target		
Flow Control Devices (2)	1	1	Credit awarded where flow control devices that regulate the supply of water to each WC area/facility according to demand are installed (and therefore minimise water leaks and wastage from sanitary fittings). An example of a flow control device is a presence detector and controller (i.e. PIR linked to a solenoid valve).	It was confirmed (11.05.15) that this credit is targeted.
Wat 04	Water efficient equipment		**To reduce unregulated water consumption by encouraging specification of water efficient equipment.**	
Water Efficient Equipment (1-2)	1	1	Credit awarded when the project team identify the building's unregulated water demands that could be realistically mitigated or reduced (e.g. for irrigation, vehicle wash plant/equipment). The project team should then identify the system(s) or processes to reduce the unregulated water demand of the development and its operation, and demonstrate through either good practice design or specification a meaningful reduction in the total water demand of the building.	It was confirmed (11.05.15) that this credit is targeted and that irrigation represented the highest unregulated use. Although it was noted that a green wall may be proposed, current proposals do not include for any irrigation systems.
Sub-Total	9	9	One water credit equals 0.78%	
Weighted Sub-Total	7	7.00		
MATERIALS				
Mat 01	Life cycle impacts		**To recognise and encourage the use of construction materials with a low environmental impact (including embodied carbon) over the full life cycle of the building. An additional Innovation credit is available - see below.**	
Materials life cycle impacts (1-3)	6	4	Up to six credits are awarded, determined by the Green Guide to Specification ratings for the external walls, windows, roof, upper floor slabs, internal walls and floor finishing elements of the build. Materials with an Environmental Product Declaration (EPD) may enable scores to be further enhanced.	It was confirmed (11.05.15) that four credits are targeted, with 5 as a potential target. A and A+ rated materials should be specified wherever possible in order to achieve this score.
Mat 02	Hard landscaping and boundary protection		**To recognise and encourage the specification of materials for boundary protection and external hard surfaces that have a low environmental impact, taking account of the full life cycle of materials used.**	
Hard landscaping and boundary protection (1)	1	1	Credit awarded where at least 80% of external hard landscaping and 80% of boundary protection specifications achieve an A or A+ rating, as defined by the Green Guide to Specification.	It was confirmed (11.05.15) that this credit is targeted. It was noted that the use of recycled aggregates to sub-bases can help with achieving A and A+ ratings for hard landscaping.
Mat 03	Responsible sourcing of materials		**To recognise and encourage the specification of responsibly sourced materials for key building elements. An additional Innovation credit is available - see below.**	**Mandatory minimum requirement: All timber used on the project is 'Legally harvested and traded timber' for Pass, Good, Very Good, Excellent and Outstanding.**
Pre-requisite (1)	0	Y	**Pre-requisite - All timber used on the project is 'Legally harvested and traded timber'**	It was confirmed (11.05.15) that this mandatory minimum requirement will be achieved. The Contractor will be required to ensure that all timber sourced for the project is certified.
Sustainable Procurement Plan (2)	1	1	Credit awarded where the principal contractor sources materials for the project in accordance with a documented sustainable procurement plan.	It was confirmed (11.05.15) that this credit is targeted. The Contractor will be required to develop a compliant sustainable procurement plan.

Credit Title	CREDITS		Summary of Requirements (refer to the BREEAM Guidance Notes for the full credit requirements)	Comments/ Actions
	Credits Available	Base Target		
Responsible sourcing of materials (3)	3	2	Up to 3 credits can be awarded where the applicable building and hard landscaping materials, in applicable locations, are responsibly sourced in accordance with the BREEAM methodology. Applicable materials categories include: Timber/timber-based products; concrete/cementitious; metal; stone/aggregate; clay-based; gypsum; glass; plastic, polymer, resin, paint, chemicals and bituminous; animal fibre/skin, cellulose fibre; other. Applicable location/use categories include:ceiling (including ceiling finishes, door/window, floor (including floor finishes), insulation, internal partition/internal walls (including finishes), roof (including finishes), structure (primary and secondary), external wall (e.g. cladding, lining, render incldng finishes), building service, hard landscaping, other. Responsible sourcing accreditations include PEFC, FSC, ISO 14001 and BES 6001. 1 credit where 18% of available points are achieved (2 credits for 36%, and 3 credits for 54%).	It was confirmed (11.05.15) that 2 credits are targeted.
Mat 04	Insulation		**To recognise and encourage the use of thermal insulation which has a low embodied environmental impact relative to its thermal properties**	
Embodied impact (2-4)	1	1	Any new insulation specified for use within the following building elements must be assessed: 1. External walls 2. Ground floor 3. Roof 4. Building services Credit awarded where the insulation index for the building fabric and services insulation is the same as or greater than 2.5, calculated using the volume of insulation, the thermal conductivity and the Green Guide rating.	It was confirmed (11.05.15) that this credit is targeted.
Mat 05	Designing for Durability and Resilience		**To recognise and encourage adequate protection of exposed elements of the building and landscape, therefore minimising the frequency of replacement and maximising materials optimisation.**	
Designing for durability and resilience (1-2)	1	1	Credit awarded where the following is demonstrated: Protecting vulnerable parts of the building from damage: The building incorporates suitable durability and protection measures or designed features/solutions to prevent damage to vulnerable parts of the internal and external building and landscaping elements. This must include, but is not limited to: a) Protection from the effects of high pedestrian traffic in main entrances, public areas and thoroughfares. b) Protection against any internal vehicular/trolley movement within 1m of the internal building fabric in storage, delivery, corridor and kitchen area. c) Protection against, or prevention from, any potential vehicular collision where vehicle parking and manoeuvring occurs within 1m of the external building facade for all car parking areas and 2m for all delivery area. Protecting exposed parts of the building from material degradation: The relevant building elements incorporate appropriate design and specification measures to limit material degradation due to environmental factors (a full list of environmental factors is provided in the guidance).	It was confirmed (11.05.15) that this credit is targeted. Method to provide checklist to help with meeting the requirements.

Credit Title	CREDITS		Summary of Requirements (refer to the BREEAM Guidance Notes for the full credit requirements)	Comments/ Actions
	Credits Available	Base Target		
Mat 06	Material Efficiency		**To recognise and encourage measures to optimise material efficiency in order to minimise environmental impact of material use and waste.**	
Material Efficiency (1)	1	1	Credit awarded when opportunities and measures to optimise the use of materials in building design, procurement, construction, maintenance and end of life have been identified, investigated and implemented by the design/construction team as appropriate in consultation with the relevant parties at each of the following RIBA stages: 1. Preparation and Brief 2. Concept Design 3. Development Design 4. Technical Design 5. Construction	It was confirmed (11.05.15) that this credit is targeted as part of the strategy to achieve an Excellent rating.
Sub-Total	14	11	**One materials credit equals 0.96%**	
Weighted Sub-Total	13.5	10.61		
WASTE				
Wst 01	Construction waste management		**To promote resource efficiency via the effective management and reduction of construction waste.** **An additional exemplary credit is available - see Innovation section below for details.**	**Mandatory minimum requirement: One credit for Outstanding.**
Construction resource efficiency (1-3)	3	2	Up to three credits awarded where a Resource Management Plan (RMP) has been developed covering the non-hazardous waste related to onsite construction and dedicated offsite manufacture or fabrication (including demolition and excavation waste) generated by the building's design and construction. Where construction waste related to on-site construction and off-site manufacture/fabrication (excluding demolition and excavation waste) meets or is lower than the benchmarks as follows (per 100m2 GIFA): One credit = 13.3m3 / 11.1 tonnes, Two credits = 7.5m3 / 6.5 tonnes, Three credits = 3.4m3 / 3.2 tonnes. Dedicated off-site manufacturing or fabrication is defined as the production of a component or material that is carried out in an off-site manufacturing or processing facility that has been specifically set up for a development project. 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 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 RMP and cover: 1. Identification of the key refurbishment/demolition materials. 2. Potential applications and any related issues for the reuse and recycling of the key refurbishment and demolition materials in accordance with the waste hierarchy.	It was confirmed (11.05.15) that two credits are targeted. The Contractor will be required to maximise resource efficiency where possible to achieve this target, although the team should seek to design out waste where possible.
Diversion of resources from landfill (4-5)	1	1	One credit awarded where 70% by volume/80% by tonnage of non-hazardous construction waste and 80% by volume/90% by tonnage of non-hazardous demolition waste generated by the development will be diverted from landfill and reused or recycled. Materials should be sorted into separate key waste groups, according to the waste streams generated by the scope of the works, either on or off-site.	It was confirmed (11.05.15) that this credit is targeted. The Contractor is to ensure that a high proportion of any waste generated is diverted from landfill.
Wst 02	Recycled aggregates		**To recognise and encourage the use of recycled and secondary aggregates, thereby reducing the demand for virgin material and optimising material efficiency in construction.** **An additional exemplary credit is available - see Innovation section below for details.**	
Recycled aggregates (1-3)	1	0	Credit awarded where at least 25% (by weight or volume) of the total high grade aggregate used on site comprises recycled or secondary aggregates. The recycled and/or secondary aggregates are EITHER: 1. Construction, demolition and excavation waste obtained onsite or offsite OR 2. Secondary aggregates obtained from a non-construction post-consumer industrial by-product source. In addition the specification of minimum levels of recycled aggregates applying to different applications is required, see compliance notes.	It was confirmed (11.05.15) that this credit is not included in the baseline target but is to be reviewed to see whether it can be achieved. Sourcing sufficient recycled aggregates can be challenging, and crushing of demolition work to appropriate expensive.

Credit Title	CREDITS		Summary of Requirements (refer to the BREEAM Guidance Notes for the full credit requirements)	Comments/ Actions
	Credits Available	Base Target		
Wst 03	Operational waste		To recognise and encourage the provision of dedicated storage facilities for a building's operational-related recyclable waste streams, so that this waste is diverted from landfill or incineration.	Mandatory minimum requirement: One credit for Excellent and Outstanding.
Operational waste (1-2)	1	1	Credit awarded where there is dedicated space(s) to cater for the segregation and storage of operational recyclable waste volumes generated by the assessed building. The space must be a) clearly labelled, b) accessible to building occupants for the deposit of materials and collections; c) of a capacity appropriate to the building type, size, number of units and predicted volumes of waste. Where appropriate, the following facilities are provided as part of its waste management strategy a) Static waste compactor(s) or baler(s); b) Vessel(s) for composting suitable organic waste OR adequate space(s) for storing segregated food waste and compostable organic material prior to collection and delivery to an alternative composting facility; c) Where organic waste is to be stored/composted on site, a water outlet is provided adjacent to or within the facility for cleaning and hygiene purposes.	It was confirmed (11.05.15) that this credit is targeted. There may be a campus-wide waste storage area which is likely to exceed the requirements for this credit. The amount of area required for BREEAM is calculated from the floor area of the College and Sports Centre plus any other buildings it may serve. Assuming the total NIFA of all buildings will exceed 500m^2 a storage area of 25m^2 would be sufficient to allow for recyclables, food and general waste.
Wst 05	Adaptation to Climate Change		To recognise and encourage measures taken to mitigate the impact of extreme weather conditions arising from climate change over the lifespan of the building. Exemplary Credit Available.	
Adaptation to Climate Change (Structural and Fabric resilience) (1)	1	1	Credit awarded when a climate change adaptation strategy appraisal is conducted for structural and fabric resilience by the end of RIBA Stage 2, in accordance with the following approach: Carry out a systematic risk assessment (specific to structural and fabric resilience) to identify and evaluate the impact of the expected increase in extreme weather conditions arising from climate change on the building over the projected life-cycle of the building, and where feasible mitigate against these impacts. The assessment should cover the following stages: 1. Hazard Identification 2. Hazard assessment 3. Risk estimation 4. Risk Evaluation 5. Risk Management	It was confirmed (11.05.15) that this credit is targeted. The actions for this credit should be undertaken by RIBA Stage 2.
Wst 06	Functional Adaptability		To recognise and encourage measures taken to accommodate future changes of use of the building over its lifespan.	
Functional Adaptability (1-2)	1	1	Credit awarded when a building specific functional adaptation strategy study is conducted by the client and design team by RIBA Stage 2, which includes recommendations for measures to be incorporated to facilitate future adaption, including: a. Ability for major refurbishment, including replacing the façade. b. Design for ease of replacement of all major plant within the life of the building e.g. panels in floors/ walls that can be removed without affecting the structure, providing lifting beams and hoists. c. Adaptability of the internal environment to accommodate changes in working practices. d. Adaptability of the internal physical space and external shell to accommodate change in use. e. Local services accessibility, such as local power, data etc. Functional adaptation measures have been implemented by the end of RIBA Stage 4 in accordance with the functional adaptation strategy where practical and cost effective.	It was confirmed (11.05.15) that this credit is targeted.
Sub-Total	8	6		
Weighted Sub-Total	8.5	6.38	One waste credit equals 1.06%	
LAND USE & ECOLOGY				
LE 01	Site selection		To encourage the use of previously developed and/or contaminated land and avoid land which has not been previously disturbed	
Previously Occupied Land (1)	1	0	Credit awarded where at least 75% of the footprint of the proposed development (including temporary site works) has been previously occupied by industrial, commercial or domestic buildings or fixed surface infrastructure.	It was confirmed (11.05.15) that this credit is likely unachievable as the new college is to be built on existing playing fields. This credit could be achieved if the equivalent area of playing field is reinstated elsewhere on site at the end of the redevelopment.

Credit Title	CREDITS		Summary of Requirements (refer to the BREEAM Guidance Notes for the full credit requirements)	Comments/ Actions
	Credits Available	Base Target		
Contaminated Land (2-3)	1	0	Credit awarded where a contaminated land specialist's site investigation, risk assessment and appraisal has deemed the land within the site to be affected by contamination. The degree of contamination, sources/types of contamination and remediation options must be identified. There must be a commitment from the client or contractor that all remediation will be in line with the remediation strategy and implementation plan as recommended by the contaminated land specialist. Adequate remediation of contamination must have taken place prior to development to achieve this credit.	It was confirmed (11.05.15) that this credit is unlikely to be achievable as the land is probably not contaminated and so remediation will not be necessary. However this will be confirmed once the ground investigation report has been finalised.
LE 02	**Ecological value and protection of ecological features**		**To encourage development on land that already has limited value to wildlife and to protect existing ecological features from substantial damage during site preparation and completion of construction works.**	
Ecological value of site (1)	1	0	Credit awarded where land within the construction zone is defined as 'land of low ecological value' using either: The BREEAM checklist for defining land of low ecological value OR A Suitably Qualified Ecologist (SQE) who has identified the land as being of 'low ecological value' within an ecological assessment report, based on a site survey.	It was confirmed (11.05.15) that this credit is probably not achievable as there are a number of mature trees bordering the site and so it is unlikely that it can be deemed to be of low ecological value.
Protection of Ecological Features (2-3)	1	0	Credit awarded where all existing features of ecological value within and surrounding the construction zone and site boundary area are adequately protected from damage during clearance, site preparation and construction activities in line with BS42020: 2013. In all cases, the principal contractor is required to construct ecological protection prior to any preliminary site construction or preparation works (e.g. clearing of the site or erection of temporary site facilities).	It was confirmed (11.05.15) that this credit is likely to be unachievable as high grade trees are to be removed.
LE 03	**Minimising Impact on existing Site**		**To minimise the impact of a building development on existing site ecology.**	**Mandatory minimum requirements: One credit for Very Good, Excellent and Outstanding.**
Change in Ecological Value (1-2)	2	2	One credit is awarded where the change in the site's existing ecological value, as a result of development, is between 0 and -9. Two credits are awarded where there is no negative change in the site's existing ecological value, as a result of development. Credits can be awarded with or without the appointment of an ecologist.	It was confirmed (11.05.15) that two credits are targeted, as it is expected that there will be at least an overall neutral effect on the ecological value of the site. The ecological value pre and post development should be considered for the whole site where proposed soft landscaping and ecological features form a common part of the whole site.
LE 04	**Enhancing site ecology**		**To recognise and encourage actions taken to maintain and enhance the ecological value of the site as a result of development.**	
Ecologist's Report and Recommendations (1-3)	1	1	One credit is awarded where the Client or project representative has appointed a Suitably Qualified Ecologist (SQE) by the end of RIBA Stage 1 to advise on enhancing the ecological value of the site. The SQE has provided an ecology report with appropriate recommendations for the enhancement of the site's ecology at RIBA Stage 2, based on a site survey/visit. Early stage advice and recommendations of the ecology report for the enhancement of site ecology have been, or will be, implemented in the final design and build. **APPOINTMENT OF SQE BY RIBA STAGE 1** **ECOLOGICAL SURVEY TO BE UNDERTAKEN DURING RIBA STAGE 2**	It was confirmed (11.05.15) that this credit is targeted.

Credit Title	CREDITS		Summary of Requirements (refer to the BREEAM Guidance Notes for the full credit requirements)	Comments/ Actions
	Credits Available	Base Target		
Increase in Ecological Value (4-6)	1	1	The LE 04 Ecologist's report and recommendations credit above has been achieved. The recommendations of the ecology report for the enhancement of site ecology have been implemented, and the SQE confirms that this will result in an increase in ecological value of the site, with an increase of 6 plant species or greater.	It was confirmed (11.05.15) that this credit is targeted. The ecological value of the site is to be enhanced via extensive new planting. If the enhancements along the River Crane occur in the same timescale as the construction then they may be able to be included in the calculations for these credits. Method will send a query to the BRE to confirm this.
LE05	**Long term impact on biodiversity**		**To minimise the long term impact of the development on the site and the surrounding area's biodiversity.**	
Long Term Impact on Biodiversity (1-3)	2	2	To achieve any of the two available credits, a Suitably Qualified Ecologist (SQE) should be appointed prior to commencement of activities onsite and they should confirm that all relevant UK and EU legislation relating to the protection and enhancement of ecology has been complied with during the design and construction process. A landscape and habitat management plan, appropriate to the site, should be produced covering at least the first five years after project completion in accordance with BS 42020:2013 Section 11.1. This is to be handed over to the building owner/occupants for use by the grounds maintenance staff. One credit is awarded where, in addition to the above, two of the 'additional measures' in the BREEAM guidance have been met. Two credits are awarded where four of the 'additional measures' in the BREEAM guidance have been met.	It was confirmed (11.05.15) that two credits are targeted. The ecologist will advise on any relevant legislation relating to ecological protection and enhancement and a landscape and habitat management plan will be produced. The Contractor will be required to implement at least 4 additional measures to enable both credits to be achieved.
Sub-Total	10	6		
Weighted Sub-Total	10	6.00	One land use and ecology credit equals 1%	
POLLUTION				
Pol 01	**Impact of Refrigerants**		**To reduce the level of greenhouse gas emissions arising from the leakage of refrigerants from the building.**	
Pre-requisite	0	Y	Where there are refrigerants specified within the installed plant/systems: All systems (with electric compressors) must comply with the requirements of BS EN 378:2008 (parts 2 and 3) and where refrigeration systems containing ammonia are installed, the Institute of Refrigeration Ammonia Refrigeration Systems Code of Practice.	It was confirmed (11.05.15) that this pre-requisite will be achieved.
Impact of Refrigerants (1-7)	3	1	One credit is awarded where the systems using refrigerants have Direct Effect Life Cycle CO_2 equivalent emissions of 1000kgCO_{2e}/kW cooling capacity. Two credits are awarded where the systems using refrigerants have Direct Effect Life Cycle CO_2 equivalent emissions of 100kgCO_{2e}/kW cooling capacity OR refrigerants have a GWP of <10. An additional credit is awarded where there is a compliant leak detection system, capable of automatically isolating and containing the remaining refrigerant(s) charge. A system with an automatic shutdown and pump down of refrigerants would comply with this. All three credits awarded where the building is designed in such a way that it avoids the need for refrigerant containing building services, and therefore no 'refrigerant using' building services or systems will be specified for the fit out.	It was confirmed (11.05.15) that at least one credit will be achieved for this issue. These requirements should be borne in mind when the systems are specified.
Pol 02	**NO_x Emissions**		**To contribute to a reduction in national NO_x emission levels through the use of low emission heat sources in the building.**	
NO_x Emissions (1)	3	0	One credit is awarded where the dry NOx emissions from plant installed to meet delivered heating and water demand are ≤100 mg/kWh (at 0% excess O_2), or two credits where they are ≤70 mg/kWh (at 0% excess O_2), or three credits where they are ≤40 mg/kWh (at 0% excess O_2). Report the direct and indirect NOx emissions in mg/kWh and energy consumption in kWh/m2/yr arising from systems installed to meet the building's space heating, cooling and hot water demands	It was confirmed (11.05.15) that no credits will be achievable for this issue as ASHPs are specified. ASHPS use grid electricity which has high NOx emissions and so no credits would be achieved.

Credit Title	CREDITS		Summary of Requirements (refer to the BREEAM Guidance Notes for the full credit requirements)	Comments/ Actions
	Credits Available	Base Target		
Pol 03	**Surface water run-off**		**To avoid, reduce and delay the discharge of rainfall to public sewers and watercourses, therefore minimising the risk of localised flooding on and off site, watercourse pollution and other environmental damage.**	
Flood Resilience (1-3)	2	2	One credit is awarded where the assessed development is located in a zone defined as having a medium or high annual probability of flooding and is not in a functional floodplain AND the ground level of the building, car parking and access is 600mm above the design flood level for the site's location. OR, where final building and site design reflects recommendations made by appropriate consultant, in accordance with BS 8533: 2011. Two credits are awarded where the assessed development is located in a zone defined as having a low annual probability of flooding and there is a low risk of flooding from all sources: fluvial, tidal, surface water, groundwater, sewers, reservoirs, canals and other artificial sources. All current and future sources of flooding must be taken into account.	It was confirmed (11.05.15) that two credits are targeted, although the number of credits achieved will be determined by the Flood Risk Assessment.
Surface Water Run Off (4-14)	0	Y	Pre-requisite: An appropriate consultant is appointed to demonstrate compliance with the following:	It was confirmed (11.05.15) that this prerequisite would be achieved.
	2	2	One credit is awarded where surface water drainage measures are specified to ensure the peak run-off rate is no greater post-development than it was pre-development, in line with 1 year and 100 year return period events, and relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS are in place. A second credit is awarded where flooding of property will not occur in the event of local drainage system failure. In addition the drainage strategy must meet certain other requirements from one of two options detailed in the BREEAM guidance. Maintenance agreements should be in put place for the ownership, operation and maintenance of specified SUDs. All calculations must include an allowance for climate change, in accordance with current best practice guidelines.	It was confirmed (11.05.15) that these credits are targeted. The drainage strategy is to be designed to ensure that all surface water will be managed on site, so both credits should be achievable.
Minimising Watercourse Pollution (15-22)	1	1	Credit awarded where there is no discharge from the developed site for rainfall up to 5mm, and where effective on site treatment has been specified in areas that could be a source of watercourse pollution. SUDs, permeable surfaces or infiltration trenches are acceptable for low risk areas. Oil/ petrol interceptors are required for higher risk areas and all systems must be in line with PPG3 and the SUDS manual, and with PPG13 for vehicle wash areas. OR, where this is not possible, a suitably qualified professional should design the system so that the intent of the credit is met as far as possible. Containment should be fitted to drainage system when chemical/liquid gas storage is on site. A comprehensive up-to-date drainage plan should be made available for building/site occupiers.	It was confirmed (11.05.15) that these credits are targeted. The drainage strategy is to be designed to ensure that all surface water will be managed on site, with appropriate pollution prevention measures installed as required. It was confirmed that permeable paving and interceptors are specified.
Pol 04	**Reduction of night time light pollution**		**To ensure that external lighting is concentrated in the appropriate areas and that upward lighting is minimised, reducing unnecessary light pollution, energy consumption and nuisance to neighbouring properties.**	
Reduction of Night Time Light Pollution (1-5)	1	1	Credit awarded where the external lighting design is in compliance with the Institution of Lighting Professionals (ILP) Guidance notes for the reduction of obtrusive light, 2011 and all external lighting (except security lighting) can be automatically switched off between 2300-0700. If safety or security lighting is provided and will be used between these hours, this part of the lighting system complies with the lower levels of lighting in Table 2 of the ILP's guidance notes. Illuminated advertisements must be designed in accordance with ILE Technical Report 5 - The Brightness of Illuminated Advertisements.	It was confirmed (11.05.15) that this credit is targeted.

Credit Title		CREDITS		Summary of Requirements (refer to the BREEAM Guidance Notes for the full credit requirements)	Comments/ Actions
		Credits Available	Base Target		
Pol 05		Reduction of Noise Pollution		To reduce the likelihood of noise arising from fixed installations on the new development affecting nearby noise-sensitive buildings.	
Reduction of Noise Pollution (1-5)		1	1	Credit awarded where there are, or will be, no noise-sensitive areas/buildings within 800m of the or the development, OR: A noise impact assessment is carried out by suitably qualified acoustic consultant in compliance with BS 7445, and measures: a) Existing background noise levels at the nearest or most exposed noise-sensitive development to the proposed building b) The rating noise level resulting from the new-noise source. The noise levels from the proposed development, when measured at the nearest/most exposed noise sensitive development, should have a difference no greater than +5dB during the day (0700hrs to 2300hrs) and +3dB at night (2300hrs to 0700) compared to background noise levels. Where changes in noise level exceed this, measures should be installed to attenuate noise at its source in order to comply with these levels.	It was confirmed (11.05.15) that this credit is targeted.
Sub-Total		13	8	One pollution credit equals 0.77%	
Weighted Sub-Total		10	6.15		
INNOVATION CREDITS/EXEMPLARY LEVEL CREDITS - A maximum of 10 credits are available in aggregate from any combination of the following:					
Man 03	Responsible Construction Practices (17)	1	1	Credit awarded where the CCS score achieved is 40 or above with 7 in each section.	It was confirmed (11.05.15) that this credit is targeted.
Man 05	Aftercare (6)	1	1	Credit awarded where there is operational infrastructure and resources in place to co-ordinate the following at quarterly intervals for the first 3 years after occupation: a. Collect the occupant satisfaction, energy consumption and water consumption data. b. Analyse the data to check the building is performing as expected and make any necessary adjustments to systems controls or to inform building user behaviours. c. Set targets for reducing water and energy consumption and monitor progress towards these. d. Feedback any 'lessons learned' to the design team and developer for use in future projects. e. Provision of the actual annual building energy, water consumption and occupant satisfaction data to BRE.	It was confirmed (11.05.15) that this credit is targeted.
Hea 01	Visual Comfort (14)	1	0	Credit awarded where at least 80% of the floor area in occupied spaces has an average daylight factor of 3% , or a minimum point daylight factor of 1.2%, in multi-storey buildings OR an average daylight factor of 4%, or a minimum point daylight factor of 1.6% in single-storey buildings.	**Credit not targeted.**
Hea 02	Indoor Air Quality (15-20)	2	0	All decorative paints and varnishes specified meet the criteria in EU Directive 2004/42/EC, and all seven remaining product categories meet the relevant testing requirements and emission levels. Two credits awarded where the formaldehyde emission levels for the seven remaining categories have been measured and are less than 0.01mg/m^3 air in accordance with the approved standards. One credit is awarded where levels and lower than 0.06mg/m^3 air.	**Credits not targeted.**
Ene 01	Reduction of Energy Use and Carbon Emissions (2-4)	5	0	Five credits awarded where the building is 'carbon negative' in terms of its modelled operational energy consumption. (Inc. regulated and unregulated energy) Up to four credits awarded if the EPR_{NC} of 0.9 and has zero net CO_2 emissions. In addition, an equivalent % of the building's modelled 'regulated' operational energy consumption, is generated by carbon neutral on-site, near-site or 'accredited external' sources and used to meet energy demand from 'unregulated ' building systems or processes. The equivalent % translate into credits as follows: 4 credits = 80%, 3 credits = 50%, 2 credits = 20%, 1 credit = 10%	**Credits not targeted.**
Wat 01	Water Consumption (1-6)	1	0	Credit awarded where a 65% improvement over baseline building water consumption is achieved.	As rainwater harvesting is being specified it may be possible to achieve this credit. **To be reviewed once Wat 01 calculation results known.**

Credit Title		CREDITS		Summary of Requirements (refer to the BREEAM Guidance Notes for the full credit requirements)	Comments/ Actions
		Credits Available	Base Target		
Mat 01	Life Cycle Impacts (4-8)	3	0	One credit is awarded where the building achieves at least two points in addition to the total points required to achieve maximum credits under Mat 01. Two credits awarded where an IMPACT compliant software tool (or equivalent) is used to measure the environmental impact of the building. The design team demonstrate how the use of this software has benefited the building in terms of measuring and reducing its environmental impact. The BIM model from the software is submitted to the BRE.	**An additional credit could be achieved depending on final Mat 01 calculations.**
Mat 03	Responsible Sourcing of Materials (4)	1	0	Credit awarded where at least 70% of the available responsible sourcing points have been achieved.	**Credit not targeted.**
Wst 01	Construction Waste Management (6-8)	1	0	Credit awarded where the non-hazardous construction waste generated by the building's design and construction is no greater than 1.6m^3 or 1.9 tonnes per 100m^2 GIFA AND the percentage of non hazardous construction and demolition waste (if relevant) diverted from landfill meets or exceeds 85% by volume/90% by tonnage (non-demolition). 85% by volume/95% by tonnage (demolition) and 95% by volume/95% by tonnage (excavation). All key waste groups are identified for diversion from landfill in the pre-construction stage RMP.	**Credit not targeted.**
Wst 02	Recycled Aggregates (4-6)	1	0	Credit awarded where the total amount of recycled and/or secondary aggregate specified is greater than 35% (by weight or volume) of the total high-grade aggregate specified for the project. To contribute to the total amount, the percentage of high-grade aggregate specified per application (where present) that is recycled and/or secondary aggregate, must meet the exemplary minimum levels (by weight or volume), as defined in the table within the guidance. Recycled and secondary aggregate must travel less than 30km by road transport.	**Credit not targeted.**
Wst 05	Responding to Adaptation to Climate Change (2)	1	0	Credit can be awarded where the Wst 05 credit has been achieved, and where a certain level of credits are achieved under: Hea 04; Ene 01; Ene 04; Wat 01; Mat 05 and Pol 03.	**Credit not targeted.**
Inn 01	Special Innovative Feature (2)	10	0	Up to ten credits are awarded if a successful application is made to the BRE to have any particular building feature, technology, system or process that can be shown to improve the sustainability performance of a building's design, construction, operation, maintenance or demolition and which is recognised as 'innovative'. Further credits are available if more than one application is successful.	**Credits not targeted.**
Sub-Total		10	2	**One Innovation credit = 1%. A maximum of 10% can be awarded in this section.**	

TOTALS	
Base Target	71.96
Total required for 'Pass'	30
Total Required for 'Good'	45
Total required for 'Very Good'	55
Total required for 'Excellent'	70
Total required for 'Outstanding'	85
Mandatory Requirements Met?	Y/N

PROJECT TEAM KEY:

PM = Project Manager: Fusion PM (Nolan Smith)
Client = Richmond upon Thames College/REEC (Represented by Julian Grindell - Fusion)
Arch = Architect: Atkins (Claire Wakelin, Kieran Dyer)
QS = Quantity Surveyor
M&E = Mechanical and Electrical Engineers: Atkins (Isabel Cashman, Jessica Elliot)
LA = Landscape Architect
SE = Structural Engineer: Atkins (Peter Oakes)
CE = Civil Engineer
TP = Transport Planner
Eco = Ecologist: Cascade (Tom Hall)
Aco = Acoustician: TBC
AP = BREEAM Accredited Professional: Method Consulting (Georgie James)
BREEAM ASSESSOR/AP (Method): Method Consulting LLP (Georgie James, Richard Holtham)

Completed by: RAH Date: 11.06.15
Checked by: GAJ Date: 11.06.15