Kingsway House

BREEAM Report Stage 1

Planning

GMS Estates

RevB, May 2016

NOTICE

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Document History

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Client Sign-off

Client	**GMS Estates**
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Contents

1. Executive Summary

This report illustrates the sustainability performance of Kingsway House in relation to the objectives set out within Camden's SDP, in relation to BREEAM 2014 New Construction (Sustainable Design).

Sustainability Objectives:

Current CAMDEN Planning Policy DP22 requires major developments to achieve a BREEAM rating of Excellent and the following percentages of the score in each of the sections:

- Energy 60%
- Water 60%
- Materials 40%

To meet the above, improvement will be required in:

Energy section: met

Water section: met

Materials section: met

BREEAM:

It has been established that the office currently has the potential to achieve a rating of Excellent with a range of options illustrated to enhance this further if required. The offices have been assessed against the Shell and Core BREEAM NC 2014 criteria, as suitable to a CatA level development.

The score currently achievable is **75.58%,** a rating of **EXCELLENT**.

The retail unit proposals have been assessed against the BREEAM NC 2014 Shel only criteria. The scoring strategy applied for the office aspect has been adapted to the shell only units and the predicted achievable score is **75.58%,** a rating of **EXCELLENT**.

EPC:

An Excellent rating requires 5 credits to be achieved (equivalent to an EPR of at least 0.375). The current BRUKL report indicates that 7 credits are achievable.

For the retail shell only aspect, it is permissible, when conducting the energy modelling, for the design team to substitute the minimum energy efficiency standards or backstop levels required by the relevant national building regulations for the performance specifications confirmed within a green fit-out agreement.

2. Introduction

Verte have been requested by GMS Estates to carry out a sustainability assessment of the redevelopment of Kingsway House, Holborn.

The report provides a status of the development's performance with regards to Camden policy DP22, and provides recommendations with regards to improving performance and meeting the necessary objectives. The content focuses on:

1. BREEAM Performance

Based on current design proposals, the development is expected result in the complete replacement structure, core and local services, with a retained façade, to provide an estimated 2,825m^2 NIA of high quality core and CatA space, as well as two retail units at lower levels. The following scope is currently assumed:

- Full façade retention
- Wholly new steel structural frame
- 2 storey mansard roof extension
- Concrete upper floors on supporting steel structure
- New Services to all office areas incorporating low-carbon heating and cooling
- Main VRF heating/cooling system
- Upgraded Lift and WC Provision
- All Dali controlled LED lighting
- Office floors finished to CatA standard with raised access floors and ceilings

The following sections, detail the proposed development's performance against the BREEAM Criteria.

2. BREEAM Pre-Assessment Summary

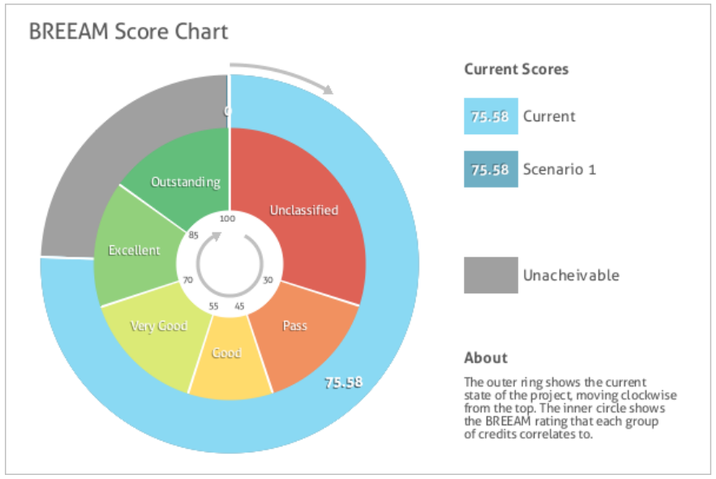
This section is intended as a summary of the BREEAM pre-assessment review for Kingsway House. The development proposals have been assessed, particularly the comments during the pre-assessment meeting. The current achievable rating has been established as well a set of measures which can be targeted to enhance this rating further. A summary of the pre-assessment can be reviewed in the next section and a detailed BREEAM register within the Appendices.

a. Scoring scenarios – Commercial

It has been established that the development currently has the potential to achieve a rating of Excellent with a range of options illustrated to enhance this further if required.

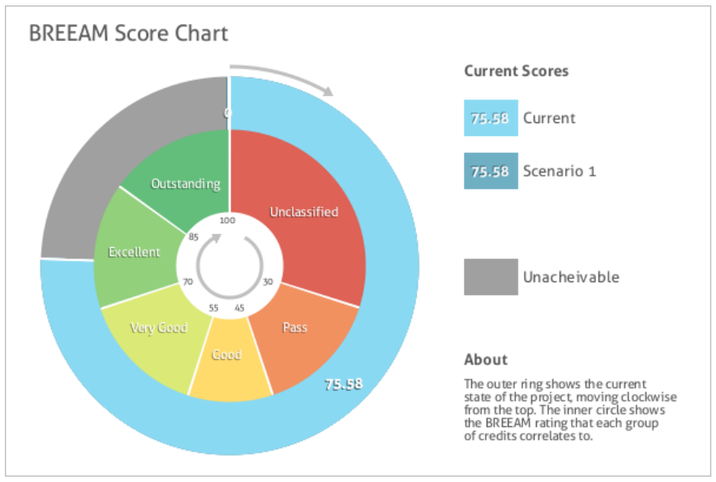
Offices:

Current - The score currently achievable is **75.58%,** a rating of **EXCELLENT**.



Retail:

Current - The score currently achievable is **75.58%,** a rating of **EXCELLENT**.



b. Immediate Actions

BREEAM Criteria include time critical elements which cannot be awarded if they are not dealt with in the prescribed time-frame as well as consultant appointments as detailed below.

Time critical issues:

- Man01 Stakeholder & 3rd Party consultations required to be undertaken at Stage 2.
- Man01 Appoint BREEAm AP at Stage 1.
- Man02 Lifecycle Costing to be undertaken at Stage 2.
- Hea06 Security needs assessment by Stage 2.
- Ene04 Low carbon design analysis.
- Mat06 Material Efficiency at all stages (1-4)
- Wst05 Functional Adaptability Strategy by Stage 2.
- Wst06 Climate Change Adaptation Strategy by Stage 2.

Consultant appointments to consider:

- Life Cycle Costing specialist
- Security Consultant (Architectural Liaison Officer)
- Indoor air quality
- Acoustician
- Energy specialist
- Transport Consultant
- Ecologist
- Flood risk and SUDS

c. Retail Units

One of the key aspects which will impact on the scoring is the energy performance of the development. For Shell only spaces, a Green Fit out Agreement can be applied. For the purposes of this BREEAM assessment, it is permissible, when conducting the energy modelling, for the design team to substitute the minimum energy efficiency standards or backstop levels required by the relevant national building regulations for the performance specifications confirmed within a green fit-out agreement. This is permissible provided that the performance specification forms part of, or is referenced within, a fit-out agreement which is, or will be, contractually required of the tenant(s) in their fit-out works.

Consideration will also have to be given to the selection of glazed facades for the retail aspects to ensure the same level of credits are achievable as assumed for the majority of the development.

3. Appendices

Pre-assessment Scoring / Offices

		Available	Current	Scenario 1	Action	Comments
Management						
Man 01	Project brief and design	4	3	3	EMRYS/GMS	Information which will be required from Project Manager: ENHANCED SCORE 1st Credit Stakeholder Consultation: -Project Program -Project Brief Outlining Sustainability Targets -Project Execution Plan -Responsibility Matrix (refer to items Cr3, a-k) -Meeting minutes as necessary 3rd and 4th credits: -BREEAM AP Appointment letter (by Milieu)
Man 02	Life cycle cost and service life planning	4	1	1	PFC	4th Credit: Capital cost (£k/m2), to be reported by QS. ENHANCED SCORE 1st and 2nd Credits Elemental Life Cycle Cost (PD 156865:2008): The LCC should provide an indication of future replacement costs over a period of analysis as required by the client (e.g. 20, 30, 50 or 60 years); The LCC should Include service life, maintenance and operation cost estimates. To be done at **Stage 2** and demonstrate how it influences design ENHANCED SCORE 3rd Credit Component Level Life Cycle Cost (PD 156865:2008): The CLLCC should cover a.Envelope, e.g. cladding, windows, and/or roofing b.Services, e.g. heat source cooling source, and/or controls c.Finishes, e.g. walls, floors and/or ceilings d.External spaces, e.g. alternative hard landscaping, boundary protection.
Man 03	Responsible construction practices	6	6	6	PFC	To be included in contract prelims.
Man 04	Commissioning and handover	4	4	4	MC/ PFC	To be included in contract prelims and M&E Specification documentation. 1st Credit: CIBSE Compliant Commissioning and Commissioning Monitor, which can be a team member, 2nd Credit: Specialist Commissioning Manager to be appointed at design stage. 3rd Credit: Thermographic Survey (Prelims) 4rth Credit: Building User Guide and Training Schedule (Prelims)
	Management Totals:	**18**	**15**	**18**		
	Management score totals:	**11**	**9.17**	**11**		
Health & Wellbeing						
Hea 01	Visual Comfort	3	3	3	EMRYS/MC	1st Credit Daylighting Levels: Expected 1 out of 2 credits. Daylighting calcs to be carried out by Energy Modeling Engineer. 2nd Credit View Out: Layouts indicate most areas will be within 7m of window. Architect to provide highlighted drawings. 3rd Credit Internal lighting levels to meet Code for lighting and fully DALI controlled.
Hea 02	Indoor Air Quality	2	0	0	MC	ENHANCED SCORE 1st Credit Ventilation: TO BE CONFIRMED DUE TO RESTRICTED PLANT SPACE Ventilation system to be designed to -Distance of intakes/extracts over 10m apart (or inline with 13779:2007) -Distance of intakes over 20m from roads -Air provision of 12l/p/s -HVAC to include appropriate filtration (13779:2007 Annex3) 2nd Credit Potential for Natural Ventilation: Not possible.
Hea 04	Thermal comfort	2	2	2	MC	1st Credit Thermal Modelling: Thermal modelling has been carried out using software in accordance with CIBSE AM111 Building Energy and Environmental Modelling, by Energy Modeling Engineer. 2nd Credit Adaptability: The thermal modelling demonstrates that the relevant requirements are achieved for a projected climate change environment.
Hea 05	Acoustic Performance	1	1	1	Acoustician	1st Credit Indoor Ambient Noise: Appoint acoustician to provide design review and provide recommendations to achieve indoor ambient noise levels that comply with the design ranges given in Section 7 of BS 8233:2014.

Hea 06	Safety and Security	2	2	2	GMS	1st & 2nd Credits Security: Appoint a Suitably Qualified Security Specialist (SQSS) to conduct an evidence based Security Needs Assessment (SNA) during or prior to Concept Design (RIBA Stage 2 or equivalent).
	Health & Wellbeing Totals:	**10**	**10**	**10**		
	Health & Wellbeing score totals:	**10.5**	**10.5**	**10.5**		
Energy						
Ene 01	Reduction of energy use and carbon emissions	12	6	6	MC	An Excellent rating requires 5 credits to be achieved (equivalent to an EPR of at least 0.375). It is recommended that a draft EPC calculation is carried out as soon as possible in order that the challenges and opportunities for energy performance are established. Energy Modelling Engineer to coordinate. 6 credits assumed at present.
Ene 02	Energy Monitoring	2	2	2	MC	1st Credit Sub-metering of major energy consuming systems: Services engineer to ensure all major energy uses are monitored in line with TM54. 2nd Credit Sub-metering of high energy load and tenancy areas: Services Engineer to ensure all energy uses are monitored for each floor.
Ene 03	External Lighting	1	1	1	MC	1st Credit External Lighting: Services engineer to ensure all external lighting to meet efficacy and control requirements. Awarded by default if no external lighting being installed.
Ene 04	Low carbon design	3	0	0	MC	1st & 2nd Credit Passive Design & Free Cooling: Energy Modelling Report confirms no credits are achievable. 3rd Credit Low or zero carbon technologies: Energy Modelling Report confirms no credits are achievable.
Ene 06	Energy Efficient Transportation Systems	3	3	3	MC	1st Credit Energy Consumption: Services engineer to provide transport demand and energy analysis report. 2nd and 3rd Credits Energy efficient features: Services engineer to specify energy efficient measures as per criteria: -Variable speed/voltage/frequency controls -LED car lighting (or efficacy of >55llcw) -Stand-by mode
	Energy Totals:	**21**	**12**	**12**		
	Energy score totals:	**15**	**8.57**	**8.571**		

Transport						
Tra 01	Public Transport Accessibility	3	3	3	Verte	Central location enables the development to achieve maximum points under this issue.
Tra 02	Proximity to amenities	1	1	1	Verte	Central location enables the development to achieve maximum points under this issue.
Tra 03	Cyclist facilities	2	2	2	EMRYS	1st & 2nd Credit Cyclist Facilities: Architect has highlighted locations for cyclist facilities to be installed. Requirements for this metropolitan location are: -13 parking spaces -2 showers & changing -13 lockers
Tra 04	Maximum Car Parking Capacity	2	2	2	EMRYS	No car parking is being provided and maximum credits can be awarded by default.
Tra 05	Travel Plan	1	1	1	GMS	ENHANCED SCORE 1st Credit Travel Plan: A travel plan should be developed as part of the feasibility and design stages. Project Manager to coordinate.
	Transport Totals:	**9**	**8**	**9**		
	Transport score totals:	**10**	**8.89**	**10**		
Water						
Wat 01	Water Consumption	5	4	4	EMRYS	All credits Water Consumption: The architect is to ensure that the water appliances meet the following water efficiency criteria: -WCs: 4.5/3lt flush -WHB: 3lt @ 3bar -Showers: 7l/min @ 3bar This will secure a 51% improvement in the water consumption benchmark.
Wat 02	Water Monitoring	1	1	1	MC	Services Engineer to ensure BMS connected water meter specified.
Wat 03	Leak Detection	2	2	2	MC	1st Credit Major Water Leak Detection: Services Engineer to ensure leak detection facility to be specified for the main incoming to the building. 2nd Credit Flow Control Devices: Services Engineer to ensure PIR linked solenoid valves are specified for each WC cluster in the core areas.
Wat 04	Water Efficient Equipment	1	1	1		As there is no other major consuming plant, this credit can be awarded by default.
	Water Totals:	**9**	**7**	**8**		
	Water score totals:	**7.5**	**5.83**	**6.667**		
Materials						

Mat 01	Life Cycle Impacts	5	5	5	EMRYS	The current suggested specification, as advised by EMRYS, generally meets high Green Guide Rating standards. As the facade is being retained this is advantageous in terms of achievable points. Following our initial calculation, 5 credits are achievable. To be confirmed as the design develops.
Mat 02	Hard Landscaping and Boundary Protection	1	1	1	EMRYS	No external landscaping so credit can be awarded by default.
Mat 03	Responsible Sourcing of Materials	4	2	2	EMRYS	1st Credit Sustainable Procurement Plan: Requirement to be included in Prelims. 2-4th Credits Responsible Sourcing of Materials: Once credit assumed for sourcing of concrete and steel to BES6001. Structural Engineer to provide certification requirement in specification and volume of relevant material.
Mat 04	Insulation	1	1	1	EMRYS/MC	Credit requirements for sourcing of green guide rated products will be included within the M&E and NBS specification. In addition, majority of insulation products should have an Environmental Performance Declaration (EPD) certificate. Services: mineral wool (duct), phenolic foam and Armaflex Building Fabric: Expected PIR, and Kingspan products for foundations and roof
Mat 05	Designing for durability and resilience	1	1	1	EMRYS	The project Architect is to ensure that 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. In addition, the relevant building elements incorporate appropriate design and specification measures to limit material degradation due to environmental factors. A statement and supporting evidence (drawings and specification) will be required.
Mat 06	Material efficiency	1	0	0	EMRYS	ENHANCED SCORE The credit focuses on a waste (material) optimisation review to be undertaken at each RIBS Stage. The assessor will review with the architect the options analysed at Stage 1 with regards to the facade retention and initiate a template document. Once the feasibility of the credit is established the credit will be assumed as achievable.

Materials Totals:		**13**	**10**	**11**		
Materials score totals:		**14.5**	**11.15**	**12.269**		
Waste						
Wst 01	Construction Waste Management	4	2	2	PFC	1-3rd Resource efficiency (1 credit): A requirement for a resource management plan will be included within the demolition Prelims documentation. It is assumed at this stage that construction waste shall be ≤11.1 tonnes per 100sqm. 4th Credit Diversion of Waste from Landfill: A requirement for 90% diversion rate will be included within the demolition Prelims documentation.
Wst 02	Recycled Aggregates	1	1	1	EWP	ENHANCED SCORE The Structural Engineer will assess the potential of the development to meet the credit criteria for specifying recycled aggregate: Bound Structural frame - 15% Bitumen or hydraulically bound base, binder, and surface courses for paved areas and roads - 30% Building foundations - 20% Concrete road surfaces - 15% Unbound Pipe bedding- 100% Granular fill and capping (see Relevant definitions section) - 100%
Wst 03	Operational Waste	1	1	1	EMRYS	The project Architect is to ensure adequate space is provided for collection of recyclable waste material: At least 2sqm per 1000sqm of net floor area for buildings < 5000sqm
Wst 04	Speculative Floor and Ceiling Finishes	1	0	0		The Architect has confirmed that no floor or ceiling finishes will be specified.
Wst 05	Adaptation to climate change	1	1	1	EMRYS/EWP	Architect and Structural Engineer to conduct a climate change adaptation strategy appraisal for structural and fabric resilience by the end of Concept Design (RIBA Stage 2 or equivalent), in accordance with the following approach: This should essentially be a design risk register to identify and evaluate the impact on the building over its projected life cycle from expected extreme weather conditions arising from climate change and, where feasible, mitigate against these impacts. Issues should include:

						-Flooding (FRA & ground levels) -Stress on structure from temp fluctuations, winds -Thermal comfort considerations -Rsilience of materials to increased solar radiation and increased moisture etc.
Wst 06	Functional adaptability	1	1	1	EMRYS/ MC	A building-specific functional adaptation strategy study has been undertaken by the client and design team by Concept Design (RIBA Stage 2 or equivalent), which includes recommendations for measures to be incorporated to facilitate future adaptation. A credit Guidance Note will be issued by the assessor.
	Waste Totals:	**9**	**5**	**6**		
	Waste score totals:	**9.5**	**5.28**	**6.333**		
Land Use & Ecology						
LE 01	Site Selection	2	1	1	EMRYS	Re-use of site ensures one credit is awarded. No contaminated land investigation.
LE 02	Ecological Value of Site and Protection of Ecological Features	2	2	2	Ecologist	It has been agreed that an Ecologist will be appointed to develop a site survey in support of BREEAM issues and advise on biodiversity. Both credits are considered achievable.
LE 03	Minimising impact on existing site ecology	2	2	2	Ecologist	It has been agreed that an Ecologist will be appointed to develop a site survey in support of BREEAM issues and advise on biodiversity. Both credits are considered achievable.
LE 04	Enhancing site ecology	2	2	2	Ecologist	It has been agreed that an Ecologist will be appointed to develop a site survey in support of BREEAM issues and advise on biodiversity.
LE 05	Long Term Impact on Biodiversity	2	2	2	Ecologist	It has been agreed that an Ecologist will be appointed to develop a site survey in support of BREEAM issues and advise on biodiversity. Both credits are considered achievable.
	Land Use & Ecology Totals:	**10**	**8**	**9**		
	Land Use & Ecology score totals:	**11**	**8.8**	**9.9**		
Pollution						

Pol 01	Impact of Refrigerants	3	0	0		It is proposed that a full VRF system is installed. Assumed no credits achievable. 1st Credit Impact f Refrigerant: It is highly unlikely Very challenging for a standard VRF system. 2nd Credit Leak Detection: Can be very expensive for standard VRF system.
Pol 02	NOx emissions	3	0	0		It is proposed that a full VRF system is installed to provide heating and cooling. NOx emissions from this type of system are too high to meet credit criteria (grid electricity).
Pol 03	Surface Water Run Off	5	4	4	EWP	1-2nd Credit Flood Risk: Location in low risk zone. An FRA statement is required by the Structural Engineer. 3-4th Credit Surface water run-off: As the hard standing area for the development will not be changing both these credits are achievable by default, due to no increase in run-off post development. 5th Credit Minimising watercourse pollution: This credit requires SUDS treatment to discharge from the site which exceeds 5mm rainfall. This issue is considered unachievable at present.
Pol 04	Reduction of Night Time Light Pollution	1	1	1	MC	1st Credit Reduction of Night-time Light Pollution: Services engineer to ensure all external lighting to meet ILE guidance and control requirements. Awarded by default if no external lighting being installed.
Pol 05	Noise Attenuation	1	1	1	Acoustician	Reduction of noise pollution: Appoint acoustician to provide background noise assessment and recommendations to attenuate accordingly.
	Pollution Totals:	**13**	**6**	**6**		
	Pollution score totals:	**11**	**5.08**	**5.077**		
	Innovation Totals:	**16**	**0**	**0**		
	Innovation score totals:	**16**	**0**	**0**		
	OVERALL SCORE TOTALS:	**116**	**75.58**	**75.58**		

Pre-assessment Scoring / Retail

		Available	Current	Scenario 1	Responsibility	Comments
Management						
Man 01	Project brief and design	4	3	3	EMRYS/GMS	Information which will be required from Project Manager: 1st Credit Stakeholder Consultation: -Project Program -Project Brief Outlining Sustainability Target -Project Execution Plan -Responsibility Matrix (refer to items Cr3, a-k) -Meeting minutes as necessary 3rd and 4th credits: -BREEAM AP Appointment letter (by Milieu)
Man 02	Life cycle cost and service life planning	4	1	1	PFC	4th Credit: Capital cost (£k/m2), to be reported by QS.
Man 03	Responsible construction practices	6	6	6	PFC	To be included in contract prelims.
Man 04	Commissioning and handover	1	1	1	MC/ PFC	To be included in contract prelims and M&E Specification documentation. 3rd Credit: Thermographic Survey (Prelims)
	Management Totals:	**15**	**11**	**11**		
	Management score totals:	**12.5**	**9.17**	**9.167**		
Health & Wellbeing						
Hea 01	Visual Comfort	4	2	2	EMRYS/MC	1st Credit Daylighting Levels: Expected 1 out of 2 credits. Daylighting calcs to be carried out by Energy Modeling Engineer. 2nd Credit View Out: Layouts indicate most areas will be within 7m of window. Architect to provide highlighted drawings. 3rd Credit Internal lighting levels to meet Code for lighting and fully DALI controlled.
Hea 02	Indoor Air Quality	1	0	0	MC	1ST Credit Potential for Natural Ventilation: Verte to submit query to BRE on whether CFD modelling is acceptable even if windows are not currently openable. MOST LIKELY UNACHIEVABLE
Hea 05	Acoustic Performance	1	1	1	Acoustician	1st Credit Indoor Ambient Noise: Appoint acoustician to provide design review and provide recommendations to achieve indoor ambient noise levels that comply with the design ranges given in Section 7 of BS 8233:2014.
Hea 06	Safety and Security	2	2	2	KABSec	1st & 2nd Credits Security: Appoint a Suitably Qualified Security Specialist (SQSS) to conduct an evidence based Security Needs Assessment (SNA) during or prior to Concept Design (RIBA Stage 2 or equivalent).
	Health & Wellbeing Totals:	**8**	**5**	**5**		
	Health & Wellbeing score totals:	**10**	**6.25**	**6.25**		
Energy						
Ene 01	Reduction of energy use and carbon emissions	12	7	7	MC	An Excellent rating requires 5 credits to be achieved (equivalent to an EPR of at least 0.375). Energy Modelling Engineer indicates 7 credits might be achievable.
Ene 03	External Lighting	1	1	1	MC	1st Credit External Lighting: Services engineer to ensure all external lighting to meet efficacy and control requirements. Awarded by default if no external lighting being installed.
Ene 04	Low carbon design	3	0	0	MC	1st & 2nd Credit Passive Design & Free Cooling: Energy Modelling Report confirms no credits are achievable. 3rd Credit Low or zero carbon technologies: Energy Modelling Report confirms no credits are achievable.
	Energy Totals:	**16**	**8**	**8**		
	Energy score totals:	**14.5**	**7.25**	**7.25**		
Transport						
Tra 01	Public Transport Accessibility	5	5	5	Verte	Central location enables the development to achieve maximum points under this issue.
Tra 02	Proximity to amenities	1	1	1	Verte	Central location enables the development to achieve maximum points under this issue.
Tra 03	Cyclist facilities	2	2	2	EMRYS	1st & 2nd Credit Cyclist Facilities: Architect has highlighted locations for cyclist facilities to be installed. Requirements for this metropolitan location are: -13 parking spaces -2 showers & changing -13 lockers
Tra 05	Travel Plan	1	1	1	EMRYS	1st Credit Travel Plan: A travel plan should be developed as part of the feasibility and design stages. Project Manager to coordinate.
	Transport Totals:	**9**	**9**	**9**		
	Transport score totals:	**11.5**	**11.5**	**11.5**		
Water						
Wat 02	Water Monitoring	1	1	1	MC	Services Engineer to ensure BMS connected water meter specified.
Wat 03	Leak Detection	1	1	1	MC	1st Credit Major Water Leak Detection: Services Engineer to ensure leak detection facility to be specified for the main incoming to the building.
Wat 04	Water Efficient Equipment	1	1	1	MC	As there is no other major consuming plant, this credit can be awarded by default.
	Water Totals:	**3**	**3**	**3**		
	Water score totals:	**4**	**4**	**4**		
Materials						
Mat 01	Life Cycle Impacts	5	5	5	EMRYS	The current suggested specification, as advised by EMRYS, generally meets high Green Guide Rating standards. As the facade is being retained this is advantageous in terms of achievable points. Following our initial calculation, 5 credits are achievable. To be confirmed as the design develops.
Mat 02	Hard Landscaping and Boundary Protection	1	1	1	EMRYS	No external landscaping so credit can be awarded by default.

Mat 03	Responsible Sourcing of Materials	4	2	2	EMRYS	1st Credit Sustainable Procurement Plan: Requirement to be included in Prelims. 2-4th Credits Responsible Sourcing of Materials: Once credit assumed for sourcing of concrete and steel to BES6001. Structural Engineer to provide certification requirement in specification and volume of relevant material.
Mat 04	Insulation	1	1	1	EMRYS/MC	Credit requirements for sourcing of green guide rated products will be included within the M&E and NBS specification. In addition, majority of insulation products should have an Environmental Performance Declaration (EPD) certificate. Services: mineral wool (duct), phenolic foam and Armaflex Building Fabric: Expected PIR, and Kingspan products for foundations and roof
Mat 05	Designing for durability and resilience	1	1	1	EW/EMRYS	The project Architect is to ensure that 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. In addition, the relevant building elements incorporate appropriate design and specification measures to limit material degradation due to environmental factors. A statement and supporting evidence (drawings and specification) will be required.
Mat 06	Material efficiency	1	0	0	EMRYS	ENHANCED SCORE The credit focuses on a waste (material) optimisation review to be undertaken at each RIBS Stage. The assessor will review with the architect the options analysed at Stage 1 with regards to the facade retention and initiate a template document. Once the feasibility of the credit is established the credit will be assumed as achievable.
	Materials Totals:	**13**	**10**	**10**		
	Materials score totals:	**17.5**	**13.46**	**13.462**		
Waste						
Wst 01	Construction Waste Management	4	2	2	PFC	1-3rd Resource efficiency (1 credit): A requirement for a resource management plan will be included within the demolition Prelims documentation. It is assumed at this stage that construction waste shall be ≤11.1 tonnes per 100sqm. 4th Credit Diversion of Waste from Landfill: A requirement for 90% diversion rate will be included within the demolition Prelims documentation.
Wst 02	Recycled Aggregates	1	1	1	EW	ENHANCED SCORE The Structural Engineer will assess the potential of the development to meet the credit criteria for specifying recycled aggregate: Bound Structural frame - 15% Bitumen or hydraulically bound base, binder, and surface courses for paved areas and roads - 30% Building foundations - 20% Concrete road surfaces - 15% Unbound Pipe bedding- 100% Granular fill and capping (see Relevant definitions section)
						- 100%
Wst 03	Operational Waste	1	1	1	EMRYS	The project Architect is to ensure adequate space is provided for collection of recyclable waste material: At least 2sqm per 1000sqm of net floor area for buildings < 5000sqm
Wst 05	Adaptation to climate change	1	1	1	EW/EMRYS	Architect and Structural Engineer to conduct a climate change adaptation strategy appraisal for structural and fabric resilience by the end of Concept Design (RIBA Stage 2 or equivalent), in accordance with the following approach: This should essentially be a design risk register to identify and evaluate the impact on the building over its projected life cycle from expected extreme weather conditions arising from climate change and, where feasible, mitigate against these impacts. Issues should include: -Flooding (FRA & ground levels) -Stress on structure from temp fluctuations, winds -Thermal comfort considerations -Rsilience of materials to increased solar radiation and increased moisture etc.
Wst 06	Functional adaptability	1	1	1	EMRYS/MC	A building-specific functional adaptation strategy study has been undertaken by the client and design team by Concept Design (RIBA Stage 2 or equivalent), which includes recommendations for measures to be incorporated to facilitate future adaptation. A credit Guidance Note will be issued by the assessor.
	Waste Totals:	**8**	**6**	**6**		
	Waste score totals:	**11**	**8.25**	**8.25**		
Land Use & Ecology						
LE 01	Site Selection	2	1	1		Re-use of site ensures one credit is awarded. No contaminated land investigation.
LE 02	Ecological Value of Site and Protection of Ecological Features	2	2	2		It has been agreed that an Ecologist will be appointed to develop a site survey in support of BREEAM issues and advise on biodiversity. Both credits are considered achievable.
LE 03	Minimising impact on existing site ecology	2	2	2		It has been agreed that an Ecologist will be appointed to develop a site survey in support of BREEAM issues and advise on biodiversity. Both credits are considered achievable.
LE 04	Enhancing site ecology	2	2	2		It has been agreed that an Ecologist will be appointed to develop a site survey in support of BREEAM issues and advise on biodiversity. One credit are considered achievable.
LE 05	Long Term Impact on Biodiversity	2	2	2		It has been agreed that an Ecologist will be appointed to develop a site survey in support of BREEAM issues and advise on biodiversity. Both credits are considered achievable.
	Land Use & Ecology Totals:	**10**	**9**	**9**		

Land Use & Ecology score totals:		**13**	**11.7**	**11.7**		
Pollution						
Pol 03	Surface Water Run Off	5	3	3	EW	1-2nd Credit Flood Risk: Location in low risk zone. An FRA statement is required by the Structural Engineer. 3-4th Credit Surface water run-off: As the hard standing area for the development will not be changing both these credits are achievable by default, due to no increase in run-off post development. 5th Credit Minimising watercourse pollution: This credit requires SUDS treatment to discharge from the site which exceeds 5mm rainfall. This issue is considered unachievable at present.
Pol 04	Reduction of Night Time Light Pollution	1	1	1	MC	1st Credit Reduction of Night-time Light Pollution: Services engineer to ensure all external lighting to meet ILE guidance and control requirements. Awarded by default if no external lighting being installed.
Pollution Totals:		**6**	**4**	**4**		
Pollution score totals:		**6**	**4**	**4**		
Innovation						
Innovation Totals:		**9**	**0**	**0**		
Innovation score totals:		**9**	**0**	**0**		
OVERALL SCORE TOTALS:		**109**	**75.58**	**75.58**		