

Report

BREEAM Preliminary Estimation

32 JAMESTOWN ROAD

London & Regional Properties

Report

CONFIDENTIAL

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1 EXECUTIVE SUMMARY

Norman Disney & Young have been commissioned by London & Regional Properties to carry out a BREEAM (**B**uilding **R**esearch **E**stablishment's **E**nvironmental **A**ssessment **M**ethod) pre-assessment of 32 Jamestown Road, (building was previously called Bewlay House) consisting of 5 floors of offices located in the London Borough of Camden. This project is a combination of new construction and major refurbishment to an existing building.

This report is a desk-based review of the original BREEAM pre-assessment for 4 floors which has now changed to 5 floors.

A breakdown of every BREEAM section (management, health & wellbeing, energy, transport, water, materials, waste, land use & ecology, pollution) with comments for each issue are provided based on the BREEAM workshop carried out to arrive at a preliminary indicator score.

The BREEAM preliminary indicator assessment carried out using BREEAM 2014 combined New Construction and Fit out assessment concludes that the part new build, part refurbishment project has the potential to target a BREEAM score of **61.46%**, a BREEAM rating of **Very Good**. This prediction is based on the information available from the design team, during the BREEAM workshop. Note: the threshold for achieving a BREEAM Very Good score is 55%.

The client's brief and the London Borough of Camden's planning policy requirement for a BREEAM Very Good rating in the final BREEAM assessment will need to be supported by the design team providing evidence compliant against the assessment criteria following construction. It is therefore important for all project team members to ensure that commitments made at this stage are carried through the design process and are implemented through to construction. It is also important to note that the cost implication of the assumptions made in this report have not been evaluated as part of this study.



2 THE DESIGN TEAM

A BREEAM pre-assessment workshop was held on 27th April 2015 at NDY's London office. The members of design team consulted for this BREEAM Pre-assessment are as follows:

Architect Ben Adams Architects	Nicholas Jewell	99 Southwark Street London SE1 0JF
Services Engineers Norman Disney & Young	David Turner	180 Old Street London EC1V 9RQ
BREEAM Assessor Norman Disney & Young	Supriya Kamath	180 Old Street London EC1V 9RQ

As the formal BREEAM assessment progresses, input will be required from various design team members, who will be responsible for providing information and pieces of evidence for the formal assessment. Evidence is generally required from the developer, project manager, contractor, construction manager, M&E engineers, architect, cost consultant as well as a transport consultant and ecologist where applicable.



3 INTRODUCTION

Norman Disney & Young have been commissioned by London & Regional Properties to carry out a BREEAM pre-assessment of the office building at 32 Jamestown Road, London. This project is a combination of new construction and major refurbishment to an existing building.

On the basis of the scope and extent of major refurbishment the Bespoke BREEAM 2014 combined New Construction and Refurbishment and Fit out assessment scheme was the most relevant scheme available to carry out the BREEAM certification of the offices areas only.

The mixed use development received planning permission in 2014. Further to the planning permission being granted, the client has instructed a change to the consented scheme. The proposed change requires new planning permission. Therefore, a new planning application submission is being prepared by the project team. In order to support the new planning application, a BREEAM 2014 pre-assessment is required.

This report is a preliminary BREEAM 2014 pre-assessment

The BREEAM certification is a two-stage process and assesses the environmental impacts arising as a result of an individual building development (including external site areas) at the following stages:

1. Design Stage (DS) - leading to an Interim BREEAM Certificate;
2. Post-Construction Stage (PCS) – leading to a Final BREEAM Certificate.

The aim of the pre-assessment is to identify early in the design stages areas where the BREEAM score can be improved.

The BREEAM 2014 New Construction and Refurbishment and Fit Out (Offices) scheme document has been used and it details the assessment criteria, compliance notes and evidence requirements for each issue. A list of documents that will be required to demonstrate compliance at the design stage and post construction review stage assessments will be provided to the design team in a separate document during the full Design & Procurement and Post Construction assessment stages.

The requirements of the BREEAM issues are very specific and can often be overlooked by the design team. Therefore it is important at the design stage that one workshop is conducted between the design team and assessor to discuss the specific assessment criteria and ensure that these can be met and implemented within the design of the development.

3.1 BREEAM

BREEAM is a voluntary scheme that aims to quantify and reduce the environmental burdens of buildings by rewarding those designs that take positive steps to minimise their environmental impacts.

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

- Management
- Health and Wellbeing
- Energy
- Transport
- Water
- Materials
- Waste
- Land use and Ecology
- Pollution
- Innovation



3.2 BREEAM Scoring

Within each of the BREEAM categories outlined above, there are a number of credit requirements that reflect the options available to designers and managers of buildings.

An environmental weighting is applied to the scores achieved under each category, as shown below, in order to calculate the final BREEAM score. The weighting factors have been derived from consensus based research with various groups such as government, material suppliers and lobbyists. This research was carried out by BRE to establish the relative importance of each environmental issue.

The rating benchmarks for BREEAM 2014 Offices scheme are as follows:

BREEAM rating	% score
UNCLASSIFIED	<30%
PASS	≥35%
GOOD	≥45%
VERY GOOD	≥55%
EXCELLENT	≥70%
OUTSTANDING	≥85%

3.3 Minimum BREEAM standards

The table below identifies those BREEAM issues that have a BREEAM minimum standard requirement. Therefore, to achieve a BREEAM rating, the minimum percentage score must be achieved as outlined in the table above and the minimum standards (i.e. number of credits achieved) applicable to that rating level complied with.

BREEAM Issue	Pass	Good	Very Good	Excellent	Outstanding
Man 03: Responsible Construction Practices				One credit (Considerate construction)	Two credits Considerate construction)
Man 04: Commissioning & Handover	None	None	None	Criterion 9 (Building User Guide)	Criterion 9 (Building User Guide)
Man 5: Aftercare	None	None	None	Parts 2 & 3 only: One credit (Seasonable commissioning)	Parts 2 & 3 only: One credit (Seasonable commissioning)
Ene 01: Reduction of Energy Use & Carbon Emissions	None	None	None	Parts 1, 2, 3 & 4 (full assessments): Six credits, varies for other assessment types	Parts 1, 2, 3 & 4 (full assessments): Ten credits, varies for other assessment types
Ene 02: Energy Monitoring	None	None	Parts 2, 3 & 4 One credit First sub-metering credit)	Parts 2, 3 & 4 One credit First sub-metering credit)	Parts 2, 3 & 4 One credit First sub-metering credit)



BREEAM Issue	Pass	Good	Very Good	Excellent	Outstanding
Wat 01: Water Consumption	None	One credit (where applicable)	One credit (where applicable)	One credit (where applicable)	Two credit (where applicable)
Wat 02: Water Monitoring	None	Part 2: Criterion 1 only	Part 2: Criterion 1 only	Part 2: Criterion 1 only	Part 2: Criterion 1 only
Mat 03: Responsible Sourcing of Materials	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only
Wst 01: Project Waste Management	None	None	None	None	One credit
Wst 03: Operational Waste	None	None	None	One credit	One credit



4 SUMMARY OF BUILDING PERFORMANCE

Based on the information provided by the project team, the development is predicted to achieve a score of **61.46%**, as a minimum, which equates to a BREEAM rating of **Very Good**. This rating is based on the assumption that evidence required for each of the credits will be fulfilled.



APPENDIX A: PRELIMINARY ESTIMATE OF BREEAM SCORE

The following section of this report provides a breakdown of the individual BREEAM issues within each category as per the BREEAM Preliminary discussions. It is intended that the estimate of the likely BREEAM rating will be updated as the design evolves.



Project: 32 James Town Road

BREEAM 2014 Preliminary assessment action list

Shell & Core stage of Construction

Bespoke BREEAM 2014 combined New Construction and Refurbishment & Fit-out scheme

Refurbished Area= 6726m ²
New Build Area =1262m ²
Total area =7988 m ²

BREEAM predicted target score = 61.46%
BREEAM predicted target rating = VERY GOOD

Last updated = 30th April 2015

criteria /credit not sought
criteria / issue not applicable
mandatory requirements for Very Good Rating
evidence reports / appointments required during RIBA stage 1 and 2 (RIBA stage A to C)
NDY- Norman Disney & Young
BAA- Ben Adam Architects
LCC- London Cost Consultancy

THIS 2014 BESPOKE COMBINED TRACKER SPREADSHEET IS AN APPROXIMATE SCORE BECAUSE IT IS NOT AREA WEIGHTED FOR THE NEW BUILD AND MAJOR REFURBISHMENT AREAS (WHILE THE ACTUAL TOOL IS AREA WEIGHTED) PLEASE ALWAYS RUN THE BESPOKE BREEAM 2014 ASSESSMENT TOOL TO CALCULATE THE EXACT BREEAM SCORE. THIS TRACKER IS PRIMARILY TO INFORM THE TEAM OF REQUIREMENTS AND MONITOR PROGRESS.

Item reference	Issue ID	Issue name	sub-issue name	Criteria reference	Credit summary	Credits available		Credits Targeted	Responsibility to action	Assessment criteria requirements (PLEASE REFER TO THE BESPOKE BREEAM 2014 BESPOKE PROJECT CRITERIA APPENDIX ISSUED BY THE BRE SPECIFICALLY FOR THIS PROJECT)
						by issue	Applicable credits by sub-issue			
	MANAGEMENT section									
1	Man 01	Project brief and design	Stakeholder consultation (project delivery)	1 to 4	Stakeholder consultation covering project delivery	4	1	0	NA	This issue is not sought
2	Man 01	Project brief and design	Stakeholder consultation (third party)	5 to 7	Stakeholder consultation (thirdparty)		1	1	BAA	Criterion 5: Prior to completion of the Concept Design stage, all relevant third party stakeholders have been consulted by the design team and this covers the minimum consultation content (see compliance note CN3). Criterion 6: 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. Criterion 7: Prior to completion of the detailed design (RIBA Stage 4, Technical Design or equivalent), consultation feedback has been given to, and received by, all relevant parties. Criterion 8 applicable for education, healthcare, law courts and major transport node building types only
3	Man 01	Project brief and design	Sustainability Champion (design)	9 to 11	Sustainability champion appointed to facilitate the setting, monitoring and achievement of BREEAM performance target(s) for the project.		1	1	NDY	Criterion 9: A Sustainability Champion has been appointed to facilitate the setting and achievement of BREEAM performance targets for the project. The design stage Sustainability Champion is appointed to perform this role during the feasibility stage (Stage 1, Preparation and Brief stage, as defined by the RIBA Plan of Work 2013 or equivalent). Criterion 10: The defined BREEAM performance target(s) has been formally agreed (see Relevant definitions) between the client and design/project team no later than the Concept Design stage (RIBA Stage 2 or equivalent). Criterion 11: To achieve this credit at the interim design stage assessment, the agreed BREEAM performance target(s) must be demonstrably achieved by the project design. This must be demonstrated via the BREEAM assessor’s design stage assessment report.
4	Man 01	Project brief and design	Sustainability Champion (monitoring progress)	12, 13			1	1	NDY	Criterion 12: The Sustainability Champion criteria 9, 10 and 11 have been achieved. Criterion 13: A Sustainability Champion is appointed to monitor progress against the agreed BREEAM performance target(s) throughout the design process and formally report progress to the client and design team.
5	Man 02	Life cycle cost and service life planning	Elemental life cycle cost (LCC)	1, 2	Recognising and encouraging the use of life cycle costing and service life planning and the sharing of data to raise awareness and understanding.	4	2	0		This issue is not sought
6	Man 02	Life cycle cost and service life planning	Component level LCC Plan	3, 4		1	1	LCC	Criterion 3: A component level LCC plan has been developed by the end of Process Stage 4 (equivalent to Technical Design – RIBA Stage 4) in line with PD 156865:2008 and includes the following component types (where present, see criteria details in scheme document). Where carrying out a major refurbishment covering all parts of the scheme, a component level LCC plan shall be developed as above. Criterion 4: Demonstrate, using appropriate examples provided by the design team, how the component level LCC plan has been used to influence building and systems design/specification to minimise life cycle costs and maximise critical value.	
7	Man 02	Life cycle cost and service life planning	Capital cost reporting	5		1	1	LCC	Criterion 5: Report the capital cost for the refurbishment/fit-out works in pounds per square metre (£k/m2 via the BREEAM Assessment Scoring and Reporting tool.	
8	Man 03	Responsible construction practices		1		6	pre-requisite	0	LCC	Pre-requisite - Criterion 1: All timber and timber-based products used on the project is 'Legally harvested and traded timber' (see Relevant definitions). Note: For other materials there are no pre-requisite requirements at this stage.
9	Man 03	Responsible construction practices	EMS	2, 3	1		1	LCC	Criterion 2: The principal contractor operates an environmental management system (EMS) covering their main operations. The EMS must be either:(a) Third party certified, to ISO 14001/EMAS or equivalent standard; or (b) Have a structure that is in compliance with BS 8555: 2003 and has reached phase four of the implementation stage, 'implementation and operation of the environmental management system', and has completed phase audits 1 to 4, as defined in BS 8555:2003. See compliance note CN5 Criterion 3: The principal contractor implements best practice pollution prevention policies and procedures on-site in accordance with Pollution Prevention Guidelines, Working at construction and demolition-sites: PPG6.	



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						by issue	Aaplicanle credits by sub-issue			
10	Man 03	Responsible construction practices	Sustainability Champion	4 to 6	Sustainability champion will monitor the project for BREEAM compliance during the construction phaseof the project.		1	1	LCC	Criterion 4: A Sustainability Champion is appointed to monitor the project to ensure ongoing compliance with the relevant sustainability performance/process criteria, and therefore BREEAM target(s), during the Construction, Handover and Close Out stages (as defined by the RIBA Plan of Works 2013, Stages 5 and 6). To do this the Sustainability Champion will ideally be site based or will visit the site regularly to carry out spot checks, with the relevant authority to do so, and will require action to be taken to address shortcomings in compliance. The Sustainability Champion will monitor site activities with sufficient frequency (see compliance note CN6) to ensure that risks of non-compliance are minimised. They will report on progress at relevant project team meetings including identifying potential areas of non-compliance and any action needed to mitigate. Criterion 5: The defined BREEAM performance target forms a requirement of the principal contractor's contract (see Man 01 Project brief and design – CN5 and Man 01 Project brief and design – Relevant definitions). Criterion 6: To achieve this credit at the final post construction stage of assessment, the BREEAM-related performance target for the project must be demonstrably achieved by the project. This is demonstrated via the BREEAM assessor's final post
11	Man 03	Responsible construction practices	Considerate construction	7, 8	Site related energy, water and transport impacts are monitored and reported to ensure ongoing compliance during the Refurbishment, Handover and Close Out stages and to improve awareness and understanding for future projects.		2	2	LCC	Criterion 7: For small scale or low value refurbishment or fit-out projects (see Relevant definitions):(a) One credit can be awarded where an individual(s) is responsible for implementing and maintaining the following considerate construction practices throughout the works stage (see Relevant definitions):i.Keeping the site clean and tidy; ii. Reducing impacts on the community through community/neighbour engagement; iii. Continuous improvements in safety iv.Commitments to respect and fair treatment of all workers; v.Suitable site facilities for operatives and visitors. (b) Two credits can be awarded where the contractor achieves 'compliance' with the criteria of a 'compliant' scheme. Criterion 8: Where the refurbishment or fit-out project does not meet the definition of a small scale or low value project (see Relevant definitions) the principal contractor has used a 'compliant' organisational, local or national considerate construction scheme and their performance against the scheme has been confirmed by independent assessment and verification. The BREEAM credits can be awarded as follows:(a) One credit where the contractor achieves 'compliance' with the criteria of a compliant scheme. (b) Two credits where the contractor significantly exceeds 'compliance' with the criteria of the scheme. Refer to the Relevant definitions section for a list of compliant schemes and therefore how performance, as determined by a compliant scheme, translates into BREEAM credits.
12	Man 03	Responsible construction practices	Monitoring of construction-site impacts	9	Responsibility assignedto individual to monitor, record and report energy use, water useand transport emissions		pre-requisite for 10 to 18	0	LCC	Criterion 9: Responsibility has been assigned to an individual(s) for monitoring, recording and reporting energy use, water consumption and transport data (where measured) resulting from all on-site refurbishment or fit-out processes (and dedicated off-site monitoring) throughout the refurbishment or fit-out programme. To ensure the robust collection of information, this individual(s) must have the appropriate authority and responsibility to request and access the data required. Where appointed, the Sustainability Champion could perform this role.
13	Man 03	Responsible construction practices	Utility consumption - energy consumption	10 to 12	Energy consumption and Water consumption		1	1	LCC	Criterion 10: Criterion 9 is achieved. Criterion 11: Monitor and record data of the site energy consumption in kWh (and where relevant, litres of fuel used) as a result of the use of construction plant, equipment (mobile and fixed) and site accommodation (as relevant to the project type). Criterion 12: Report the total carbon dioxide emissions (total kgCO2/project value) from the construction process via the BREEAM Assessment Scoring and Reporting tool (for the purposes of potential future BREEAM performance benchmarking).
14	Man 03	Responsible construction practices	Utility consumption - water consumption	13 to 15					LCC	Criterion 13: Criterion 9 is achieved Criterion 14: Monitor and record data on principal constructor's and subcontractors' potable water consumption (m3) arising from the use of construction plant, equipment (mobile and fixed) and site accommodation (as relevant to the project type, see Compliance Note). Criterion 15: Using the collated data report the total net water consumption (m3), i.e. consumption minus any recycled water use from the construction process via the BREEAM Assessment Scoring and Reporting tool (for the purposes of potential future BREEAM performance benchmarking).
15	Man 03	Responsible construction practices	Transport of construction materials and waste	16 to 18			1	1	LCC	Criterion 16: Criterion 9 is achieved Criterion 17: Monitor and record data on transport movements and impacts resulting from delivery of the majority of refurbishment or fit-out materials to site and refurbishment, fit-out and demolition or strip-out waste from site. As a minimum this must cover:(a)Transport of materials from the factory gate to the building site, including any transport, intermediate storage and distribution, See Relevant definitions. (b)Scope of this monitoring must cover the following as a minimum:i. Where Part 1 is being assessed, materials used in major building elements, including insulation materials; ii.Where Part 2 is being assessed, materials used for core services; iii.Where undertaking a comprehensive refurbishment including fit-out with a combination of Parts 1 - 4, materials used for major building elements, services and interior fit-out; iv.Where within scope, ground works and landscaping materials; v.Where undertaking a Parts 3 & 4 only assessment, materials used in the fit-out are included with the exception of small scale and low value refurbishment of fit-out projects (see Relevant definitions) where this credit is not applicable. (c)Transport of construction waste from the construction gate to waste disposal processing or recovery centre gate. Scope of this monitoring must cover the construction waste groups outlined in the project's waste management plan. Criterion 18: Using the collated data, report separately for materials and waste, the total fuel consumption (litres) and/or total carbon dioxide emissions (kgCO2 eq), plus total distance travelled (km) via the BREEAM Assessment Scoring and Reporting tool



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						by issue	Aaplicanle credits by sub-issue			
16	Man 04	Commissioning and handover	Commissioning and testing schedule and responsibilities	1 to 4	Schedule of commissioning including optimal timescales and appropriate testing and commissioning of all building services systems and building fabric in line with best practice.	4	1	1	LCC	Criterion 1: There is a schedule of commissioning and testing that identifies appropriate commissioning required for the scope of works that includes a suitable timescale for commissioning and re-commissioning of all relevant works carried out. Commissioning should be carried out where changes are being made to the following:(a) Building services (including both complex and non-complex systems) (b) Building services control systems (including Building Management Systems) (c) Changes to the building fabric that will affect thermal performance. Criterion 2: The schedule will identify the appropriate standards that all commissioning activities will be conducted in accordance with such as current Building Regulations, BSRIA and CIBSE guidelines and/or other appropriate standards, where applicable. Where a building management system (BMS) is specified, refer to compliance note CN8 on BMS commissioning procedures. Criterion 3: An appropriate project team member(s) is appointed to monitor and programme pre-commissioning, commissioning, testing and, where necessary, re-commissioning activities on behalf of the client. Criterion 4: The principal contractor accounts for the commissioning and testing programme, responsibilities and criteria within their budget and main programme of works, allowing for the required time to complete all commissioning and testing activities prior to handover.
17	Man 04	Commissioning and handover	Commissioning building services	5, 6				1	NDY	Criterion 5: The commissioning and testing schedule and responsibilities credit is achieved. Criterion 6: For projects where work is being undertaken to upgrade, renovate or install new building services and systems.(a.)For complex building services and systems, a specialist commissioning manager is appointed during the design stage (by either client or contractor) with responsibility for:(i) Undertaking design reviews and giving advice on suitability for ease of commissioning; (ii) Providing commissioning management input to construction programming and during installation stages; (iii) Management of commissioning, performance testing and handover/post handover stages. (b.) For simple building services, this role can be carried out by an appropriate project team member (see criterion 3), provided they are not involved in the general installation works for the building services system(s).
18	Man 04	Commissioning and handover	Testing and inspecting building fabric	7, 8	Inspecting, testing, identifying and rectifying defects via an appropriate method.			1	LCC	Criterion 7: Projects where the fabric of the building is being upgraded, the integrity of the building fabric, including continuity of insulation, avoidance of thermal bridging and air leakage paths is quality assured through completion of a thermographic survey as well as airtightness testing and visual inspection at appropriate times during the refurbishment. The survey/testing is undertaken by a Suitably Qualified Professional (see Relevant definitions) in accordance with the appropriate standard, with visual inspection conducted by a representative of the main contractor or by an independent inspector such as a clerk of works. Criterion 8: Any defects identified in the site inspection, thermographic survey and the airtightness testing reports are rectified prior to building handover and close out. Any remedial work must meet the required performance characteristics for the building/element.
19	Man 04	Commissioning and handover	Handover	9, 10	Provision of a non-technical Building User Guide and user/operator training timed appropriately around handover and proposed occupation.			1	LCC	Criterion 9: A Building User Guide is developed or (where present) an existing Building User Guide is updated, prior to handover for distribution to the building occupiers and premises managers (seeRelevant definitions), with a draft copy developed and discussed with users first (where the building occupants are known) to ensure the guide is most appropriate and useful to potential users. Criterion 10: 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 design intent of refurbishment/fit-out works; (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, to ensure they are fully conversant with the detailed operation of the building (d) Introduction to the Building User Guide and other relevant building documentation, e.g. design data, technical guides, maintenance strategy, operations and maintenance (O&M) manual, commissioning records, log book etc. (e) Maintenance requirements, including any maintenance contracts and regimes in place.
20	Man 05	Aftercare	not applicable	all	not applicable	0	0		NA	Issue / criteria are not applicable and therefore not assessed
	MANAGEMENT section totals					18	18	15		
						Category weighting	11.00%			
						Credit value for this section	0.61%			
						% contribution to score	11.00%	9.17%		
	HEALTH & WELLBEING section									
21	Hea 01	Visual comfort	Glare control	1, 2	Potential for disabling glare has been designed out of all relevant building areas.	7	1	1	BAA	Criterion 1: The potential for disabling glare has been designed out of all relevant building areas using a glare control strategy, either through building form and layout and/or building design measures (see compliance note CN7). Criterion 2: The glare control strategy avoids increasing lighting energy consumption, by ensuring that: a.The glare control system is designed to maximise daylight levels under all conditions while avoiding disabling glare in the workplace or other sensitive areas. The system should not inhibit daylight from entering the space under cloudy conditions, or when sunlight is not on the façade: AND b.The use or location of shading does not conflict with the operation of lighting control systems.



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						by issue	Aaplicanle credits by sub-issue			
22	Hea 01	Visual comfort	Daylighting	3 to 5	Good practice daylighting levels have been met.		1	1	BAA	Criterion 3: Up to three credits are awarded on a sliding scale depending on the percentage of relevant building areas that comply with one of the following daylighting criteria: (a.) The relevant building areas meet good practice daylight factor(s) and other criterion as outlined in Table - 12 and Table - 13: OR (b.) The relevant building areas meet good practice average and minimum point daylight illuminance criteria as outlined in Table - 14. Criterion 4: Two credits where daylighting provision, averaged over all relevant spaces, has improved after refurbishment or fit-out by 30% or more and there is a minimum glazing to floor area ratio of either: (a.) 5% glass to floor area ratio for side windows; OR (b.) 2.5% glass to floor area ratio for roof lights; Criterion 5: One credit where daylighting provision, averaged over all relevant spaces, has improved after refurbishment or fit-out by 15% or more and there is a minimum glazing to floor area ratio of either: (a.) 5% glass to floor area ratio for side windows; OR (b.) 2.5% glass to floor area ratio for roof lights.
23	Hea 01	Visual comfort	View out	6 to 9	Floor space in relevant building areas has an adequate view out to reduce eye-strain and provide a link to the outside.		1	1	BAA	Criterion 6: Two credits where 95% of the floor area in relevant building areas is within 7m of a wall which has a window or permanent opening that provides an adequate view out. Criterion 7: One credit where 80% of the floor area space in relevant building areas is within 7m of a wall which has a window or permanent opening that provides an adequate view out and criterion 8 is met. Criterion 8: The window/opening must be ≥ 20% of the surrounding wall area (refer to Relevant definitions in the Additional information section). Where the room depth is greater than 7m, compliance is only possible where the percentage of window/opening is the same as, or greater than, the values in Table 1.0 of BS 8206. Criterion 9: In addition, the building type criteria in Table - 15 are applicable to view out criteria.
24	Hea 01	Visual comfort	Internal lighting	10 to 12	Internal and external lighting systems are designed to avoid flicker and provide appropriate illuminance (lux) levels.		1	1	NDY	Criterion 10: All fluorescent and compact fluorescent lamps are fitted with high frequency ballasts. Criterion 11: Internal lighting in all relevant areas of the building is designed to provide an illuminance (lux) level appropriate to the tasks undertaken, accounting for building user concentration and comfort levels. This can be demonstrated through a lighting design strategy that provides illuminance levels in accordance with the SLL Code for Lighting 2012 and any other relevant industry standard. Criterion 12: For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 7 sections 3.3, 4.6, 4.7, 4.8 and 4.9. This gives recommendations highlighting: a.Limits to the luminance of the luminaires to avoid screen reflections. (Manufacturers’ data for the luminaires should be sought to confirm this.) b.For uplighting, the recommendations refer to the luminance of the lit ceiling rather than the luminaire; a design team calculation is usually required to demonstrate this. c.Recommendations for direct lighting, ceiling illuminance, and average wall illuminance.
25	Hea 01	Visual comfort	External lighting	13					NDY	Criterion 13: All external lighting located within the refurbishment or fit-out zone is designed to provide illuminance levels that enable users to perform outdoor visual tasks efficiently and accurately, especially during the night. To demonstrate this, external lighting provided is specified in accordance with BS 5489-1:2013 Lighting of roads and public amenity areas and BS EN 12464-2:2014 Light and lighting - Lighting of work places - Part 2: Outdoor work places.
26	Hea 01	Visual comfort	Zoning and occupant control	14 to 16	Internal lighting is zoned to allow for occupant control.				NDY	Criterion 14: Internal lighting is zoned to allow for occupant control (see Relevant definitions) in accordance with the criteria below for relevant areas present within the building: a.In office areas, zones of no more than four workplaces b.Workstations adjacent to windows/atria and other building areas separately zoned and controlled c.Seminar and lecture rooms: zoned for presentation and audience areas d.Library spaces: separate zoning of stacks, reading and counter areas e.Teaching space or demonstration area f.Whiteboard or display screen g.Auditoria: zoning of seating areas, circulation space and lectern area h.Dining, restaurant, café areas: separate zoning of servery and seating/dining areas i.Retail: separate zoning of display and counter areas j.Bar areas: separate zoning of bar and seating areas k.Wards or bedded areas: zoned lighting control for individual bed spaces and control for staff over groups of bed spaces l.Treatment areas, dayrooms, waiting areas: zoning of seating and activity areas and circulation space with controls accessible to staff. Criterion 15: Areas used for teaching, seminar or lecture purposes have lighting controls provided in accordance with CIBSE Lighting Guide 5 Criterion 16: In addition the building type criteria in Table - 16 (where relevant) are met;



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criteria /credit not sought
criteria / issue not applicable
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27	Hea 02	Indoor air quality	Indoor air quality (IAQ) plan	1	Minimising sources of air pollution through careful design specification and planning.	3	1	1	BAA, NDY,LCC	Criterion 1: An indoor air quality plan has been produced and implemented, with the objective of facilitating a process that leads to design, specification and installation decisions and actions that minimise indoor air pollution during the design, construction and 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.)Protection of Heating Ventilation and Air Conditioning (HVAC) systems from sources of pollution during refurbishment/fit-out works e.g. dust e.Procedures for protecting the indoor air quality of areas outside of the refurbishment or fit-out zone that may be affected by the refurbishment/fit-out works f.Procedures for identifying and implementing third party testing and analysis required to ascertain that the contaminant sources have been removed effectively before occupancy g. Commitments for maintaining indoor air quality in-use, e.g. maintenance and cleaning of the HVAC system, ductwork and filters.
28	Hea 02	Indoor air quality	Ventilation	2 to 5						Refurbishment and fit-out works include measures to minimise the concentration and recirculation of pollutants in the building as follows: Criterion 2: Provide fresh air into the building in accordance with the criteria of the relevant standard for ventilation. Criterion 3: Design ventilation pathways to minimise the build-up of air pollutants in the building, as follows:a.In air conditioned and mixed mode buildings/spaces: i.The building’s air intakes and exhausts are over 10m apart and intakes are over 20m from sources of external pollution; OR ii.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. b.In naturally ventilated buildings/spaces: openable windows/ventilators are over 10m from sources of external pollution. Criterion 4: Where present, HVAC systems must incorporate suitable filtration to minimise external air pollution, as defined in BS EN 13779:2007 Annex A3. Criterion 5: Areas of the building subject to large and unpredictable or variable occupancy patterns have carbon dioxide (CO2) or air quality sensors specified and:(a.) In mechanical ventilated buildings/spaces: sensor(s) are linked to the mechanical ventilation system and provide demand-controlled ventilation to the space.(b.) In naturally ventilated buildings/spaces: sensors either have the ability to alert the building owner or manager when CO2 levels exceed the recommended set point, or are linked to controls with the ability to adjust the quantity of fresh air, i.e. automatic opening windows/roof vents.
29	Hea 02	Indoor air quality	VOC emission levels (products)	6, 7						Issue / criteria are not applicable and therefore not assessed
30	Hea 02	Indoor air quality	VOC emission levels (post construction)	8 to 12						Issue / criteria are not applicable and therefore not assessed
31	Hea 02	Indoor air quality	Potential for natural ventilation	13, 14						Issue / credit not sought
32	Hea 03	Safe containment in laboratories	not applicable	all	not applicable	0	0	0		Issue / criteria are not applicable and therefore not assessed



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33	Hea 04	Thermal comfort	Thermal comfort	1 to 5	Thermal modelling carried out to appropriate standards. Criteria 1 to 5	3	1	1	NDY	<p>Criterion 1 .Thermal modelling has been carried out using software in accordance with CIBSE AM111 Building Energy and Environmental Modelling.</p> <p>Criterion 2 : The software used to carry out the simulation at the detailed design stage provides full dynamic thermal analysis. For smaller and more basic building designs with less complex heating or cooling systems, an alternative less complex means of analysis may be appropriate (such methodologies must still be in accordance with CIBSE AM11).</p> <p>Criterion 3: The modelling demonstrates that:a.For air conditioned buildings, summer and winter operative temperature ranges in occupied spaces are in accordance with the criteria set out in CIBSE Guide A Environmental design2, Table 1.5; or other appropriate industry standard (where this sets a higher or more appropriate requirement/level for the building type). b.For naturally ventilated/free running buildings:i.Winter operative temperature ranges in occupied spaces are in accordance with the criteria set out in CIBSE Guide A Environmental design, Table 1.5; or other appropriate industry standard (where this sets a higher or more appropriate requirement/level for the building type). ii.The building is designed to limit the risk of overheating, in accordance with the adaptive comfort methodology outlined in CIBSE TM52: The limits of thermal comfort: avoiding overheating in European buildings3.</p> <p>Criterion 4: Where undertaking a Part 4 assessment a competent person (e.g. chartered building services engineer) must assess the suitability of existing building services and controls to identify any changes that may be required as a result of fit-out works (e.g. as a result of changes to internal layout, occupant density, additional equipment that may increase cooling loads etc.).</p> <p>Criterion 5 : .For air conditioned buildings, the PMV (predicted mean vote) and PPD (predicted percentage of dissatisfied) indices based on the above modelling are reported via the BREEAM assessment scoring and reporting tool.</p>



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						by issue	Aaplicanle credits by sub-issue			
				6 to 9	Adaptability - For projected climate change scenario		1	0	NA	This issue is not sought
				10,11,12	Thermal zoning and controls		1	1	NDY	Criteria 10: .Criteria 1 to 4 are achieved. Criteria 11: The thermal modelling analysis (undertaken for compliance with criteria 1 to 4) has informed the temperature control strategy for the building and its users. Criteria 12: 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. For example consider the different requirements for the central core of a building compared with the external perimeter adjacent to the windows. b.Where specified, any new local cooling or heating services (or changes to existing services) are designed to ensure they do not conflict with core services (e.g. conflicts between two separate cooling systems, conflicts between core heating and locally provided cooling systems). c.The degree of occupant control required for these zones, based on discussions with the end user (or alternatively building type or use specific design guidance, case studies, feedback) considers:i.User knowledge of building services ii.Occupancy type, patterns and room functions (and therefore appropriate level of control required) iii.How the user is likely to operate or interact with the system(s), e.g. are they likely to open windows, access thermostatic radiator valves (TRV) on radiators, change air-conditioning settings etc. iv.The user expectations (this may differ in the summer and winter) and degree of individual control (i.e. obtaining the balance between occupant preferences, for example some occupants like fresh air and others dislike drafts). d.How the proposed systems will interact with each other (where there is more than one system) and how this may affect the thermal comfort of the building occupants. e.The need or otherwise for an accessible building user actuated manual override for any automatic systems.
34	Hea 05	Acoustic performance	Acoustic performance	1	The building meets appropriate acoustic performance standards and testing requirements in terms of:	3				Criterion 1: The building meets the appropriate acoustic performance standards and testing requirements defined in the checklists and tables section which defines criteria for the acoustic principles of:a.Sound insulation; b.Indoor ambient noise level; c.Reverberation times. Criteria 2 & 3: only relevant for a partial refurbishment or fit-out.
35	Hea 05	Acoustic performance	Sound insulation	see table 23			1	1	BAA	The sound insulation between acoustically sensitive rooms and other occupied areas complies with the performance criteria given in Section 7 of BS 8233:2014.
36	Hea 05	Acoustic performance	Indoor ambient noise level				1	0	NA	Achieve indoor ambient noise levels that comply with the design ranges given in Section 7 of BS 8233:2014.
37	Hea 05	Acoustic performance	Reverberation times.				1	0	NA	Acoustic environment (control of reverberation, sound absorption and speech transmission index): Achieve the requirements relating to sound absorption and reverberation times, where applicable, set out in Section 7 of BS 8233:2014.
38	Hea 06	Safety and security	Security of site and building	1 to 3	Provision of effective measures which support safe access to and from the building.	1	1	0	NA	This issue is not sought



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						by issue	Applicable credits by sub-issue			
	HEALTH & WELLBEING section totals				Number of Credits	17	14	9		
					Category weighting	10.50%				
					Credit value for this section	0.62%				
					% contribution to score	8.65%		5.56%		
	ENERGY section									
39	Ene 01	Reduction of energy use and carbon emissions	Whole building energy model	1	Recognise improvements in the energy performance of the refurbished building over existing building performance in relation to heating and cooling energy demand, primary energy consumption and carbon dioxide emissions.	15	15	10	NDY	For projects that want to gain recognition for improvements made at the whole building level, using whole building energy modelling National Calculation Methodology (NCM) compliant software. Criterion 1: Calculate the Energy Performance Ratio for Non Domestic Refurbishment (EPRNDR) and compare with the benchmarks in Table - 27 to determine the corresponding number of BREEAM credits.
40	Ene 02	Energy monitoring	Sub-metering of major energy consuming systems	1 to 4	Energy metering systems are installed to enable energy consumption to be assigned to end uses.	2	1	1	NDY	Criterion 1: Energy metering systems are installed that enable at least 90% of the estimated annual energy consumption of each fuel to be assigned to the various end-use categories of energy consuming systems (see Methodology). Criterion 2: The energy consuming systems in buildings with a total useful floor area greater than 1,000m2 are metered using an appropriate energy monitoring and management system. Criterion 3: The systems in smaller buildings are metered either with an energy monitoring and management system or with separate accessible energy sub-meters with pulsed or other open protocol communication outputs, to enable future connection to an energy monitoring and management system (see Relevant definitions). Criterion 4: The end energy consuming uses are identifiable to the building users, for example through labelling or data outputs.
41	Ene 02	Energy monitoring	Sub-metering of high energy load and tenancy areas	5	Sub-meters are provided for high energy load and tenancy areas.		1	1	NDY	Criterion 5: An accessible energy monitoring and management system or separate accessible energy sub-meters with pulsed or other open protocol communication outputs to enable future connection to an energy monitoring and management system are provided, covering a significant majority of the energy supply to tenanted areas or, in the case of single occupancy buildings, relevant function areas or departments within the building/unit.
42	Ene 03	External lighting		1 to 3	Specification of energy efficient light fittings for external areas of the development and controls to prevent use during daylight hours or when not needed.	1	1	1	NDY	Criterion 1: The building has been designed to operate without the need for external lighting (which includes on the building, signs and at entrances). OR alternatively, where the building does have external lighting, one credit can be awarded as follows: Criterion 2: The average initial luminous efficacy of the external light fittings within the construction zone is not less than 60 luminaire lumens per circuit Watt. Criterion 3: All external light fittings are automatically controlled for prevention of operation during daylight hours and presence detection in areas of intermittent pedestrian traffic.
43	Ene 04	Low carbon design	Passive design analysis	1 to 3	Analysis of the existing building is undertaken to identify opportunities for, and encourage the adoption of, passive design solutions, including free cooling.	3	0		NA	This issue is not sought
44	Ene 04	Low carbon design	Free cooling	4 to 6			0		NA	Criterion 4: The passive design analysis credit is achieved. Criterion 5: The passive design analysis carried out under criterion 2 includes an analysis of free cooling and identifies opportunities for the implementation of free cooling solutions. Criterion 6: The building uses ANY of the free cooling strategies listed in compliance note CN8 to reduce the cooling energy demand, i.e. it does not use active cooling.
45	Ene 04	Low carbon design	Low zero carbon feasibility study	7, 8			1	1	NDY	Criterion 7: A feasibility study has been carried out by the completion of the Concept Design stage (RIBA Stage 2 or equivalent) by an energy specialist (see Relevant definitions) to establish the most appropriate recognised local (on-site or near-site) low or zero carbon (LZC) energy source(s) for the building/development (see compliance note CN10). Criterion 8: A local LZC technology/technologies has/have been specified for the building/development in line with the recommendations of this feasibility study and this method of supply results in a meaningful reduction in regulated carbon dioxide (CO2) emissions (see compliance note CN19).
46	Ene 05	Energy efficient cold storage	not applicable	all	not applicable	0	0	0	NA	Issue / criteria are not applicable and therefore not assessed



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47	Ene 06	Energy efficient transportation systems	Energy consumption	1	An analysis of the transport demand and usage patterns is undertaken to determine the optimum number and size of lifts, escalators and/or moving walks.	3	1	1	NDY	Criterion 1: Where new lifts, escalators and/or moving walks (transportation types) are specified within refurbishment works: (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, escalators and/or moving walks. (b.) The energy consumption has been estimated in accordance with BS EN ISO 25745 Energy performance of lifts, escalators and moving walks, Part 2: Energy calculation and classification for lifts (elevators) and/or Part 3 - Energy calculation and classification for escalators and moving walks, 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 regenerative drives should be considered, subject to the requirements in CN6 (d.) The transportation system with the lowest energy consumption is specified.
48	Ene 06	Energy efficient transportation systems	Energy efficient features - Lifts	2 to 4	Energy efficient installations are specified.		2	2	2	NDY
49	Ene 07	Energy efficient laboratory systems	not applicable	all	not applicable	0	0	0	NA	Issue / criteria are not applicable and therefore not assessed
50	Ene 08	Energy efficient equipment	not applicable	all	not applicable	0	0	0	NA	Issue / criteria are not applicable and therefore not assessed
51	Ene 09	Drying space	not applicable	all	not applicable	0	0	0	NA	Issue / criteria are not applicable and therefore not assessed
	ENERGY section totals					24	22	17		
						Category weighting	15.00%			
						Credit value for this section	0.63%			
						% contribution to score	13.75%	10.63%		
TRANSPORT section										
52	Tra 01	Public transport solutions	Accessibility Index	1, 2	Recognition for projects where proximity to good public transport networks has been reviewed and where poor, alternative measures have been implemented, thereby helping to reduce transport-related pollution and congestion.	5	3	3	BAA	Criterion 1: The public transport Accessibility Index (AI) for the assessed building is calculated and BREEAM credits awarded according to the building type. For Accessibility Index benchmarks seeTable - 34 in the Checklists and tables section. Criterion 2: The Accessibility Index is determined by entering the following information into the BREEAM Tra 01 calculator: a.The distance (m) from the main building entrance to each compliant public transport node; b.The public transport type(s) serving the compliant node, e.g. bus or rail; c.The average number of services stopping per hour at each compliant node during the operating hours of the building for a typical day (see compliance notes and Table - 36 in the Additional information section).
53	Tra 01	Public transport solutions	Alternative transport measures	3			0	0	NA	Criterion 3: Where alternative transport measures in Table - 35 are provided, credits can be awarded based upon the number of measures implemented as detailed in Table - 33.
54	Tra 02	Proximity to amenities	Proximity to amenities	1	Recognition of projects where proximity of, and accessibility to, local amenities which are likely to be frequently required and used by building occupants has been reviewed.	1	1	1	BAA	Criterion 1: Where a building is located within close proximity of, and accessible to, local amenities which are likely to be frequently required and used by building occupants, as outlined in Table - 37.



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55	Tra 03	Cyclist facilities	Cycle storage	1	Provision of compliant cycle storage spaces and facilities to encourage safe and healthy cycling.	2	1	1	BAA	Criterion 1: Compliant cycle storage spaces that meet the minimum levels set out in Table - 38 (see Checklists and tables) are installed.
56	Tra 03	Cyclist facilities	Cyclist facilities	2, 3			1	1	BAA	Criterion 2: Criterion 1 has been achieved. Criterion 3: At least two of the following types of compliant cyclist facilities have been provided for all building users (including pupils where appropriate to the building type) - see Relevant definitions for the scope of each compliant cyclist facility;a.Showers; b.Changing facilities; c.Lockers; d.Drying spaces.
57	Tra 04	Maximum car parking capacity	Car parking capacity	1	To ensure change of use projects review provision of car parking spaces to optimise car parking capacity and encourage alternatives to car travel.	2	2	2	BAA	Criterion 1: The building's car parking capacity is compared to the maximum car parking capacity benchmarks in Table - 39 and the relevant number of BREEAM credits awarded. For most building types, except those where stated, the benchmarks vary according to the building's public transport Accessibility Index (AI determined in accordance with BREEAM issue Tra 01 Sustainable transport solutions). Therefore, for these building types the AI must be determined prior to assessing this issue. This is required to ensure that the building's car parking capacity is relative to the building's accessibility to the public transport network.
58	Tra 05	Travel plan	Travel plan	1 to 4	To promote sustainable reductions in transport burdens by undertaking a site specific travel assessment/statement and developing a travel plan based on the needs of the particular site.	1	1	1	BAA	Criterion 1: A travel plan has been developed as part of the feasibility and design stages. Criterion 2: A site specific travel assessment/statement has been undertaken to ensure the travel plan is structured to meet the needs of the particular site and covers the following (as a minimum):(a) Where relevant, existing travel patterns and opinions of existing building or site users towards cycling and walking so that constraints and opportunities can be identified. (b) Travel patterns and transport impact of future building users. (c) Current local environment for walkers and cyclists (accounting for visitors who may be accompanied by young children). (d) Disabled access (accounting for varying levels of disability and visual impairment). (e) Public transport links serving the site. (f) Current facilities for cyclists. Criterion 3: The travel plan includes a package of measures to encourage the use of sustainable modes of transport and movement of people and goods during the building's operation and use. Criterion 4: If the occupier is known, they must be involved in the development of the travel plan and they must confirm that the travel plan will be implemented post refurbishment or fit-out and be supported by the building's management in operation.
	TRANSPORT section totals				Number of Credits	11	9	9		
					Category weighting	10.00%				
					Credit value for this section	0.91%				
					% contribution to score	8.18%		8.18%		
	WATER section									
59	Wat 01	Water consumption	Water consumption	1 to 5	Reducing the demand for potable water through the provision of efficient sanitary fitting, rainwater collection and water recycling systems	5	5	2	NDY,BAA	Criterion 1: An assessment of the efficiency of newly specified domestic water-consuming components and (where relevant) measures specified to retrofit existing devices is undertaken using the BREEAM Wat 01 calculator, including all fittings applicable to the project type as detailed in Table - 42. Where there are no fittings within the scope of refurbishment or fit-out works, or only minimal water-consuming fittings present or specified, refer to compliance notes 5 or 6 to determine how this issue should be assessed. Criterion 2: The water consumption (litres/person/day) for the assessed building is compared against a baseline performance and BREEAM credits awarded based upon Table - 41. Criterion 3: The efficiency of the following 'domestic scale' water-consuming components must be included in the assessment (where specified/relevant to project type as defined by Table - 42):a.WCs; b.Urinals; c.Taps (wash hand basins and where specified kitchen taps and waste disposal unit); d.Showers; e.Baths; f.Dishwashers (domestic and commercial sized); g.Washing machine (domestic and commercial or industrial sized). The BREEAM Wat 01 calculator defines the building types and activity areas for which the above components must be assessed. Criterion 4: Where a greywater and/or rainwater system is specified, its yield (l/person/day) is used to off-set non-potable water demand from components that would otherwise be supplied using potable water. Criterion 5: Any greywater systems must be specified and installed in compliance with BS 8525-1:2010 Greywater Systems -



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Item referen ce	Issue ID	Issue name	sub-issue name	Criteria reference	Credit summary	Credits available		Credits Targeted	Responsibility to action	Assessment criteria requirements (PLEASE REFER TO THE BESPOKE BREEAM 2014 BESPOKE PROJECT CRITERIA APPENDIX ISSUED BY THE BRE SPECIFICALLY FOR THIS PROJECT)
						by issue	Aaplicanle credits by sub-issue			
60	Wat 02	Water monitoring	Water monitoring	1 to 5	Specification of a water meter/s on the mains water supply to encourage water consumption management and monitoring to reduce the impacts of inefficiencies and leakage.	1	1	1	NDY	Criterion 1: The specification of a water meter on the mains water supply to each building; this includes instances where water is supplied via a borehole or other private source. Criterion 2: Water-consuming plant or building areas, consuming 10% or more of the building’s total water demand, are either fitted with easily accessible sub-meters or have water monitoring equipment integral to the plant or area (see Compliance notes). Criterion 3: Each meter (main and sub) has a pulsed or other open protocol communication output to enable connection to an appropriate utility monitoring and management system, e.g. a building management system (BMS), for the monitoring of water consumption (see Relevant definitions). Criterion 4: If the refurbishment zone is within a site that has an existing BMS, managed by the same occupier/owner (as the space undergoing refurbishment or fit-out), the pulsed/digital water meter(s) for the refurbishment or fit-out zone must be connected to the existing BMS. Criterion 5: If the refurbishment or fit-out zone is within a building that is leasehold, the pulsed/digital water meter(s) for the refurbishment or fit-out zone must be connected to the incoming water supply for water using equipment in tenanted areas (see compliance note).
61	Wat 03	Water leak detection	Leak detection system	1	Recognition of leak detection systems capable of detecting a major water leak on the mains water supply	2	1	1	NDY	Criterion 1: A leak detection system which is capable of detecting a major water leak on the mains water supply within the building and between the building and the utilities water meter is installed. The leak detection system must be:(a.) A permanent automated water leak detection system that alerts the building occupants to the leak OR an inbuilt automated diagnostic procedure for detecting leaks is installed. (b.) Activated when the flow of water passing through the water meter/data logger is at a flow rate above a pre-set maximum for a pre-set period of time; (c.) Able to identify different flow and therefore leakage rates, e.g. continuous, high and/or low level, over set time periods; (d.) Programmable to suit the owner/occupiers’ water consumption criteria; (e.) Where applicable, designed to avoid false alarms caused by normal operation of large water-consuming plant such as chillers.
62	Wat 03	Water leak detection	Flow control devices	2	Flow control devices that regulate the supply of water to each WC area/facility to reduce water wastage.		1	1	NDY	Criterion 2: 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).
63	Wat 04	Water efficient equipment	Water efficient equipment	1, 2	Identifying a building's total unregulated water demand and mitigating or reducing consumption through systems and/or processes.	1	1	1	NDY	Criterion 1: The design team has identified all unregulated water demands that could be realistically mitigated or reduced. Criterion 2: System(s) or processes have been identified to reduce the unregulated water demand, and demonstrate, through either good practice design or specification, a meaningful reduction in the total water demand of the building.
	WATER section totals				Number of Credits	9	9	6		
					Category weighting	7.50%				
					Credit value for this section	0.83%				
					% contribution to score	7.50%		5.00%		
	MATERIAL section									
64	Mat 01	Life cycle impacts	Life cycle impacts	option 2 - 8 to 10	Reductions in the building’s environmental life cycle impacts through the reuse of materials and the use of tools to analyse the life cycle impact of any new materials using robust environmental information assessment of the main building elements.	6	6	4	BAA	
65	Mat 02	Hard landscaping and boundary protection	not applicable	all	not applicable	0	0	0	NA	An issue dedicated to hard landscaping and boundary protection is not included in this scheme. Hard landscaping and boundary protection are assessed in Mat01 Lifecycle impacts.
66	Mat 03	Responsible sourcing of materials		1		pre-requisite		0	BAA	Criterion 1: All timber and timber-based products used on the project is Legally harvested and traded timber (see Relevant definitions). Note:(a.) It is a minimum requirement for achieving a BREEAM rating (for any rating level) that compliance with criterion 1 is confirmed. (b.) For other materials there are no pre-requisite requirements at this stage.



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67	Mat 03	Responsible sourcing of materials	Sustainable procurement plan	2	Materials sourced in accordance with a sustainable procurement plan.	4	1	1	BAA	Criterion 2: The principal contractor sources materials for the project in accordance with a documented sustainable procurement plan (see the Relevant definitions in the Additional information section).
68	Mat 03	Responsible sourcing of materials	Responsible sourcing of materials (RSM)	3, 4	Key building materials are responsibly sourced to reduce environmental and socio-economic impacts.		1	1	BAA	Criterion 3: One credit can be awarded where at least three of the material types listed in Table - 53 'Material categories' has been responsibly sourced from one of the responsible sourcing schemes recognised by BREEAM as detailed in Guidance Note 18. Criterion 4: Up to three of the available RSM credits (refer to Table - 51) can be awarded where the applicable building materials (refer to Table - 53) are responsibly sourced in accordance with the BREEAM methodology, as defined in steps 1 to 2 in the Methodology.
69	Mat 04	Insulation	Embodied impact	1, 2	Recognition of the use of thermal insulation which has a low embodied environmental impact relative to its thermal properties.	1	1	1	BAA, NDY	Criterion 1: Any new insulation specified for use within the following building elements must be assessed:(a) External walls; (b) Ground floor; (c) Roof; (d) Building services. Criterion 2: The Insulation Index for the building fabric and services insulation is the same as or greater than 2.5. See the Methodology section for a description of calculating the Insulation Index.
70	Mat 05	Designing for durability and resilience	Protecting vulnerable parts of the building from damage	1	The building incorporates measures to reduce impacts associated with damage and wear-and-tear.	1	1	1	BAA	Criterion 1: 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 necessarily limited to:(a.) Protection from the effects of high pedestrian traffic in main entrances, public areas and thoroughfares (corridors, lifts, stairs, doors etc.). (b.) Protection against any internal vehicular/trolley movement within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas. (c.) Protection against, or prevention from, any potential vehicular collision where vehicular parking and manoeuvring occurs within 1m of the external building façade for all car parking areas and within 2m for all delivery areas.
71	Mat 05	Designing for durability and resilience	Protecting exposed parts of the building from material degradation	2 to 5	Relevant building elements incorporate appropriate design and specification measures to limit material degradation due to environmental factors.				BAA	Criterion 2: Environmental factors have been identified that are relevant to the site location (see Table - 58) Criterion 3: Existing applicable building elements that are exposed to any relevant environmental factors have been identified (see Table - 58) Criterion 4: Existing applicable building elements (see Table - 58) have been surveyed have been assessed to identify impacts of material degradation effects including an assessment to grade the severity of any degradation effects. Design and specification measures have been developed to repair and protect existing elements according to the severity of any degradation affects, to limit degradation. Where it is not feasible to implement measures to limit material degradation for existing elements, justification should be provided. Criterion 5: Newly specified materials or newly constructed elements (e.g. a new external wall) within the scope of refurbishment or fit-out works incorporate appropriate design and specification measures to limit material degradation due to environmental factors (See Methodology See Table - 58 in the Checklists and tables section for a list of applicable elements, environmental factors and material degradation effects to consider.
72	Mat 06	Material efficiency	Material efficiency	1, 2	Opportunities and measures have been identified and taken to optimise the use of materials.	1	1	0	NA	Criterion 1: Opportunities have been identified, and appropriate measures investigated and implemented within the scope of refurbishment or fit-out works, to optimise the use of materials through building design, procurement, refurbishment, maintenance and end of life (see examples in Table - 59 and Table - 60, in the Additional information section) Criterion 2: The above is carried out by the design/construction team in consultation with the relevant parties (see CN3) at each of the following RIBA stages:(a) Preparation and Brief; (b) Concept Design; (c) Developed Design; (d) Technical Design; (e) Construction.
	MATERIAL section totals				Number of Credits	13	10	8		
					Category weighting	14.50%				
					Credit value for this section	1.12%				
					% contribution to score	11.15%		8.92%		
	WASTE section									
73	Wst 01	Project waste management	Pre-refurbishment audit	1	Development of a pre-refurbishment audit to identify options for reuse and recycling.	7	1	1	LCC	Criterion 1: The client shall ensure that a pre-refurbishment audit of all existing buildings, structures or hard surfaces within the scope of the refurbishment or fit-out zone is completed. The requirements for carrying out an appropriate pre-refurbishment audit are (a) The audit should be carried out at the Concept Design Stage (equivalent to RIBA stage 2) prior to strip-out or demolition works in order to use the audit results to guide the design, consideration of materials that can be reused, and to set targets for waste management and ensure all contractors are engaged in the process of maximising high grade reuse and recycling opportunities. (b) The audit should be carried out by a competent person (see Relevant Definitions) who is independent of the project, has appropriate knowledge of buildings, waste and options for the reuse and recycling of different waste streams. (c) Actual waste arisings and waste management routes used should be compared with those forecast from the audit and barriers to achieving targets should be investigated. The audit must be referenced in the resource management plan and cover: (d) Identification and quantification of the key materials where present on the project (see Table - 66) (e) Potential applications and any related issues for the reuse and recycling of the key materials in accordance with the waste hierarchy. (f) Identification of local reproprocessors or recyclers for recycling of materials (g) Identification of overall recycling rate for all key materials (h) Identification of reuse targets where appropriate. (i) Identification of overall landfill diversion rate for all key materials.



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74	Wst 01	Project waste management	Reuse and direct recycling of materials	2 to 4	Actions to reuse or directly recycle materials.		2	1	LCC	Criterion 2: Where waste material types detailed in Table - 64 are either directly re-used on-site or off-site or are sent back to the manufacturer for closed loop recycling Criterion 3: One credit is achieved where 50% of the total available points for the waste material types detailed in Table - 64, that are present on the project have been achieved (using the Was 01 calculator tool, see Table - 65 in the Methodology section). Criterion 4: Two credits are achieved where 75% of the total available points for the waste material types detailed in Table - 64, that are present on the project have been achieved (using the Was 01 calculator tool, see Table - 65 in the Methodology section) Please note that in most instances any materials specified in Table - 64 that are sent to a Material Recovery Facility (MRF) for recovery does not qualify for this credit. See compliance note CN2, Resource management plan for further details.
75	Wst 01	Project waste management	Resource efficiency	5, 6	Development of a refurbishment resource management plan. Reducing projectn waste related to on-site construction and off-site manufacture/fabrication.		3	1	LCC	Criterion 5: Develop and implement a compliant resource management plan covering the waste arisings from the refurbishment or fit-out project with the aim of minimising waste (see Relevant definitions), recording and reporting accurate data on waste arisings. Criterion 6: The non-hazardous waste relating to on-site refurbishment or fit-out, and dedicated off-site manufacture or fabrication processes generated by the building's design and construction meets, or exceeds, the resource efficiency benchmarks set out in Table - 61 and Table - 62 as relevant to the project type.
76	Wst 01	Project waste management	Diversion of resources from landfill	7	Diverting non-hazardous construction (on-site and dedicated off-site manufacture/fabrication), demolition and excavation waste (where applicable) generated by the project from landfill.		1	1	LCC	Criterion 7: The following percentages of non-hazardous construction and demolition waste (where applicable) generated have been diverted from landfill:
77	Wst 02	Recycled aggregates	Recycled aggregates	1 to 3	Percentage levels of recycled or secondary aggregate specified against set targets.	1	0	1	LCC, structural engineer	Criterion 1: The percentage of high grade aggregate that is recycled or secondary aggregate, specified in each application (present) must meet the following minimum % levels (by weight or volume) to contribute to the total amount of recycled or secondary aggregate, as specified in . Criterion 2: The total amount of recycled or secondary aggregate specified, and meeting criterion 1, is greater than 25% (by weight or volume) of the total high grade aggregate specified for the project. Where the minimum level in criterion 1 is not met for an application, all the aggregate in that application must be considered as primary aggregate when calculating the total high grade aggregate specified. Criterion 3: The recycled or secondary aggregates are EITHER: (a.) Construction, demolition and excavation waste obtained on-site or off-site; OR (b.) Secondary aggregates obtained from a non-construction post-consumer industrial by product source (see Relevant definitions section).
78	Wst 03	Operational waste	Operational waste	1, 2	Provision of suitable space and facilities to allow for segregation and storage of operational recyclable waste volumes generated by the assessed building/unit, its occupant(s) and activities.	1	1	1	BAA	Criterion 1: Dedicated space(s) is provided for the segregation and storage of operational recyclable waste volumes generated by the assessed building/unit, its occupant(s) and activities. This space must be: (a) Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams (b) Accessible to building occupants or facilities operators for the deposit of materials and collections by waste management contractors (c) Of a capacity appropriate to the building type, size, number of units (if relevant) and predicted volumes of waste that will arise from daily/weekly operational activities and occupancy rates. Criterion 2: Where the consistent generation in volume of the appropriate operational waste streams is likely to exist, e.g. large amounts of packaging or compostable waste generated by the building's use and operation, the following facilities are provided: (a) Static waste compactor(s) or baler(s); situated in a service area or dedicated waste management space. (b) Vessel(s) for composting suitable organic waste resulting from the building's daily operation and use; OR adequate space(s) for storing segregated food waste and compostable organic material prior to collection and delivery to an alternative composting facility. (c) Where organic waste is to be stored/composted on-site, a water outlet is provided adjacent to or within the facility for cleaning and hygiene purposes.



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79	Wst 04	Speculative floor and ceiling finishes	Speculative floor and ceiling finishes	1, 2	Specification of floor and ceiling finishes only where agreed with the occupant or for tenanted areas where the future occupant is not known, carpets, other floor finishes and ceiling finishes are installed in a show area only to reduce wastage.	1	1	1	BAA	Criterion 1: For tenanted areas (where the future occupant is not known), prior to full fit-out works, interior finishes (including carpets, other floor finishes, ceiling finishes and any other interior finishes) have been installed in a show area only. Criterion 2: In a building being refurbished or fitted out for a specific occupant, that occupant has selected (or agreed to) the specified interior finishes.
80	Wst 05	Adaptation to climate change	Adaptation to climate change - structural and fabric resilience	1	Encourage consideration and implementation of measures to mitigate the impact of more extreme weather conditions arising from climate change over the lifespan of the building.	1	0	0	NA	Criterion 1: 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:a. Carry out a systematic (structural and fabric resilience specific) risk assessment 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. The assessment should cover the following stages:i.Hazard identification; ii.Hazard assessment; iii.Risk estimation; iv.Risk evaluation; v.Risk management.
81	Wst 06	Functional adaptability	Functional adaptability	1, 2	Encourage consideration and implementation of measures to accommodate future changes to the use of the building and its systems over its lifespan.	1	1	1	BAA	Criterion 1: 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. Criterion 2: Functional adaptation measures (see examples in Table - 68) have been adopted in the design by Technical Design stage (RIBA Stage 4 or equivalent) in accordance with the functional adaptation strategy recommendations, where practical and cost effective. Omissions have been justified in writing to the assessor.
	WASTE section totals				Number of Credits	12	9	7		
					Category weighting	9.50%				
					Credit value for this section	0.79%				
					% contribution to score	7.13%		5.54%		
	LAND USE & ECOLOGY section									
82	LE 01	Site selection	Site selection		Not applicable to this scheme.	0	0			This issue is not applicable to BREEAM UK Refurbishment and Fit-out 2014.
83	LE 02	Protection of ecological features	Protection of ecological features	1, 2	Recognition of where existing features have been protected prior to and during site operations.	1	1	0	NA	Criterion 1: All existing features of ecological value (see Relevant definitions) within and surrounding the refurbishment or fit-out zone and site boundary area are adequately protected from damage during clearance, site preparation and refurbishment or fit-out activities in line with BS42020: 2013. Criterion 2: In all cases, the principal contractor is required to construct ecological protection recommended by the Suitably Qualified Ecologist (SQE), prior to any preliminary site refurbishment or fit-out or preparation works (e.g. erection of temporary site facilities).
84	LE 03	Minimising impact on existing site ecology	Minimising impact on existing site ecology		Not applicable to this scheme.	0	0	0	NA	This issue is not applicable to BREEAM UK Refurbishment and Fit-out 2014.
85	LE 04	Enhancing site ecology	Ecologist's report and recommendation s	1 to 3	Recognition of steps taken to enhance site ecology through the advice of a suitably qualified ecologist.	1	1	0	NA	Criterion 1: A suitably qualified ecologist (SQE) has been appointed by the client or their project representative by the end of the Preparation and Brief stage (RIBA Stage 1 or equivalent) to advise on enhancing the ecology of the site at an early stage. Criterion 2: The SQE has provided an Ecology Report with appropriate recommendations for the enhancement of the site's ecology at Concept Design stage (RIBA Stage 2 or equivalent). The report is based on a site visit/survey by the SQE (see also CN6). Criterion 3: The early stage advice and recommendations of the Ecology Report for the enhancement of site ecology have been, or will be, implemented in the refurbishment or fit-out.
86	LE 05	Long term impact on biodiversity	Long term impact on biodiversity	1 to 3	The production of a long term landscape and habitat management plan to encourage measures that improve the site's long term biodiversity.	2	2	0	NA	Criterion 1: Where a Suitably Qualified Ecologist (SQE) is appointed prior to commencement of activities on-site and they confirm that all relevant UK and EU legislation relating to the protection and enhancement of ecology has been complied with during the refurbishment or fit-out process. Criterion 2: Where a landscape and habitat management plan, appropriate to the site, is 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. Criterion 3: Where additional measures to improve the assessed site's long term biodiversity are adopted, according to Table - 69. Where criteria 1 to 3 are met credits can be awarded as per the criteria details.
	LAND USE & ECOLOGY section totals				Number of Credits	4	4	0		
					Category weighting	11.00%				
					Credit value for this section	2.75%				
					% contribution to score	11.00%		0.00%		
	POLLUTION section									
87	Pol 01	Impact of refrigerants		2	Avoidance or reduction of the impact of refrigerants through specification and leak prevention/detection.	3	3	3	NDY	Criterion 2: All systems (with electric compressors) must comply with the requirements of BS EN 378:20081 (parts 2 and 3) and where refrigeration systems containing ammonia are installed, the Institute of Refrigeration Ammonia Refrigeration Systems Code of Practice.



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THIS 2014 BESPOKE COMBINED TRACKER SPREADSHEET IS AN APPROXIMATE SCORE BECAUSE IT IS NOT AREA WEIGHTED FOR THE NEW BUILD AND MAJOR REFURBISHMENT AREAS (WHILE THE ACTUAL TOOL IS AREA WEIGHTED) PLEASE ALWAYS RUN THE BESPOKE BREEAM 2014 ASSESSMENT TOOL TO CALCULATE THE EXACT BREEAM SCORE. THIS TRACKER IS PRIMARILY TO INFORM THE TEAM OF REQUIREMENTS AND MONITOR PROGRESS.

Item referen ce	Issue ID	Issue name	sub-issue name	Criteria reference	Credit summary	Credits available		Credits Targeted	Responsibility to action	Assessment criteria requirements (PLEASE REFER TO THE BESPOKE BREEAM 2014 BESPOKE PROJECT CRITERIA APPENDIX ISSUED BY THE BRE SPECIFICALLY FOR THIS PROJECT)
						by issue	Aaplicanle credits by sub-issue			
88	Pol 01	Impact of refrigerants	Impact of refrigerants	3 to 5					NA	For 2 credits meet criteria 3 & 4 or for 1 credit meet criteria 5. Criterion 3: Where the systems using refrigerants have Direct Effect Life Cycle CO2 equivalent emissions (DELCO2e) of ≤ 100 kgCO2e/kW cooling/heating capacity. To calculate the DELCO2e please refer to the Relevant definitions in the Additional information section and the Methodology section. OR Criterion 4: Where air-conditioning or refrigeration systems are installed the refrigerants used have a Global Warming Potential (GWP) ≤ 10. OR for one credit Criterion 5: Where the systems using refrigerants have Direct Effect Life Cycle CO2 equivalent emissions (DELCO2e) of ≤ 1000 kgCO2e/kW cooling/heating capacity.
89	Pol 01	Impact of refrigerants	Leak detection	6, 7					NA	Criterion 6: Where systems using refrigerants have a permanent automated refrigerant leak detection system installed; OR where an inbuilt automated diagnostic procedure for detecting leakage is installed. In all instances a robust and tested refrigerant leak detection system must be installed and must be capable of continuously monitoring for leaks. Criterion 7: The system must be capable of automatically isolating and containing the remaining refrigerant(s) charge in response to a leak detection incident (see Other information).
90	Pol 02	NO _x emissions	NO _x emissions	1, 2	Reduction in emissions of nitrous-oxides (NO _x) arising from the building's space and water heating systems.	3	3	2	NDY	Criterion 1: Where the plant installed to meet the building's delivered heating and hot water demand has, under normal operating conditions, a NO _x emission level (measured on a dry basis at 0% excessO ₂) as follows: NO _x emission for heating and hot water if ≤ 100 mg/kWh = 1 credit, ≤ 70 mg/kWh = 2 credits; ≤ 40 mg/kWh = 3 credits. Criterion 2: Report via the BREEAM scoring and reporting tool the direct and indirect NO _x 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.
91	Pol 03	Flood risk management and reducing surface water run-off	Flood risk management	1 to 6	Identifying the buildings flood risk and adopting flood resilience or resistance measures through refurbishment or fit-out works.	2	2	2	LCC	Low flood risk - Criterion 1: Where flood maps from the appropriate statutory body (see Relevant definitions)confirm the refurbishment or fit-out is situated in a flood zone that is defined as having a low annual probability of flooding; OR Criterion 2: The project meets the requirements for avoidance of flooding in accordance with Checklist 1, (see Checklists and tables), e.g. where the refurbishment or fit-out zone is of a floor level that is 0.3m higher than the obtained/estimated flood level and safe access/escape routes are available/present Medium/high flood risk - Criterion 3: Where criterion 4 and either criterion 5 or 6 have been met. Criterion 4: Where flood maps from the appropriate statutory body (see Relevant definitions) confirm the site has a medium or high flood risk and a site specific FRA has been undertaken (as relevant to size of project in accordance with CN7). The FRA must take all current and future sources of flooding into consideration in accordance with compliance note. Criterion 5: Where the refurbishment or fit-out zone achieves avoidance from flooding through either: a.the refurbishment and fit-out zone is located entirely on the first floor or above and a flood emergency plan has been developed in accordance with 'Would your business stay afloat? A Guide to preparing your business for flooding', Environment Agency, 2011 b.As a result of the building's floor level or measures to keep water away, the building is defined as achieving avoidance from flooding by following Checklist A-1, Checklists and tables. Criterion 6: Where avoidance is not possible, two credits are achieved where a full flood resilience/resistance strategy is
92	Pol 03	Flood risk management and reducing surface water run-off	Surface water run-off - (one credit) neutral impact on surface water	7, 8	Surface water run-off is managed to be no worse as a result of refurbishment works.	2	1	1	LCC	Criterion 7: There is no increase in the impermeable surfaces as a result of the refurbishment works; OR Criterion 8: If there is an increase in the impermeable surface as a result of the refurbishment works then the following must be met: (a) Hard standing areas - where there is an extension or increase in the hardstanding areas and hence an increase in the total impermeable area as a result of the refurbishment works, the hardstanding area must be permeable or be provided with on-site SuDS to allow full infiltration of the additional volume, to achieve the same end result. The permeable hardstanding must include all pavements and public rights of way, car parks, driveways and non-adoptable roads, but exclude footpaths that cross soft landscaped areas which will drain onto a naturally permeable surface. (b) Building extension - where there is an increase in building footprint, extending onto any previously permeable surfaces, the additional run-off caused by the area of the new extension must be managed on-site using an appropriate SuDS technique for rainfall depths up to 5mm.
93	Pol 03	Flood risk management and reducing surface water run-off	Surface water run-off (Two credits) - reducing run-off	9, 10			0	0	NA	Criterion 9: An Appropriate Consultant (see Relevant definitions) has been used to design an appropriate drainage strategy for the site. Criterion 10: Either of the following criteria are met:(a) There is a decrease in the impermeable area by 50% or more, from the pre-existing impermeable hard surfaces; OR (b) Where run-off as a result of the refurbishment is managed on-site using source control achieving the following requirements:i.The peak rate of run-off as a result of the refurbishment for the 1 in 100 year event has been reduced by 50% from the existing site. ii.The total volume of run-off discharged into the watercourses and sewers as a result of the refurbishment, for a 1 in 100 year event of 6 hour duration has been reduced by 50%. iii.An allowance for climate change must be included for all of the above calculations; this should be made in accordance with current best practice planning guidance.



Project: 32 James Town Road

BREEAM 2014 Preliminary assessment action list

Shell & Core stage of Construction

Bespoke BREEAM 2014 combined New Construction and Refurbishment & Fit-out scheme

Refurbished Area= 6726m ²
New Build Area =1262m ²
Total area =7988 m ²

BREEAM predicted target score = 61.46%
BREEAM predicted target rating = VERY GOOD

Last updated = 30th April 2015

criteria /credit not sought
criteria / issue not applicable
mandatory requirements for Very Good Rating
evidence reports / appointments required during RIBA stage 1 and 2 (RIBA stage A to C)
NDY- Norman Disney & Young
BAA- Ben Adam Architects
LCC- London Cost Consultancy

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94	Pol 03	Flood risk management and reducing surface water run-off	Minimising water course pollution	11 to 14	Watercourse pollution prevention systems are in place.	1	0	0	NA	Criterion 11: There is no discharge from the developed site (includes new and existing hard landscaping and buildings) for rainfall up to 5mm (confirmed by the Appropriate Consultant). Criterion 12: Where suitable pollution prevention measures are put in place (or already exist) for the different sources of pollution present on the assessed site, in accordance with compliance note CN20. Criterion 13: A comprehensive and up to date drainage plan of the site will be made available for the building/site occupiers. Criterion 14: Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS must be in place.
95	Pol 04	Reduction of night time light pollution	Reduction of night time light pollution		External light pollution is eliminated through effective design or the removal of the need for unnecessary external lighting.	1	1	1	NDY	Criterion 1: Where external lighting pollution has been eliminated through effective design that removes the need for external lighting without adversely affecting the safety and security of the site and its users. OR alternatively, where the building does have external lighting, one credit can be awarded as follows: Criterion 2: The external lighting strategy has been designed in compliance with Table 2 (and its accompanying notes) of the ILP Guidance notes for the reduction of obtrusive light, 2011. Criterion 3: All external lighting (except for safety and security lighting) can be automatically switched off between 23:00 and 07:00. Criterion 4: If safety or security lighting is provided and will be used between 23:00 and 07:00, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 2 of the ILP's Guidance notes. Criterion 5: Illuminated advertisements, where specified, must be designed in compliance with ILE Technical Report 5 – The Brightness of Illuminated Advertisements.
96	Pol 05	Reduction of noise pollution	Reduction of noise pollution		Measures to reduce the likelihood of disturbance arising as a result of noise from fixed installations on the development.	1	1	1	NDY	Criterion 1: Where there are, or will be, no noise-sensitive areas or buildings within 800m radius of the assessed site. OR Criterion 2: Alternatively, where the building does have noise-sensitive areas or buildings within 800m radius of the site, one credit can be awarded as follows: a. Where a noise impact assessment in compliance with BS 74451 has been carried out and the following noise levels measured/determined: i. Existing background noise levels at the nearest or most exposed noise-sensitive development to the proposed development or at a location where background conditions can be argued to be similar. ii. The rating noise level resulting from the new noise source (see CN7). Criterion 3: The noise impact assessment must be carried out by a suitably qualified acoustic consultant holding a recognised acoustic qualification and membership of an appropriate professional body (see Relevant definitions in the Additional information section). Criterion 4: The noise level from the proposed site/building, as measured in the locality of the nearest or most exposed noise-sensitive development, is a difference no greater than +5dB during the day (07:00 to 23:00) and +3dB at night (23:00 to 07:00) compared to the background noise level. Criterion 5: Where the noise source(s) from the proposed site/building is greater than the levels described in criterion 4, measures have been installed to attenuate the noise at its source to a level where it will comply with criterion 4.
	POLLUTION section totals				Number of Credits	13	11	10		
					Category weighting	11.00%				
					Credit value for this section	0.85%				
					% contribution to score	9.31%		8.46%		
	INNOVATIONS not targeted									
	TOTAL BREEAM SCORE				87.67%			61.46%		



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