



ORCHARD STREET INVESTMENT LTD

4 HARDMAN SQUARE - REFURBISHMENT

ENVIRONMENTAL STANDARDS STATEMENT





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1 INTRODUCTION

1.1 DEVELOPMENT DESCRIPTION

WSP has been appointed to provide engineering advisory services in relation to the design and construction of the refurbishment of the 4 Hardman Square development and pre-planning services on behalf of the client Orchard Street Investments Ltd.

This Environmental Standards Statement has been prepared by WSP to support a full planning application.

This Statement provides detail of the various measures incorporated into the development proposals to ensure suitable levels of sustainability performance in accordance with local and national planning policy. It should be read alongside supporting documents such as the Design and Access Statement, Planning Statement, and Circular Economy Statement.

1.2 SITE CONTEXT

4 Hardman Square is situated in the city of Manchester's financial centre, Spinningfields. It is an existing five storey office building with retail units to the ground floor.

Located on Hardman Square (between Gartside Street, Byrom Street, and Hardman Street) the building is ideally located with public transport links and car parking facilities available. The building's office space is currently fully un-occupied following a previous strip out however, there are 2 operating retail outlets on the ground floor.

1.2.1 EXISTING BUILDING

4 Hardman Square was constructed in 2006. The structure is a steel frame and is predominately clad in a glazed curtain walling. A plant area is located on the ground floor adjacent to the reception. There is additional rooftop plant (visible from aerial photographs).

The entrance is located on the south elevation of the building, central on plan. This is a double height space with a height of approximately 7-8m (this height is used to provide mezzanine areas within the retail units).

The entrance is recessed slightly from the first floor above and leads into the main atrium. The lift core opens onto the atrium which extends the full height of the building with a rooflight above the top floor.

1.2.2 PROPOSED WORKS

Internal Alterations & Refurbishment Works:

- Full new Cat A fit out including WC blocks to Levels 1-5.
- New shower, toilet and locker provision at mezzanine level.
- New mezzanine infill above reception forming a new social space
- Refurbishment of the existing passenger lifts.
- Refurbishment of the existing reception.
- Creation of new cycle store within ground floor
- New M&E systems throughout

Façade & Rooftop Alterations:

- New treatments to façade adjacent the main entrance.
- New rooftop extension to create meeting and social space

- New rooftop terrace
- Restoration works to curtain walling.

Figure 1-1 - Site Context



Figure 1-2 - Illustration of the Proposed Development



2 POLICY CONTEXT

This chapter provides an overview of the relevant sustainability planning policy and guidance from a national and local perspective.

2.1 NATIONAL POLICY

This section sets out a summary of current national guidance and policy in relation to sustainable development.

2.1.1 NATIONAL PLANNING POLICY FRAMEWORK

The National Planning Policy Framework (NPPF) provides a framework for the development of locally prepared plans and the government's planning policies for England and how these are expected to be applied.

Paragraph 7 of the NPPF states that: 'the purpose of the planning system is to contribute to the achievement of sustainable development'.

Paragraph 8 explains that, to deliver sustainable development, the planning system has three overarching objectives which are interdependent and must be pursued in mutually supportive ways.

An **ECONOMIC** objective to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;

A **SOCIAL** objective supporting strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering well-designed beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being;

An **ENVIRONMENTAL** objective contributing to protecting and enhancing our natural, built and historic environment; including, making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low economy.

These objectives are key to the development of plans and the NPPF sets out a number of key themes for consideration which guide the preparation of local plans and policies, ensuring the delivery of sustainable development.

The July 2021 update to the NPPF recognises the role planning has to play in support of the UK's pursuit of the United Nations Sustainable Development Goals (UNSDGs) which address social progress, economic wellbeing and environmental protection.

2.1.2 PLANNING PRACTICE GUIDANCE

Planning Practice Guidance (PPG) provides further advice on various planning issues associated with development, including those linked to sustainability and renewable energy and underpins the policies within the NPPF.

PPG is a material consideration in planning decisions and should generally be followed unless there are clear reasons not to. It sets out how local authorities should include policies that protect the local environment and strategies to mitigate and adapt to climate change and supports developments that are functional and adaptable for the future.

The March 2019 PPG update confirmed that Local Authorities have the option to set technical requirements exceeding the minimum requirements of the Building Regulations in respect of access, water and space where sufficient evidence is produced to justify the target.

2.1.3 NATIONAL DESIGN GUIDE

The National Design Guide is based on the national planning policy practice guidance and objective for good design as set out in the NPPF. The Guide introduces ten characteristics of well-designed places which work together to create developments Character and Community, while positively addressing environmental issues affecting climate.

2.1.4 BUILDING REGULATIONS

Whilst not planning policy, the Building Regulations (and specifically Approved Document Part L: Conservation of Fuel and Power) set out the requirements for energy and carbon performance in new buildings.

Periodic updates to these national regulations will drive energy efficiency and carbon reduction improvements. Government has stated that developers will continue to have flexibility in how they meet carbon reduction targets; but that the emphasis is on using a "fabric first" approach.

On 15th June 2022, the Building Regulations were updated as an interim step towards part of the roadmap to the 'full' Future Homes and Buildings Standard, which comes into effect in 2025. The regulations aim to deliver buildings that are of a higher quality, with lower energy bills and reduce GHG emissions by around 30% for new homes and 27% for non-domestic buildings. There is a transition period of one year from this date; this will allow any new building, where plans have been submitted before 15th June, one year to make a meaningful start and be allowed to comply with the previous regulations. These transitions apply at a plot level, not at a site level.

In addition, the UK government has now updated the Building Regulations with a new Approved Document, Part O: Overheating. As of 15th June 2022, this standard is now in place. However, these regulations do not apply to this project as building notice was submitted prior to the 15th June 2022 deadline, and work on site is scheduled to commence prior to the 15th June 2023 cut off.

Part O sets out new requirements for mitigating overheating, specifying that residential developments must limit unwanted solar gains in the summer and provide means to remove heat.

Compliance with Part O can be demonstrated using two methods to demonstrate the risk of overheating from rising summer temperatures has been mitigated:

- Following a simplified prescribed glazing and free area ratio; or,
- Use of a Dynamic Simulation Modelling.

2.1.5 LOCAL PLANNING POLICY

Current and emerging Manchester City Council planning policy relating to sustainable development, energy and climate change is summarised below.

Manchester Core Strategy Development Plan Document (2012) Manchester's Core Strategy (2012), is the key document in the Manchester Local Plan. It sets out the long-term strategic policies for Manchester's future development and forms the framework against which planning applications are assessed. The following Core Strategy policies are of greatest relevance to sustainable development and the focus of this Statement.

Policy EN4 – Reducing CO2 emissions by enabling low and zero Carbon Development – Development should be designed in accordance with the energy hierarchy to reduce energy demand through active and passive design measures meeting residual requirements through the use of zero carbon, renewable energy technologies.

Developments are encouraged to take into account the following principles:

- Located and designed in a manner that allows advantage to be taken of opportunities for low and zero carbon energy supplies where possible.
- Where possible new development and retrofit projects will be used as a mechanism to help improve the energy efficiency and where possible provide low and zero carbon energy to existing buildings.
- Where appropriate, new development and retrofit projects are encouraged to connect to and/or make commitments to low or zero carbon energy schemes and/or to incorporate provision to enable future connection to any existing/potential decentralised energy networks.

Policy EN6 – Target framework for CO2 reductions from low or zero carbon energy supplies – Applications for development over 10 dwellings or 1,000m2 floor area are expected to meet sustainability targets which vary depending on the scale of the development, where feasible.

Development that meets the criteria above is required to be accompanied by an energy statement which sets out the projected regulated energy demand and associated carbon emissions and how the following targets will be met.

Development below the above thresholds is expected to meet the targets but does not need to have an accompanying energy statement.

For the purpose of this policy, development is split into three target categories:

- Target 1 - Network development areas: Locations where the proximity of new buildings, the mix of use and density of development provides the right conditions to support district heating.
- Target 2 - Electricity intense areas: Locations where the predominant building type has all electric fit out, such as retail units and leisure complexes.
- Target 3 – Micro-generation areas: Locations where lower densities and fragmented mix of uses tend to mean that only building scale solutions are practical.

An Energy Assessment is required to be submitted, and developers are permitted to use green infrastructure elements to contribute to the carbon reduction requirements provided adequate evidence is provided.

Policy EN8 – Adaptation to Climate Change – All new development is expected to be adaptable to climate change and developments should have consideration of adaptation measures including:

- Minimising flood risk through sustainable drainage systems.
- Reducing the urban heat island effect through green infrastructure.
- Minimising overheating through passive design.
- The opportunity to provide linked and diverse green space to enhance natural habitats which will assist species adaptation.

Policy DM1 - Development Management – All new development should have regard to a range of sustainability issues including site location, accessibility, waste management, biodiversity and flood risk, as well as incorporating sustainable construction techniques which includes the application of BREEAM.

Policy CC5 – Transport – Developers should work to ensure that all users are able to access development by sustainable means, especially taking account of times when developments are likely to be busiest.

Policy EN9 - Green Infrastructure – New development is expected to maintain existing green infrastructure in terms of its quantity, quality and multiple function. Developers are also encouraged to enhance existing green infrastructure where possible.

Policy EN 14 - Flood Risk – Development should be directed away from sites at the greatest risk of flooding, and towards sites with little or no risk of flooding.

Policy EN 17 - Water Quality – development should avoid adverse impact on water quality, including during the construction phase, and minimise surface run-off.

Policy EN 19 - Waste – requires all developers to demonstrate the proposal's consistency with the principles of the waste hierarchy.

Policy DM 1 - Development Management – New development should have regard to the following specific issues:

- Appropriate siting, layout, scale, form, massing, materials and detail.
- Impact on the surrounding areas in terms of the design, scale and appearance of the proposed development.
- Development should have regard to the character of the surrounding area.
- Accessibility: buildings and neighbourhoods fully accessible to disabled people, access to new development by sustainable transport modes.
- Design for health.
- Refuse storage and collection.

2.1.6 GUIDE TO DEVELOPMENT IN MANCHESTER SUPPLEMENTARY PLANNING DOCUMENT (SPD) (2007)

This Guide to Development Supplementary Planning Document (SPD) (2007) provides guidance to develop and enhance environments within Manchester which are visually attractive, have a unique and positive sense of place and where properly caters for the functions which it accommodates, both now and in the future.

Chapter 4 of the SPD sets out Manchester City Council's expectations on the content of Environmental Standards Statements.

2.1.7 PLACES FOR EVERYONE

Until December 2020 a joint development plan document of the ten Greater Manchester local authorities was being prepared, known as the Greater Manchester Spatial Framework (GMSF).

However, progression of the GMSF ceased following the decision by Stockport Council to withdraw.

Instead, a joint committee formed by the nine other boroughs has been formed to prepare 'Places for Everyone' (PfE), a joint development plan for jobs, new homes and sustainable growth across these boroughs.

Places for Everyone: Publication Plan5 was published in July 2021, with a period for representations taking place between 9th August and 3rd October 2021. The Greater Manchester Combined Authority submitted the plan to the Secretary of State for examination on 14th February 2022.

PfE sets out a number of ambitious sustainability policies, accounting for climate mitigation and adaptation, social value, economic growth and the natural environment.

Policies include a requirement for new commercial development to achieve at least BREEAM 'Excellent' standard for the Ene 01 Reduction of Energy Use and Carbon emissions credit issue, rising to Outstanding' from 2038.

Development will be expected to adopt a net zero carbon approach to operational carbon up to 2028, and incorporate construction carbon from then onwards. However, the practicalities of this policy including carbon calculation method and offset payments have not been fully confirmed yet.

Development should also achieve a net gain in biodiversity of at least 10%. The policies within PfE are not considered further within this statement, due to its current stage of publication. However, the aspiration of Greater Manchester to become net zero carbon by 2038 is supported by the Applicants.

2.1.8 LOCAL PLAN ISSUES CONSULTATION

Manchester City Council Local Plan Issues Consultation (February 2020) explains how the new Local Plan will contribute to a zero carbon city by providing the spatial expression in support of the Council's intention to move towards a zero carbon Manchester by 2038 at the latest. The Issues Consultation covers a range of issues that will have a direct bearing on successfully meeting the zero carbon challenge by 2038.

2.1.9 MANCHESTER CLIMATE CHANGE FRAMEWORK 2020-25

The Manchester Climate Change Framework 2020-25 (February 2020) builds on the Draft Manchester Zero Carbon Framework 2020-38 (published February 2019) and Manchester City Council's declaration of a climate emergency in July 2019.

The Framework sets the following objectives to be met by 2025:

Objective 1: Staying within our carbon budgets – including reducing CO2 emission from our homes, workplaces and ground transport by at least 50% during 2020-25.

Objective 2: Climate adaptation and resilience – adapting the city's buildings, infrastructure and natural environment to the changing climate.

Objective 3: Health and wellbeing – improving the health and wellbeing of everyone in Manchester through actions that also contribute to our climate change mitigation and adaption objectives.

Objective 4: Inclusive, zero carbon and climate resilient economy – ensuring Manchester establishes an inclusive, zero carbon and climate resilient economy where everyone can benefit.

2.1.10 VALIDATION REQUIREMENTS

Manchester City Council's Validation Checklist (2018) requires applications for major new development to be accompanied by an Environmental Standards Statement to address the sustainability of the development proposals and demonstrate a 20% carbon reduction.

2.2 PLANNING POLICY SUMMARY

There are several consistent themes across national and local sustainability policy which are relevant to the 4 Hardman Square proposals:

- A minimum 15% reduction in CO2 emission beyond Building Regulations Part L 2010 is required through a combination of building envelope performance, energy efficiency and on-site zero / low carbon energy technology. This performance is equivalent to a circa 9% CO2 reduction on Part L 2013. The latest Part L 2021 targets also surpass this performance equivalent, therefore compliance only with Part L 2021 meets this target.
- Ensuring the development is resilient to a changing climate is a further key requirement at both national and local levels, particularly in relation to increased risk of floods and summertime overheating.
- A minimum BREEAM 'Very Good' rating is required given the proposals comprise commercial office development.
- It is clear from the declaration of climate emergency and ambitious target to achieve carbon neutrality by 2038, that the council and Greater Manchester expect new development to contribute to a carbon neutral future.

The following chapter details the approach proposed to address these policy requirements.

3 SUSTAINABILITY AND ENERGY STRATEGY

Low carbon, sustainable design is at the heart of the development brief.

This statement provides a summary of the targets for the proposed warehouses and the energy efficient measures put in place to meet these targets.

3.1 POLICY AND TARGETS

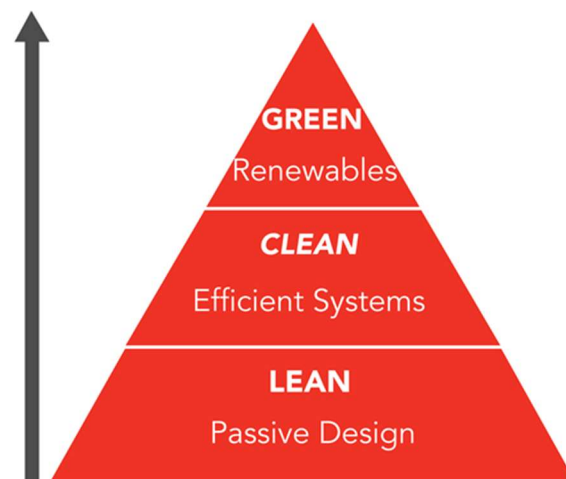
The development will be required to comply with the following as agreed with the developer:

- Part L2 of the Building Regulations
- BREEAM – Target excellent
- NABERS – Target 4.5 Stars

3.2 LOW CARBON STRATEGY

The design of the building has followed the 'lean, clean, green' approach to low carbon design, as per the figure below.

Figure 3-1 - Low Carbon Design



The following design features have been used to achieve CO₂ savings for the Port Cheshire warehouses

Be Lean:

- High levels of fabric insulation on new elements

Be Clean:

- LED lighting
- High efficiency ASHP (i.e. air source heat pump) technology
- High efficiency ventilation heat recovery (75%)

Be Green:

- Photovoltaic (PV) panels
- De-gasification of the building services

3.3 SUSTAINABILITY

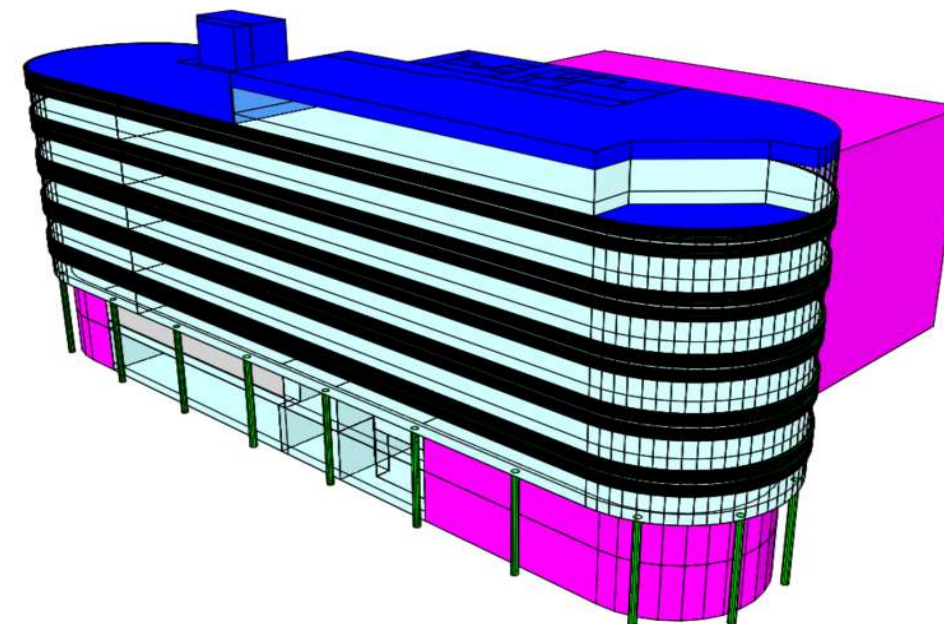
For construction the UK GBC requires the embodied carbon to be minimised and at Practical Completion offset by purchasing UK GBC recognised carbon offsets (evidence of which is to be provided to the tenant).

The base build is to achieve NZC embodied carbon of 800kgCO₂/sqm or less.

The base build office space is to achieve an NZC EUI of 55kWh/sqm/annum or less based on the following operational metrics;

- Lighting power density – 4.5 (W/m² peak NIA)
- Lighting out of hours – 0.5 (W/m² peak NIA)
- Tenant power density – 8 (W/m² peak NIA)
- ICT Loads - 0.5 (W/m² peak NIA)
- Small power out of hours – 2 (W/m² peak NIA)

Figure 3-2 - Image of the building from the dynamic modelling software



This said:

Various façade configurations have been investigated

- The baseline fabric utilised Part L 2006 values
- It was found that the upgraded fabric values shown in Table 1 provide optimum savings in terms of energy and carbon
- The upgraded fabric will obtain less than 5% savings in operational energy and carbon per year.
- The upgraded fabric operational cost savings will be less than £10,000 per annum.
- Server rooms have been excluded from the calculation.
- Results are based on stage 2 modelling and changes are likely to occur as the design develops

- The analysis is based on the existing façade being replaced with an identical configuration. In reality this may not occur, and we would look at optimum glazing ratios, shading etc which will impact the results obtained.

To meet low carbon design the following have been used

Internal design conditions

- Internal Temperature (Winter): 21 °C
- Internal Temperature (Summer): 24 °C

Occupancy

- Density: 10 m2/person
- Sensible Gain: 88 W/person
- Latent Gain: 53 W/person
- NABERS Occupancy profiles
- Domestic hot water
- Instantaneous point of use

Power

- Equipment gain: 10 W/m2

Lighting

- Lighting gain: 4 W/m2
- Daylight dimming

Heating & Cooling

- FCU's provide heating and cooling to occupied areas
- SCoP: 3.86
- SEER: 5

The results of this study demonstrate that with a retained façade the build the development can still target a NABERS Rating of **4.5 Stars** – this will be investigated further at the next stage.

Further break down of high efficiency systems as followed to be used:

Element	Design Rationale
Air Handling Plant	Ventilation is provided via centralised high efficiency Air Handling Units (AHU) which will be provided to achieve low specific fan powers (a maximum of 1.6W/l/s).
Energy Recovery	Air handling systems will incorporate heat recovery systems with a minimum efficiency of 75%.
Heating and Cooling Plant	High efficiency heating and cooling will be provided by the VRF system in most spaces - with a cooling efficiency of 4.5 and a heating efficiency of 3. Electric panel heaters will be used to heat the toilets and stores. It has been assumed that the warehouses will be heated with gas fired radiant heaters. The warehouse has provision for heating via gas radiant heaters with an efficiency of 92%.

Terminal Units	Specific fan power of terminal units will be 0.5 W/l/s or lower. Extract vent will be provided at 0.4 W/l/s or lower
Domestic Hot Water	Domestic hot water is provided via point of use electric.
Lighting Technology	High efficiency lighting will be provided throughout to meet at least 120lum/W.. This includes the use of high efficiency LED luminaries throughout. Daylight dimming will be required in the offices, reception and warehouse areas along with occupancy controls throughout the building.
Renewable technology	Both units are to be fitted with 10% roof coverage of Photo-Voltaic Panels, as indicated on the architects plan. Minimum efficiency

3.4 PART L2 2021

The project includes extensive refurbishment activity to the building.

The table below summarises the measures which are included within the scheme, in line with Table D1 of Approved Document L, Conservation of fuel and power, Volume 2: Buildings other than dwellings, which summarises energy efficiency measures which are typically considered technically, functionally and economically feasible in normal circumstances.

Improvement Measure	Refurbsihment
Upgrading heating systems	Included
Upgrading cooling systems	Included
Upgrading air-handling systems	Included
Upgrading lighting systems	Included
Installing energy metering	Included
Upgrading thermal elements	Not included
Replacing windows or doors	Not included
Installing LZC energy generation	Included

In summary of Part L2B of the Building Regulations deals with conservation of Fuel and power in existing, non-domestic buildings. For the existing building to comply with Part L2B, the following regulations should be considered:

- Regulation 23(2) and requirement L1(a): Replacement of thermal elements and limiting heat gains and losses – there is no requirements to upgrade thermal elements, though WSP will always recommend that all new elements meet table 4.1 where possible. As there is an extension, Regulation 28: Consequential improvements is triggered.

- Regulation 23(1) and requirement L1(a): Renovating elements and limiting heat gains and losses - there is no requirements to upgrade thermal elements, though WSP will always recommend that all new elements meet table 4.1 where possible.
- Regulation 28: Consequential improvements to energy performance – is triggered as above, the value of consequential improvements should not be less than 10% of the value of the principal works

As it is understood that all MEP systems are to be replaced on this scheme as per client brief, we believe this will meet the 10% value of the principal works; items 1 though to 5 of Table D1 and therefore despite consequential improvements being triggered under Part L2B there is no reason to unnecessarily upgrade the façade or external thermal elements of the building. The cost consultant is to confirm that this is the case.

However, any extension should be regarded as a new building and will be assessed under Approved Document L2.

4 ENVIRONMENTAL DESIGN

BREEAM is the world's leading sustainability assessment tool for new buildings. The scheme is operated by the Building Research Establishment (BRE) and includes a range of criteria against which the sustainability performance of new buildings is assessed.

4.1 BREEAM STRATEGY

4 Hardman Square has been registered under BREEAM UK Refurbishment and Fit-out 2014.

In line with Manchester City Council's Guide to Development SPD, at least a 'Very Good' rating will be achieved. This commitment supports Manchester's declaration of climate emergency and journey to net zero carbon.

The Appendix of this statement includes the proposed BREEAM strategy as established via a pre-assessment and team workshops that have been undertaken to demonstrate that the 'Excellent' target is on track with a potential score of 77.22%.

This pre-assessment was undertaken by WSP.

5 WATER MANAGEMENT & WEATHER RESILIENCE

Water management and weather resilience issues in new development are becoming increasingly important as a result of climate change, with effects such as increased winter rainfall, decreased summer rainfall and increased summer temperatures already being experienced.

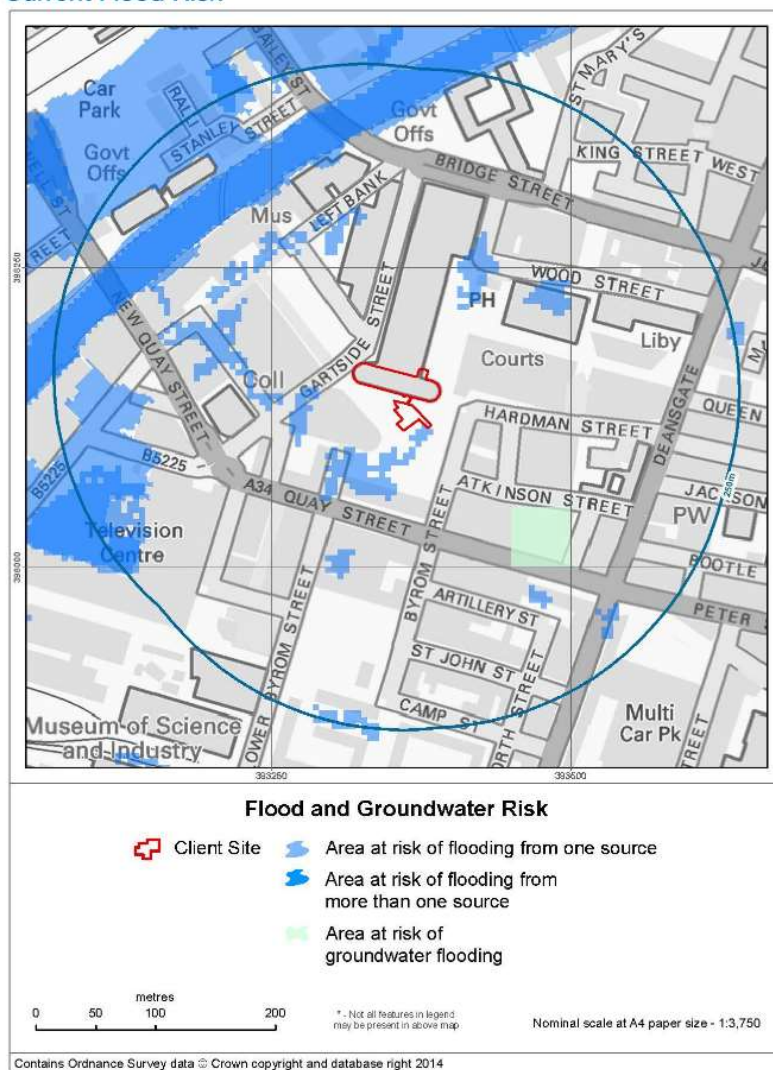
The Met Office's latest UK Climate Projections (UKCP18) include significant changes to climatic conditions in Manchester by the 2050s, including increased summer and annual temperatures, increased winter rainfall and reduced summer rainfall.

5.1 FLOOD RISK & DRAINAGE

A Flood Risk Assessment (FRA), commissioned by the applicant from Argyll Environmental, confirms that the flood risk is Low-Moderate. Therefore, the site is not considered to be at a significant risk of flooding, as shown below.

Figure 5-1 - Flood and Groundwater Risk

Current Flood Risk



5.2 POTABLE WATER EFFICIENCY

Potable water is an increasingly important natural resource and with the majority of the UK classed as being in an area of moderate or severe water stress the conservation of water is becoming a more significant sustainability metric.

To ensure water efficiency, 4 Hardman Square will be designed to achieve a 25% reduction in mains water consumption which equates to achieving two credits under BREEAM issue Wat 01 Water Consumption. Water saving measures will be incorporated into the design of the office to achieve these credits and will be confirmed at detailed design.

Furthermore, soft landscaping will be reliant on rainwater or manual watering only.

These measures will help ensure the development reduces demand on local potable water supplies and therefore promote resilience to potential water constraints such as summer droughts.

5.3 BUILDING OVERHEATING RISK

Overheating has been limited through careful specification of u-values, glazing g-values, and external shading for new construction materials, however the existing façade is remaining as existing which limits the ability to enhance the entire building.

Additionally, the building services strategy offers comfort cooling in the form of an all-electric Air Source Heat Pump system to all office areas.

An overheating analysis in line with CIBSE TM52 and BREEAM Hea 04 Thermal Comfort credit requirements for both current and future climatic scenarios will be undertaken during detailed design.

6 WASTE MANAGEMENT

Regarding operational waste, sufficient storage for recyclable and non-recyclable waste will be provided in accordance with Manchester City Council's Waste Storage & Collection Guidance for New Developments GD04 (Version 6, September 2017). This guidance provides minimum standards for the storage and collection of refuse and for recycling facilities in new domestic and commercial development.

Waste storage facilities provided at 4 Hardman Square will reflect the various waste streams that are generated and collected by the local waste authority. By making it clear and convenient for building users to separate waste at source, a reduction of waste sent to landfill will be encouraged.

The existing bin store will be utilised, facilities management (MAPP) will transport waste to this area at regular intervals using the route marked below.



Ventilation – The bin store contains existing extract ventilation that ventilates to the roof level. This equipment will be retained and reused during and after the refurbishment following a recommission. Having reviewed with the waste management provider, SWR Newstar, the existing ventilation strategy is deemed sufficient.

Hygiene – The bin store will be cleaned regularly on a weekly basis. A cleaning and management strategy will be agreed and implemented by facilities management.

The management company MAPP will be responsible for placing the bins at the collection point and returning them to the property promptly. The two commercial units (Bagel Nash & Pret a Manger) will operate independently from the main office and will be responsible for these areas.

7 CONSTRUCTION MANAGEMENT

The proposed development will ensure that construction is undertaken in a way which minimises waste and impact on the surrounding area. The main contractor will register with the Considerate Constructors Scheme and target a score of at least 4.5 stars to achieve compliance significantly beyond best practice.

7.1 DURATION OF WORKS & WORKING HOURS

The construction phase is estimated to be 42 weeks in duration. The project is expected to finish in November 2023 Construction/demolition will be confined to the following hours:

- Monday - Friday: 7.00am – 5.30pm
- Saturday: 7.00am – 2.00pm
- Sunday & Bank holidays: Not planned for though this will be reviewed when needed

The Circular Economy Statement issued separately outlines how the redevelopment of 4 Hardman Square has implemented circular economy principles, through commitments made and measures taken throughout design and construction. The report includes details with respect to material and waste minimisation, use of sustainable materials, and protection of natural resource.

7.2 DEMOLITION AND CONSTRUCTION

The building materials used in the refurbishment shall be environmentally friendly wherever possible, and encourage the use of recycled building materials, which is also energy efficient. Site waste management plans should, therefore, be implemented to reduce the quantity of waste generated, and to increase re-use and recycling. Opportunities for reuse of existing structures should be explored, and where this is not appropriate, materials should be reused on site and incorporated into the new design where practicable.

Materials that are environmentally friendly, of low embodied energy, locally sourced, and can be recycled or reclaimed when the building comes to the end of its life should be prioritised. Materials that contain environmentally damaging chemicals should be avoided.

7.3 CONSTRUCTION SITE ENVIRONMENTAL MANAGEMENT

Activities carried out during the construction of developments have the potential to cause significant environmental impact. In order to avoid such impacts, it is important that appropriate measures are put in place to manage and control the waste generated, the amount of water and energy used, and any potential releases to water, land and air. Use of the Considerate Constructor scheme is recommended.

7.4 DELIVERIES, WASTE & CONTRACTOR PARKING

Deliveries to site will be via Gartside Street and Byrom Street. The Principal Contractor (PC) will time deliveries and waste removal to be outside peak traffic periods and peak pedestrian times. The PC will create a hoarded zone adjacent to the building to enable deliveries and waste removal to be managed and controlled. The hoarded zone will also create a safe route to access/egress the building.

The PC will have a dedicated logistics manager on site to manage the delivery side.

All deliveries to and from the site of materials and work equipment must be pre-booked with the logistics Manager giving sufficient notice. Materials will be ordered on a 'just in time' basis to minimise the amount of space needed on-site.

All deliveries will be unloaded at roadside and taken across the pedestrian zones and in to the hoarded zone. The appointed Principal Contractor will provide trained banksman to assist the unloading and safe manoeuvring of vehicles to and from the building.

Waste will be removed from site via wait and load skips at times of the day to try and avoid disruption to nearby businesses and any residents. Any waste removed will be taken to a national waste management centre where it will be subject to recycling. Copies of waste reports will be made available for review if needed.

The Principal Contractor must follow the guidance provided in Protecting the public: Your next move HSG151.

There will be no space for contractor and visitor parking, therefore, contractors will be required to make use of the numerous pay and display car parks that are located within the area.

8 BIODIVERSITY

As the development is a refurbishment to an existing building there is no impact to any existing biodiversity.

However, the new landscaping proposals will aim to enhance biodiversity on site, provide green infrastructure and new planting and create new habitats for local priority species to achieve a net gain in biodiversity of at least 10%.

Appendix A

BREEAM PRE-ASSESSMENT





Quartz

4 HARDMAN SQUARE

BREEAM RFO 2014 Pre-Assessment - Stage 2 Report



DRAFT

Quartz

4 HARDMAN SQUARE

BREEAM RFO 2014 Pre-Assessment - Stage 2 Report

PRE-ASSESSMENT REPORT (VERSION1) CONFIDENTIAL

PROJECT NO. 70091798

OUR REF. NO. 70091798

APRIL 2022

Quartz

4 HARDMAN SQUARE

BREEAM RFO 2014 Pre-Assessment - Stage 2 Report

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QUALITY CONTROL

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Report Name	4 Hardman Square		
Remarks	BREEAM Pre-Assessment RIBA Stage 2		
Date			
Prepared by			
Signature			
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Signature			
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APPENDICES



Appendix A

BREEAM CREDIT TRACKER

DRAFT

1. EXECUTIVE SUMMARY

1.1. CONTEXT

WSP has been appointed in its capacity as Licensed BREEAM Assessors and Advisory Professionals (AP) to provide BREEAM assessment services for the proposed 4 Hardman Square project. This report provides an overview to BREEAM UK Refurbishment and Fit-out 2014, highlights opportunities to embed sustainability principals from the outset of the project, and the current BREEAM strategy and scoring during RIBA stage 2. The project under assessment comprises:

Project Name	4 Hardman Square
Location	Manchester, United Kingdom
Main Use Function	Office
BREEAM Assessment Scheme	BREEAM Non-Domestic Refurbishment and Fit-out 2014
Assessment type	Office
Approximate NIA / GIA (m ²)	5,279m ² / 6,255m ²
Current Stage	RIBA Stage 2
Target Rating / Reason	BREEAM Excellent, because of Planning requirement
Stage of Assessment	Pre-Assessment (Stage 2)

The purpose of this report is to demonstrate:

- The agreed route for the achievement of a formal BREEAM 'Excellent' certification in the design stage assessment.
- The credits/performance requirements which the team have agreed to target and implement.
- The actions required by the project team to satisfy the BREEAM evidential requirements, including those with early RIBA stage requirements.
- Progress to date in closing assessment credits (where documentary evidence demonstrating compliance has been provided).

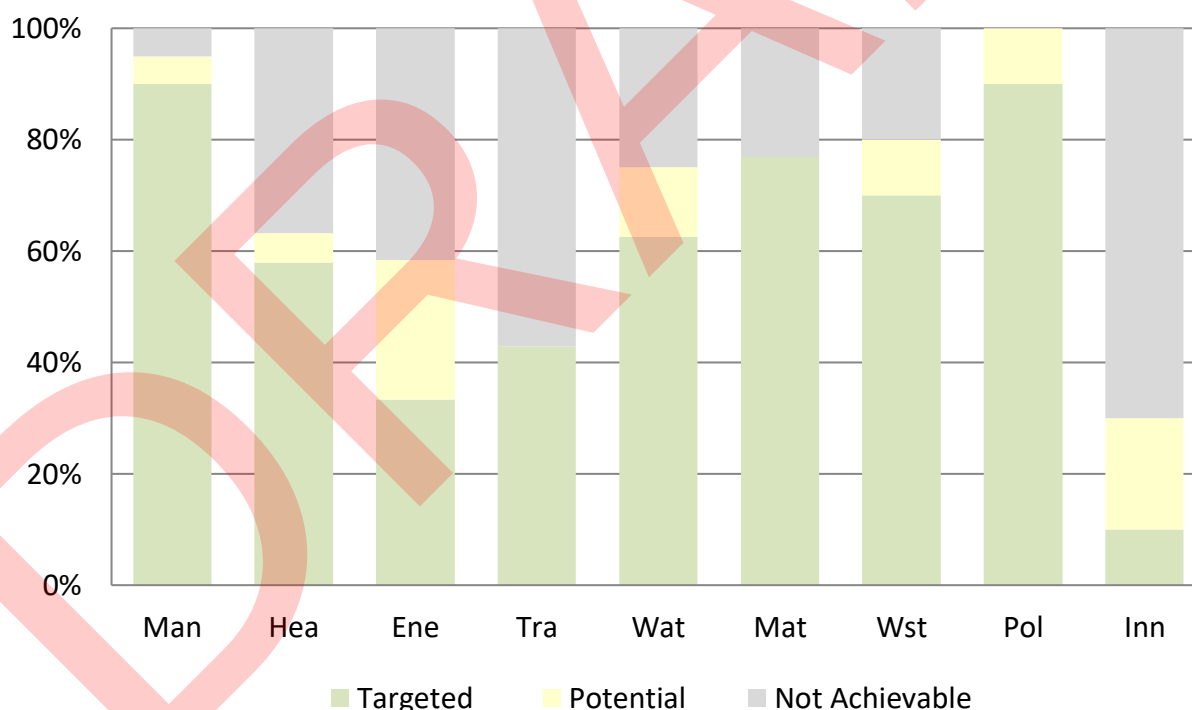
1.2. SCORING

Based on discussions and agreements with the Design Team and client, the following scoring scenarios are predicted:

OFFICE

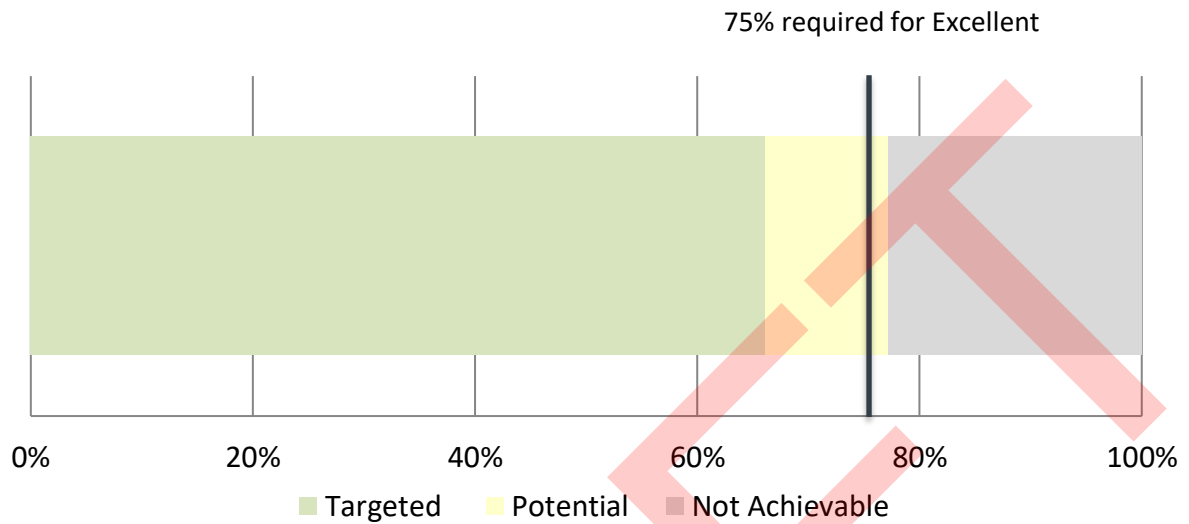
Scoring Scenario		BREEAM Score (Cumulative)*	Indicative BREEAM Rating
BREEAM NON-DOMESTIC RFO 2014	Targeted	66.16%	Very Good
	Potential	77.22%	Excellent
*Score as produced by BRE's BREEAM scoring and reporting tool			

BREEAM Section Scoring



Graphical representation of the credits associated with each environmental section

Score Progression



Graphical representation of progress to a targeted score of 75% (i.e., recommended score with 5% buffer for BREEAM 'Excellent') for the project.

Targeted Scoring Scenario

This is based on the items agreed as being targeted by the design team.

We recommend that at least 5% is targeted above the required rating, i.e. 75% for 'Excellent'. This is to safeguard for missed credits during completion of the design and construction of the asset.

Additional Scoring Scenario

Further to those items noted as targeted, additional credits were identified, which upon further investigation from the design team or updates to the design could result in an additional (higher) score and rating.

For full details please refer to the main assessment tracker in Appendix A.

2. PROJECT BACKGROUND

4 Hardman Square project is located in Manchester, United Kingdom.

The project's function is an office space situated within an existing building. This development is being assessed under BREEAM Non-Domestic Refurbishment and Fit-out 2014 scheme. The project is to be formally registered with BRE Global Ltd.

The development is required by Quartz requirements to achieve BREEAM 'Excellent'.

3. INTRODUCTION

3.1. PRE-ASSESSMENT PURPOSE

The report constitutes the BREEAM Pre-Assessment report for the proposed Office fit-out of 4 Hardman Square.

The content is based on information provided by the design team during various workshops, DTMs, and subsequent liaison during RIBA stage 2.

The purpose of this report is to:

- Demonstrate the strategy (targeted BREEAM credits and overall score) agreed with the project team to achieve the desired BREEAM Excellent rating.
- Represent the status of early-stage credits following the design team providing necessary evidence; and
- Outline the actions required by the project team to satisfy BREEAM evidence requirements.

To summarise these outcomes, this report includes the following:

- An appraisal of the current development proposals against the BREEAM criteria.
- Identification of the mandatory credits which are essential to be included within the development to achieve the desired rating; and
- Consideration of potential credits that could be targeted subject to additional consideration, investigation, and possibly additional costs.

This report has been prepared by qualified BREEAM Assessors at WSP who are licensed by the BRE to undertake assessments using the BREEAM Non-Domestic Refurbishment and Fit-out 2014.

To demonstrate compliance with the targeted credits as part of the formal design stage and construction stage BREEAM assessments, documentary evidence demonstrating performance is required to be presented to the BREEAM Assessor by the project team. 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 at construction. The cost implications of the assumptions made in this report have not been evaluated as part of this study.

The criteria for achieving a BREEAM certificate can be challenging if overlooked during the design evolution process. The team can access the full scheme documents (technical manual), which are freely available, at:

<http://www.breem.com/RFO2014>

4. ASSESSMENT STRATEGY

4.1. BREEAM PROJECT LIFE CYCLE

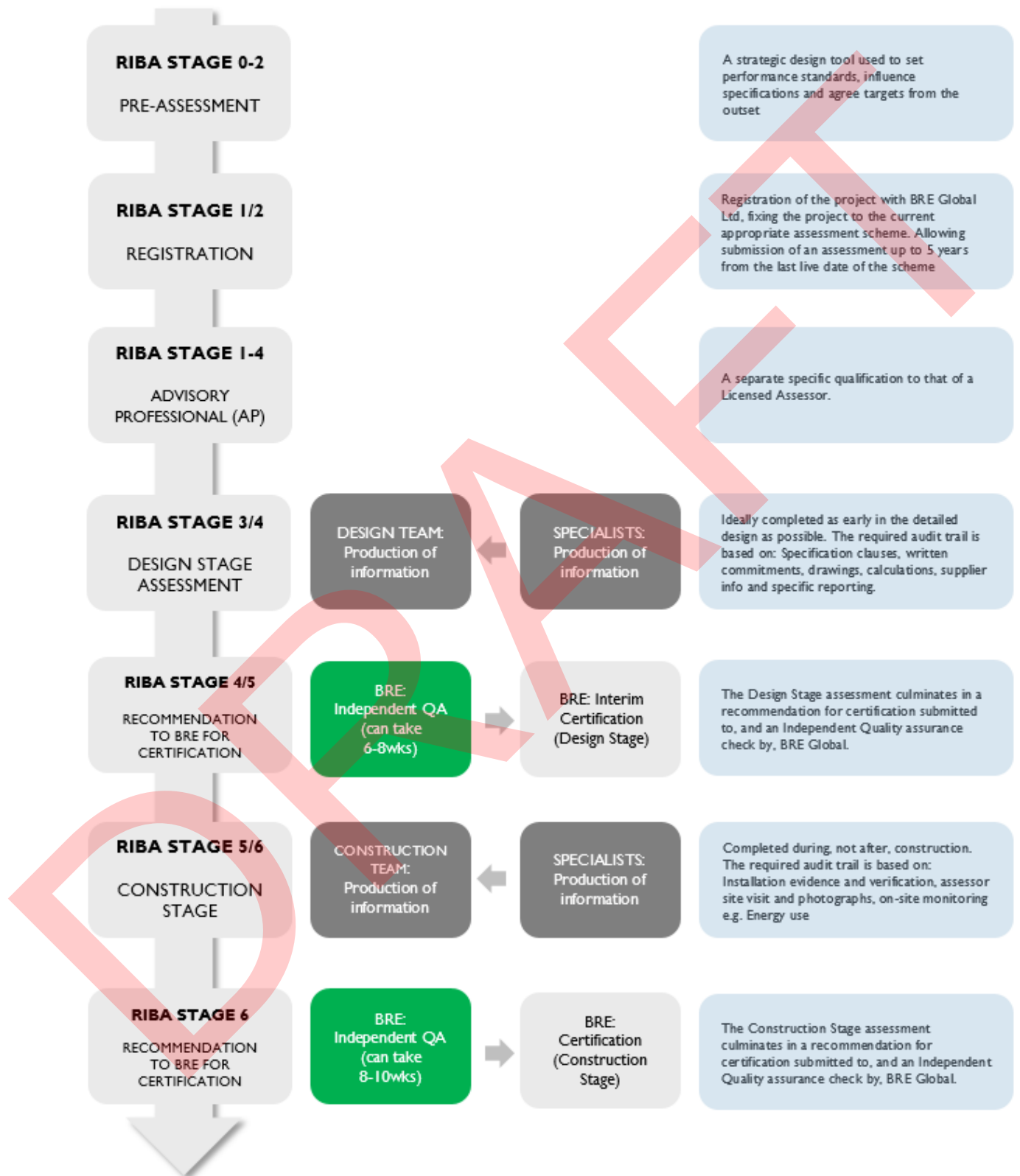
The stages of a BREEAM assessment require as a minimum a Construction Stage assessment in order to receive a final BREEAM certificate. It is strongly recommended that a three-stage assessment process is undertaken to maximise the efficiency of achieving the required rating.

- Pre-Assessment
- Design Stage Assessment
- Construction Stage Assessment

The BREEAM Project Lifecycle diagram shows the full process for a BREEAM assessment.

This report represents the initial stages of the concept design stage BREEAM Assessment whereby the team have identified and agreed on a set of BREEAM performance measures to ensure the overall achievement of the required BREEAM rating is met and is working towards demonstrating compliance.

4.2 BREEAM: PROJECT LIFE CYCLE



5. ROLES AND RESPONSIBILITIES

The BREEAM Assessor and BREEAM Accredited Professional (AP) must act in accordance with their “BREEAM License Agreement” with BRE Global Ltd; the owner, managing body and certification authority for all BREEAM schemes.

The design/ construction team will be required to demonstrate “achievement” of the various BREEAM performance requirements through the presentation of documentary evidence as listed by BRE and conveyed by the Licensed Assessor. This audit material often requires specific responses/ reporting to demonstrate compliance.

During the early stages of assessment, ownership for the various actions and dates for submission will be agreed, which if not met may require a variation to our agreed scope of works.

In accordance with the BREEAM License the Assessor/ BREEAM AP must maintain a position of non-conflict of interest. This means that whilst they can provide guidance to the various design/ construction team members, they cannot be responsible for the delivery of any part of the required audit trail.

Note: It is acceptable that the Assessor/ AP is part of the same organisation as a member or members of the design team who are responsible for information production.

6. BACKGROUND TO BREEAM

BREEAM is a market-focused tool aimed at encouraging significant improvements in the performance of buildings through quantification of a building's full life environmental impacts.

The BREEAM score provides a means of recognising a projects sustainability benefits and so benchmarking it against other buildings. Key benefits of using the methodology include:

- Maximising opportunities to enhance the building's performance during the planning, design and construction phases of new build, refurbishment and fit out projects.
- Specifying environmental requirements during procurement and management of all types of developments.
- Use of an independently verifiable measurement tool for forming part of Environmental Management Systems.
- Providing an independently verifiable sustainability label for marketing and promotional purposes.

6.1. BREEAM SCORING AND RATING

BREEAM ratings are divided into six levels as shown in Table 1. The associated percentage score is achieved based on meeting the requirements of a number of credits that correspond to meet or exceed the rating benchmarks.

Table 1 – BREEAM rating benchmarks

BREEAM Rating	Percentage Required
UNCLASSIFIED	< 30%
PASS	≥ 30%
GOOD	≥ 45%
VERY GOOD	≥ 55%
EXCELLENT	≥ 70%
OUTSTANDING	≥ 85%

6.2. BREEAM CATEGORY WEIGHTINGS

The categories within BREEAM are weighted according to relative importance within the country of assessment through a weighting system derived by BRE Global as shown in Table 2. Within each category there are a different number of credits, therefore, individual credits carry specific percentage weightings, as a percentage of the overall total.

The number of credits available is based on the scoping of appropriate assessment criteria for the project type, location and functions. WSP's assessment tracker (found in **Error! Reference source not found.**) shows the percentage contribution of each targeted credit to highlight that a credit in one section may not carry the same contribution to the score as a credit in another, due to the category weightings.

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

Table 2 - Section Weightings, RFO 2014, Parts 2, 3, 4

Category	Section Weighting
Management	15.31%
Health & Wellbeing	17.36%
Energy	18.51%
Transport	6.25%
Water	7.15%
Materials	16.75%
Waste	8.37%
Land Use & Ecology (Scoped out)	0.00%
Pollution	10.31%
Innovation	10.00%

Note: Energy weighting is subject to the team's review; therefore, scoring scenarios and all other categories' weightings could change.

6.3. MANDATORY REQUIREMENTS

To achieve a BREEAM rating, the minimum percentage score (associated with credits achieved) must be met plus mandatory standards for specific requirements applicable to that rating level must be complied with. These are shown in Table 3.

Table 3 - Mandatory Credits

Credit Ref	Credit	BREEAM Rating/ Minimum Number of Credits				
		Pass	Good	Very Good	Excellent	Outstanding
Man 03	Responsible Construction Practices	-	-	-	One Credit (responsible construction management)	Two Credits (responsible construction management)
Man 04	Commissioning and handover	-	-	-	Criterion 9 (Building User Guide)	Criterion 9 (Building User Guide)
Man 05	Aftercare (N/A for Shell and Core)	-	-	-	Parts 2 and 3 only: One credit (Seasonal commissioning)	Parts 2 and 3 only: One credit (Seasonal commissioning)
Ene 01	Reduction of Energy use and carbon emissions	-	-	-	Parts 1, 2, 3 and 4 (full assessments): Six credits, varies for other assessment types	Parts 1, 2, 3 and 4 (full assessments): Ten credits, varies for other assessment types
Ene 02	Energy Monitoring (first credit)	-	-	Parts 2, 3 and 4: One credit (First sub-metering credit)	Parts 2, 3 and 4: One credit (First sub-metering credit)	Parts 2, 3 and 4: One credit (First sub-metering credit)
Wat 01	Water Consumption	-	One Credit	One Credit	One Credit	Two Credits
Wat 02	Water Monitoring	-	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 construction products	Criterion 1 only (Legal Timber)	Criterion 1 only (Legal Timber)	Criterion 1 only (Legal Timber)	Criterion 1 only (Legal Timber)	Criterion 1 only (Legal Timber)
Wst 01	Construction Waste Management	-	-	-	-	One Credit
Wst 03	Operational Waste	-	-	-	One credit	One Credit

6.4. REQUIREMENTS WITH SPECIFIC ACTION TIMINGS

When targeting some credits, the requirements can include delivery of work ahead of the completion of a specific project stage (RIBA Stage 2) to ensure opportunities for positive sustainability outcomes are not missed by the project team. These are shown in Table 4.

Table 4 – Timing of assessment (key credits)

Credit Ref	Credit	Plan of work				
		Preparation and brief (1)	Concept design (2)	Developed design (3)	Technical design (4)	Construction and handover (5/6)
Man 01	Stakeholder consultation		Consultation		Feedback provided	
Man 01	Sustainability champion (design)	Appointment (BREEAM AP)	Sustainability target agreed			
Man 02	Life cycle cost and service life planning		Elemental life cycle cost (LCC)		Component level LCC appraisal	
Man 03	Sustainability champion (construction)					Appointment and monitoring
Ene 04	Passive design analysis		Passive design analysis and thermal model			
Ene 04	Low or zero-carbon technologies		LZC appraisal			
Tra 05	Travel Plan	Travel Plan				
Mat 03	Sustainable Procurement Plan		Procurement Policy			
Mat 06	Materials efficiency	Whole team engagement	Whole team engagement	Whole team engagement	Whole team engagement	Whole team engagement
Wst 06	Functional adaptability		Adaptability study		Adaptation measures adopted	

7. FURTHER INFORMATION

7.1. REPORT FORMAT

The tables in Appendix A show the BREEAM criteria against which the building is being assessed (office). The credits available for each issue are shown along with a calculated overall percentage score and rating. The scoring has also been undertaken on the BREEAM Non-Domestic Refurbishment and Fit-out 2014 scheme tools.

This allows for a simple analysis of the effect of achieving more or removing any given credit. A summary of the actions has been shown, however, the full requirements for the BREEAM assessment can be viewed within the assessment manual or can be provided upon request.

The tables provide a high-level discussion of performance requirements and agreements. During the next stage of formal assessment, explicit ownership, actions, and timing for production will be shown based on agreement with the team.

7.2. DISCLAIMER

WSP has undertaken the following BREEAM report with input and agreement from the Design Team. All information provided has been accepted in good faith as being accurate and representative of the proposed scheme at the time of review.

The credits and credit requirements are based on the BREEAM Non-Domestic Refurbishment and Fit-out 2014 methodology.

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

7.3. COPYRIGHT

The BREEAM name and logo are registered trademarks of the Building Research Establishment Ltd. Copyright exists on BREEAM and it may not be used or reproduced in any form or for any purpose without the prior written consent of BRE.

Appendix A

BREEAM CREDIT TRACKER

4 Hardman Square Pre-Assessment

This BREEAM credit tracker has been developed following an initial meeting with the project team on the 08/04/2022. The BREEAM UK Non Domestic Refurbishment and Fit-Out scheme document (SD216 2.0 - 2014) must be referred to for the criteria details. During the design evolution, the project team has responsibility to understand the details of the criteria requirements and consider them in the context of the proposed design.

												Cumulative Scores					
												66.16%	77.22%				
BREEAM issue ID	BREEAM Issue title	BREEAM credit title	BREEAM criteria	Part Applicability			Credits available	% Worth (in total for each BREEAM issue)	Mandatory Requirements		Design Stage Scoring		Commentary	Actions	Indicative timeframe	Indicative responsibility	
				Part 2	Part 3	Part 4			Very Good	Excellent	Targeted	Potential					
Management																	
Man 01	Project brief and design	Stakeholder consultation (project delivery)	The design team develop a sustainability brief prior to during RIBA Stage 1 to set out the following: (a) Client requirements (b) Sustainability objectives and targets including target BREEAM rating (c) Timescales and budget; (d) List of consultees and professional appointments required (e) Project constraints Prior to completion of the RIBA Stage 2, the project delivery stakeholders meet to identify and define their roles, responsibilities and contributions for each of the key phases of project; considering the following: (a) End user requirements (b) Aims of the design and design strategy (c) Particular installation and construction requirements/limitations (d) Design and construction risk assessments e.g. CDM, legionella risk assessment (e) Legislative requirements e.g. building control notification, heritage requirements (f) Procurement and supply chain (g) Identifying and measuring project success in line with project brief objectives (h) Occupiers' budget and technical expertise in maintaining any proposed systems (i) Maintainability and adaptability of the proposals (j) Requirements for the production of project and end user documentation (k) Requirements for commissioning, training and aftercare support. The project team demonstrate how the project delivery stakeholder contributions and the outcomes of the consultation process influenced the project at each stage.	✓	✓	✓	1	0.77%			1		The Design Team has confirmed that the requirements for this issue will be fulfilled Information regarding this credit will be sent to the client 1 credit targeted	1) Consultation plan setting out the process and scope of the consultation. 2) Meeting minutes to demonstrate when collaborations began, what was discussed, the defining of roles and responsibilities for each stage, aims, requirements and the outcomes of this process.	RIBA Stage 2	Client	
		Stakeholder consultation (third party)	The design team have covered the minimum consultation content to relevant third party stakeholders prior the completion of RIBA Stage 2. Consultation feedback is given to, and received by all relevant parties by the end of RIBA Stage 4. 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. The consultation exercise used a method carried out by an independent party.	✓	✓	✓	1	0.77%			1		The Design team has confirmed a Consultation Plan will be done 1 credit targeted	1) Consultation plan and reports setting out the process, scope and outcomes of the consultation, as well as the timings of this process. 2) Documentation demonstrating the parties consulted, the topics covered, a summary of the views expressed, how these influenced the design brief, and the feedback given to consultees.	RIBA Stage 2	Client	
		Sustainability champion (design)	A Sustainability Champion has been appointed at RIBA Stage 1 to facilitate the setting and achievement of BREEAM performance targets. The defined BREEAM performance targets between the client and design/project team no later than RIBA Stage 2. The agreed BREEAM performance targets must be demonstrably achieved via the BREEAM assessor's design stage assessment report.	✓	✓	✓	1	0.77%			1		A BREEAM AP has been appointed for stages 1 - 2	1) Appointment letter for the Sustainability Champion defining the scope of their role and responsibilities 2) Meeting minutes confirming the Sustainability Champion attended key design team meetings throughout the design process and the BREEAM requirements and targets discussed. 3) Status/monitoring reports from the Sustainability Champion at key stages.	RIBA Stage 1/2	BREEAM AP	
		Sustainability champion (monitoring progress)	Sustainability Champion (design) criteria has been achieved. A Sustainability Champion is appointed to monitor progress against the agreed BREEAM performance targets throughout the design process and formally report progress to the client and design team. The Sustainability Champion must attend key project/design team meetings and report throughout each RIBA stage.	✓	✓	✓	1	0.77%			1		2 credits targeted	1) Appointment letter for the Sustainability Champion defining the scope of their role and responsibilities 2) Meeting minutes confirming the Sustainability Champion attended key design team meetings throughout the design process and the BREEAM requirements and targets discussed. 3) Status/monitoring reports from the Sustainability Champion at key stages.	RIBA Stage 4	BREEAM AP	
Man 02	Life cycle cost and service life planning	Elemental life cycle cost (LCC)	An outline, entire asset elemental life cycle cost (LCC) plan has been carried out at RIBA Stage 2 in line with 'Standardised method of life cycle costing for construction procurement' PD 156865:20081. The elemental LCC plan: a) An outline LCC plan has been undertaken for the project based on the building's basic structure and envelope, appraising a range of options and based on the life expectancy of the refurbished building, e.g. 20, 30, 50+ years. b) The servicing strategy for the project outlining services component over a 15 -year period, in the form of an 'elemental LCC Plan'. c) A fit-out strategy is developed outlining fit-out options over a 10-year period.	✓	✓	✓	2	1.53%			2		The design team has confirmed that the requirements for this credit will be met. An Elemental LCC report will be completed during RIBA Stage 2. 2 credits targeted	1) A copy of a compliant Elemental LCC report with supporting documentation of analysis of alternative options and the benefits of the chosen option; 2) The fabric and servicing strategy	RIBA Stage 2	Cost Consultant Client	
		Component level LCC Plan	A Component level LCC plan has been developed by the end of RIBA Stage 4 in line with PD 156865:2008 and includes the following component types: Part 1 assessments, including components within scope of works: Envelope, e.g. cladding, windows, and/or roofing Part 2 & 3 assessments including newly specified local and core services: Newly specified local and/or core service equipment, e.g. boiler, air-conditioning, air handling unit, and/or controls etc. Parts 1 – 4, where finishes are within scope of works: Finishes, e.g. walls, partitions, floors and/or ceilings etc. Where external spaces are within scope of works: External spaces, e.g. alternative hard landscaping, boundary protection.	✓	✓	✓	1	0.77%			1		The design team will review this credit further. 1 potential credit	1) A copy of the compliant Component level LCC plan with supporting documentation of analysis. 2) Design drawings / specification of the inclusion of the recommended options identified by the LCC reports. 3) A copy of the maintenance strategy or a formal commitment to produce one in compliance with the requirements and be informed by the LCC.	RIBA Stage 4	Cost Consultant Client	

													Cumulative Scores					
													66.16%	77.22%				
BREEAM issue ID	BREEAM Issue title	BREEAM credit title	BREEAM criteria	Part Applicability			Credits available	% Worth (in total for each BREEAM issue)	Mandatory Requirements		Design Stage Scoring		Commentary	Actions	Indicative timeframe	Indicative responsibility		
				Part 2	Part 3	Part 4			Very Good	Excellent	Targeted	Potential						
		Capital cost reporting	Report the capital cost for the refurbishment/fit-out works in pounds per square metre (£k/m2)	✓	✓	✓	1	0.77%			1		The design team has confirmed that the requirements for this credit will be met. A template letter will be sent to the Design team to confirm the capital cost 1 credit targeted	1) Report with the capital cost for the building in pounds per square metre	RIBA Stage 4	Cost Consultant Client		
Man 03	Responsible construction practices	Pre-requisite	All timber and timber-based products used on the project is 'Legally harvested and traded timber'	✓	✓	✓		0.00%			yes		The design team confirms these credits can be achieved. 5 credits targeted	1) A formal letter of commitment or contractual requirements document confirming the actions that will be undertaken as part of site works.	RIBA Stage 4	Contractor		
		Environmental management	The principal contractor operates an environmental management system (EMS) covering their main operations. i.e. ISO 14001/EMAS or Compliance with BS8555:2003. 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	✓	✓	✓	1	0.77%			1				RIBA Stage 4	Contractor		
		Sustainability Champion (construction)	A Sustainability Champion is appointed to monitor the project to ensure ongoing compliance with the relevant sustainability performance/process criteria, and therefore BREEAM targets, during RIBA Stages 5 and 6. The principal contractors contract includes BREEAM performance targets The BREEAM assessor's final post construction stage assessment report must demonstrate compliance with BREEAM-related performance targets	✓	✓	✓	1	0.77%			1				RIBA Stage 4	Contractor		
		Considerate construction	Using the Considerate Constructors Scheme (CCS) the principal contractor must achieve scheme certification and a CCS score as follows: 1. One credit: a CCS score between 25 and 34 and a score of at least 5 in each of the five sections 2. Two credits: a CCS score between 35 and 39 and a score of at least 7 in each of the five sections Innovation Credit: a CCS score of more than 40 and a score of at least 7 in each of the five sections	✓	✓	✓	2	1.53%		1	1				RIBA Stage 4	Contractor		
		Utility consumption	Responsibility has been assigned to an individuals for monitoring, recording and reporting energy use and water consumption resulting from all on-site refurbishment or fit-out processes. <u>Energy consumption</u> - 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). - Report the total carbon dioxide emissions (total kgCO2/project value) from the construction process <u>Water consumption</u> - 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 - Using the collated data report the total net water consumption (m3), i.e. consumption minus any recycled water use from the construction process	✓	✓	✓	1	0.77%			1				RIBA Stage 4	Contractor		
		Transport of construction materials and waste	Monitor and record data on transport movements and impacts resulting from delivery of the majority of materials to site 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. b. Scope of this monitoring must cover the following as a minimum: - Materials used for core services - Where within scope, ground works and landscaping materials c. Transport of construction waste from the gate to waste disposal processing or recovery centre. Scope must cover the construction waste groups outlined in the project's waste management plan. 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)	✓	✓	✓	1	0.77%			1				RIBA Stage 4	Contractor		
		Commissioning and testing schedule and responsibilities	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 buildings services, building services control systems and changes to the building fabric which will affect building performance. All commissioning activities are carried out in accordance with current Building Regulations, BSRIA and CIBSE guidelines and/or other appropriate standards, where applicable. 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. The principal contractor accounts for the commissioning and testing programme, responsibilities and criteria within the main programme of works.	✓	✓	✓	1	0.77%			1		The design team confirms this credit can be achieved. 1 credit targeted	1) Specification or written confirmation confirming commissioning standards, responsibilities and schedule.	RIBA Stage 4	MEP Engineer		

													Cumulative Scores					
													66.16%	77.22%				
BREEAM issue ID	BREEAM Issue title	BREEAM credit title	BREEAM criteria	Part Applicability			Credits available	% Worth (in total for each BREEAM issue)	Mandatory Requirements		Design Stage Scoring		Commentary	Actions	Indicative timeframe	Indicative responsibility		
				Part 2	Part 3	Part 4			Very Good	Excellent	Targeted	Potential						
Man 04	Commissioning and handover	Commissioning building services	Commissioning and testing schedule and responsibilities credit is achieved. 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 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;	✓	✓	✓	1	0.77%			1		The design team confirms this credit can be achieved. 1 credit targeted	1) Specification or written confirmation confirming commissioning standards, responsibilities and schedule.	RIBA Stage 4	MEP Engineer		
		Handover	A Building User Guide (BUG) is developed prior to handover for distribution to the building occupiers and premises managers. 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: - The design intent of refurbishment/fit-out works - The available aftercare provision and aftercare team main contact(s), including any scheduled seasonal commissioning and post occupancy evaluation - Introduction to, and demonstration of, installed systems and features, particularly BMS controls and their interfaces, - Introduction to the Building User Guide and other relevant building documentation. - Maintenance requirements, including any maintenance contracts and regimes in place.	✓	✓	✓	1	0.77%		BUG	1		The design team confirms this credit can be achieved. 1 credit targeted	1) Specification or written confirmation confirming that a BREEAM compliant building user guide will be produced and handed over.	RIBA Stage 4	Client Contractor		
Man 05	Aftercare	Aftercare support	There will be operational infrastructure and resources in place to provide aftercare support to the building occupiers, which meets the following as a minimum: a) A meeting programmed to occur between the aftercare team/individual and the building occupier/management to: i. Introduce the aftercare team or individual to the aftercare support available ii. Present key information about features of the refurbished building b) On-site facilities management training c) Initial aftercare support provision for at least the first month of building occupation d) Longer term aftercare support provision for occupants for at least the first 12 months from occupation There will be operational infrastructure and resources in place to co-ordinate the collection and monitoring of energy and water consumption data for a minimum of 12 months. If discrepancies between actual and predicted performance are identified, commitments are required to address the discrepancies.	✓	✓	✓	1	0.77%			1		The design team confirms this credit can be achieved. 1 credit targeted	1) Specification or written confirmation confirming that a the provision of BREEAM compliant Aftercare will be provided.	RIBA Stage 4	Client Contractor		
		Seasonal commissioning	Seasonal commissioning activities must be completed over a minimum 12-month period, once the building becomes substantially occupied. Complex systems - Specialist Commissioning Manager: i. Testing of all building services under full load conditions ii. Where applicable, testing should also be carried out during periods of extreme (high or low) occupancy. iii. Interviews with building occupants to identify problems or concerns regarding the effectiveness of the systems. iv. Re-commissioning of systems, and incorporating any revisions in operating procedures into the operations and maintenance (O&M) manuals.	✓	✓		1	0.77%		1	1		The design team confirms this credit can be achieved. 1 credit targeted	1) Specification or written confirmation confirming that a the provision of BREEAM compliant Seasonal commissioning will be provided.	RIBA Stage 4	Contractor		
		Post occupancy evaluation	The client or building occupier makes a commitment to carry out a post occupancy evaluation (POE) exercise one year after initial building occupation. This is done to gain in-use performance feedback from building users to inform operational processes, including re-commissioning activities, and maintain or improve productivity, health, safety and comfort. The POE is carried out by an independent party and needs to cover: a) A review of the design intent and construction process b) Feedback from a wide range of building users including facilities management on the design and environmental conditions of the building covering c) Sustainability performance The client or building occupier makes a commitment to carry out the appropriate dissemination of information on the building's post-occupancy performance.	✓	✓	✓	1	0.77%			1		The design team confirms this credit can be achieved. 1 credit targeted	1) Specification or written confirmation confirming that a the provision of BREEAM compliant post-occupancy evaluation will be provided.	RIBA Stage 4	Client Contractor		
Health and Wellbeing																		
		Glare control	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). 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.			✓	1	0.91%			1		The design team has confirmed that the requirements for this credit will be met. BREEAM AP will send information to the architects regarding requirements to comply with this credit. 1 credit targeted	1) Specialist report / modelling results demonstrating that glare has been designed out. 2) Specification or manufacturer literature for the blinds 3) Drawings with marked up locations of blinds	RIBA Stage 3	Client Architect		

												Cumulative Scores					
												66.16%	77.22%				
BREEAM issue ID	BREEAM Issue title	BREEAM credit title	BREEAM criteria	Part Applicability			Credits available	% Worth (in total for each BREEAM issue)	Mandatory Requirements		Design Stage Scoring		Commentary	Actions	Indicative timeframe	Indicative responsibility	
				Part 2	Part 3	Part 4			Very Good	Excellent	Targeted	Potential					
Hea 01	Visual comfort	Daylighting	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: Higher education - occupied spaces 2% ADF for 30% / 45% / 60% area 4. Two credits where daylighting, averaged over all relevant spaces, has improved 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; 5. One credit where daylighting, averaged over all relevant spaces, has improved 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. Note: The improvement in daylighting provision is calculated using the BREEAM Hea 01 Calculator tool based upon either the increase in glazing area, transmittance, illuminance or percentage daylight factor.			✓	3	2.74%			0	0	The design team has confirmed that the requirements is not achievable	1) Specialist daylight report / calculation / modelling results demonstrating that the daylight values can be achieved in all relevant areas. 2) GA drawings demonstrating the designs, arrangement and location of windows modelled for daylighting.	RIBA Stage 3	Client Architect	
		View out	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. 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. 8.The window/opening must be ≥ 20% of the surrounding wall area (refer to Hea 01 Visual comfort 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 . 9. In addition, the building type criteria in Table 15 are applicable to view out criteria.			✓	2	1.83%			0	0	The design team has confirmed that the requirements is not achievable	1) Drawings (and, if required, supporting calculations) demonstrating that the relevant floor areas are within the required distances. 2) Drawings demonstrating that the windows/openings account for 20% of the surrounding wall area.	RIBA Stage 3	Client Architect	
		Internal and external lighting levels, zoning and control	Internal Lighting - All fluorescent and compact fluorescent lamps are fitted with high frequency ballasts. - Internal lighting in all relevant areas of the building is designed provide illuminance levels in accordance with the SLL Code for Lighting 2012 and any other relevant industry standard. - 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. External lighting 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. Zoning and occupant control Internal lighting is zoned to allow for occupant control in accordance with the specific criteria for relevant areas present within the building:			✓	1	0.91%			1		The design team to review the requirements for External Lighting. 1 credit targeted subject to teams' review.	1) Specification confirming compliance with the relevant CIBSE, BS and zoning requirements. 2) Drawings confirming the zoning and control of internal and external lighting.	RIBA Stage 4	MEP Engineer	
		Indoor air quality (IAQ) plan	An indoor air quality (IAQ) 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.	✓	✓	✓	1	0.91%			1		The design team has confirmed that the requirements for this credit will be met. 1 credit targeted	1) Copy of a BREEAM compliant Indoor Air Quality plan.	RIBA Stage 3	Client MEP Engineer / Air Quality Consultant	
		Ventilation	Provide fresh air into the building in accordance with the criteria of the relevant standard for ventilation. 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. Where present, HVAC systems must incorporate suitable filtration to minimise external air pollution, as defined in BS EN 13779:2007 Annex A3. Areas of the building subject to large and unpredictable or variable occupancy patterns have carbon dioxide (CO2) or air quality sensors specified.	✓	✓		1	0.91%			0	0	The design team has confirmed that the requirements is not achievable	1) Design drawings demonstrating the ventilation pathway distances are to be achieved, or specification confirming these are designed in accordance with BS EN 13779:2007 Annex A2 2) Where applicable, specification confirming that building areas subject to large and unpredictable or variable occupancy patterns have carbon dioxide or air quality sensors	RIBA Stage 4	MEP Engineer	
		Volatile organic compound (VOC) emission levels (products)	All decorative paints and varnishes specified meet the criteria in Table 20 At least five of the 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).			✓	1	0.91%			1		BREEAM AP will send information regarding how to achieve this credit. 1 credit targeted	1) Copy of a BREEAM compliant indoor air quality plan (as above) 2) Specification confirming products are specified to meet the BREEAM VOC levels and testing requirements	RIBA Stage 4	Air Quality Specialist Architect	

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				Part 2	Part 3	Part 4			Very Good	Excellent	Targeted	Potential				
										66.16%	77.22%					
Hea 02	Indoor air quality	Volatile organic compound (VOC) emission levels (post construction)	The formaldehyde concentration level is measured post construction (but pre-occupancy) and is found to be less than or equal to 100µg/m3 averaged over 30 minutes The total volatile organic compound (TVOC) concentration level is measured post construction (but pre-occupancy) and found to be less than 300µg/m3 over 8 hours Where VOC and formaldehyde levels are found to exceed the limits the project team confirms the measures that have, or will be taken, in accordance with the IAQ plan, to reduce the levels to within these limits, including re-measurement. The testing and measurement of the above pollutants are in accordance with the following standards where relevant: a) BS ISO 16000-4: 2011, b) BS ISO 16000-6: 2011, c) BS EN ISO 16017-2: 2003, d) BS ISO 16000-3: 20116 The measured concentration levels of formaldehyde (µg/m³) and TVOC (µg/m³) are reported, via the BREEAM Assessment Scoring and Reporting Tool.			✓	1	0.91%				1	Contractor will determine if the credit can be met. 1 potential credit.	1) Copy of a BREEAM compliant indoor air quality plan (as above) 2) Written confirmation confirming the commitment to undertake pre-completion testing in line with the BREEAM requirements.	RIBA Stage 4	Contractor
		Adaptability - Potential for natural ventilation	The building ventilation strategy is designed to be flexible and adaptable to potential building occupant needs and climatic scenarios. Occupied spaces are designed to be capable of providing fresh air entirely via a natural ventilation strategy. The following are methods deemed to satisfy this criterion: - Room depths are designed in accordance with CIBSE AM10 (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 - The design demonstrates that the natural ventilation strategy provides adequate cross flow of air to maintain the required thermal comfort conditions and ventilation rates. This is demonstrated using the requirements of CIBSE AM10. For fit-out projects (Part 3 assessments), local services are designed to provide fresh air via a natural ventilation strategy and are appropriately designed according to the room depth in accordance with CIBSE AM10. For Part 3 assessments , local services are designed to provide fresh air via a natural ventilation strategy and are appropriately designed according to the room depth in accordance with CIBSE AM10. The natural ventilation strategy is capable of providing at least two levels of user-control on the supply of fresh air to the occupied space	✓	✓		1	0.91%			0	0	The design team has confirmed that the requirements is not achievable	1) Specification / report to confirm the building are designed to be capable of providing fresh air entirely via a natural ventilation strategy in accordance with the accepted methods and standards.	RIBA Stage 4	MEP Engineer Architect
Hea 04	Thermal comfort	Thermal modelling	Thermal modelling has been carried out using software in accordance with CIBSE AM11. The software used to carry out the simulation at the detailed design stage provides full dynamic thermal analysis. The modelling demonstrates that summer and 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 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 buildings. Where undertaking a Part 4 assessment 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 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.	✓	✓	✓	1	0.91%			1		The design team has confirmed that the requirements for this credit will be met and the Thermal Model will be done during Stage 3. 1 credit targeted	1) CIBSE AM 11 full dynamic thermal comfort study results confirming that the building complies with the above credit but also can accommodate the expected effects of climate change.	RIBA Stage 3	Client MEP Engineer
		Adaptability - for a projected climate change scenario	All thermal modelling criteria has been achieved The thermal modelling demonstrates that the relevant requirements set out above are achieved for a projected climate change environment. Where thermal comfort criteria are not met for the projected climate change environment, the project team demonstrates how the building has been adapted, or designed to be easily adapted in future using passive design solutions. For air conditioned buildings, the PMV and PPD indices based on the above modelling are reported.	✓			1	0.91%			1		The design team has confirmed that the requirements for this credit will be met. 1 credit targeted	1) CIBSE AM 11 full dynamic thermal comfort study results confirming that the building complies with the above credit but also can accommodate the expected effects of climate change.	RIBA Stage 3	Client MEP Engineer
		Thermal zoning and controls	The thermal modelling analysis has informed the temperature control strategy for the building and its users. The strategy for proposed heating/cooling system(s) demonstrates that it has addressed the following: a. Zones within the building and how the building services could efficiently and appropriately heat or cool these areas. b. Any new local cooling or heating services (or changes to existing services) are designed to ensure they do not conflict with core services c. The degree of occupant control required for these zones, based on discussions with the end user d. How the proposed systems will interact with each other 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.	✓	✓		1	0.91%			1		The design team has confirmed that the requirements for this credit will be met. 1 credit targeted	1) Specification confirming the thermal controls and their location/accessibility to building users. 2) Written confirmation that the amount of control provided is as a result of discussions with the end user. 3) Drawings showing the thermal zones and associated controls	RIBA Stage 4	MEP Engineer

														Cumulative Scores					
														66.16%	77.22%				
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				Part 2	Part 3	Part 4			Very Good	Excellent	Targeted	Potential							
Hea 05	Acoustic performance		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. Where undertaking a partial refurbishment or fit-out, the performance standards and testing requirements defined in the checklist and tables section for the following principles are applicable to each assessment part: b. Part 2: criteria for indoor ambient noise levels only c. Part 3: criteria for sound insulation and indoor ambient noise levels	✓	✓	✓	2	1.83%			2		The design team has confirmed that the requirements for this credit will be met. 3 credits targeted	1) Acoustician's report confirming early design advice to meet the required performance standards, and the design is capable achieving the relevant acoustic performance criteria. 2) Written confirmation or specification from the design team confirming the recommendations made by the Acoustician will be implemented to achieved the performance standards. 3) A copy of the Acoustician's CV to confirm they meet the BRE's definition of a Suitably Qualified Acoustician	RIBA Stage 4	Acoustician			
		Reverberation times	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.			✓	1	0.91%			1								
Hea 06	Safety and security	Security of site and building	1. A Suitably Qualified Security Specialist (SQSS) conducts an evidence based Security Needs Assessment (SNA) during or prior to Concept Design (RIBA Stage 2 or equivalent), see compliance note where the refurbishment or fit-out zone comprises part of a larger building. 2.The SQSS develops a set of recommendations or solutions during or prior to Concept Design (RIBA Stage 2 or equivalent). These recommendations or solutions aim to ensure that the design of buildings, public and private car parks and public or amenity space are planned, designed and specified to address the issues identified in the preceding SNA. 3.The recommendations or solutions proposed by the SQSS are implemented (see CN5.2. Any deviation from those recommendations or solutions will need to be justified, documented and agreed in advance with a suitably qualified security specialist.			✓	1	0.91%			1		A SQSS has been appointed. The design team has confirmed that the requirements for this credit will be met. 1 credit targeted	1) SQSS Report and Recommendations 2) Drawings demonstrating implementation of ALO recommendations.	RIBA Stage 2	Client SQSS			
Energy																			
Ene 01	Reduction of energy use and carbon emissions	Whole building energy model	Project can demonstrate compliance with a whole building energy model (Max fifteen credits) OR elemental level energy model (Max twelve credits) Two additional credits are available for historic buildings dependant on scores achieved in the whole building energy model/elemental level energy model and if a set list of requirements is met Option 1: Up to fifteen credits - Whole building energy model 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. Option 2: Up to twelve credits - Elemental level energy model For projects where the scope of work is limited to a single or multiple assessment parts (from parts 1, 2, 3 and 4) such as partial or minor refurbishment projects and fit-out projects. This option can, however, be used by projects undertaking a full refurbishment (all assessment parts). Note: The credits available for option 2 are dependent upon the applicable assessment part and building type as defined in the BREEAM Refurbishment and Fit-out reporting tool. However irrespective of the building type and assessment scope, it is always possible to score up to 100% of the credits available to each project.	✓	✓	✓	15	11.57%	6 credits (for part 1,2,3 and 4 assessment parts)		0	6	Option 1 If option 1 is chosen, preliminary energy calculation is required to confirm how many credits can be targeted. Please note that Excellent rating requires 6 credits to be achieved as a minimum. Option 2 If option 2 is chosen, the team is required to calculate the energy score using the BREEAM Refurbishment and Fit-out energy model for the applicable assessment parts to determine the number of credits awarded. Excellent rating will require a minimum of 36% of available credits to be achieved. Note: The credits available for option 2 are dependent upon the applicable assessment part and building type as defined in the BREEAM Refurbishment and Fit-out reporting tool. However irrespective of the building type and assessment scope, it is always possible to score up to 100% of the credits available to each project. TBC - Further clarification from the team is required.	1) As-designed BRUKL Input (.inp) and Output (pdf) report for both the existing and proposed building. 2) Details of the Energy Assessor's Accreditations	RIBA Stage 4	MEP Engineer Accredited Energy Assessor			
Ene 02	Energy monitoring	Sub-metering of major energy consuming systems	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. 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 (e.g. BMS) The end energy consuming uses are identifiable to the building users, for example through labelling or data outputs.	✓	✓	✓	1	0.77%	1 (pts 2, 3, 4)	1 (pts 2, 3, 4)	1		The design team will have to review the credit requirements further. 2 credits targeted subject to teams' review.	1) Specification / metering schematic / drawings confirming metering of relevant systems. 2) Written confirmation of the systems that have been metered using a pulsed output meter.	RIBA Stage 4	MEP Engineer			
		Sub-metering of high energy load and tenancy areas	An accessible energy monitoring and management system is 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.	✓	✓		1	0.77%			1								
Ene 03	External lighting		The building has been designed to operate without the need for external lighting (including building, signs and at entrances). OR Where the building does have external lighting: - The average initial luminous efficacy of the external light fittings within the construction zone is not less than 60 luminaire lumens per circuit Watt. - All external light fittings are automatically controlled for prevention of operation during daylight hours and presence detection in areas of intermittent pedestrian traffic.	✓	✓		1	0.77%			1		The design team has confirmed that the requirements for this credit will be met. 1 credit targeted	1) Specification confirming compliance with the relevant energy efficient lighting and lighting control criteria. 2) Drawings showing the extent of the external lighting and the type of fittings. 3) Manufacturers literature/datasheets for the specified external light fittings (if known at this stage).	RIBA Stage 4	n/a			
		Passive design analysis	The first credit within issue Hea 04 Thermal comfort has been achieved. The project team carries out an passive design analysis of the proposed building design to influence decisions made during RIBA Stage 2 and identify opportunities for the implementation of passive design solutions. The building implements passive design measures in line with the passive design analysis and provides a meaningful reduction in total energy demand.	✓	✓		1	0.77%			1		The design team has confirmed that the requirements for this credit will be met. 1 credit targeted	1) A copy of the passive design analysis report 2) Drawings / specifications demonstrating the inclusion of any passive design measures resulting from the findings of the passive design analysis. 3) Calculations confirming the meaningful reduction of the total heating, cooling, mechanical ventilation and lighting loads and energy consumption in line with the findings of the passive design analysis as a result of implementing passive design measures.	RIBA Stage 2	MEP Engineer			

													Cumulative Scores					
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BREEAM issue ID	BREEAM Issue title	BREEAM credit title	BREEAM criteria	Part Applicability			Credits available	% Worth (in total for each BREEAM issue)	Mandatory Requirements		Design Stage Scoring		Commentary	Actions	Indicative timeframe	Indicative responsibility		
				Part 2	Part 3	Part 4			Very Good	Excellent	Targeted	Potential						
Ene 04	Low carbon design	Free cooling	The passive design analysis credit is achieved. The passive design analysis carried out includes an analysis of free cooling and identifies opportunities for the implementation of free cooling solutions. The building uses ANY of the free cooling strategies listed in the BREEAM manual to reduce the cooling energy demand, i.e. it does not use active cooling.	✓			1	0.77%			0	0	The design team has confirmed that the requirements is not achievable	1) A copy of the specialist report confirming the outcomes of the dynamic simulation model to demonstrate the feasibility of a free cooling strategy meeting the requirements. 2) Drawings / specification confirming the inclusion of the free cooling strategy measures.	RIBA Stage 2	MEP Engineer		
		Low zero carbon feasibility study	A feasibility study has been carried out by the completion of the RIBA Stage 2 by an energy specialist to establish the most appropriate recognised local low or zero carbon (LZC) energy source for the building. A local LZC technology has been specified for the development in line with the recommendations of this feasibility study and provides a meaningful reduction in regulated carbon dioxide (CO2) emissions.	✓			1	0.77%			1		The design team has confirmed that the requirements for this credit will be met. 1 credit targeted	1) BREEAM compliant LZC feasibility study. 2) BRUKL Output report for designed and standard case building and associated calculations to demonstrate the reduction in CO2 emissions. 3) Drawings / specifications demonstrating the inclusion of the recommended LZC technology.	RIBA Stage 2	MEP Engineer		
Ene 06	Energy efficient transportation systems	Energy Efficient features	For each newly specified lift, the following three energy efficient features are specified and for existing lifts , at least two of the following energy efficient features are specified: a. The lifts operate in a standby condition during off-peak periods. b. The lift car lighting and display lighting provides an average lamp efficacy, (across all fittings in the car) of > 55 lamp lumens/circuit Watt. c. The lift uses a drive controller capable of variable speed, variable-voltage, and variable-frequency (VVVF) control of the drive motor. Where the use of regenerative drives is demonstrated to save energy, they are specified.	✓	✓		3	2.31%			3		The design team has confirmed that the requirements for this credit will be met. 3 credits targeted	1) Specification confirming at least three energy efficient features of the specified lift. 2) Manufacturer datasheet for the specified lift demonstrating the energy efficient features.	RIBA stage 3	VT Engineer		
Transport																		
Transport Section scoped out for a part 2/3 only without a change of use																		
Tra 01	Public transport solutions	Accessibility Index	1. The public transport Accessibility Index (AI) for the assessed building is calculated and BREEAM credits are awarded according to the building type. For Accessibility Index benchmarks see Table - 34 in the Checklists and tables section. 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). Up to three credits - Alternative transport measures 3.Where alternative transport measures are provided, credits can be awarded based upon the number of measures implemented			✓	3	2.68%			1		The design team has confirmed that the requirements for this credit will be met. 1 credit targeted	1) Location map marked-up to confirm: a. public transport nodes b. safe pedestrian walking routes 2) Transport timetables for all relevant bus and train services at the identified nodes.	RIBA Stage 3	Architect Client		
Tra 02	Proximity to amenities		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	0.89%			1		The design team has confirmed that the requirements for this credit will be met. 1 credit targeted	1) Location map marked-up to confirm location and safe pedestrian routes and distances (500m) to at least TWO of the THREE following amenities: a. food outlet b. cash machine c. Access to a recreation/leisure facility for fitness/sports	RIBA Stage 3	Architect Client		
Tra 03	Cyclist facilities	Cycle storage	1. Compliant cycle storage spaces that meet the minimum levels set out in Table - 38 are installed.			✓	1	0.89%			0	0	The design team has confirmed that the requirements is not achievable	1) Design plan confirming location and number of cycle spaces. 2) Manufacturer datasheet for cycle racks.	RIBA Stage 3	Architect Client		
		Cyclist facilities	2. Criterion 1 has been achieved. 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 .			✓	1	0.89%			0	0		3) Written confirmation of actual or nominal building occupancy - Nominal numbers can be calculated based on calculation ratios provided in the BREEAM technical manual. 4) Specification / drawings to confirm the security and lighting standards comply with requirements.	RIBA Stage 3	Architect Client		
Tra 05	Travel plan		1.A travel plan has been developed as part of the feasibility and design stages. 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 requirements in the BREEAM manual 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. 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.			✓	1	0.89%			1		The design team has confirmed that the requirements for this credit will be met. The design team will confirm whether a new travel Plan has been developed. 1 credit targeted	1) A copy of the Travel Plan for the building. 2) Written confirmation and/or drawings demonstrating the measures outlined in the plan will be implemented.	RIBA stage 1/2	Client Transport Consultant		
Water																		
Wat 01	Water consumption		Up to five credits where evidence provided demonstrates that the specification includes taps, urinals, WCs and showers that consume less potable water in use than standard specifications for the same type of fittings. Credits are awarded based on the following improvement over the notional baseline: - One credit - 12.5% improvement - Two credits - 25% improvement - Three credits - 40% improvement - Four credits - 50% improvement - Five credits - 55% improvement The calculations is based upon the following sanitary fittings: a) WCs; b) Urinals; c) Taps; d) Showers; e) Baths; f) Dishwashers; g) Washing machine; h) Kitchen pre-rinse nozzles	✓	✓	✓	5	4.47%	1	1	3		The design team has confirmed that the requirements for this credit will be met. 3 credits targeted	1) Specification / sanitary schedule confirming number of fittings and water efficiency figures for the following: a) WCs b) Urinals c) Taps d) Showers e) Baths f) Dishwashers g) Washing machines 2) Manufacturer datasheet confirming the water efficiency figures in the specification can be delivered.	RIBA Stage 4	Architect MEP Engineer		

													Cumulative Scores					
													66.16%	77.22%				
BREEAM issue ID	BREEAM Issue title	BREEAM credit title	BREEAM criteria	Part Applicability			Credits available	% Worth (in total for each BREEAM issue)	Mandatory Requirements		Design Stage Scoring		Commentary	Actions	Indicative timeframe	Indicative responsibility		
				Part 2	Part 3	Part 4			Very Good	Excellent	Targeted	Potential						
Wat 02	Water Monitoring		One credit where evidence provided demonstrates that a water meter with a pulsed output will be installed on the mains supply to each building/unit. The water consuming plant or areas consuming 10% or more of the building's water use need to be fitted with a pulsed sub meter or have water monitoring equipment integral to the plant or area. If the refurbishment zone is within a site that has an existing BMS, managed by the same occupier/owner, the pulsed/digital water meters must be connected to the existing BMS	✓	✓	✓	1	0.89%	Criterio n 1 (part 2)	Criterio n 1 (part 2)	1		The design team has confirmed that the requirements for this credit will be met. 1 credit targeted	1) Specification confirming the provision of a water meter and its connection to BMS. 2) Design plan confirming location of water meter and BMS display. 3) Written confirmation whether water consuming plant or areas consume 10% or more of the building's water use.	RIBA Stage 4	MEP Engineer		
Wat 03	Water Leak detection	Leak Detection	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.	✓			1	0.89%				1	The Design Team is to review this issue further. 1 potential credit	1) Specification confirming the inclusion of the leak detection system and its capabilities as listed in the BREEAM Criteria column.	RIBA Stage 4	MEP Engineer		
		Flow Control Devices	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).	✓	✓	✓	1	0.89%			1		The Design Team has confirmed that the requirements for this credit will be met. 1 credit targeted	1) Specification confirming the inclusion of flow control devices. 2) Design plan / schematic confirming location of solenoid valves and PIRs to WC areas.	RIBA Stage 4	MEP Engineer		
Materials																		
Mat 01	Life cycle impacts	Project lifecycle assessment study	OPTION 2 - Up to four credits out of the six available credits Robust environmental performance information has been collected for newly specified materials or where materials are retained in situ for the following elements: a) Heat source, space heating, air-conditioning and ventilation b) Communication, security and control systems c) Electrical installations d) Fire and lightning protection e) Lift and conveyor installations/systems f) Water and waste installations g) Sanitary installations Credits are awarded based upon the percentage of available points achieved. The total number of points achieved is based on the percentage of each element that has been: - reused in situ - reused in situ with minor repairs - specified with robust environmental performance information.	✓	✓	✓	6	7.73%			4		The Design Team has confirmed that the requirements for this credit will be met. 4 credits targeted	1) Report/Minutes confirming the proportion of materials which will be reused. 2) Completed Mat 01 Calculator tool.	RIBA Stage 4	Architect MEP Engineer		
Mat 03	Responsible sourcing of materials	Pre-requisite	All timber and timber based products used on the project is 'Legally harvested and traded timber'	✓	✓	✓	yes		Criterio n 1	Criterio n 1	yes		The Client is to provide confirmation that the requirements for this issue will be fulfilled by the contractor. Pre-requisite targeted	1) Drawings/specification confirming material build up of elements.	RIBA Stage 4	Client Contractor		
		Sustainable procurement plan	The principal contractor sources materials for the project in accordance with a documented sustainable procurement plan	✓	✓	✓	1	1.29%			1		The Client is to provide confirmation that the requirements for this issue will be fulfilled by the contractor. 1 credit targeted	2) Completed Mat 3 template table confirming the following: - Breakdown of element - Supplier details and certification type (e.g. ISO14001) - Volume of material	RIBA Stage 4	Client Contractor		
		Responsible sourcing of materials (RSM)	Up to three credits of the available RSM credits can be awarded where the applicable building materials are responsibly sourced in accordance with the BREEAM methodology. Credits are awarded based on the following % points achieved: - Three credits - 54% of available points achieved - Two credits - 36% - One credit - 18%	✓	✓	✓	3	3.87%			2		The Client is to provide confirmation that the requirements for this issue will be fulfilled by the contractor. WSP MEP has confirmed that the requirements for this credit will be met. 2 credits targeted	3) Specification confirming that all timber will be sourced in accordance with the UK Government's Timber Procurement Policy. 4) A copy of a BREEAM compliant Sustainability Procurement Plan	RIBA Stage 4	Architect Contractor Client		
Mat 04	Insulation	Embodied impact	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. The Insulation Index for the building fabric and services insulation is the same as or greater than 2.5. Therefore at least 50% of the insulation must be A+ rated, with the remaining 50% to be at least A rated.	✓	✓	✓	1	1.29%			1		The Design Team has confirmed that the requirements for this credit will be met. 1 credit targeted	1) Drawings/specification confirming material build up of insulation elements. 2) Completed Mat 4 template table confirming the following for each material specification: a. area (m²) b. thickness (mm) c. thermal conductivity (W/m.k) d. green guide rating	RIBA Stage 4	Architect MEP Engineer		

												Cumulative Scores					
												66.16%	77.22%				
BREEAM issue ID	BREEAM Issue title	BREEAM credit title	BREEAM criteria	Part Applicability			Credits available	% Worth (in total for each BREEAM issue)	Mandatory Requirements		Design Stage Scoring		Commentary	Actions	Indicative timeframe	Indicative responsibility	
				Part 2	Part 3	Part 4			Very Good	Excellent	Targeted	Potential					
Mat 05	Designing for durability and resilience	Protecting vulnerable parts of the building from damage and material degradation	Protecting vulnerable parts of the building from damage. The building incorporates suitable durability and protection measures or designed features/solutions to prevent damage to vulnerable parts of the internal and external building and landscaping elements; such as: - Bollards/barriers/raised kerbs to delivery and vehicle drop-off areas - Corridor walls specified to Severe Duty (SD) as per BS 5234-21 - Protection rails to walls of corridors - Kick plates/impact protection (from trolleys etc.) on doors - Hard-wearing and easily washable floor finishes in heavily used circulation areas (i.e. main entrance, corridors, public areas etc.) Protecting exposed parts of the building from material degradation The relevant building elements incorporate appropriate design and specification measures to limit material degradation due to environmental factors Existing building elements, have been assessed to identify impacts of material degradation effects including an assessment to grade the severity of any degradation effects. Design measures have been developed to repair and protect existing elements according to the severity of any degradation affects, to limit degradation. 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			✓	1	1.29%			1		The Design Team has confirmed that the requirements for this credit will be met. BREEAM AP will send templates to confirm compliance with the requirements. 1 credit targeted	1) Design plan marked-up to confirm internally and externally: a. areas of vulnerability b. protection from the effects of high pedestrian traffic c. protection against any internal vehicular/ trolley movement d. protection against or prevention from any potential vehicular collision where vehicular parking and manoeuvring occurs. 2) Completed Mat 05 proforma detailing design measures to protect the building from environmental degradation	RIBA Stage 4	Architect	
Mat 06	Material efficiency		Opportunities have been identified, and appropriate measures investigated and implemented, to optimise the use of materials in building design, procurement, construction, maintenance and end of life. The above is carried out by the design/construction team in consultation with the relevant parties at each of the following RIBA stages: a. Preparation and Brief b. Concept Design c. Developed Design d. Technical Design e. Construction.	✓	✓	✓	1	1.29%			1		WSP MEP has confirmed that the requirements for this credit will be met. BREEAM AP will send information regarding requirements to comply with the credit. 1 credit targeted	1) Material efficiency design notes / report revisions for each key RIBA stage reached to date, identifying opportunities for and appropriate measures taken to optimise the use of materials in building design, procurement, construction, maintenance and end of life. 2) Supporting documentary evidence of implementing measures for optimising the use of materials (e.g. specifications, drawings, etc...)	RIBA Stage 1/2	Architect MEP Engineer	
Waste																	
Wst 01	Project waste management	Pre-refurbishment audit	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 audit should be carried out prior to strip-out or demolition works, be referenced in the resource management plan and cover: d. Identification and quantification of the key materials where present on the project 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.	✓	✓	✓	1	0.84%			1		The Design Team has confirmed that the requirements for this credit will be met. 1 credit targeted	1) A copy of a compliant pre-refurbishment audit. 2) Completed Wst01 Proforma identifying all material types present prior to strip out and confirmation as to whether they will be re-used or recycled 3) Confirmation of all materials which are unable to be reused due to contamination (asbestos) 4) Written confirmation that the contractor will meet the resource efficiency and diversion from landfill targets 5) Written commitment to produce a BREEAM compliant Resource Management Plan / Site Waste Management Plan	RIBA Stage 3	Client Contractor	
		Reuse and direct recycling of materials	Where waste material types detailed in the BREEAM manual are either directly re-used on-site or off-site or are sent back to the manufacturer for closed loop recycling Credits are awarded based on the % of available points achieved for the waste material types detailed in Table - 64, that are present on the project: - Two credits - 75% - One credit - 50%	✓	✓	✓	2	1.67%				1	The Design Team will review this credit further 1 potential credit		RIBA Stage 4	Client Contractor	
		Resource efficiency	Develop and implement a compliant resource management plan covering the waste arising's project One credit for <11.3 m³ per 100m² (gross internal floor area) Two credits for <4.5m³ per 100m² Three credits for < 2.1m³ per 100m²	✓	✓	✓	3	2.51%			2		The Design Team has confirmed that the requirements for this credit will be met. Contractor to review it. 2 credits targeted		RIBA Stage 4	Client Contractor	
		Diversion of resources from landfill	One credit where evidence provided demonstrates that: - 85% by volume or 90% by tonnage non-hazardous construction AND - 90% by volume or 95% by tonnage demolition waste generated by the development will be diverted from landfill and reused or recycled.	✓	✓	✓	1	0.84%			1		The Design Team has confirmed that the requirements for this credit will be met. 1 credit targeted		RIBA Stage 4	Client Contractor	
Wst 03	Operational waste	Operational waste	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 c. Of a capacity appropriate to the building type, size, number of units (if relevant) and predicted volumes of waste 2. Where the consistent generation in volume of the appropriate operational waste streams is likely to exist, 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; OR adequate space(s) for storing segregated food waste and compostable organic material prior to collection. c. Where organic waste is on-site, a water outlet is provided adjacent to or within the facility for cleaning and hygiene purposes.			✓	1	0.84%			1		The Design Team has confirmed that the requirements for this credit will be met. 1 credit targeted	1) Design plan confirming location and area (m²) of storage area. 2) Written confirmation that the space is adequately sized for the anticipated volume of waste and the waste collection arrangement, is clearly labelled for recycling, within easy reach of the building (<20m away from an entrance) and in a location with good vehicular access.	RIBA Stage 4	Architect Client	

												Cumulative Scores					
												66.16%	77.22%				
BREEAM issue ID	BREEAM Issue title	BREEAM credit title	BREEAM criteria	Part Applicability			Credits available	% Worth (in total for each BREEAM issue)	Mandatory Requirements		Design Stage Scoring		Commentary	Actions	Indicative timeframe	Indicative responsibility	
				Part 2	Part 3	Part 4			Very Good	Excellent	Targeted	Potential					
Wst 04	Speculative floor and ceiling finishes		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. 2. In a building being refurbished or fitted out for a specific occupant, that occupant has selected (or agreed to) the specified interior finishes.		✓		1	0.84%			1		The Design Team has confirmed that the requirements for this credit will be met. 1 credit targeted		RIBA stage 3	architect, client	
Wst 06	Functional adaptability		A building-specific functional adaptation strategy study has been undertaken by the client and design team by RIBA Stage 2, which includes recommendations for measures to be incorporated to facilitate future adaptation. Functional adaptation measures have been implemented by RIBA Stage 4 in accordance with the functional adaptation strategy recommendations, where practical and cost effective.	✓	✓	✓	1	0.84%			1		The Design Team has confirmed that the requirements for this credit will be met. 1 credit targeted	1) A copy of the Functional adaptation strategy appraisal report to identify and make recommendations for measures to be incorporated to facilitate future adaptation. 2) Evidence to demonstrate how the findings of the Functional adaptation strategy appraisal report have influenced the design and particular measures have been implemented (e.g. implementation report, drawings or specification documents)	RIBA Stage 2	Architect Structural Engineer MEP Engineer	
Land Use and Ecology																	
Issue scoped out of the assessment as there is no new or existing landscaping areas within the refurbishment or fit-out zone																	
Pollution																	
Pol 01	Impact of refrigerants	Pre-requisite	All systems (with electric compressors) must comply with the requirements of BS EN 378:20081 and where refrigeration systems containing ammonia are installed, the Institute of Refrigeration Ammonia Refrigeration Systems Code of Practice.	✓	✓	✓	-				yes		The design team has confirmed that the requirements for this pre-requisite will be met. 1 pre-requisite targeted		RIBA Stage 4	MEP Engineer	
		Impact of Refrigerant	3 credits: Where the building does not require the use of refrigerants within its installed plant/systems. 2 credits: 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 Where air-conditioning or refrigeration systems are installed the refrigerants used have a Global Warming Potential (GWP) ≤ 10. 1 credit: Where the systems using refrigerants have Direct Effect Life Cycle CO2 equivalent emissions (DELCO2e) of ≤ 1000 kgCO2e/kW cooling/heating capacity.	✓	✓	✓	2	2.06%			2		The design team has confirmed that the requirements for this credit will be met. 2 credits targeted	1) Written confirmation and manufacturer datasheet of the relevant refrigeration type confirming refrigerant charge (kg) and system information, if applicable: a. Refrigerant Recovery Efficiency factor (%) b. Annual Leakage Rate (units: % refrigerant charge) c. Annual Purge Release factor (% Refrigerant charge) d. Annual Service Release (% Refrigerant charge) e. Probability factor for catastrophic failure (% refrigerant charge loss/year) f. Global Warming Potential of refrigerant g. Cooling capacity (kW)	RIBA Stage 4	MEP Engineer	
		Leak detection	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. The system must be capable of automatically isolating and containing the remaining refrigerant(s) charge in response to a leak detection incident	✓	✓	✓	1	1.03%				1	The design team will review this credit further 1 potential credit.	1) Specification confirming inclusion of refrigerant leak detection and containment system as per the BREEAM Criteria column.	RIBA Stage 4	MEP Engineer	
Pol 02	NOx emissions		Credits achieved are based on the following scores where the dry NOx emissions (at 0% excess O2): - One credits- ≤100 mg/kWh (space heating) - Two credits - ≤70 mg/kWh (space heating) - Three credits - ≤40 mg/kWh (space heating)	✓	✓		3	3.09%			3		The design team will confirm the type of heating system. 3 credits targeted	1) Specification confirming heating, cooling and hot water systems. 2) Manufacturer's datasheet confirming: a. dry NOx emission rate (at 0% excess O2) b. heat and electrical outputs of all systems 3) Calculations from the project team confirming average NOx emission rate.	RIBA Stage 4	MEP Engineer	
Pol 03	Flood risk management and reducing surface water run-off	Flood risk management	Low flood risk Where flood maps from the appropriate statutory body confirm the refurbishment or fit-out is situated in a flood zone that is defined as having a low annual probability of flooding; OR The project meets the requirements for avoidance of flooding in accordance with Checklist 1, 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 Where flood maps confirm the site has a medium/high flood risk a site specific FRA has undertaken AND 5.The refurbishment zone achieves avoidance from flooding through either: a. The refurbishment 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. OR 6. Where avoidance is not possible, two credits are achieved where a full flood resilience/resistance strategy is implemented for the building's scope of works in accordance with recommendations made by a Suitably Qualified Building Professional.	✓	✓	✓	2	2.06%			2		The design team confirm the requirements for this credit will be met. Flood risk assessment to be provided by the design team. 2 credits targeted	1) Drainage consultant's report/ calculations/ specification confirming: a.Type and storage volume (l) of the drainage measures b. Total area of hard surfaces (m2) c. Peak/Volume flow rates (l/s) pre and post development for the return period events and discharge rates d. Additional allowance for climate change designed in to the system e. Impact on the building of flooding from local drainage system failure f. specification of SuDS and pollution measures for high risk areas as applicable.	RIBA Stage 3	Client Architect Drainage Consultant	
Pol 04	Reduction of night time light pollution		One credit where evidence provided demonstrates that the external lighting design is in compliance with the guidance in the ILP Guidance notes for the reduction of obtrusive light, 2011. All external lighting (except safety and security) should be automatically switched off between 23:00 and 7:00 hours. Safety and security lighting levels should be lowered between these hours to meet the criteria in table 2 of the ILP notes. Illuminated advertisements, where specified, must be designed in compliance with ILE Technical Report 5 – The Brightness of Illuminated Advertisements	✓	✓		1	1.03%			1		The design team confirm the requirements for this credit will be met. 1 credit targeted	1) Specification confirming compliance with the ILP Guidance notes for the reduction of obtrusive light, 2011 and inclusion of controls to automatically switch off lighting between 23:00 and 07:00 hours.	RIBA Stage 4	MEP Engineer	

											Cumulative Scores		Commentary	Actions	Indicative timeframe	Indicative responsibility
											66.16%	77.22%				
BREEAM issue ID	BREEAM Issue title	BREEAM credit title	BREEAM criteria	Part Applicability			Credits available	% Worth (in total for each BREEAM issue)	Mandatory Requirements		Design Stage Scoring					
				Part 2	Part 3	Part 4			Very Good	Excellent	Targeted	Potential				
Pol 05	Reduction of noise pollution		Where there are no noise-sensitive areas or buildings within 800m radius of the assessed site. OR Where the building does have noise-sensitive areas or buildings within 800m radius of the site: - A noise impact assessment in compliance with BS 7445 is carried out - The noise impact assessment must be carried out by a suitably qualified acoustic consultant - The noise level 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. - Where the noise is greater than the levels described measures have been installed to attenuate the noise at its source to a level where it will comply.	✓	✓	✓	1	1.03%			1		The design team confirm the requirements for this credit will be met. Acoustician's report is needed. 1 credit targeted	1) Acoustician's report confirming: a. Distance to noise sensitive buildings from the proposed sources of noise in the new development. b. Baseline noise investigations (compliant with BS 7445:1991) and plant noise values that the background noise levels will not be exceeded and the proximity of any noise sensitive receptors in the vicinity. c. Recommendations for noise attenuation measures. 2) Written confirmation that any recommendations made by the Acoustician will be implemented into the design to ensure the final building is compliant with the relevant standards	RIBA Stage 2	Acoustician
Innovation																
Man 03	Responsible construction		See Man 03 above				1	1.00%			1		The Client is to provide confirmation that the requirements for this issue will be fulfilled by the contractor 1 exemplary credit targeted.		RIBA Stage 4	Contractor
Man 05	Aftercare support		Operational infrastructure and resources will be put in place to co-ordinate the following activities at quarterly intervals for the first three years of building occupation: a.Collection of occupant satisfaction, energy consumption and water consumption data. b.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. c.Setting targets for reducing water and energy consumption and monitor progress towards these. d.Feedback any 'lessons learned' to the design team and developer for use in future projects.				1	1.00%				1	The Client is to provide confirmation that the requirements for this issue will be fulfilled by the contractor The Design team is to review this credit further 1 additional exemplary credit		RIBA Stage 4	Contractor
Hea 01	Daylighting		- Occupied areas have an average daylight factor of 3% in 80% of the space - A minimum point daylight factor of 1.2% OR 2.1% for spaces with glazed roofs, such as atria				1	1.00%			0	0	The design team has confirmed that the requirements is not achievable		None	
Hea 02	VOC		One credit - All seven remaining categories meet the testing requirements and emission levels criteria - For products b) – f) listed in the table, the formaldehyde emission levels are measured and found to be less than or equal to 0.06mg/m3 air in accordance with the approved testing standards Two credits - All seven remaining categories meet the testing requirements and emission levels criteria - For products B to F listed in the table, the formaldehyde emission levels are measured and found to be less than or equal to 0.01mg/m3 air, in accordance with the approved testing standards				2	2.00%			0	0	The design team has confirmed that the requirements is not achievable		None	
Wat 01	Water consumption		As per Wat 1, one exemplary credit can be achieved where there is a 65% reduction in water consumption over the notional building.				1	1.00%			0	0	The design team has confirmed that the requirements is not achievable		None	
Mat 01	Environmental impact of materials		Achieve at least 85% of points within the Option 2 proforma				1	1.00%				1	TBC 1 potential exemplary credit		None	Architect MEP Engineer
Mat 03	Responsible sourcing of materials		Where, in addition to the standard BREEAM requirements, 70% of the available responsible sourcing points have been achieved.				1	1.00%			0	0	The design team has confirmed that the requirement is not achievable		None	
Was 01	Construction waste management		- Non-hazardous construction waste is no greater than 1.4m3 or 0.4 tonnes per 100m2 - The percentage of non-hazardous construction and demolition waste diverted from landfill meets is at least 95% by volume or 97 by tonnage - Waste materials are sorted into separate key waste groups either on-site or off-site through a licensed contractor for recovery. - 75% of difficult to manage wastes have been reused on or off-site rather than recycled				1	1.00%			0	0	The design team has confirmed that the requirements is not achievable		None	
							10									

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