

21-23 Bedford Place - Hotel

BREEAM Pre-Assessment

Draft Issue

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Executive Summary

1.1 Introduction

Assessor Name	Will Newall
Target Score	Excellent – 70%
Technical Manual Version	BREEAM RFO 2014
Development type	Multi Residential, Hotel
Project scope	Whole Building Refurbishment (Parts 1,2,3 & 4)
Current target score	73.26%

Issue	Credit	Credits Available	Credits Targeted	Description
Man 01	Project Brief and Design	4	4	<p>Stakeholder Consultation (project delivery) Targeted - Yes (1 credit) Input from all the major stakeholders is required from the earliest stage (prior to RIBA stage 2), key roles and responsibilities are to be identified and defined for each key phase. The design team must demonstrate how stakeholder consultation has influenced the Initial Project Brief including, where relevant, the project execution plan, communication strategy and the concept design. Documentation such as meeting minutes, project brief and project plan will be required (this must be prior to RIBA Stage 2).</p> <p>Stakeholder Consultation (third party) Targeted - Yes (1 credit) All relevant third-party stakeholders should be fully consulted by the design team. It must be demonstrated how the consultation exercise has influenced the project brief and concept design. Consultation feedback must also be provided to all relevant parties.</p> <p>Sustainability Champion — design Targeted - Yes (1 credit) A Sustainability Champion should be appointed at RIBA Stage (feasibility) to set and facilitate the BREEAM performance targets for the project. These targets must be formally agreed with the client by Concept Design Stage with the BREEAM Design Stage report showing compliance with the performance targets.</p> <p>Sustainability Champion — monitoring Targeted - Yes (1 credit) Sustainability Champion (Design) criteria have to be met to enable this additional credit to be achieved. Sustainability Champion to be appointed to monitor progress against the agreed BREEAM performance targets.</p> <p>Actions: Evidence required prior to end of stage 2 of project delivery planning. Design Team to provide evidence of meetings between third party stakeholders and how the outcomes of the meetings have influenced the Project Brief and early design options</p>
Man 02	Life cycle costing and service life design	4	1	<p>Elemental Life Cycle Costing (ELCC) (2 credits) Targeted - No An elemental life cycle cost (LCC) analysis to be carried out at Process Stage 2 (equivalent to Concept Design - RIBA Stage 2) together with any design option appraisals in line with 'Standardised method of life cycle costing for construction procurement' PD 156865:2008. The LCC analysis must demonstrate how the following has been developed: - Outline LCC Plan undertaken on the building's basic structure & envelope, appraising a range of option and based on the life expectancy of the refurbished building. (20, 30, 50+ years). - Servicing strategy outlining services component over a 15 year period - Fit-out strategy outlining fit-out options over a 10 year period</p> <p>Component level Life Cycle Costing (CLCC) (1 credit) Complete by RIBA Stage 4 Targeted - No Component Level LCC Plan to be carried out at Process Stage 4 (equivalent to Technical Design RIBA Stage 4) in line with 'Standardised method of life cycle costing for construction procurement' PD 156865:2008. The report must demonstrate how the LCC plan has influenced building systems design/specification to minimise LCC and maximise critical value. This includes where present: - Part 1: Envelope (cladding, windows, roofing) - Part 2 & 3: New local & core services equipment (boiler, A/C, air handling, controls etc.) - Part 1 4: Finishes (walls, partitions, floors, ceilings etc.) - External space: If included (hard landscaping, boundary protection)</p> <p>Capital cost reporting (1 credit) Targeted - Yes The capital cost of the project will be formally stated by the project team and included within the BREEAM assessment, measured in £k/m2.</p> <p>Actions: ELCC and CLCC are expensive credits to achieve. Reporting Capital cost of the project (£k/m²) will be done by the quantity surveyor.</p>
Man 03	Responsible constructions practices	6	6	<p>Prerequisite - All timber and timber-based products used on the project to be 'Legally harvested and traded timber'. (MANDATORY)</p> <p>Environmental Management (1 credit)</p>

				<p>Targeted - Yes The principal contractor (and demolition contractor) must have a certified Environmental Management System (ISO 14001/EMAS) and Amplement best practice pollution prevention policier and procedures on site in accordance with PPG6.</p> <p>Site based Sustainability Champion Targeted - Yes (1 credit) To be appointed to ensure ongoing compliance during construction, handover and close out stages. A defined BREEAM performance target will be a requirement of the Contract document. The BREEAM performance target must be achieved for the credit to be awarded.</p> <p>Considerate Constructors Scheme Targeted - Yes (1 credit) A compliant considerate construction scheme must be used to verify and certify site performance (e.g. Considerate Constructors Scheme). 1 credit for compliance only (CCS — >25/50 (min 5 in each category), 2 credits for 'exceeding compliance' >35/40 (with min 7 in each category).</p> <p>Site monitoring of utilities and transport of construction and waste materials Targeted - Yes (1 credit) The following are to be reported: -Energy consumption (kWh and litres of fuel used) and COz emissions (total kgCO /project value). -Water (potable) (m') minus any recycled water use. Transport of materials from factory gate to site including transport, intermediate storage and distribution. Total fuel consumption and total carbon dioxide equivalent plus total distance travelled (km).</p> <p>Actions: <i>Timber certificates to be provided</i> <i>Main Contractor to provided EMS equivalent confirmation.</i> <i>Main Contractor to register under CCS.</i> <i>Main Contractor to provide a written commitment to undertake the above.</i> <i>Main Contractor to assign an individual responsible for ensuring that monitoring records are maintained throughout construction.</i></p>
<p>Man 04</p>	<p><i>Commissioning and handover</i></p>	<p>4</p>	<p>4</p>	<p>Commissioning and testing schedule Targeted - Yes (1 credit) A full commissioning and testing schedule will be required, with responsibilities set out for all complex and non-complex systems and services, building control systems and changes to the building fabric that will affect thermal performance. Commissioning to be undertaken in accordance with the relevant standards and Building Regulations with an appropriate project team member appointed to monitor and programme the works. The Fit-Out Contractor must account for the programme, responsibilities and criteria within their budget and main programme of works.</p> <p>Commissioning building services Targeted - Yes (1 credit) A specialist commissioning manager is appointed during the design stage (by either the client or the principal contractor) with responsibility for: a. Undertaking design reviews and giving advice on suitability for ease of comm issioning. b. Providing commissioning management input to construction programming and during installation stages. Management of commissioning, performance testing and handover/post handover stages.</p> <p>Testing and inspecting building fabric Targeted - Yes (1 credit) 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 Man 04 Commissioning and handover) 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. 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 of the building/element</p> <p>Handover Targeted - Yes (1 credit) A Building User Guide should be developed prior to handover, in addition, a training schedule will be required for the building occupiers and/or premises manager.</p> <p>Action:</p>

				<p>Main Contractor / M&E Consultant to provide a written specification to confirm the above within a DS letter. Evidence of testing, commissioning and a BUG will all be required at PCR stage</p>
Man 05	<i>Aftercare</i>	3	3 + 1	<p>Aftercare Support (1 credit) Targeted - Yes To be provided to the building occupiers for the first 12 months of occupation including meetings, on-site facilities management training and weekly on-site attendance (dependent on complexity of systems) for the first month. The collection and monitoring of energy and water consumption data for a min. 12 months once the building is occupied. Any discrepancies between actual and predicted performance should be identified and action taken as required.</p> <p>Seasonal commissioning Targeted - Yes (1 credit) This should be completed over the 12 month period after the occupation of the building. <u>Complex systems - Specialist Commissioning Manager:</u> -Testing of all building services under full load conditions, i.e. heating equipment in mid-winter, cooling/ventilation equipment in mid-summer, and under part load conditions (spring/autumn). -Where applicable, testing is carried out during periods of extreme (high or low) occupancy. Interviews with building occupants (where they are affected by the complex services) to identify problems or concerns regarding the effectiveness of the systems. Re commissioning of systems (following any work needed to serve revised loads) and incorporating any revisions in operating procedures into the operations and maintenance (O&M) manuals. <u>Simple systems (naturally ventilated) external consultant/aftercare team/facilities manager:</u> -Review thermal comfort, ventilation, and lighting, at three, six- and nine-month intervals after initial occupation, either by measurement or occupant feedback. -Take all reasonable steps to re-commission systems following the review to take account of deficiencies identified and incorporate any relevant revisions in operating procedures into the O&M manuals.</p> <p>Post Occupancy Evaluation Targeted - Yes (1 credit) Commitment to be made by the client to carry out a Post Occupancy Evaluation exercise 1 year after initial building occupation. The POE is to be undertaken by an independent party and should cover: -A review of the design intent and construction process (review of design, procurement, construction and handover processes). -Feedback from a wide range of building users including facilities management on the design and environmental conditions of the building covering: Internal environmental conditions (light, noise, temperature, air quality), control, operation and maintenance, facilities and amenities, access and layout, other relevant issues. -Sustainability performance (energy/water consumption, performance of any sustainable features or technologies, e.g. materials, renewable energy, rainwater harvesting etc.).</p> <p>Exemplar Credit Targeted - Yes (1 credit) Operational infrastructure and resources will be provided by the client to coordinate the following activities at quarterly intervals for the first three years of building occupation: 1. Collection of occupant satisfaction, energy consumption and (where available) water consumption data. 2. Analysis of the data to check the building is performing as expected and make any necessary adjustments to systems controls or to inform building user behaviours. 3. Setting targets and/or appropriate actions for reducing water and energy consumption and monitor progress towards these. 4. Feedback any 'lessons learned' to the design team and developer for use in future projects. 5. Provision of the actual annual building energy, water consumption (where available and accessible) and occupant satisfaction data to BRE for the purpose of future BREEAM performance benchmarking.</p> <p>Action: Action: Client to commit to aftercare support for at least 12 months after occupation. Seasonal commissioning and POE to be committed to by the client. Exemplar credit to be sought over monitoring of building performance against estimates/targets.</p>
Hea 01	<i>Visual comfort</i>	7	4	<p>Glare control Targeted - Yes (1 credit) A glare control strategy will be implemented, through measures such as building form/ layout, brise soleil, blinds etc.</p> <p>Daylighting Targeted - Yes (1/3 credits) Up to 3 credits can be awarded depending on % of relevant areas that comply with: - Good practice daylight factors (as per BREEAM Table 12 and 13) where the uniformity Or daylight factor Of at least 0.3 times the daylight factor in Table 1 2, 80% of the room has view of sky from desk height (0.85m in multi residential, 0.7m all others) and the room depth criterion $d/w + d/HW < 2/(7 RB)$ is satisfied OR</p>

				<p>Good practice average and minimum point daylight illuminance criteria (as per Table 74).</p> <p>Internal and external lighting, zoning and controls Targeted - Yes (1 credit) Internal fluorescent lights to be fitted with high frequency ballasts, and all internal fighting to be designed to provide illuminance levels in accordance with the SLL Code for Lighting 2012, CIBSE Lighting Guide 72 sections 3.3 & 4.6-4.9 (for areas using computer screens) and any other relevant industry standard. External lighting must be provided in accordance with BS 5489 7:2013 and BEEN 12464 2:2014 Zoning and occupant control must be provided in accordance with relevant BREEAM criteria.</p> <p>View out Targeted- Yes (1/2) 2 credits are available where 95% of the floor area is within 7m of a wall with a window that provides an adequate view out. 1 credit where 80% of the floor area is within 7m of a wall with a window that provides adequate view out AND window/opening must be 20% of the surrounding wall area. If the room is >7m deep, then % window/opening is the values in Table 1.0 of BS8206.</p> <p>Action: Architect to summarise glare control strategy. 1 Daylighting credit are assumed for initial draft, a full daylighting study is required to determine if more or less are possible. Currently assumed view out credit is not achievable. M&E Consultant to confirm lighting requirements via specification and lighting designs</p>
Hea 02	Indoor Air Quality	5	3 + 1	<p>Indoor air quality plan Targeted - Yes (1 credit) An indoor air quality plan must be provided by the Design Team. The purpose of the plan is to minimise internal air pollution during occupation.</p> <p>Ventilation Targeted — No For 1 credit, in air conditioned/mixed-mode buildings, the air intakes and exhausts must be over 10m apart and 20m from external sources of pollution (roads, car parks etc.—) or the intakes and exhausts must be designed in accordance with BS EN 13779:2007 Annex A2. HVAC systems must have suitable filtration to minimise external pollution. This is unlikely given the site's central location.</p> <p>Volatile organic compound (VOC) emission levels (products) Targeted - Yes (1 credit) Decorative paints and varnishes, wood panels, floor coverings, floor adhesives, ceiling tiles and wall coverings to be specified to meet the VOC emission levels as set out in BREEAM RFO 2014 Table 20. Main Contractor to collate product data sheets during construction to confirm that all relevant products meet the required emission standards.</p> <p>Volatile organic compound (VOC) emission levels (post construction) Targeted - Yes (1 credit) 1 credit can be awarded for the testing of the formaldehyde concentration levels pre-occupancy, achieving <100yg/averaged over 30 mins. Total VOC concentration levels must be measured and found to be <300yg/over 8 hours in line with Building Regulations.</p> <p>Potential for natural ventilation Targeted - No In order to achieve the credit, the building ventilation strategy is designed to be flexible and adaptable to potential building occupants needs and climatic scenarios. This can be demonstrated as follows: Where occupied spaces of the building are designed to be capable of providing fresh air entirely via a natural ventilation strategy. Achieved where room depths are designed in accordance with CIBSE AM TO (section 2.4). The openable window area in each occupied space is equivalent to 5% of the gross internal floor area of that room/floor plate, OR - Where the design demonstrates that the natural ventilation strategy provides adequate cross flow of air to maintain the required thermal comfort conditions and ventilation rates, assessed using ventilation design tool types recommended by CIBSE AM107.</p> <p>For fit out projects (Part 3 assessments), local services are to be designed to provide fresh air via a natural ventilation strategy and are appropriately designed according to the room depth in accordance with CIBSE AM10.</p> <p>The natural ventilation strategy should be capable of providing at least 2 levels of user control on the supply of fresh air to the occupied space.</p> <p>Exemplar Credit Targeted – Yes (1/2 Credits) All seven remaining product categories listed in Table 20 meet the testing requirements and emission levels criteria for Volatile Organic Compound (VOC) emissions (listed in the table). 17. For products B – F listed in Table 20, the formaldehyde emission levels have been measured and found to be less than or equal to 0.06mg/m³air in accordance with the approved testing standards in Table 20.</p>

				<p>Action: Produce a BREEAM compliant IAQP. Produce a VOC schedule and compile datasheets of all products used. M&E will need to confirm that natural ventilation credits can be achieved. Ensure formaldehyde emissions are in line with requirements</p>
Hea 04	Thermal Comfort	3	3	<p>Thermal modelling Targeted Yes (1 credit) Modelling would be required to be undertaken using compliant software in accordance with CIBSE AM11 Building Energy and Environmental Modelling. The simulation must provide full dynamic thermal analysis. Modelling must demonstrate that summer and winter operative temperature ranges are in accordance with CIBSE Guide A Environmental Design for both current and projected climate change scenarios.#</p> <p>Adaptability - for a projected climate change scenario Targeted - Yes (1 credit) The thermal modelling credit (above) must be achieved to enable the adaptability credit to be achieved. Ultimately, the thermal modelling is required to demonstrate that for different types of building services the standards are achieved for a projected climate change environment.</p> <p>Thermal zoning and controls Targeted - Yes (1 credit) Thermal modelling should inform the temperature control strategy for the building. Control strategy to be based on appropriate zoning, occupant control based on discussion with the end user, and system interaction.</p> <p>Action: M&E to undertake thermal modelling in accordance with CIBSE AM11. Temperature control strategy to be completed</p>
Hea 05	Acoustic Performance	4	3	<p>Acoustic performance Targeted - Yes (3/4 credits) One, three or four credits are available for Multi-residential and Other, Residential institution buildings where the relevant criteria in the checklists and table section have been applied. Please also see CN6. The building should target the appropriate acoustic performance standards and testing requirements as set out within the BREEAM Technical Manual in order to achieve 2 credits. Namely: - Sound insulation - Indoor ambient noise levels to comply with the design ranges given in Section 7 BS 8233:2014 - Reverberation times (not possible due to the scheme being below residential units) - A programme of pre completion testing to be carried out by a compliant test body (UKAS / ANC registered)</p> <p>Action: A programme of pre completion acoustic testing must be undertaken by a compliant test body to confirm that all standards have been achieved.</p>
Hea 06	Security	1	1	<p>Security Targeted — Yes (1 credit) A Suitably Qualified Security Specialist (SQSS/ALO) must conduct an evidence-based Security Needs Assessment (SNA) prior to RIBA Stage 2, and issue recommendations during Stage 2, which will be implemented.</p> <p>Action: Client to appoint a SQSS and complete DS letter. Architect to provide drawings showing SNA recommend actions.</p>
Ene 01	Reduction of energy use and carbon emissions	15	7	<p>Reduction of energy use and carbon emission Targeted - Yes (5/15 credit) A standard whole building energy model (e.g. BRUKL document in SBEM) and the Energy Performance Ratio will be completed and for refurbishment (EPR) it is compared to benchmarks in the BREEAM software. Using this approach ties in with Building Regulations requirements and Part L2A being applicable for the scheme.</p> <p>In essence the potential existing building performance is compared to the average performance of the existing building stock to determine how much improvement can be achieved. This approach recognises whether the building is better or worse than the average and weights the scoring accordingly.</p> <p>The EPR compares 'actual' and 'notional' data on heating & cooling demand, primary energy consumption and CO₂ emissions. This data is listed on the existing and proposed building's BRUKL reports.</p>

				<p>Historic Buildings Targeted - Yes (2 credits) Two additional credits are available for Historic buildings, up to a maximum of twelve or fifteen depending on whether option 1 or option 2 is being used respectively as detailed in criteria 1 and 2, where:</p> <ol style="list-style-type: none"> 3. A specialist study has been undertaken by a Suitably Qualified Heritage Conservation Specialist (see Relevant Definitions) at the Concept Design stage (equivalent to RIBA Stage 2), to investigate the implications of improving building fabric and services performance while minimising the potential negative impacts of both the historic character of the building, the condition of the building fabric and indoor air quality. 4. The study includes looking at the potential for improving ventilation, air tightness and moisture control within the building, ensuring that these are considered in balance with that of the welfare of the historic building fabric. This includes considering materials specified, impacts on breathability of the building, paying attention to additional ventilation that may be required e.g. roof, wall and floor voids. 5. The report makes recommendations for potential improvements to the building fabric in accordance with best practice guidance including: <ol style="list-style-type: none"> a. Energy Efficiency and Historic Buildings: Application of Part L of the Building Regulations to historic and traditionally constructed buildings, English Heritage b. Guide for practitioners 6, conversion of traditional buildings parts 1 and 2, application of the Scottish building standards, Historic Scotland c. The Sustainable Traditional Buildings Alliance (STBA) Responsible Retrofit Guidance Tools (www.responsible-retrofit.org). 6. Each of the following (as a minimum) must be considered and recommendations for improvement made: <ol style="list-style-type: none"> a. Roof b. External/sheltered walls c. Ground floor d. Upper floors e. Windows and external doors 7. Where improvement cannot be made to any of the above (e.g. due to conservation or building performance issues), justification should be provided including the alternative measures that have been considered and reasons these measures could not be adopted (e.g. glazing options considered etc.). <p>Action: M &E to complete the Energy modelling to confirm the number of achievable credits — 6 assumed at this stage based on previous experience Historic building assessment be conducted by heritage specialist.</p>
Ene 02	Energy Monitoring	1	1	<p>Sub-metering of major energy consuming systems Targeted - Yes (1 credit) 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).</p> <p>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.</p> <p>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). 4. The end energy consuming uses are identifiable to the building users, for example through labelling or data outputs.</p>

				<p>Action: M &E to include metering in the scheme and produce schematic drawing covering all relevant items and spaces.</p>
Ene 03	External Lighting	1	1	<p>Energy efficient external lighting Targeted — Yes (1 credit) External lighting is to have a luminous efficacy of 60 lumens / watt or greater, controlled through a time-switch or daylight sensor to prevent operation during daylight hours, and presence detection in areas of intermittent pedestrian traffic. Note: this also includes advertisements, see notes within Pol04.</p> <p>Action: Design Team to confirm the commitment to criteria</p>
Ene 04	Low Carbon Design	3	2	<p>Passive design analysis Targeted — Yes (1 credit) Hea 04 must be achieved in order to achieve this credit. The project team should carry out an analysis of the existing building fabric, form, site location and outline scheme design to influence decisions made during the Concept Design stage (RIBA Stage 2 or equivalent) and identify opportunities for the implementation of passive design solutions and retrofit measures that reduce demands for energy consuming building services.</p> <p>The building should use passive design measures to reduce the total heating, cooling, mechanical ventilation and lighting loads and energy consumption in line with the findings of the passive design analysis and the analysis demonstrates a meaningful reduction in the total energy demand as a result.</p> <p>Free cooling Targeted - No The Passive design credit above must be achieved. The building should not use any active cooling but use any of the cooling methods as outlined in CN6.1.</p> <p>Low and zero carbon technologies - LZC feasibility study Targeted - Yes (1 credit) A Low Zero Carbon feasibility report should be undertaken to confirm the most suitable LZC technology for the site. The LZC technologies should then be specified and installed on the building to deliver a meaningful reduction (>5%) in regulated COC emissions</p> <p>Action: Passive design study to be completed by M&E LZC study to be completed by M&E and subsequent inclusion of this within the design of the building.</p>
Ene 05	Energy efficient cold storage	0	0	Not applicable in this assessment
Ene 06	Energy efficient transportation systems	3	3	<p>Energy Consumption Targeted — Yes (1 credit) 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 ENISO25745 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.</p> <p>Energy efficient features Targeted - Yes (2 credits) At least two of the criteria within the scope of influence are specified. The lifts operate in a standby condition during off-peak periods. For example, the power side of the lift controller and other operating equipment such as lift car lighting, user displays, and ventilation fans switch off when the lift has been idle for a prescribed length of time. The lift car lighting and display lighting provides an average lamp efficacy, (across all fittings in the car) of > 55 lamp lumens/circuit Watt. The lift uses a drive controller capable of variable speed, variable-voltage, and variable-frequency (VVVF) control of the drive motor.</p> <p>Actions: Drawings show a lift in place, will need confirmation on the type. Lift report is required and at least criteria to be met.</p>
Ene 08	Energy efficient equipment	2	2	<p>Energy efficient equipment Targeted — Yes (2 credits) All sources of unregulated demand should be identified. A meaningful reduction in energy consumption must then be achieved, either through the 'deemed to comply' standards listed in the BREEAM manual or through measures applicable to the systems within the building.</p> <p>Applicable equipment in a fit out would include: - Office equipment to be sourced with the 'Energy Star' rating - Fridge / fridge freezer to be sourced with an A+ energy rating</p>

				<p>Action: Require confirmation that this can be achieved</p>
Tra 01	Sustainable Transport Solutions	3	3	<p>Accessibility Index Targeted — Yes (1 credit) The site must have access to suitable transport nodes that provide regular services to the city centre or transport depots/stations. The nodes must be accessible via a 'safe walking route' (i.e. lit pavements with crossing points) and within 650min (bus stops) and 1000m (train stations).</p> <p>The development is located in close proximity to numerous transport services and achieves an Accessibility Index (AI) of 59.14 (PTAL) which allows for three credits within this section due to the building type and table 34.</p> <p>Alternative transport measures — this is to be discussed and from initial draws it is assumed that two new measures will be added and one credit to be achieved (cycle storage, cycle facilities, electric car charging) This is to be discussed.</p> <p>Action: High AI mean 3 credits can be achieved.</p>
Tra 02	Proximity to Amenities	1	1	<p>Proximity to amenities Targeted - Yes (1 credit) The site will be located in close proximity (<500m from the main entrance), and accessible via 'safe walking route' (i.e. lit pavements with crossing points), to the three following amenities: -Appropriate food outlet -Cash (cash point or bank) -Leisure and recreational facility</p>
Tra 03	Cyclist facilities	2	0	<p>Cycle storage Targeted - Yes (0 credit) Compliant cycle storage spaces that meet the minimum levels set out in Table 38 (see Checklists and tables) are installed.</p> <p>Cycle Facilities Targeted - No Two of the following should be provided — lockers, changing facilities, showers, drying space. It has been confirmed that although some lockers, changing facilities AND showers will be provided for staff, it is unlikely these can meet the BREEAM requirements.</p> <p>Action: Credits currently not targeted, as cycle storage and facilities not displayed on plans.</p>
Tra 05	Travel Plan	1	1	<p>Travel plan Targeted - Yes (1 credit) A travel plan is to be developed as part of the feasibility & design stages and this is to be based on the site-specific travel assessment and to cover the following as a minimum: - 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. - Travel patterns and transport impact of future building users. - Current local environment for walkers and cyclists (accounting for visitors who may be accompanied by young children). - Disabled access (accounting for varying levels of disability and visual impairment). - Public transport links serving the site. Current facilities for cyclists.</p> <p>The travel plan is to include a package of measures to encourage sustainable transport and if the occupier is known they must input into the travel plan and confirm implementation of it.</p> <p>Action: Transport Assessment and Travel Plan must be completed in feasibility and design stages to enable the credit to be awarded.</p>
Wat 01	Water Consumption	5	3	<p>Water consumption Targeted — Yes (3 credits as benchmark)</p> <p>Level 3 performance has been targeted. A typical specification should be as follows,:</p> <ul style="list-style-type: none"> -WC 4 litres effective flush volume; -Wash hand basin taps — 4.5 litres per min; -Showers — 6 litres per min -Baths - 140 litres -Kitchenette Taps - 5 litres per min

				<ul style="list-style-type: none"> -Domestic sized dishwashers - 12 litres/cycle -Domestic sized washing machines - 40 litres/use -Commercial sized dishwashers - 5 litres/rack -Commercial or industrial sized washing machines - 7.5 litres/kg <p>Action: M&E to confirm the above in DS letter, drawings and relevant data sheets</p>
Wat 02	Water Monitoring	1	1	<p>Water monitoring Targeted — Yes (1 credit)</p> <p>The following elements have been assumed and should be reflected in the specification: Mains water meter to be supplied to the building (with a pulsed output) — this is mandatory element and must be achieved for a 'Very Good' rating.</p> <p>In addition, water consuming plant or building areas, consuming 10% or more of the building's total water demand, should also be fitted with sub meters or have water monitoring equipment integral to the plant or area.</p> <p>As the water demands are a small for staff kitchen and WC facilities it could be considered that there would be no additional benefit from installation of sub meters - to be confirmed by M&E consultant (ref: CN3.1).</p> <p>Action: Specify water metering within the design and schematics. Mains Water Meters to be confirmed as having pulsed outputs to support BREEAM — M&E to confirm with drawings and data sheets.</p>
Wat 03	Leak Detection	2	2	<p>Leak detection system Targeted - Yes (1 credit)</p> <p>A leak detection system should be installed on the mains water supply from the utility water meter into the building. If a break tank is installed, then the leak detection system would only cover from the utility water meter to the check meter in the plant room. The detection system must: Alert occupants to the leak OR have automated diagnostic procedure installed. Activate when flow of water is above a pre set maximum and period.</p> <ul style="list-style-type: none"> -Identify different flow and therefore leakage rates over a set time period. -Designed to avoid false alarm (where applicable). <p>Flow control devices Targeted - Yes (1 credit)</p> <p>Flow control devices should be installed to each WC area/facility to avoid leaks and wastage. These can be in the form of:</p> <ul style="list-style-type: none"> -A time controller or programmed time controller -A volume controller -A presence detector and controller -A central control unit (utilising all or some of the above) <p>The control device must be installed in communal WC areas.</p> <p>Action: Leak detection system and flow control devices to be detailed within the M&E specification.</p>
Wat 04	Leak Detection	0	0	<p>Water efficient equipment Targeted - Yes (1 credit)</p> <p>Any unregulated water demands that could be realistically mitigated or reduced should be identified.</p> <p>This credit has been deemed not applicable due to no unregulated water demand.</p>
Mat 01	Life Cycle Impacts	6	3	<p>Life cycle Impacts Targeted — Yes (3 currently)</p> <p>The project uses a life cycle assessment (LCA) tool or undertakes a building information model life cycle assessment (BIM LCA) to measure the life cycle environmental impact of the refurbishment or fit-out works.</p> <p>The LCA covers new materials as relevant to the assessment parts listed in CN7 and indicated in the 'Materials assessment scope' section of the BREEAM Refurbishment and Fit-out Mat 01 calculator (Part B of the tool).</p> <p>The mandatory requirements identified in the 'Materials assessment tool, method and data' section of the BREEAM Refurbishment and Fit-out Mat 01 calculator have been met.</p> <p>A member of the project team completes the BREEAM Refurbishment and Fit-out Mat 01 calculator using parts A and B and determines a score based on the robustness of the LCA tool used (Part A of the tool) and the scope of the assessment in terms of the materials specified that have been considered (Part B of the tool)</p>

				<p>Where the design team can demonstrate how the LCA has benefited the building in terms of measuring and reducing its environmental impact. See CN14</p> <p>Where the design team submit the LCA tool output (e.g. Building Information Model (BIM))for assessing the building to BRE Global (via the project's appointed BREEAM assessor)to inform future potential LCA benchmarking for BREEAM</p> <p>Credits are awarded in accordance with Table 46.</p> <p>Alternatively more simple option 2 methodology can be used, however this limits amount of credits available.</p> <p>Action: Approach to be confirmed, Mat 01 assessment to be conducted and amount of credits achievable confirmed.</p>
Mat 03	Responsible Sourcing	4	3	<p>Pre-requisite for all assessments: All timber used on the project is to be legally harvested and traded. Supporting statement to this effect and supposing chain of custody certification.</p> <p>Sustainable Procurement Plan Targeted - Yes (1 credit) The contractor is required to provide Sustainable Procurement Plan which sets out clear framework for the responsible sourcing of materials to guide procurement throughout the project. The plan can be adopted at an organisational level, alternatively it can be site specific.</p> <p>Responsible sourcing of materials (RSM) Targeted — Yes 1 credits (2/3 Credits)</p> <p>All relevant building materials including (but not limited to) concrete, steel, blocks, insulation, plasterboard etc. are to be sourced from suppliers holding ISO14001 / BES6001 product certification, with all timber to be FSC/PEFC certified and from a legal source. A RSM score of 36%+ will, therefore, be targeted (2 credits).</p> <p>Action: Sustainable procurement plan to be produced and key materials (timber, metal stud, insulation and plasterboard) to be sourced from suppliers with ISO 14001/BES 6001 or EPDs</p>
Mat 04	Insulation	1	1	<p>Embodied impact Targeted - Yes (1 credit) An insulation index of >2.5 must be achieved for the embodied environmental impact of the insulation. Insulation within the following elements is to be assessed external walls, ground floor, roof and building services. The embodied impact calculated based on the Green Guide rating of the insulation and its thermal conductivity.</p> <p>Where possible, products will be specified with manufacturer's Environmental Product Declarations (EPDs) as these will enhance the Green Guide ratings.</p> <p>Action: Architect to complete the Mat 04 schedule — and high quality (performance) insulation to be installed.</p>
Mat 05	Designing for durability and resilience	1	1	<p>Protecting vulnerable parts of the building from damage Targeted - Yes (1 credit) Areas to be identified which are subject to vehicular, trolley and pedestrian movement, and suitable design measures to be included for protection and prevent damage.</p> <ul style="list-style-type: none"> -Protection from the effects of high pedestrian traffic in main entrances, public areas and thoroughfares (corridors, lifts, stairs, doors etc.). -Protection against any internal vehicular/trolley movement within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas. -Protection against, or prevention from, any potential vehicular collision where vehicular parking and manoeuvring occurs within 1m of the external building facade for all car parking areas and within 2m for all delivery areas. <p>Material degradation (e.g. corrosion, discolouration) due to environmental factors (e.g. moisture, solar radiation) must be limited through appropriate design and specification measures. (only as applicable to the works included in the fit-out)</p> <p>Action: Architect to specify protection measures for the building with drawings, schedule and letter.</p>
Mat 06	Material efficiency	1	1	<p>Material efficiency Targeted — Yes (1 credit) Opportunities should be 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.</p>

				<p>The above should be carried out by the design/construction team in consultation with the relevant parties at each of the following RIBA stages: Preparation and Brief, Concept Design, Developed Design, Technical Design, Construction.</p> <p>Action: Material efficiency report to be produced at each RIBA Stage of the Fit-Out process, design stage letter to confirm this will be completed is required</p>
Wst 01	Construction Waste Management	7	4	<p>Pre-refurbishment audit Targeted — No (1 credit) A pre-refurbishment waste audit must be undertaken at Concept Design (RIBA Stage 2) prior to demolition of existing buildings / structures. Even if there is no demolition works being undertaken.</p> <p>Reuse and direct recycling of materials Targeted — Yes (1/2 credit) Where waste materials are either directly re-used on-site or off-site or are sent back to the manufacturer for closed loop recycling, 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. 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.</p> <p>Resource efficiency Targeted — Yes (2/3 credits) A Resource Management Plan (Site Waste Management Plan) must be developed covering non hazardous waste relating to construction (including dedicated off-site manufacture), demolition and excavation. A nominated person should be identified to take responsibility for the plan and collection of data to confirm that the following targets have been met: - two credits - construction waste generated should be less than the target benchmarks which are assumed for this project at 4.5m³ or 1.2 tonnes of waste per 100m² (GIFA). Where possible the lower benchmark of 2.1 m³ or 0.4 tonnes should be targeted (this will achieve three credits).</p> <p>Diversion of resources from landfill; Targeted — Yes (1 credits) One credit is targeted for diverting waste from landfill — refurbishment/fit out 85% by volume (90% by tonnage); demolition 90% by volume (95% by tonnage).</p> <p>Action: Pre-refurbishment audit to be carried out. Resource management plan to be produced, initial report received. Waste figures to be quantified.</p>
Wst 03	Operational Waste	1	1	<p>Operational waste Targeted — Yes (1 credit) The design team needs to identify the typical volumes of recyclable waste that will be generated and show that there is sufficient space for the storage of recyclables. Where volumes cannot be predicted, at least 2m² area should be allowed per 1000m² floor area for storage of recyclable waste and this should be clearly identified on the Site Plan.</p> <p>Dedicated waste storage space will also need to be clearly labelled and accessible to all building occupants. If large volumes of bulky packaging are anticipated then a waste compactor or baler will also be required.</p> <p>Action: Architect to specify the area of waste storage provision, supporting labelling on walls and label clearly on drawings</p>
Wst 05	Adaptation to Climate Change	1	1	<p>Structural and Fabric resilience Targeted – Yes (1 Credit)</p> <p>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:</p> <ol style="list-style-type: none"> 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: <ol style="list-style-type: none"> i. Hazard identification ii. Hazard assessment iii. Risk estimation iv. Risk evaluation

				<p>v. Risk management.</p> <p>Action: To be completed prior to the end of concept design</p>
Wst 06	Functional Adaptability	1	1	<p>Functional adaptability Targeted - Yes (1 credit)</p> <p>A building-specific functional adaptation strategy study is required to be undertaken by the client and design team by Concept Design (RIBA Stage 2) of the fit-out, which should include recommendations for measures to be incorporated to facilitate future adaptation. The study should cover:</p> <ul style="list-style-type: none"> -The potential for major refurbishment, including replacing the facade. -Design aspects that facilitate the replacement of all major plant within the life of the building, e.g. panels in floors/walls that can be removed without affecting the structure, providing lifting beams and hoists. -The degree of adaptability of the internal environment to accommodate changes in working practices. <p>The degree of adaptability of the internal physical space and external shell to accommodate change in use.</p> <ul style="list-style-type: none"> -The extent of accessibility to local services, such as local power, data infrastructure etc. <p>The adaption measures should be adopted into the scheme by RIBA Stage 4 to enable the credit to be awarded.</p> <p>Action: Functional adaptability study complete and report received by the Architects prior to the end of Stage 2. To be readdressed during stage 4.</p>
LE 02	Protection of Ecological features	0	0	Deemed not applicable for this assessment
LE 04	Enhancing Site Ecology	1	0	<p>Ecologists report and recommendations Targeted – Yes (1 Credit)</p> <p>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.</p> <p>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 CN4.1).</p> <p>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.</p> <p>Action: Evidence of early consultation required and SQE's report required</p>
LE 05	Long term impact on biodiversity	2	1	<p>Long term impact on biodiversity; Targeted — Yes (1/2 Credits)</p> <p>Based on initial drawings this credit will be included within the scope of the assessment as there is a change to ecological value. With two additional measures one credits can be awarded. With four additional measures two credits can be awarded.</p> <p>Action: To be confirmed.</p>
Pol 01	Impact of refrigerants	3	2	<p>Impact of refrigerants Targeted — Yes (1 credit)</p> <p>Three credits can be achieved where there are no refrigerants used. However, if refrigerants are used and the below is achieved, two credits can be achieved: The system using refrigerants must have a direct effect life cycle COC equivalent emission (DELCOze) of <100 kgCOze/kw cooling/heating capacity OR the air-conditioning or refrigeration systems are installed have a GWP of <10</p> <p>Leak detection Targeted — Yes (1 credit)</p> <p>If refrigerants are used on site, the systems will be specified with a permanent automated refrigerant leak detection system and must be capable of automatically isolating and containing the remain ing refrigerant(s) charge.</p> <p>Action: M&E to confirm which refrigerants are to be used within the building.</p>
Pol 02	NOx Emissions	3	3	<p>NOx emission levels for heating and hot Targeted — Yes (3 credits)</p> <p>For credits to be awarded emissions level will need to be: <70 mg/kWh (2 credits), or,</p>

				<p><40 mg/kWh (3 Credits).</p> <p>There will be no NOx emissions, with heat pumps being used for heating and hot water.</p> <p>Actions: Energy strategy to confirm heating system.</p>
Pol 03	Flood risk management and reducing surface water run-off	5	5	<p>Flood risk management Targeted - Yes (2 credits) A desk study undertaken by Meinhardt (Preliminary Drainage and Flood Risk analysis based on the Environmental Agency mapping) suggests that the site should be in flood zone 1. A detailed flood risk analysis is required to confirm this.</p> <p>Surface water run-off Targeted - Yes (2 credits) Where the area of impermeable run-off is set to increase, SuDs will need to be implemented to ensure that the rate of run-off remains the same as was measured prior to development. The credits are only achievable following further input.</p> <p>Minimising water course pollution Targeted - Yes (1 credit) -To be confirmed that 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). -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. -A comprehensive and up to date drainage plan of the site will be made available for the building/site occupiers. - Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified Suds must be in place.</p> <p>Actions: Drainage Engineer to supply FRA and Drainage Strategy Report & calculations clearly confirming the BREEAM credits that can be awarded. Drawings to be provided confirming the drainage design / SUDs solution.</p>
Pol 04	Reduction of night time pollution	1	1	<p>Reduction of night time light pollution Targeted — Yes (1 credit)</p> <p>This external lighting is to be designed in compliance with the ILE Guidance Note for the reduction of obtrusive light, 2011 in order to minimise unnecessary light pollution.</p> <p>All external lighting (excluding security and safety lighting but INCLUDING advertisements) to be switched off between 2300hrs and 0700hrs. Security/safety lighting used between these times must comply with the lower levels of light as in the ILP's guidance.</p> <p>Illuminated advertisements, where specified, must be compliant with ILE Technical Report 5 - The Brightness of Illuminated Advertisements</p> <p>Action: M&E to confirm compliance</p>



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