ELEMENT SUSTAINABILITY

LONDON ROAD FIRE STATION, MANCHESTER

ENVIRONMENTAL STANDARDS STATEMENT

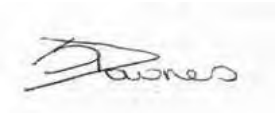
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Appendix A– BREEAM Bespoke Pre-Assessment

1. INTRODUCTION

Element Sustainability has been commissioned by Allied London to review the sustainability performance of the proposed refurbishment and change of use of the London Road Fire Station (LRFS), Manchester.

The purpose of this Statement is to summarise the relevant policy background and requirements of Manchester City Council (hereafter referred to as the council) and demonstrate the ways in which Allied London have addressed these aims through their proposals.

This statement reviews the sustainable design features and energy strategy of the proposed development. The potential BREEAM (2014) Bespoke rating for the scheme will also be reviewed. Details of the design attributes, specifications and characteristics of the proposed development site are appraised in order to demonstrate how the proposals contribute to sustainable development in Manchester and seek to mitigate the environmental impacts.

2. DEVELOPMENT PROPOSALS

2.1 Development Site Description

The London Road Fire Station is a Grade II*[1] listed building located in the heart of Manchester City Centre. The proposed development site formerly housed the fire, police and ambulance service and previous uses also include a bank and coroner's court.

The site boundaries are formed by Whitworth Street to the north and east, Fairfield Street to the south and Minshull Street South to the west, as presented in Figure 2.1. The proposed development site sits within the Whitworth Street Conservation Area and comprises a very large quadrilateral building of three and four storeys around a central courtyard.

Beyond the site boundaries, the proposed development is situated within a locality of commercial and retail units as well as student accommodation, university buildings and hotels. The proposed development site also benefits from its adjacent location from Manchester Piccadilly station.

Figure 2.1 – Pre-development Site



2.2 Development Proposals

The site is occupied by a Grade II* listed building which is to be retained and refurbished as part of the proposals. The proposed development will comprise working spaces as well as a boutique hotel, leisure, fitness, retail and food outlets. The city centre location will offer building users easy access to a range of retail, office, leisure, residential and transport infrastructure.

[1] Grade II listing applies not just to the exterior fabric of the building itself, but also to the interior, fixtures, fittings, and objects within the curtilage of the building, even if they are not fixed.

Table 2.1 details the proposed floor areas.

Table 2.1 – Floor Area Schedule

Area	Basement	Ground (GIA m^2)	Level 01 (GIA m^2)	Level 02 (GIA m^2)	Level 03 (GIA m^2)
GIA (m^2)	1,851	4,010	2,727	2,646	2,430
Total	**13,664**				

The floor plans are presented in Figure 2.2 to 2.9.

Figure 2.2 – Proposed Basement Plan



Figure 2.3 – Proposed Ground Floor Plan



Figure 2.4 – Proposed First Floor Plan

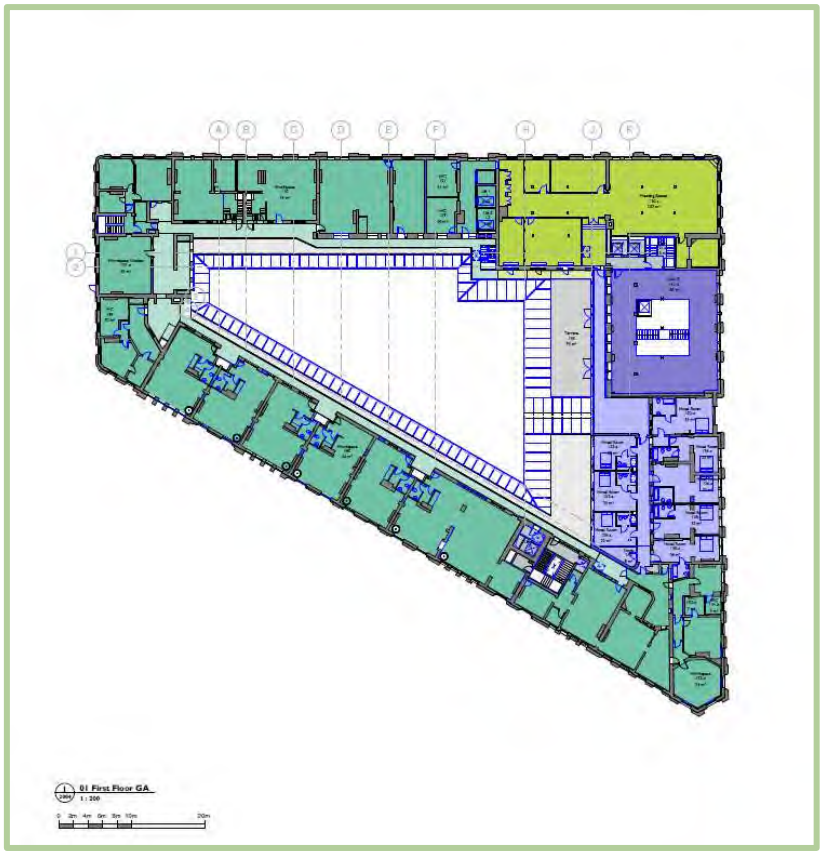


Figure 2.5 – Proposed Second Floor Plan



Figure 2.6 – Proposed Third Floor Plan



3. POLICY REVIEW

This section reviews the planning policy requirements and sustainability targets that are relevant to this scheme.

3.1 Local Planning Policy

3.1.1 Manchester Core Strategy

Manchester's Core Strategy (CS) was adopted on 11th July 2012 and is the key Development Plan Document in the Local Development Framework (LDF).

CS Policy DM 1 - Development Management requires all development to have regard to a number of development principles

Subject to scheme viability, developers will be required to demonstrate that new non-domestic development to achieve a BREEAM Rating or for domestic development to achieve the Code for Sustainable Homes standard[2].

CS Policy EN 4 - Reducing CO_2 Emissions by Enabling Low and Zero Carbon Development requires all development to follow the principle of the Energy Hierarchy, being designed:

- To reduce the need for energy through design features that provide passive heating, natural lighting and cooling;
- To reduce the need for energy through energy efficient features such as improved insulation and glazing; and,
- To meet residual energy requirements through the use of low or zero carbon energy generating technologies.

CS Policy EN 6 - Target Framework For CO_2 Reductions From Low or Zero Carbon Energy Supplies requires applications for residential development of 10 or more units and all other development over 1,000m^2 to meet, as a minimum, the targets shown in the tables below, unless unviable.

Table 3.1 – Policy EN6 CO_2 Emissions Reduction Targets; Non-Domestic

Target	*% Minimum Requirements*
Target One: Network development area	CHP/District heating anchor or connection or where not feasible a 15% increase on Part L 2010
Target Two: Electricity intense buildings	+10% increase on Part L 2010
Target Three: Micro generation area	+15% increase on Part L 2010

[2] On the 25th March 2015 the Government issued a Written Ministerial Statement setting out the conclusion of the Housing Standards Review. The statement set out a new policy on the application of technical housing standards that applied immediately to all local planning authorities and qualifying bodies. This had a direct effect on the application of existing Code policies, and the setting of new Code policies. The Government elected to remove the Code for Sustainable Homes and incorporate new additional optional Building Regulations on water and access, and a new national space standard.

Further details of the building regulation requirements are provided in the section below.

3.1.2 Guide to Development in Manchester, Supplementary Planning Document

The Core Strategy requires that all developments should accord with the design guidance set out in the Supplementary Planning Documents (SPD). The Guide to Development in Manchester SPD was adopted on 11th April 2007 and supports and enhances the ongoing shaping of the City by providing a set of reasoned principles which will guide developers, designers and residents. These principles include a number of environmental standards, and includes the following categories which are identified in the SPD:

- Energy efficiency;
- Renewable energy;
- Environmental design;
- Water management and weather resilience;
- Waste management;
- Construction management;
- Biodiversity; and,
- Waterways.

3.1.3 Manchester's Great Outdoors

A Green and Blue Infrastructure Strategy for Manchester aims to invest to date in the city's Green and Blue infrastructure over the next 10 years (by 2025). Four objectives have been established to enable the vision to be achieved:

1. Improve the quality and function of existing green and blue Infrastructure, to maximise the benefits it delivers.
2. Use appropriate green and blue infrastructure as a key component of new developments to help create successful neighbourhoods and support the city's growth.
3. Improve connectivity and accessibility to green and blue infrastructure within the city and beyond.
4. Improve and promote a wider understanding and awareness of the benefits that green and blue infrastructure provides to building users, the economy and the local environment.

3.1.4 Climate Emergency

A Climate Emergency was declared by Manchester City Council on the 10th July 2019 in response to the findings of the Intergovernmental Panel on Climate Change (IPCC) report. The City Council believe that there is serious risk to Manchester's people of climate change affecting economic, social and environmental well-being, supply chains – including food security, financial systems and local weather, among many others. Therefore, the target for becoming a zero-carbon city has been accelerated by 12 years, setting 2038 as the new target for the city. The council has agreed the following:

- To deliver the 2038 target and determine if an earlier target can be possible.
- Encourage involvement in all wards by April 2020 through meetings as part of the Our Manchester strategy.

- Review all policies, processes and procedures to ensure the council can become carbon neutral. Present an action plan by March 2020 detailing how the city can stay within its carbon budget.

- Make climate breakdown and the environment, an integral part of activity throughout the council, including all decision making, ensuring key decisions take into account the impact on achieving the zero-carbon target.

- Investigate measures to ensure future procurement is carbon neutral. Increase the percentage of social value with an additional environmental element.

- Work with suppliers to green their supply chains and support local production.

- Investigate and introduce measures to help reach domestic zero carbon levels including addressing fuel poverty and retrofitting existing homes.

- Investigate ways to ensure that future local plans place a mandatory requirement for all new development to be net zero carbon by the earliest possible date.

3.2 Emerging Policies

The Greater Manchester Spatial Framework 2019 (Draft) will set out how Greater Manchester should develop up until 2037 and is currently on hold. However, it contains the following relevant emerging policies:

Policy GM-S 2 Carbon and Energy aims to deliver a carbon neutral Greater Manchester no later than 2038, with a dramatic reduction in greenhouse gas emissions. There is an expectation that new development will:

a) Be zero net carbon from 2028 by following the energy hierarchy (with any residual carbon emissions offset), which in order of importance seeks to:

I. Minimise energy demand;
II. Maximise energy efficiency;
III. Utilise renewable energy;
IV. Utilise low carbon energy; and
V. Utilise other energy sources.

With an interim requirement that all new dwellings should seek a 19% carbon reduction against Part L of the 2013 Building Regulations.

b) Incorporate adequate electric vehicle charging points to meet likely long-term demand;

c) Where practicable, connect to a renewable/low carbon heat and energy network;

d) Achieve a minimum 20% reduction in carbon emissions (based on the dwelling emission or building missions rates) through the use of on site or nearby renewable and / or low carbon technologies; and,

e) Include a carbon assessment to demonstrate how the design and layout of the development sought to maximise reductions in whole life CO_2 equivalent carbon emissions.

3.3 National Planning Policy

In addition to the local planning policies, the National Planning Policy Framework 2018 is a material consideration. The National Planning Policy Framework (amended July 2019) replaces all previous PPSs and PPGs.

The NPPF states that the planning system should play an active role in guiding development to sustainable solutions. There are three dimensions to sustainable development, as stated within the NPPF: economic, social and environmental. These dimensions give rise to the need for the planning system to perform a number of roles:

An economic role – contributing to building 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 and innovation; and by identifying and coordinating development requirements, including the provision of infrastructure;

A social role – supporting strong, vibrant and healthy communities, by providing the supply of housing required to meet the needs of present and future generations; and by creating a high quality built environment, with accessible local services that reflect the community's needs and support its health, social and cultural well-being; and
An environmental role – contributing to protecting and enhancing our natural, built and historic environment; and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy.

These roles should not be undertaken in isolation, because they are mutually dependent. Economic growth can secure higher social and environmental standards, and well-designed buildings and places can improve the lives of people and communities. Therefore, to achieve sustainable development, economic, social and environmental gains should be sought jointly and simultaneously through the planning system.

Pursuing sustainable development requires careful attention to viability and costs in plan-making and decision-taking. To ensure viability, the costs of any requirements likely to be applied to development, such as requirements for affordable housing, standards, infrastructure contributions or other requirements should, when taking account of the normal cost of development and mitigation, enable the development to be deliverable. At the heart of the National Planning Policy Framework is a presumption in favour of sustainable development - for decision-taking this means approving development proposals that accord with the development plan without delay.

3.4 Regulatory Framework

3.4.1 Building Regulations

Building Regulations, Part L - Conservation of Fuel and Power sets the compliance standards for energy demand and carbon dioxide emissions from buildings.

Approved Document L2A addresses the conservation of fuel and power in new non-domestic buildings. The proposed development will be registered against Building Regulations, Part L (2013) which requires all newly constructed buildings to comply with the 5 criteria set out in Approved Document L2A:

I. Achievement of an acceptable Building CO_2 Emission Rate. i.e. the BER is less than the TER (target emission rate for a notional building);

II. Limits on design flexibility – including U-values, air permeability, air handling plant efficiency, duct leakage, insulation, lighting system efficiency;

III. Limiting solar gains in summer;

IV. Construction quality and commissioning - The BER must be recalculated as constructed; and

V. Provision of information - Information must be provided to the building operator.

Existing non-domestic buildings

Approved Document L2B specifically addresses the conservation of fuel and power in existing non-domestic buildings and provides minimum efficiency standards for building services and thermal elements.

The work undertaken to refurbish the existing building will be guided by this building regulation. Given the Grade II* listed status of the building there are however, many other considerations and constraints which will take precedent over the energy performance of this element of the scheme.

3.4.2 BREEAM

In accordance with the local planning policy requirements, the developer aspires to achieve a BREEAM 'Good' rating for their refurbishment of the existing London Road Fire Station Building and new build extension. BREEAM (Building Research Establishment's Environmental Assessment Method) is the world's leading and most widely used environmental assessment method for buildings. The standard aims to mitigate the life cycle impacts of buildings on the environment and enable buildings to be recognised according to their environmental benefits.

The BREEAM Assessment methodologies utilised to assess the scheme are as follows:

- BREEAM UK Bespoke (2014 Refurbishment and Fit-out and 2014 New Construction)

As the proposed development does not fit the 'typical' scope of either a BREEAM New Construction and Refurbishment and Fit-Out schemes, a 'bespoke' process to BREEAM compliance will be followed. In the bespoke process, BREEAM criteria are selected and amended for the specific project. Amendments and additions to the standard criteria reflect the unique use and sustainability opportunities of the project and the location. Although the bespoke process involves amending criteria for individual developments, it still adheres to a set of standards in terms of BREEAM structure, credit method and content and will incorporate elements of both methodologies below.

BREEAM UK 2014 New Construction –

The BREEAM New Construction 2014 scheme can be used to assess the environmental life cycle impacts of new non-domestic buildings at the design and construction stages. 'New Construction' is defined as development that results in a new standalone structure, or new extension to an existing structure, which will come into operation or use for the first time upon completion of the works.

BREEAM Non-domestic Refurbishment and Fit-out –

The BREEAM UK Non-Domestic Refurbishment and Fit-out 2014 scheme can be used to assess the environmental life cycle impacts of existing non-domestic buildings at the refurbishment and fit-out stages. The definition of 'refurbishment' encompasses a wide range of works to improve the performance, function and overall condition of an existing building. 'Fit-out' also encompasses a wide range of works, however it is

more associated with internal works to the building including the first fit-out of a newly constructed building or re-fitting an existing building.

The BREEAM UK Non-Domestic Refurbishment and Fit-out 2014 scheme provides a modular set of criteria that are applied depending upon the scope of works for a particular project type including:

Part 1: Fabric and Structure
Part 2: Core Services
Part 3: Local Services
Part 4: Interior Design

BREEAM Assessment Methodologies -

BREEAM UK schemes are a performance-based assessment method and certification scheme for new non-domestic buildings and refurbishment projects. This is achieved through integration and the use of the scheme by clients and their project team at key stages in the design and construction process.

The building's performance is assessed under a number of categories, including:

- Energy;
- Water;
- Transport;
- Materials;
- Land use and ecology;
- Pollution;
- Health and wellbeing; and
- Management.

The BREEAM rating benchmarks for BREEAM UK New Construction (NC) and Refurbishment and fit-out (RFO) projects are presented in Table 3.1.

Table 3.1 – BREEAM Rating Benchmarks

BREEAM Rating	% Score Required
Outstanding	≥ 85
Excellent	≥ 70
Very Good	≥ 55
Good	≥ 45
Pass	≥ 30

There are no minimum standards associated with the BREEAM 'Good' standard in terms of the building's energy and emission performance. However, to ensure that performance against fundamental environmental issues are not over-looked in pursuit of a particular rating, BREEAM sets minimum standards of performance in key areas e.g. energy, water, materials etc. A BREEAM 'Good' rating requires the following minimum performance standards, see Table 3.2.

Table 3.2 – Minimum 'Good' Standards

Minimum Standards for BREEAM 'Good' rating	'Good' Rating Credits
WAT 01: Water Consumption	One credit
WAT 02: Water Monitoring	Criterion 1 only
MAT 03: Responsible Sourcing of Materials	Criterion 1 only

The target BREEAM rating for this scheme is BREEAM 'Good' (refer to Section 5 for further details). This broadly represents the top 50% of UK new non-domestic buildings (intermediate good practice).

4. BREEAM PERFORMANCE

A BREEAM Pre-assessment report has been prepared by a qualified BREEAM Accredited Professional (AP) Assessor. This determines the feasible credits and potential BREEAM rating for the part new build and part refurbished scheme for the London Road Fire Station (LRFS) development and demonstrates a commitment to the principles of good construction, design and sustainability.

4.1 BREEAM Assessment Classification

The BREEAM assessment methodology applicable to this mixed-use development is as follows:

- BREEAM 2014 UK Bespoke (Non-Domestic Refurbishment and Fit-out and New Construction).

In reviewing and assessing the feasibility of the BREEAM credit award and the overall BREEAM performance of this scheme, constraints arising from the nature of the proposed development site and location have been considered;

- The scheme proposals comprise:
    - Refurbishment of an existing building,
    - Introduction of new build elements; and,
    - Various uses classes proposed (mixed-use scheme).

  Due to the nature of the proposals, the appropriate assessment methodology would be BREEAM Bespoke. The proposals have been reviewed against the BREEAM Bespoke (assumed criteria) to demonstrate an indicative award of credits for this scheme;

- The BREEAM Pre-assessment strategy will provide an estimation before a site specific, bespoke set of BREEAM criteria can be developed by the BRE for this project in due course; and,

- Improving the performance of existing buildings is often challenging and many of the issues to address are exacerbated for buildings such as the Grade II* listed LRFS which is also located within a conservation area. In a bespoke assessment such as this, features such as location, orientation, fabric and form cannot be altered, and other constraints may exist. This is considered to be particularly relevant for the Grade II* listed building where there are further limitations on design options and specific requirements associated with a building's appearance.

Due to the aforementioned reasons, a BREEAM target rating of 'Good' has been determined for overall performance of this scheme.

4.2 BREEAM Credit Award Review

An overview of the BREEAM credit award for each issue is presented below. The BREEAM 2014 UK Bespoke (assumed criteria) Pre-assessment overview report is presented within Appendix A. This contains a full commentary on the individual credit award and specification requirements.

4.2.1 Management

In order to minimise the impact of the development during construction and operation whilst providing a safe place to live, the proposals include for the following provisions:

Project Brief and Design –

- Stakeholder consultation covering project delivery and relevant third parties. This is to encourage an integrated design process and considering BREEAM performance targets early to influence decision-making and optimise building performance.

Life Cycle Cost and Service Life Planning –

- Reporting the capital cost of the building. This will promote the business case for sustainable buildings through the enhanced understanding of capital cost.

Construction Site Impacts –

- All timber and timber-based products used throughout the project will be 'legally harvested and traded timber';

- The principal contractor will appoint a Sustainability Champion and demonstrate sound environmental management practices and consideration for neighbours across their activities on-site; and,

- Site related energy and water impacts are monitored and reported to ensure ongoing compliance during the Construction, Handover and Close Out stages and to improve awareness and understanding for future projects. Construction site impacts will be minimised as follows:

    - Monitor, report and set targets for carbon dioxide or energy arising from site activities;

    - Monitor, report and set targets for water consumption arising from site activities; and,

    - Monitor and record data from the transport movements and impacts resulting from delivery of construction materials to site and construction waste from site.

Commissioning and Handover –

The provision of the following processes and handover guidance will be provided to encourage a planned handover and commissioning process which will reflects the needs of the building occupants:

- A schedule of commissioning including optimal timescales, appropriate testing and commissioning of all building services systems and building fabric in line with best practice will be undertaken;

- Inspecting, testing, identifying and rectifying defects via an appropriate method will be carried out; and,

- Provision of a non-technical Building User Guide and user/operator training timed appropriately around handover and proposed occupation will enable building users to use and manage the building operations efficiently.

4.2.2 Health and Wellbeing

To enable the building users and visitors of this development to experience an enhanced quality of work life and pleasant visitor experience within the building, the following measures will be delivered at the proposed development:

Visual Comfort –

- Internal lighting systems will be designed to avoid flicker and provide appropriate illuminance (lux) levels. This will ensure best practice in visual performance and comfort for building occupants;

- Designing internal and external lighting systems to provide appropriate illuminance (lux) levels, thereby giving a more comfortable environment for occupants. Internal lighting will be zoned to allow for occupant control; and,

- The external lighting strategy will be designed to reduce unnecessary light pollution, energy consumption and nuisance to neighbouring properties.

Indoor Air Quality -

- An indoor air quality plan will be produced, with the objective of facilitating a process that leads to design, specification and installation decisions and actions that minimise indoor air pollution during occupation of the building; and,

Safety and Security –

- Secure By Design - Security needs will be understood and taken into account in the design and specification. Any recommendations made by the Secure By Design Officer will be implemented to encourage effective measures that promote safe and secure use and access to and from the building.

4.2.3 Energy

In order to limit energy demand and carbon dioxide (CO_2) emissions from the operation of the proposed scheme, the following design features will be integrated within the scheme to enable the building users to lead a low impact lifestyle:

Reduction of CO_2 Emissions –

- The New Construction element of the scheme will aim to align with Part L, 2A (2013) criteria in accordance with the current local planning policies and the BREEAM mandatory 'good' rating requirement;

- The design for the food and beverage areas and hotel will be developed on the basis of Part L2B conservation of fuel and power in existing buildings other than dwellings, again subject to the heritage constraints outlined below.

- Details of the proposed approach to reducing the energy demand and associated carbon dioxide emissions of the scheme are presented in the separate Energy Statement produced by

Crookes Walker Consulting Limited (see document ref: Crookes Walker Consulting Limited - 1968/R007 London Road Fire Station Energy Statement).

- The energy statement concludes:
    - *Due to the heritage significance of LRFS, it is proposed to retain the existing external fabric of the building, although substantial window repair/replacement is in progress due to current poor condition. This presents an opportunity to enhance the performance of the building envelope in terms of thermal performance and air permeability. The scope of this currently includes new secondary glazing; this is primarily for acoustic reasons but will have significant thermal performance benefits.*
    - *Where feasible, and without impacting upon the historical appearance of the building, the building fabric and servicing strategies will be further refined to establish the optimum design to minimise on-site energy demand and carbon emissions of the development and promote sustainability and a high-quality local environment.*
- The design solutions considered thus far have concentrated on achieving intrinsically energy efficient services systems, and currently include the following:
    - Provision of a sitewide 'condenser water loop', allowing the use of water source heat pumps and Variable Refrigerant Flow type systems. Water source units are very energy efficient, approaching double the efficiency of conventional air-cooled systems for a well-designed system;
    - High efficiency, gas fired condensing boilers as the principal heat source for the building;
    - Potential future heating input from district heating system;
    - Variable speed cooling towers for heat rejection facilitating reduced energy consumption for space cooling;
    - Use of building components with good thermal properties;
    - Heating and cooling loads to be minimised as far as possible by passive means;
    - Heat recovery in the ventilation systems;
    - Lighting controls offering both daylight dimming and presence detection in office areas and landlord areas;
    - The benefit of good daylighting and the use of appropriate lighting controls to reduce the electrical energy consumption; and,
    - Passive solar shading measures to reduce heat gains.

Energy Monitoring –

- Energy metering systems will be Installed so that at least 90% of the estimated annual energy consumption of each fuel is assigned to the end-use categories; and,

- Sub-meters will be provided for high energy load and tenancy areas. These are a powerful tool to help facilities management to organise and manage their consumption, target certain areas of over-use and streamline controls to improve efficiency over time and seasons.

External Lighting –

- All new external light fittings, where provided, within the construction zone will be dedicated low energy; and,

- External light fittings will be controlled through a time switch, or daylight sensor, to prevent operation during daylight hours.

Low and Zero Carbon Technologies (LZC) Technologies –

- Crookes Walker Consulting Limited have prepared a feasibility study to establish the most appropriate recognised local (on-site or near-site) low and zero carbon (LZC) energy sources for the building based on the feasibility study. The specified LZC reviews the options of ground source energy and trigeneration energy and concludes that neither option is considered practical for this project.

Energy Efficient Transportation Systems -

- An analysis of the proposed transportation demand and usage patterns will determine the optimum number and size of lifts required. This would encourage the implementation of energy efficient and suitably sized systems within the building, and,

- Energy efficient installations will be specified.

4.2.4 Transport

- The proposed development is located within a highly sustainable location in terms of transport connections with basic facilities and amenities all within easy walking distance of the site; and,

- A site-specific, framework travel plan based on the needs of the site has been undertaken by Vectos Limited to promote sustainable reductions in transport burdens for future tenants to adopt.

A Transport Statement for the proposed scheme has also been completed by Vectos Ltd. The site is in a highly sustainable location in terms of transport connections with basic facilities all within easy walking distance of the site.

Transport Links -

- There is an excellent level of public transport provision in the area;

- Sustainable transport measure across the site will be maximised through the development, such as: providing cycle storage and facilities, the site is within close proximity to amenities and has a high Accessibility Index.

    - Bus – Piccadilly Gardens Bus Station is located just over 400m from the site and provides access to key local destinations such as East and West Didsbury, Sale, Altrincham, Stockport

and Manchester Airport. There are also numerous bus stops in operation within 400m of the site such as those located on London Road and Whitworth Street. These stops provide frequent services to destinations including Denton and Levenshulme in addition to various locations around Manchester City Centre.

- Rail – The nearest railway station is Piccadilly Station which is located conveniently just a two-minute walk from development site. This station is one of the main transport hubs in Manchester and provides services to national and local destinations including London, Birmingham, Liverpool, Crewe, Stoke on Trent and Sheffield, among other destinations.

- Metrolink – The nearest Metrolink service operates out of Manchester Piccadilly Railway Station, a two-minute walk away. The station provides services to local destinations such as: Eccles, Bury, MediaCityUK and Altrincham and will offer an excellent transport option for visitors to the proposed site.

4.2.5 Water

Water Consumption and Monitoring –

- A water efficiency strategy will be determined for the site. This will include the specification of 'A' rated appliances;

- The buildings will be specified with efficient water fixtures and controls. This will result in a reduction in water consumption (litres/person/day); The mandatory minimum criteria for the BREEAM 'Good' rating will be exceeded and a potential improvement targeted, which is a 40% improvement over the set BRE water consumption baseline; and,

- The design team will identify the building's total unregulated water demand and mitigate or reduce consumption through systems and/or processes such as irrigation systems for landscaping.

Water Monitoring –

- A water meter on the mains water supply to the building will be specified to monitor and manage consumption.

Water Leak Detection and Prevention -

- The provision of a leak detection systems capable of detecting a major water leaks on the mains water supply, leakage especially in the case of water can be a drain on the resource and particularly difficult to establish without data collection.

4.2.6 Materials

This development will contribute towards making more efficient use of non-renewable material resources and to reducing the lifecycle impact of materials used in construction. This is demonstrated by the selection of:

Materials Lifecycle Impacts –

- Materials will be selected which have a low environmental impact throughout their life cycle for the main building elements, through conducting a through conducting a life cycle assessment and integrating its outcomes in the design decision-making process.

Responsible Sourcing of Materials –

- The development proposals show that the scheme will be an efficient use of the building's footprint and the proposed scheme will re-use, where possible, materials from the existing building. There are no major external works to the retained building and therefore the building envelope will be relatively unchanged. This in turn ensures that land and material use is optimised across the development and demonstrates early consideration in terms of resource efficiency;

- Furthermore, the proposals will have a positive impact on the fabric of the building and protect this heritage asset and Manchester's wider historic environment;

- Materials will be selected which have a low environmental impact throughout their life cycle;

- Suppliers and manufacturers who operate Environmental Management Systems will be prioritised;

- Responsible sourcing of materials will be managed by the contractor. All timber used within the development will be responsibly sourced, verified by the FSC or PEFC standard; and,

- Consideration will be given to local sourcing of construction materials where feasible.

Insulation –

- The use of thermal insulation which has a low embodied environmental impact relative to its thermal properties will be specified throughout the development to reduce the construction phase impact of this scheme upon climate change.

Designing for Robustness –

- Adequate protection will be provided for exposed elements of the building and landscaped areas, therefore minimising the frequency of replacement materials resulting from damage to exposed elements of the building and landscape; and,

- Relevant building elements will incorporate appropriate design and specification measures to limit material degradation due to environmental factors.

4.2.7 Waste

Construction Waste –

Prior to commencement of the construction phase, a Construction Resource Management Plan will be produced by the developer to limit the on and off-site environmental impacts of construction. The waste management strategy will also include the following:

- Pre-demolition/pre-refurbishment audit will be completed of all existing buildings, structures or hard surfaces within the scope of the development site will be undertaken. This promotes resource efficiency via the effective management and reduction of construction waste;

- Procedures to reduce construction waste related to on-site construction and off-site manufacture/fabrication; and,

- Diverting non-hazardous construction (on-site and dedicated off-site manufacture/fabrication), demolition and excavation waste (where applicable) generated by the project from landfill.

Operational Waste –

- Provision of suitable space and facilities to allow for segregation and storage of operational recyclable waste volumes generated by the building occupants and activities will optimise recycling rates; and,

- A waste management strategy will be developed, ensuring that adequately sized bin storage areas will be provided, access for collection personnel and vehicles has been established and other aspects of waste management is designed into the development at an early stage of the design.

Speculative Finishes (office areas only) –

- To avoid unnecessary waste of materials, the specification and fitting of finishes will be selected by the building occupants.

Adaptability to Climate Change (See Section 5 for further detail) –

- The creation of a climate change adaptation strategy appraisal which will consider the mitigation measures for more extreme weather events arising from climate change over the lifespan of the building. This aims to minimise the future need of carrying out works to adapt the building to take account of more extreme weather changes resulting from climate change and changing weather patterns.

Design for Disassembly and Adaptability –

- A building specific adaptation strategy will be undertaken to encourage consideration and implementation of measures to accommodate future changes to the use of the building and its systems over its lifespan. This strategy will ensure that there is unnecessary materials use, cost and disruption arising from the need for future adaptation works as a result of changing functional demands and to maximise the ability to reclaim and reuse materials at final demolition in line with the principles of a circular economy.

4.2.8 Biodiversity

There is no green space on site prior to development, and little scope to add to this for the post-development site.

Enhancing Site Ecology –

- The proposed development site is of low ecological value and the appointed ecologist (Tyrer Ecological Consultants Limited) will advise on enhancing the ecological value of the site at an early stage. The suitably qualified ecologist (SQE) will provide appropriate recommendations for the enhancement of the site's ecology at Concept Design stage (RIBA Stage 2 or equivalent). This report is based on a site visit/survey by the SQE.

Long Term Impact on Biodiversity -

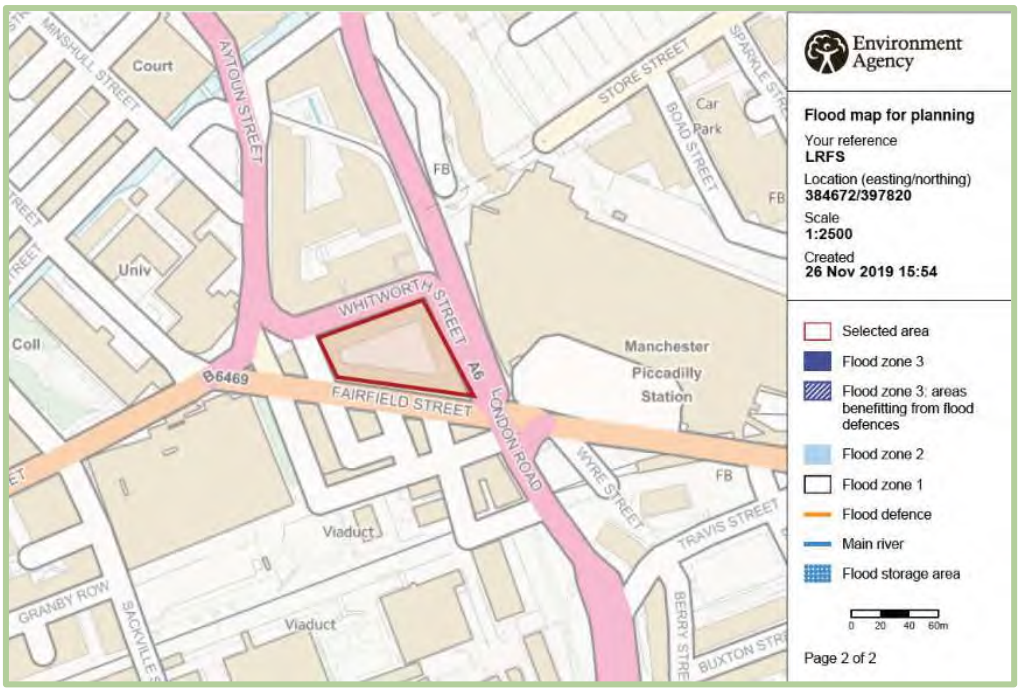
- The appointed ecologist (Tyrer Ecological Consultants Limited) confirms:
    - Bat roost potential is low however, contractors should adopt a standard awareness of the possible presence of undetected singular or small numbers of bats which often use buildings at any time of the year.
    - If work is planned during the bird breeding season (March – August) then the cavity at the chimney wall should be investigated to ensure nesting birds are absent; alternatively the cavity should be sealed before that time which would allow work to proceed without the possibility of Black Redstarts occupying it and subsequently causing delays to the project.
    - Provisions to aid roosting bats can be incorporated into the new development, and enhancement measures for Black Redstart and Peregrine may be considered to help the scheme achieve a biodiversity net-gain.
- A landscape and habitat management plan, appropriate to the site, will be produced covering at least the first five years after project completion where additional measures to improve the assessed site's long-term biodiversity are adopted.

4.2.9 Pollution

Surface Water Management –

- The development site is located within a low flood risk zone. Data provided on the Environment Agency website confirms the development lies within Zone 1 and therefore has a low probability of flooding and (see Figure 4.1).
- A sit-specific Flood Risk Assessment and Drainage Strategy has been prepared by Curtins Ltd. The developer commits to ensuring that the surface water run-off will be managed resulting in a peak rate and volume of surface water run-off that will be no greater post-development than pre-development.

Figure 4.1 - Flood Risk Map



Reduction of night-time light pollution –

- The external lighting strategy will be designed to reduce unnecessary light pollution through effective design, energy consumption and nuisance to neighbouring properties.

Reduction of noise pollution –

- Measures to reduce the likelihood of disturbance arising as a result of noise from fixed installations on the development.

4.2.10 Potential BREEAM Score and Rating

Working alongside the qualified BREEAM AP assessor, the technical design team has reviewed the individual credit criteria and award of credits within the Bespoke (assumed criteria) Pre-Assessment in order to optimise the building's BREEAM performance. All credits allocated within this BREEAM Pre-Assessment will require further technical verification and additional feasibility assessment during the formal Design Stage and Post Construction BREEAM assessments.

The BREEAM Pre-Assessment (presented in the Appendix A of this Statement) shows that the building is expected to perform as follows:

- BREEAM 2014 Bespoke[3] (Refurbishment and Fit-out ad New Construction) – Indicative building score = **50.62% (minimum required = 45% for BREEAM Good)**

[3] The BREEAM strategy has been reviewed against the non-domestic New Construction and non-domestic Refurbishment and Fit-out assessment methodologies to determine the feasible BREEAM rating for the scheme. The Bespoke criteria will be developed by the BRE and follow similar principals including site specific requirements and consider the mixed uses proposed within the scheme.

4.2.1 Minimum 'Good' standards

Following an initial review of the proposals, the BREEAM Pre-Assessment report demonstrates that the mixed-use scheme is able, in principle, to meet all mandatory credit requirements (see Table 4.1) and achieve an overall BREEAM 'Good' rating. The scheme will aspire to achieve a BREEAM 'Very Good' rating, feasibility will be clarified further into the development cycle during RIBA stages 3 and 4 (detailed/technical design).

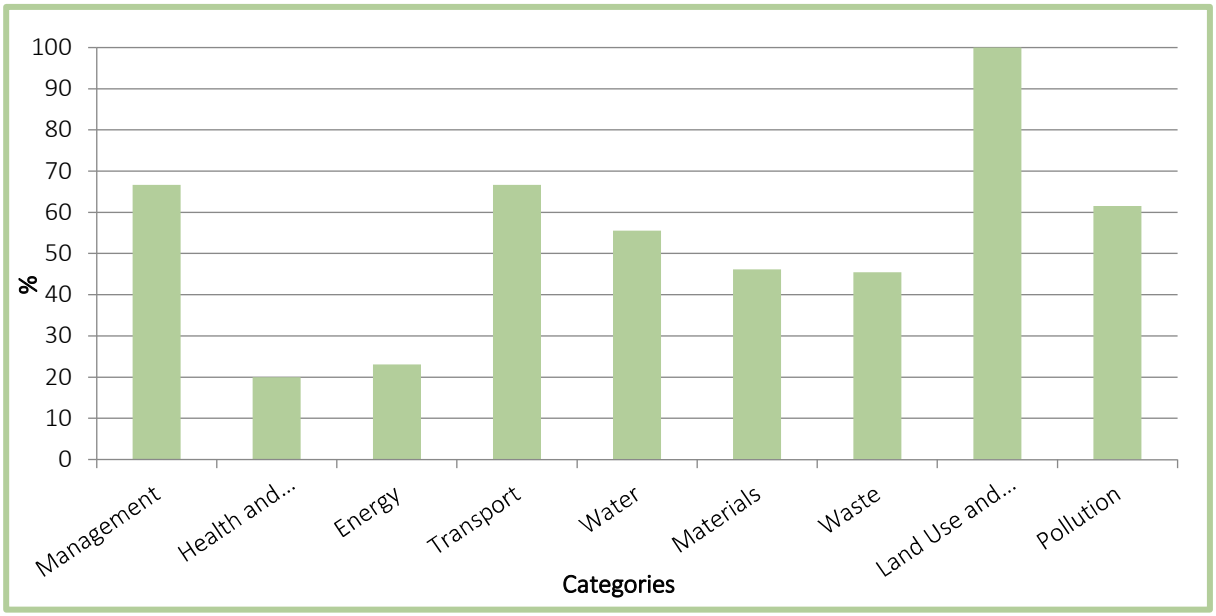
Note that a number of assumptions have been made within this initial appraisal process which will require confirmation by means of further technical input during the formal assessment, once the design and specifications are finalised. The approach to achieving the target BREEAM rating may, therefore, be subject to change further into the development cycle.

Table 4.1 – Minimum Standards Achieved

Minimum Standards for BREEAM for 'Good' rating	Achieved
WAT 01: Water Consumption	✓
WAT 02: Water Monitoring	✓
MAT 03: Responsible Sourcing of Materials	✓

Figure 4.2 shows the estimated relative performance in each of the BREEAM Bespoke environmental sections of sustainability.

Figure 4.2 - Sustainability Performance Overview – Bespoke



4.3 Manchester City Councils - Green and Blue Infrastructure Strategy

The contribution of the London Road Fire Station development to Manchester's Green and Blue infrastructure is restricted due to its location within Manchester city centre coupled with the necessity to protect this heritage asset and Manchester's wider historic environment.

Notwithstanding this, there is still an opportunity to encourage access to part of the city centre's Blue and Green Infrastructure. Subject to planning consent, work is due to commence for the creation of a 6.5 acre public park on the banks of the River Medlock as part of the 30 acre Mayfield regeneration scheme adjacent to Piccadilly Station and within close proximity to the London Road Fire Station development.

The development's significant heritage and contemporary sociable spaces will be a key component as it will draw people through the development and help to create successful neighbourhoods. The proposals support the city's growth in areas such as investment into the public realm and will provide a steppingstone to overall improve connectivity and accessibility to Green and Blue Infrastructure located within the Mayfield Regeneration scheme.

Pollution Prevention Guidance will be adhered to by the main contractor in respects to air (dust) and water (ground and surface) pollution during the demolition and construction phase to prevent any degradation of existing Blue Infrastructure. Pollution prevention measures may include, but are not limited to the following:

- Bunded tanks;
- Oil-water separators; and
- Gully traps.

5. CLIMATE CHANGE EMERGENCY

A Climate Emergency was declared by Manchester City Council on 10th July 2019, with a target to make Manchester carbon neutral by 2038. In support of this, the developer wishes to highlight the following measures that will form part of the specification of this development:

- Unregulated energy demand (that is, the energy demand associated with appliances and cooking) typically accounts for over half of the total carbon dioxide emissions from modern developments such as this. To limit this:
    - The integrated white goods will have as a minimum an A+ energy rating; and,
    - A welcome pack will be provided to all tenants to encourage selection of green energy providers to enable them to make informed decisions.

- It is anticipated that more severe, short term weather events such as extreme flooding, storms, droughts and heat waves will become more frequent. This development will be resilient to potential climate change effects through the management of surface water:
    - The drainage strategy will incorporate the use of Sustainable Drainage Systems (SuDS) where appropriate; and,
    - This system will be designed to withstand a 1 in a 100-year storm event plus a 40% allowance for climate change.

- Waste is a misuse of natural resources and also contributes a large proportion of the UK's carbon footprint;
    - Waste minimisation during construction will raw reduce materials demand, thereby reducing the building's embodied carbon footprint; and,
    - During occupation, the building will benefit from recycling facilities to enable the local authority waste reduction targets, diverting more materials away from landfill and reducing the occupants' carbon footprint further

- The site's location will enable a low carbon, sustainable lifestyles. Located minutes away from several major railway stations, the building users have the option to utilise various sustainable modes of transport. This is facilitated by:
    - Basic infrastructure provided for future connections such as secure cycle storage on and off-site;
    - Travel options, including local access to transport nodes for bus and Metrolink;
    - Local amenities are within easy walking distance of the site, enabling building users to live local with a reduced need to travel; and,
    - Home working options are supported by the generous apartment dimensions and good levels of natural daylighting.

- The buildings are designed to incorporate features that will serve to reduce energy demand, and in turn, carbon emissions arising from access to the building:
    - The lighting provision within the common areas will include active sensors; and,
    - The fit-out specification of the dwellings will seek to minimise water demand. Water efficiency measures (such as dual flush toilets, flow restrictors and reduced volume

baths) will limit potable water demand to <105litres/person/day. This will reduce water heating energy loads and also cut the process energy required to supply clean drinking water.

- An energy strategy that aims to reduce carbon dioxide emission reductions will include the following measures:
    - Provision of a sitewide 'condenser water loop', allowing the use of water source heat pumps and Variable Refrigerant Flow type systems. Water source units are very energy efficient, approaching double the efficiency of conventional air-cooled systems for a well-designed system;
    - High efficiency, gas fired condensing boilers as the principal heat source for the building;
    - Potential future heating input from district heating system;
    - Variable speed cooling towers for heat rejection facilitating reduced energy consumption for space cooling;
    - Use of building components with good thermal properties;
    - Heating and cooling loads to be minimised as far as possible by passive means;
    - Heat recovery in the ventilation systems;
    - Lighting controls offering both daylight dimming and presence detection in office areas and landlord areas;
    - The benefit of good daylighting and the use of appropriate lighting controls to reduce the electrical energy consumption; and,
    - Passive solar shading measures to reduce heat gains.

These commitments, in combination, seek to work towards the carbon reduction target of no more than 1.5°C global temperature increase and assist Manchester City Council in meeting their Climate Change Emergency objectives.

6. CONCLUSION

This Statement has reviewed the environmental performance of the proposed London Road Fire Station (LRFS), Manchester against national and local policies.

The key issues of Manchester City Council's (MCC) Supplementary Planning Document (Environmental Standards) in accordance with the Core Strategy Policy DM 1 have been addressed by the proposals while taking MCC's declaration of a Climate Emergency into consideration. These are as follows:

- The proposed new and refurbished elements of the scheme will be designed in accordance with the BREEAM criteria and achieve the required 'Good' rating (with an aspiration to achieve 'Very Good'. This represents 'good practice' for new non-domestic buildings in the UK and as detailed in Section 5, the scheme is expected to perform well in all areas of the assessments;

- Due to the heritage significance of LRFS, it is proposed to retain the existing external fabric of the building. This presents an opportunity to enhance the performance of the building envelope in terms of thermal performance and air permeability;

- Where feasible, and without impacting upon the historical appearance of the building, the building fabric and servicing strategies will be further refined to establish the optimum design to minimise on-site energy demand and carbon emissions of the development and promote sustainability and a high-quality local environment;

- Water management for the development will be specified and consumption will be minimised; Water management will target a 40% improvement upon the BREEAM baseline case through the specification of efficient water fixtures;

- The development site is located within Flood Zone 1. The site drainage strategy will be designed to manage the surface water runoff to ensure that the peak rate and volume of surface water run-off will be no greater post-development than pre-development;

- Waste arising during construction and occupation/operation will be minimised. A site waste management plan will be adopted during construction. The building will be provided with waste facilities and a comprehensive waste management plan for the site will accord with the local authority recycling scheme. The provision of suitable space and facilities will allow the hotel scheme to segregate and store operational recyclable waste;

- Construction site management procedures will minimise adverse impacts on the environment and control pollution generated during the construction phase. These include a waste management strategy to reduce the quantity of waste generated, and to increase re-use and recycling of materials. A commitment will be made to minimise waste and pollution;

- In accordance with the BREEAM criteria materials are proposed to be responsibly sourced, materials with low environmental impact will be selected and local suppliers will be prioritised. In combination this procurement strategy will minimise, and conserve energy associated with transportation and waste generation; and,

- The contribution of the London Road Fire Station development to Manchester's Green and Blue infrastructure (Manchester's Great Outdoors) is restricted due to its location within Manchester city centre coupled with the necessity to protect this heritage asset and

Manchester's wider historic environment. The development provides an opportunity to encourage access to part of the city centre's Blue and Green Infrastructure.

Furthermore, the proposals accord with the aims of the National Planning Policy Framework, as follows:

- The proposed development will accord with the regulatory compliance criteria and achieve a BREEAM 'Good' rating. This will assist in mitigating the impact of climate change and its environmental impact.

- The proposals include the restoration and protection of a heritage asset, a Grade II* listed building. This also represents a very efficient use of land; and,

- Construction practices that minimise adverse impacts on the environment will be adhered to including a waste management strategy to reduce the quantity of waste generated, and to increase re-use and recycling, a commitment will be made to minimise waste and pollution.

In conclusion, the proposed development reviewed within this statement for the scheme at London Road Fire Station, Manchester will deliver a much-improved heritage building, providing a quality development that responds positively with the guidance provided within the Manchester City Council's adopted planning policies.

Appendix A – BREEAM Bespoke (Assumed Criteria) UK 2014 Pre-Assessment.

Refurbishment and Fit-out - BREEAM Pre-Assessment Review

Bespoke: Specific BREEAM Bespoke criteria will be required for this project, this will require completion of a Bespoke Application Form. The below is an assumed set of criteria, based on previous similar bespoke schemes. As such the final specific requirements for some building areas may vary.

Overview Potential BREEAM Rating - Indicative BREEAM Pre-Assessment score = **50.62% (minimum required = 55% for BREEAM Very Good)**

Issue		Available Credits	Targeted Credits	Responsibility	BREEAM Assumed Bespoke Criteria
Management					
Man 1 – Project Brief and Design					
Man 1a	**Stakeholder Consultation (Project Delivery)**	1	1	Project Manager / Design Team	A clear sustainability brief is developed prior to Concept Design AND prior to completion of the Concept Design (RIBA Stage 2 or equivalent), the project delivery stakeholders (see Relevant definitions) have met to identify and define their roles, responsibilities and contributions for each of the key phases of project delivery. The project team demonstrate how the project delivery stakeholder contributions and the outcomes of the consultation process have influenced or changed the Initial Project Brief, including if appropriate, the Project Execution Plan, Communication Strategy, and the Concept Design.
Man 2b	**Stakeholder Consultation (Third Party)**	1	0	Project Manager / Design Team	**Credit Not Currently Sought** - Prior to completion of the Concept Design stage, all relevant third party stakeholders have been consulted by the design team and this covers the minimum consultation content.
Man 2 - Life Cycle Cost and Service Life Planning					
Man 2a	**Elemental LCC**	1	0	Cost Consultant	**Credit Not Currently Sought**
Man 2b	**Component LCC**	1	0	Cost Consultant	**Credit Not Currently Sought**
Man 2c	**Capital Cost Reporting**	1	1	Client or Project Manager	The capital cost to be reported for the refurbishment project £/m^2.

Issue		Available Credits	Targeted Credits	Responsibility	BREEAM Assumed Bespoke Criteria
Man 3 - Responsible Construction Practices					
Man 3 (P)	Timber Procurement (M)	Pre-Req	Pre-Req	Main Contractor	Main contractor to ensure that all timber is legally harvested and trade timber.
Man 3a	Environmental Management	1	1	Main Contractor	Main Contractor to operates ISO 14001.
Man 3b	Sustainability Champion	1	1	Sustainability Champion	A Sustainability Champion is appointed to monitor the project to ensure ongoing compliance with the relevant sustainability performance/process criteria, and therefore BREEAM target(s), during the Construction, Handover and Close Out stages.
Man 3c	Considerate Construction	2	1	Main Contractor	The Main Contractor to register with CCS and achieve a score of compliance.
Man 3d	Monitoring of Construction site impacts (Energy and Water)	1	1	Main Contractor	Main Contractor sets targets, monitors and reports on energy and water consumption each month, based on site activities.
Man 3e	Monitoring of Construction Site Impacts (Transport)	1	1	Main Contractor	Main Contractor monitors transport of materials from the factory gate to the building site, including any transport, intermediate storage and distribution; as well as Transport of construction waste from the construction gate to waste disposal processing/recovery centre gate.
Man 4 - Commissioning and Handover					
Man 4a	Commissioning and testing schedule and responsibilities	1	1	Client/ M&E	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.

Issue		Available Credits	Targeted Credits	Responsibility	BREEAM Assumed Bespoke Criteria
Man 4b	**Commissioning building services**	1	1	M&E	Where work is being undertaken to upgrade, renovate or install new building services and systems. a. For complex building services and systems, a specialist commissioning manager is appointed during the design stage (by either client or contractor) with responsibility for: i. Undertaking design reviews and giving advice on suitability for ease of commissioning ii. Providing commissioning management input to construction programming and during installation stages iii. Management of commissioning, performance testing and handover/post handover stages.
Man 4c	**Testing and inspecting building fabric**	1	0	Main Contractor	**Credit Not Currently Sought**
Man 4d	**Handover**	1	1	Design Team	A Building User Guide is developed or (where present) an existing Building User Guide is updated, prior to handover for distribution to the building occupiers and premises managers (see Man 04 Commissioning and handover), with a draft copy developed and discussed with users first (where the building occupants are known) to ensure the guide is most appropriate and useful to potential users. A training schedule is prepared for building occupiers/premises managers, timed appropriately around handover and proposed occupation plans.
Man 5 - Aftercare					
Man 5a	**Aftercare Support**	-	-	N/A	Not Applicable
Man 5b	**Seasonal Commissioning**	-	-	N/A	Not Applicable
Man 5c	**Post Occupancy Evaluation**	-	-	N/A	Not Applicable
Man 4 Ex	**Exemplary Level**	-	-	N/A	Not Applicable
Health and Wellbeing					
HEA 1 - Visual Comfort					
Hea 01a	**Glare Control**	-	-	N/A	Not Applicable
Hea 01b	**Daylighting**	3	0	Daylight Consultant	**Credit Not Currently Sought**

Issue		Available Credits	Targeted Credits	Responsibility	BREEAM Assumed Bespoke Criteria
Hea 01c	**View Out**	2	0	Architect	**Credit Not Currently Sought**
Hea 1d	**Internal and External Lighting**	1	1	M&E	**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 to provide an illuminance (lux) level appropriate to the tasks undertaken, accounting for building user concentration and comfort levels. This can be demonstrated through a lighting design strategy that provides illuminance levels in accordance with the SLL Code for Lighting 2012 and any other relevant industry standard. **External Lighting -** All external lighting located within the refurbishment or fit-out zone is designed in accordance with BS 5489-1:2013 Lighting of roads and public amenity areas3 and BS EN 12464-2:2014 Light and lighting - Lighting of work places - Part 2: Outdoor work places. **Zoning and occupant controls** - Internal lighting is zoned to allow for occupant control in accordance with the BREEAM criteria
Hea 2 Indoor Air Quality					
Hea 2a	**Indoor Air Quality Plan**	1	1	Design Team/Main Contractor/ Indoor Air Quality Specialist	An indoor air quality plan to be produced and implemented, with the objective of facilitating a process that leads to design, specification and installation decisions and actions that minimise indoor air pollution during the design, construction and occupation of the building. The indoor air quality plan must consider the following: • Removal of contaminant sources • Dilution and control of contaminant sources • Procedures for pre-occupancy flush out • Protection of Heating Ventilation and Air Conditioning (HVAC) systems from sources of pollution during refurbishment/fit-out works e.g. dust • Procedures for protecting the indoor air quality of areas outside of the refurbishment or fit-out zone that may be affected by the refurbishment/fit-out works • Procedures for identifying and implementing third party testing and analysis required to ascertain that the contaminant sources have been removed effectively before occupancy • Commitments for maintaining indoor air quality in-use, e.g. maintenance and cleaning of the HVAC system, ductwork and filters.

Issue		Available Credits	Targeted Credits	Responsibility	BREEAM Assumed Bespoke Criteria
Hea 2b	Ventilation	1	0	M&E	**Credit Not Currently Sought**
Hea 2c	Volatile Organic Compounds (VOCs)	1	-	Design Team and Main Contractor	Not Applicable
Hea 2d	Volatile organic compound (VOC) emission levels (post construction)	1	-	Main Contractor/ Indoor Air Quality Specialist	Not Applicable
Hea 4 Thermal Comfort					
Hea 4a	Thermal modelling	1	0	Thermal Modeller/M&E	**Credit Not Currently Sought -** The development may struggle to achieve CIBSE Guide A compliance in all areas.
Hea 4b	Adaptability – for a projected climate change scenario	1	0	Thermal Modeller/M&E	**Credit Not Currently Sought -** The development may struggle to achieve CIBSE Guide A compliance in all areas.
Hea 4c	Thermal zoning and controls	1	0	Thermal Modeller/M&E	**Credit Not Currently Sought** - The development may struggle to achieve CIBSE Guide A compliance in all areas.
Hea 5 - Acoustic Performance					
Hea 5a	Performance Standard	3	0	Acoustician	**Credit Not Currently Sought** - The development is unlikely to achieve compliance with the BREEAM acoustic standards in all areas.
Hea 6 - Safety and Security					

Issue		Available Credits	Targeted Credits	Responsibility	BREEAM Assumed Bespoke Criteria
Hea 6a	**Consultation with ALO**	1	1	Architect/ALO	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). 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. The recommendations or solutions proposed by the SQSS are implemented. Any deviation from those recommendations or solutions will need to be justified, documented and agreed in advance with a suitably qualified security specialist.
Energy					
Ene 1 - Reduction of CO2 Emissions					
Ene 1	**Reduction of CO_2 Emissions**	15	1-3	Design Team	**BREEAM Assessor Notes:** Option 1 Whole Building Approach to be used to assess this issue. Credits achieved through an improvement from Pre-development to Post-Development.
Ene 2 - Energy Monitoring					
En e 2a	**Sub-metering of major energy consuming systems**	1	1	M&E	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**. The systems in smaller buildings are metered either with an energy monitoring and management system or with separate accessible energy sub-meters with pulsed or other open protocol communication outputs, to enable future connection to an energy monitoring and management system. The end energy consuming uses are identifiable to the building users, for example through labelling or data outputs.
Ene 2b	**Sub-metering of high energy load and tenancy areas**	1	0	M&E	**Credit Not Currently Sought**

Issue		Available Credits	Targeted Credits	Responsibility	BREEAM Assumed Bespoke Criteria
Ene 3 - External Lighting					
Ene 3	**External Lighting**	1	1	M&E	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.
Ene 4 - Low Carbon Design					
Ene 4a	**Passive Design Analysis**	1	0	M&E / Energy Assessor	**Credit Not Currently Sought**
Ene 4b	**Free Cooling**	1	0	-	**Credit Not Currently Sought**
Ene 4b	**LZC Technologies**	1	0	M&E / Energy Assessor	**Credit Not Currently Sought**
Ene 6 - Energy Efficient Transportation Systems					
Ene 6	**Lifts & Escalators**	3	3	Lift Supplier	An analysis of the transportation demand and usage patterns for the building has been carried out to determine the optimum number and size of lifts, escalators and/or moving walks. 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. For example the power side of the lift controller and other operating equipment such as lift car lighting, user displays and ventilation fans switch off when the lift has been idle for a prescribed length of time. 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. 4. Where the use of regenerative drives is demonstrated to save energy, they are specified.

Issue		Available Credits	Targeted Credits	Responsibility	BREEAM Assumed Bespoke Criteria
Ene 8 - Energy Efficient Equipment					
Ene 8	**Energy Efficient Equipment**	2	2	M&E/client	**Credit Not Currently Sought**
Transport					
Tra 1 - Public Transport Accessibility					
Tra 1	**Accessibility Index**	5	5	BREEAM Assessor	Completed by BREEAM Assessor - Initial review of the accessible transportation nodes 3 credits targeted.
Tra 2 - Proximity to Amenities					
Tra 2	**Proximity to Amenities within 500m**	1	1	BREEAM Assessor	Completed by BREEAM Assessor – central location, local amenities within close proximity.
Tra 3 - Cyclist Facilities					
Tra 3a	**Cycle Storage**	1	0	Design Team/Architect	**Credit Not Currently Sought**.
Tra 3b	**Cycle Facilities**	1	0	Architect	**Credit Not Currently Sought**
Tra 4 - Maximum Car Parking Capacity					
Tra 4	**Car Parking Capacity**	-	-	n/a	Credit not applicable

Issue		Available Credits	Targeted Credits	Responsibility	BREEAM Assumed Bespoke Criteria
Tra 5 - Travel Plan					
Tra 5	**Travel Plan**	1	1	Client / Transport Consultant	Travel Plan and Transport Assessment to be prepared and provided to the building occupants (where known).
Water					
Wat 1 - Water Consumption					
Wat 1	**Water Consumption**	5	2	Architect/M&E	2no. credits targeted which requires a 40% improvement over the BRE's baseline performance. Flow rate examples can be provided to met this requirement. An assessment of the efficiency of newly specified domestic water-consuming components. The efficiency of the following 'domestic scale' water-consuming components must be included in the assessment (where specified/relevant to project type as defined by Table 42): • WCs • Urinals • Taps (wash hand basins and where specified kitchen taps and waste disposal unit) • Showers • Baths • Dishwashers (domestic and commercial sized) and • Washing machine (domestic and commercial or industrial sized)
Wat 2 - Water Monitoring					
Wat 2 (P)	**Water Monitoring (M)**	1	1	M&E	The specification of a water meter on the mains water supply the building Each meter (main and sub) has a pulsed or other open protocol communication output to enable connection to an appropriate utility monitoring and management system. Water-consuming plant or building areas, consuming 10% or more of the building's total water demand, are either fitted with easily accessible sub-meters or have water monitoring equipment integral to the plant or area.

Issue		Available Credits	Targeted Credits	Responsibility	BREEAM Assumed Bespoke Criteria
Wat 3 - Water Leak Detection and Prevention					
Wat 3a	**Leak detection system**	1	1	M&E	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.
Wat 3b	**Water Leak Prevention**	1	0	M&E	**Credit Not Currently Sought**
Wat 4 - Water Efficient Equipment					
Wat 4	**Unregulated Water Use**	1	1	Landscape Architect	Landscaping to be watered via precipitation throughout all seasons of the year.

Issue		Available Credits	Targeted Credits	Responsibility	BREEAM Assumed Bespoke Criteria
Materials					
Mat 1 Life Cycle Impacts					
Mat 1	Life Cycle Impacts	4	1	Architect/Structural Engineer	Assumed credits awarded at this stage – further investigation required in to the materials to be retained and the specification of new materials.
Mat 3 - Responsible Sourcing of Materials					
Mat 3a	Timber Procurement	Pre-Req.	Pre-req.	Main Contractor	All timber used on site will be sourced in accordance with the UK Government's Timber Procurement Policy.
Mat 3b	Sustainable Procurement Plan	1	1	Main Contractor	The principal contractor sources materials for the project in accordance with a documented sustainable procurement plan
Mat 3c	Major Building Elements	3	1	Main Contractor	Key building materials are responsibly sourced to reduce environmental and socio-economic impacts. There will be a materials procurement workshop such that the Main Contractor achieves at least one of three available credits in this area.
Mat 4 - Insulation					
Mat 4a	Embodied Impact of Insulation	1	1	Architect/Main Contractor/ M&E	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.

Issue		Available Credits	Targeted Credits	Responsibility	BREEAM Assumed Bespoke Criteria
Mat 5 - Designing for Robustness					
Mat 5	**Designing for Robustness**	1	1	Architect	**Protecting vulnerable parts of the building from damage** 1. The building incorporates suitable durability and protection measures or designed features/solutions to prevent damage to vulnerable parts of the internal and external building and landscaping elements. This must include, but is not necessarily limited to: a. Protection from the effects of high pedestrian traffic in main entrances, public areas and thoroughfares (corridors, lifts, stairs, doors etc.). b. Protection against any internal vehicular/trolley movement within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas. **Protecting exposed parts of the building from material degradation** Environmental factors have been identified that are relevant to the site location. Existing applicable building elements that are exposed to any relevant environmental factors have been identified. Existing applicable building elements have been surveyed have been assessed to identify impacts of material degradation effects including an assessment to grade the severity of any degradation effects. Design and specification measures have to be developed to repair and protect existing elements according to the severity of any degradation affects, to limit degradation. Where it is not feasible to implement measures to limit material degradation for existing elements, justification should be provided. 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.
Waste					
Wst 1 - Construction Waste Management					
Wst 1a	**Reuse and direct recycling of materials**	2	0	Main Contractor	**Credit currently not Sought**
Wst 1b	**Pre-Refurbishment Audit**	1	1	Developer	The client shall ensure that a pre-refurbishment audit of all existing buildings, structures or hard surfaces within the scope of the refurbishment to be completed.

Issue		Available Credits	Targeted Credits	Responsibility	BREEAM Assumed Bespoke Criteria
Wst 1c	**Construction Resource Efficiency**	3	2	Main Contractor	**Resource Efficiency (up to three credits available) – Targeted 2 credits** Targets will be set within the Site Waste Management Plan, and procedures put in place, to ensure that less than 2.1m3 / 0.4T per 100 m2 (gross floor area) of non-hazardous construction waste will be produced on site.
Wst 1d	**Diversion of waste from Landfill**	1	1	Main Contractor	**Diversion from landfill – Targeted one credit** Targets and procedures will be put in place to ensure that over 85% by volume / 90% by weight of construction waste generated is diverted from landfill and that materials will be sorted into key waste groups.
Wst 2 -Recycled Aggregates					
Wst 2	**Recycled Aggregates**	-	-	N/A	Credit Not Currently Sought
Wst 3 - Recyclable Waste Storage					
Wst 3	**Recyclable Waste Storage**	1	1	Architect/ Building Owner	Dedicated space(s) is provided for the segregation and storage of operational recyclable waste volumes generated by the assessed building/unit, its occupant(s) and activities. This space must be: a. Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams b. Accessible to building occupants or facilities operators for the deposit of materials and collections by waste management contractors c. Of a capacity appropriate to the building type, size, number of units (if relevant) and predicted volumes of waste that will arise from daily/weekly operational activities and occupancy rates.
Wst 4 – Speculative Finishes					
Wst 4	**Speculative Finishes**	1	1	Architect / Occupant	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.
Wst 5 – Adaptability to Climate Change					
Wst 5	**Adaptability to Climate Change**	1	0	Architect / Structural Engineer	**Credit Not Currently Sought**

Issue		Available Credits	Targeted Credits	Responsibility	BREEAM Assumed Bespoke Criteria
Wst 6 – Functional Adaptability					
Wst 6	**Functional Adaptability**	1	1	Architect / Structural Engineer	A building-specific functional adaptation strategy study to be undertaken by the client. Functional adaptation measures have been adopted in the design by Technical Design stage (RIBA Stage 4 or equivalent) in accordance with the functional adaptation strategy recommendations, where practical and cost effective. Omissions have been justified in writing to the assessor.
Land Use and Ecology					
Le 4 - Enhancing Site Ecology					
Le 4	**Enhancing Site Ecology**	1	1	Ecologist /Developer	A suitably qualified ecologist (SQE) has been appointed by the client or their project representative by the end of the Preparation and Brief stage (RIBA Stage 1 or equivalent) to advise on enhancing the ecology of the site at an early stage. The SQE has provided an Ecology Report with appropriate recommendations for the enhancement of the site's ecology at Concept Design stage (RIBA Stage 2 or equivalent). The report is based on a site visit/survey by the SQE. The early stage advice and recommendations of the Ecology Report for the enhancement of site ecology have been, or will be, implemented in the refurbishment or fit-out.
Le 5 – Long-term Impact on Biodiversity					
Le 5	**Long-term Impact on Biodiversity**	2	2	Ecologist /Developer	Where a Suitably Qualified Ecologist (SQE) is appointed prior to commencement of activities on-site and they confirm that all relevant UK and EU legislation relating to the protection and enhancement of ecology has been complied with during the refurbishment or fit-out process. A landscape and habitat management plan, appropriate to the site, is produced covering at least the first five years after project completion in accordance with BS 42020:2013 Section 11.1. Where additional measures to improve the assessed site's long-term biodiversity are adopted.
Pollution					
Pol 3 Surface Water Run-Off					
Pol 3a	**Flood Risk**	2	2	Flood Risk Specialist	Flood Risk Zone 1 – Has a flood risk assessment been completed for the development (i.e. planning)

Issue		Available Credits	Targeted Credits	Responsibility	BREEAM Assumed Bespoke Criteria
Pol 3b	**Surface Water Run-off**	2	1	Drainage Consultant	**Neutral impact** - There is no increase in the impermeable surfaces as a result of the refurbishment works.
Pol 4 – Reduction of Noise Pollution					
Pol 4	**Reduction of Noise Pollution**	1	1	M&E	The external lighting strategy has been designed in compliance with Table 2 (and its accompanying notes) of the Institution of Lighting Professionals (ILP) Guidance notes for the reduction of obtrusive light, 2011. All external lighting (except for safety and security lighting) can be automatically switched off between 23:00 and 07:00. If safety or security lighting is provided and will be used between 23:00 and 07:00, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 2 of the ILP guidance notes.
Pol 5 – Noise Attenuation					
Pol 05	**Noise Attenuation**	1	1	Acoustician/M&E	Where the building does have noise-sensitive areas or buildings within 800m radius of the site, one credit can be awarded as follows: Where a noise impact assessment in compliance with BS 7445 has been carried out and the following noise levels measured/determined: Existing background noise levels at the nearest or most exposed noise-sensitive development to the proposed development or at a location where background conditions can be argued to be similar. The rating noise level resulting from the new noise source. The noise impact assessment must be carried out by a suitably qualified acoustic consultant holding a recognised acoustic qualification and membership of an appropriate professional body (see Relevant definitions in the Additional information section). The noise level from the proposed site/building, as measured in the locality of the nearest or most exposed noise-sensitive development, is a difference no greater than +5dB during the day (07:00 to 23:00) and +3dB at night (23:00 to 07:00) compared to the background noise level. Where the noise source(s) from the proposed site/building is greater than the levels described in criterion 4, measures have been installed to attenuate the noise at its source to a level where it will comply with criterion 4.
Innovation Credit					
	Innovation Credits			N/A	10	1	0	