

Environmental Standards Statement

Victoria Point

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Executive Summary

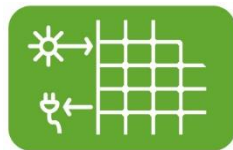
Sustainability is a fundamental aspect of the Victoria Point student residential development with the proposals working towards net zero carbon, circular economy, biodiversity enhancement, health & wellbeing and green travel infrastructure. The repurposing of most of the existing buildings, with only Blocks 4 and 6 being demolished, also follows national campaigns for the repurposing and refurbishment of existing buildings where possible. By implementing the environmental standards outlined within this report, the Victoria Point development will provide a productive, healthy and enjoyable space for people that treads lightly on the planet.

This Environmental Standards Statement (ESS) provides a response to the various sustainability and environmental planning policies of the Manchester Local Development Framework Core Strategy (Development Plan Document Adopted 11th July 2012). This includes following the guidance set out within the Manchester Supplementary Planning Guidance (Adopted April 2007) which requires all planning applications to provide an ESS and provide a response to the following key headings.



ENERGY EFFICIENCY

The developments energy strategy will deliver a high performance building that exceeds current building regulation (Part L 2021) energy and carbon performance by up to 2%. This is being achieved through the application of an energy hierarchy process that reduces energy demand through enhanced fabric performance, followed by the application of highly efficient systems and renewable technologies. This performance exceeds the requirements of Policy EN6 of the Manchester Core Strategy.



RENEWABLE ENERGY

A 1094m² photovoltaic array is proposed to deliver renewable energy to the campus. In addition, Air Source Heat Pumps are also proposed to deliver low carbon heating for hot water to the building in accordance the UK Government Heat and Buildings Strategy. These technologies have been specifically selected following a Low and Zero Carbon Technology (LZCGT) feasibility study. This renewable energy strategy complies with the requirements of Policy EN6 of the Manchester Core Strategy.



ENVIRONMENTAL DESIGN

The project is targeting BREEAM Excellent certification which exceeds the requirements of Policy DM 1 of the Manchester Core Strategy. By assessing and certifying the project against BREEAM, the development will be designed to have a positive response against a multitude of performance metrics including biodiversity, health & wellbeing, pollution & waste minimisation, embodied carbon and responsible construction.



WATER MANAGEMENT & WEATHER RESILIENCE

The project is respectful to the city's water courses and groundwater sources with a series of measures applied to manage both waters discharged and consumed by the building. This includes the incorporation of SUDS and swales within the landscaping design with attention also applied to manage peak and volume run off into the local sewer network (including an allowance for climate change). Water consumed by the building will also be minimised through the application of low consuming fittings, appliances, and landscaping. Water monitoring and control devices will also be specified to manage and reduce water consumption in operation.



WASTE MANAGEMENT

Operational waste arising from the building will be minimised through the development and adoption of a building specific waste management plan. This will include advice on waste reduction and circular economy strategies to assist students and building users to reduce their waste generation. To maximise recycling of operational waste, dedicated recycling bin provisions are proposed based on the anticipated volume of waste arising from the building's occupants. The bin areas have also been specifically located for ease of access for both building occupants and refuse collection.



CONSTRUCTION MANAGEMENT

Circular economy is a fundamental aspect of the building design with the re-use and repurposing of existing buildings a key aspect of the proposals. For buildings and structures being demolished, a pre-demolition audit will be undertaken to optimise material recovery, re-use and recycling. New materials will be specifically selected to reduce the new buildings upfront embodied carbon while also being durable and resilient to reduce maintenance and replacement over the life cycle of the campus. Environmentally responsible materials will also be specified that have a minimal impact on the plant and people. Pollution arising from the construction process will also be minimised through responsible construction practices.



BIODIVERSITY

A site ecological appraisal has been completed to identify any existing wildlife and wildlife habitats and protection measures to be undertaken to protect and sustain existing wildlife as part of the new development. This includes the integration of bird and bat boxes within the proposed building and green roof areas and landscaping to provide foraging for native species. The incorporation of trees and planting within the landscaping aims to enhance the biodiversity of the site while also providing people with the intrinsic connection that humans have with nature (i.e. biophilic design).



WATERWAYS

The Victoria Point development is not located within close proximity to the cities waterways and as such has minimal opportunities to enhance the public access, environmental conditions and management of these assets. The development is however committed to the protection of local watercourses by applying Nature Based Solution (NBS) to manage water run off from the buildings and hard landscaping. During the construction phases of the project water course pollution prevention measures will also be implemented.

The creation of a new student residential campus that responds to the climate emergency and nature crisis is at the forefront of the Victoria Point proposals responding to all of the environmental design standards set out in the Core Strategy and Supplementary Guidance. A summary of the buildings environmental strategy is provided within the graphic below.

1 Introduction

The world is in a climate emergency and in response to this the UK Government has set a legally binding target to be Net Zero Carbon economy by 2050. Similarly, Manchester City Council have set targets to be a carbon neutral city by 2038. To achieve these goals, new developments must respond to the climate emergency and implement measures that reduce carbon impact both in construction and operation, minimise pollution impact, and enhance ecology and the wellness of people.

It is for these reasons why sustainability is a fundamental aspect of the proposed Victoria Point student residential development, where all the above aspects are embedded within the project brief and building design.

1.1 Proposed Development

The site is located in Manchester and currently comprises of six existing blocks of student accommodation. The plans consist of redevelopment of existing student accommodation blocks (6 in total) to include the phased demolition and extension of existing buildings to provide a total no.876 student beds at a maximum height of 12 storeys, including associated ancillary internal and external amenity space, ground floor community/commercial space (Use Class E, F1 and F2), hard and soft landscaping and associated highway works

The project also has industry leading sustainability ambitions including BREEAM Excellent, Net Zero Carbon in Operation and A rated Energy Performance Certificate. This document describes how the design has been developed to meet its benchmarking ambitions and regulatory compliance requirements.

1.2 Purpose of This Report

This report presents environmental strategy for the proposed Victoria Point student residential development in support of its planning application. In particular, this report responds to the environmental standards set out within the Manchester Local Development Framework Core Strategy (Development Plan Document Adopted 11th July 2012) and the guidance set out within the Manchester Supplementary Planning Guidance (Adopted April 2007).

The developments BREEAM Pre-assessment has also been provided within this report as requested by Manchester City Council planning department.



Figure 1.1 Victoria Point Development Site Plan

2 Planning Policy

In response to the climate and environmental emergency, national and local planning policy has placed sustainability at the heart of all new development proposals to provide the needs of people within the means of the living planet. This includes a just transition to Net Zero Carbon (NZC) while also delivering against the United Nations Sustainable Development Goals as well as our national outcomes.

Manchester City Council recognise the importance of sustainable development and as such have planning policies that set specific requirements for new developments to achieve to enhance the local environment and mitigate against climate change, loss of habitat and environmental impact.

2.1 National Planning Policy Framework (December 2023)

The National Planning Policy Framework (NPPF) is a key part of the Government's reforms to make the planning system less complex and more accessible, protect the environment, and promote sustainable development. It sets out the Government's planning policies for England and how these are expected to be applied. The NPPF replaces the previous suite of national Planning Policy Statements, Planning Policy Guidance Notes, and some Circulars, except PPS10 (Waste).

NPPF outlines the strategic policies that relate to achieving sustainable development (Section 2 of NPPF) by applying the following three overarching objectives:

an economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types 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 – to support 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 – to protect and enhance 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 carbon economy.

These objectives should be delivered through the preparation and implementation of plans and the application of the policies in this Framework; they are not criteria against which every decision can or should be judged. Planning policies and decisions should play an active role in guiding development towards sustainable solutions, but in doing so should take local circumstances into account, to reflect the character, needs and opportunities of each area.

2.2 Manchester Local Development Framework - Core Strategy (July 2012)

The Adopted Local Plan sets out the Council's vision and strategy for the area until 2027. The Core Strategy is the principal strategic document within the Local Plan. An adopted Supplementary Planning Document (SPD) that expands on the Local Plan's requirements is the Guide to Development in Manchester.

Manchester has set an ambitious target to become zero carbon by 2038, with new developments to achieve zero carbon by 2038. A short-term target is not included in the current policy. However, it is expected that new developments will support the Council's vision by incorporating net zero carbon measures to reduce the whole life carbon of developments (including embodied and operational carbon). The current adopted plan also sets out various planning policies that relate to ecology enhancement and protection, watercourse pollution, green/ active travel, air pollution and waste. These policies include the following:

- Policy EN4 Reducing CO2 Emissions by Enabling Low and Zero Carbon Development.
- Policy EN5 Strategic Areas for low and zero carbon decentralised energy infrastructure.
- Policy EN6 Target Framework for CO2 reductions from low or zero carbon energy supplies.

- Policy EN 7 Energy Infrastructure opportunities.
- Policy EN 8 Adaptation to Climate Change.
- Policy EN 9 Green Infrastructure.
- Policy EN 14 Flood Risk.
- Policy EN 15 Biodiversity and Geological Conservation.
- Policy EN 16 Air Quality.
- Policy EN 17 Water Quality.
- Policy EN 19 Waste.

New developments are required to respond to the environmental planning policies above with the provision of an Environmental Standards Statement provided in accordance with Manchester Supplementary Planning Guidance (Adopted April 2007).

2.3 Manchester Supplementary Planning Guidance (April 2007)

Guide to Development in Manchester Supplementary Planning Document and Planning Guidance (Adopted April 2007) is a three part document that provides support and guidance with regards to understanding the objectives of the planning policies within the Core Strategy and how developments are to respond to them. The three parts consist of:

- Part 1 - Supplementary Planning Document.
- Part 2 - Guidance.
- Part 3 - Implementation.

Within Part 1, it is a requirement for new applications to submit an Environmental Standards Statement (ESS) which is to be separate from the developments Design and Access Statement. The ESS is to set out how the submitted proposal will achieve the environmental standards set out within the Core Strategy and the supplementary guidance. Applicants are to respond to the following key environmental headings:

- Energy Efficiency
- Renewable Energy
- Environmental Design
- Water Management and Weather Resilience
- Waste Management
- Construction Management
- Biodiversity
- Waterways

In addition to the above, the developments BREEAM Pre-assessment is also to be provided outlining the targeted credits and overall score/ certification sought.

This EES and BREEAM Pre-assessment aims to respond to the requirements of Part 1 of the Supplementary Planning Document.

3 Environmental Standards Statement

This section of the report provides a response to the environmental standards of the supplementary planning guidance under the 9 sustainability headings. The corresponding BREEAM Pre-assessment is also provided within the Appendix of this report that outlines the credits targeted to achieve Excellent certification.

3.1 Energy Efficiency

An energy hierarchy process (as illustrated in Figure 3.2) has been applied in the design development aiming to initially minimise building energy demands through passive design measures, followed by application of energy efficient systems with the opportunity of renewable technologies then considered.

The buildings energy performance has been tested and informed from the project outset with early-stage analysis completed to inform the building massing and glazing ratios. The purpose of this analysis is to achieve a balance between daylight, useful solar gain and energy performance. An iterative process of optimising and assessing the buildings solar response was undertaken as illustrated in Figure 3.1 below.

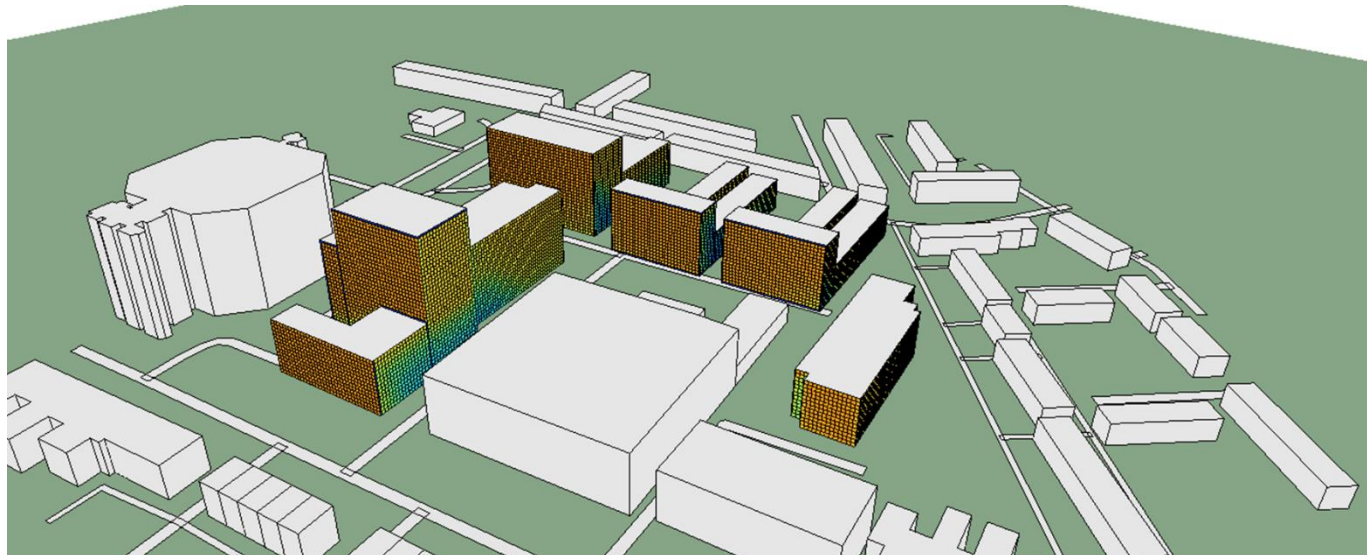


Figure 3.1 Early Stage Façade Solar Exposure Analysis

Following Manchester's Local Development Plan, the proposed development aims to minimise CO2 emissions to the atmosphere arising from the operations of and within the building. The following energy hierarchy (by Policy EN 6 of the Core Strategy) has been applied to the design strategy of the development to minimise CO2 emissions:

1. Minimising energy consumption through passive design measures
2. Supplying energy efficiently through active systems & plant
3. Maximising energy generation from on-site Low and Zero Carbon Generation Technologies (LZCT) energy sources

The three principles outlined above have been applied sequentially and systematically in developing the proposal. These are illustrated in the following sections.

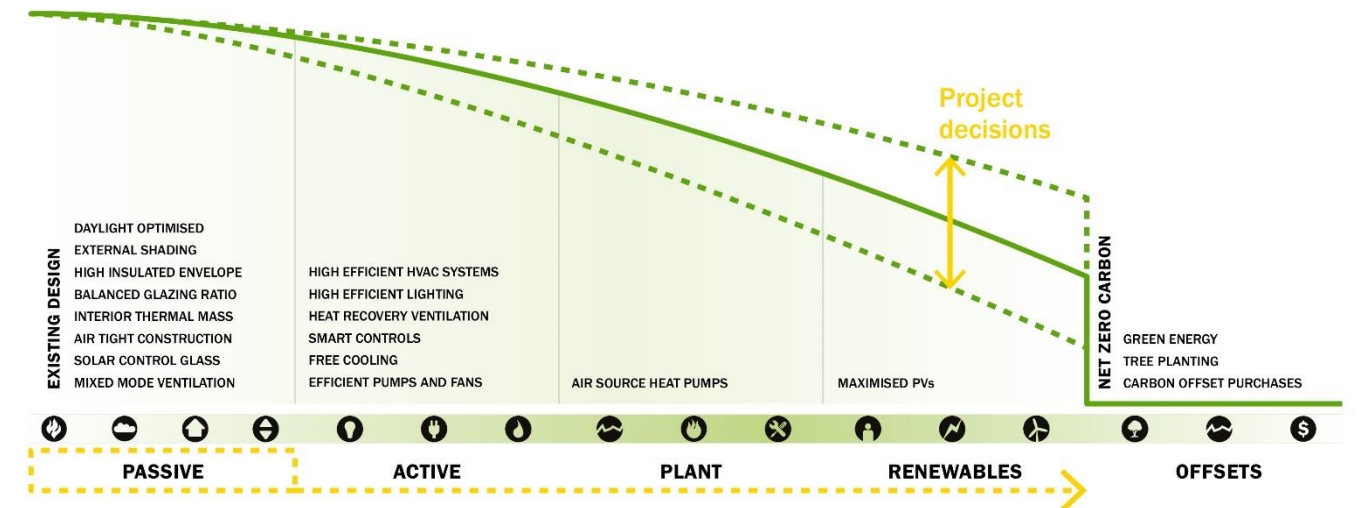


Figure 3.2 NQX Building Energy Hierarchy Process

3.1.1 Passive Design Measures

The energy-efficient building design of the proposed development will minimise the need for energy in operation while maximising the comfort of users during the lifetime of the building. Integrating passive design principles will enable the building to be less reliant on HVAC systems and minimise dependence on artificial lighting, taking advantage of natural energy flows to maintain visual and thermal comfort.

Several measures have been implemented to limit heat losses across the building envelope. These include highly efficient built form and high levels of insulation and airtightness to both the new and existing fabric. New windows with solar control glass has been implemented to help minimise solar heat gains and reduce the energy required for cooling. Daylight into the building has been maximised through the specification of glazing with a high visible light transmittance. The performances go significantly beyond building regulations compliance and have applied the latest innovative insulation and glazing products to reduce the building heat demand.

3.1.2 Energy Efficient Systems

Services that exceed compliance with Part L 2021 have been specified. Services will include energy-efficient lighting systems, controls, and efficient HVAC and DHW plant and equipment.

Details of the systems applied are provided in Table 3.2, which includes the performance of ASHP, heat recovery ventilation, lighting, and controls. The latest innovative technologies have been applied within the energy model to reduce energy consumption and CO2 emissions to ensure the building uses energy as efficiently and cleanly as possible.

3.1.3 Low Carbon Technologies

A low carbon and renewable technology feasibility study has been completed that concluded that heat pumps and photovoltaics are the best suited technologies for the proposed development.

By implementing the proposed energy strategy, the building exceeds the compliance against the current building regulations (Part L) by up to 2% as illustrated in Table 3.1. This exceeds the requirements of Planning Policy EN6 and allows 6-7 credits to be achieved under the BREEAM Ene 01 Issue (minimum 4 credits required for Excellent).

It can therefore be concluded that the energy strategy proposals for the Victoria Point development achieve the aims and objectives set out under the Energy Efficiency heading of the Manchester Supplementary Planning Guidance (Adopted April 2007).

Table 3.1 Energy Modelling Results

	Results				
	Block 1	Block 2	Block 3	Block 4	Block 5-6
HVAC System	Electric Panels and MVHR to accommodation spaces VRF to Amenity areas				
BER kgCO2/m2	0.24	2.4	2.48	2.16	2.53
TER kgCO2/m2	3.02	2.42	2.52	2.18	2.58
% BER/TER Betterment over Part L 2021	92.1%	0.8%	1.6%	0.9%	1.9%
BPER kWh/m2	1.89	24.56	25.4	22.35	26.11
TPER kWh/m2	32.75	25.08	26.06	22.84	27.04
% BPER/TPER Betterment over Part L 2021	94.2%	2.1%	2.5%	2.1%	3.4%
BREEAM Ene01 Credits achieved	7	7	7	6	7
Part L 2021 Compliance Achieved					
15% pass over Part L 2010 (Policy EN 6)					
EPC Rating	A	A	A	A	A
Prerequisite for BREEAM Excellent Achieved (min. 4 credits)					

Table 3.2 Victoria Point Building Fabric and Energy Performances

Element or System	
Fabric Thermal Performance	
External Wall U-Value	0.13 W/m2K
Floor U-Value	0.25 W/m2K (Existing elements) 0.12 W/m2K (New elements)
Roof U-Value	0.25 W/m2K (Existing elements) 0.12 W/m2K (New elements)
Glazing U-value (incl. frame)	1.2 W/m2.K
Building Air Permeability	3 m3/m2.h
Glazing Performance	
Glazing g-value	0.4
Glazing Light Transmittance	71%
HVAC	
Studio Spaces	- Electric Panel Heaters and MVHR - UK NCM type = Other local room heater - unfanned - SCoP = 1 - SFP = 0.8 W/l-s - Heat Recovery Efficiency = 79%
Cluster Spaces	- Electric Panel Heaters and MVHR - UK NCM type = Other local room heater - unfanned - SCoP = 1 - SFP = 1.1 W/l-s - Heat Recovery Efficiency = 90%
Amenity Spaces	- VRF air conditioning and MVHR ventilation - UK NCM type = Variable Refrigerant Flow - SCoP = 3.6, SEER = 5 - UK NCM air supply mechanism = Centralised balanced A/C or mech vent system - SFP = 1.6 W/l/s, HR = 82%
Plant Spaces	- Elec Panel Frost protection for externally located rooms - SCoP = 1.0 - UK NCM air supply mechanism = Centralised balanced A/C or mech vent system - SFP = 1.8 W/l-s, HR = 79%
Domestic Hot Water	
Domestic Hot Water	- Indirect ASHP system serving floorplate HIU's. - SCoP = 3.5
Lighting	
Luminaire efficacy	Average = 120 lm/cw
Lighting controls	- Manual switches to all studios. - Additional absence or presence detection to all other communal spaces.
LZCGT Technologies	
PV	Area = 1094m2 (across all blocks), Eff= 22.6%, Inclination = 12° , Orientation = 186° (from North)
ASHP (for DHW)	Efficiency as above

3.2 Renewable Energy

Following a Low and Zero Carbon Technology feasibility study (as outlined in the supporting Energy Statement), 1094m² of photovoltaic panels are proposed to deliver renewable electricity to the buildings. In addition, the feasibility study identified that Air Source Heat Pumps (ASHP) are a suitable low carbon technology to deliver low carbon domestic hot water heating to the buildings. By adopting this all-electric heating strategy, the building will be able to achieve Net Zero Carbon in operation as the national grid decarbonises (expected to be decarbonised by 2035). This is in accordance with the UK Heat and Buildings Strategy and Future Building Standard that aims to decarbonise homes, commercial, industrial and public sector buildings by 2050.

Through the analysis of suitable low carbon and renewable technologies, combined with address the national objective of all-electric buildings that take benefit of the decarbonisation of the national grid, it can be concluded that compliance with Policy EN4 and EN6 is achieved. This is further demonstrated with the area of PV being maximised on the buildings roof to optimise the available renewable energy yield and as such achieves compliance with the requirements of the Manchester Supplementary Planning Guidance (Adopted April 2007). .

3.3 Environmental Design

The Victoria Point development aims to achieve a high standard of sustainable design, procurement and construction and as such is targeting BREEAM Excellent certification. A BREEAM Pre-assessment has been completed for the building which is currently falling short of the Excellent target, however potential credits have been identified to enhance the score to achieve the required 70% plus a 5% margin..

A copy of the BREEAM Pre-assessment is provided with Appendices of this report that includes the BREEAM hitlist/ tracker that identifies the credits targeted.

With the Manchester Supplementary Planning Guidance requiring BREEAM Very Good, it can be concluded that the Victoria Point proposals exceed the requirements of DM1 and the corresponding supplementary guidance.

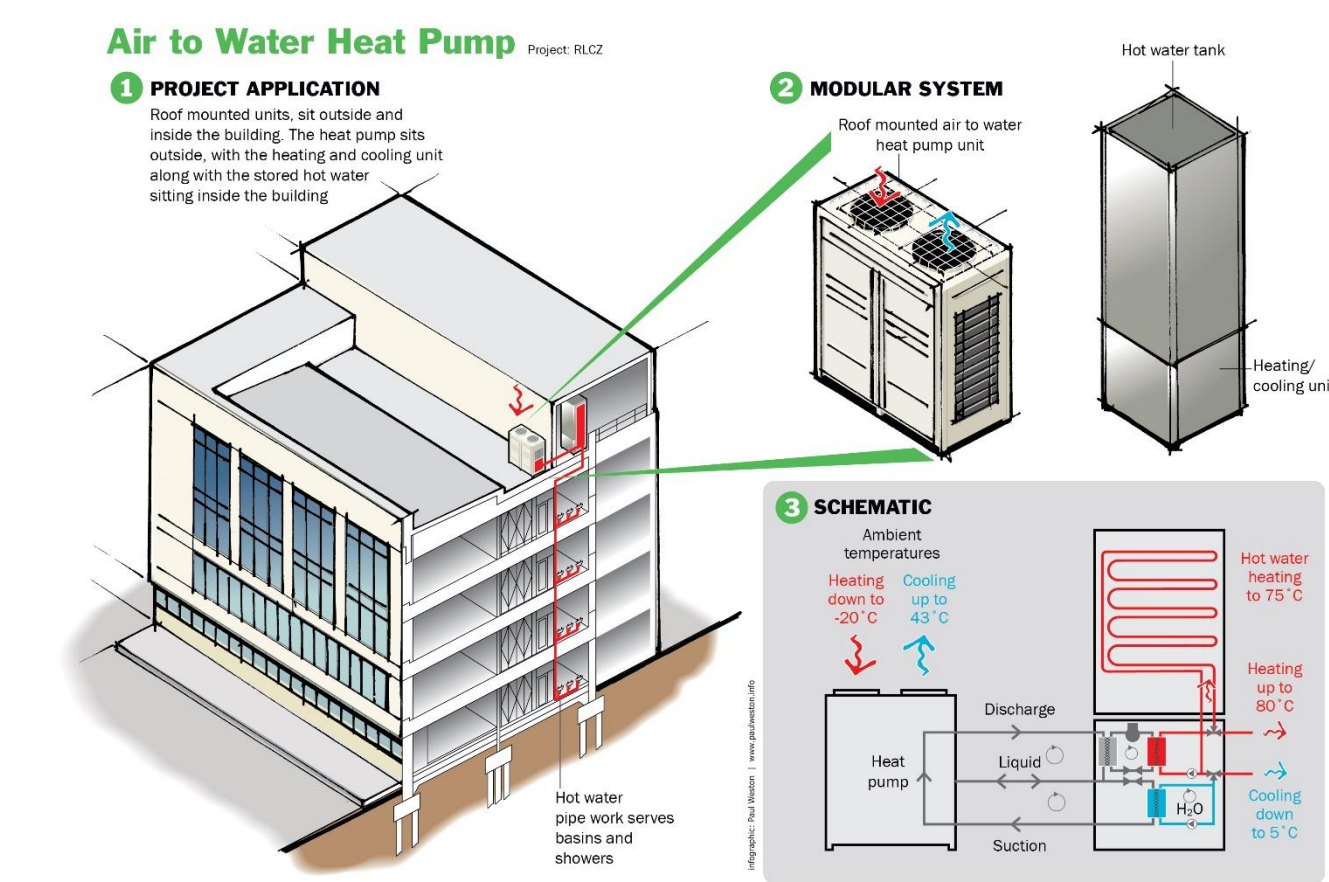


Figure 3.3 Air Source Heat Pump System

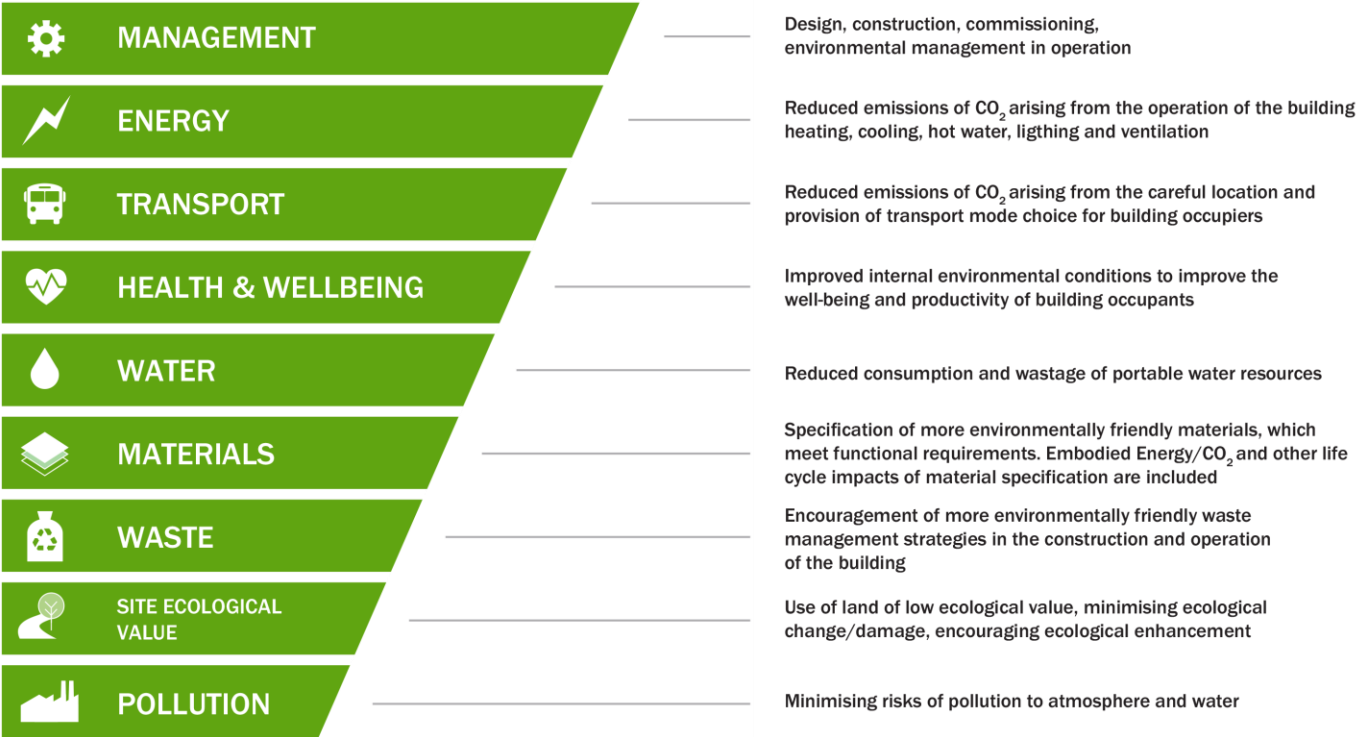


Figure 3.4 Scope of BREEAM Assessment (BREEAM Issues)

3.4 Water Management and Weather Resilience

In addition to the creation of a high-quality environment for people, the building has been designed to be resilient to the effects of climate change and extreme weather conditions. This includes designing and testing the building under warm weather conditions to ensure that thermal comfort within the building can be maintained. Similarly, the buildings fabric will be designed to ensure it can provide a robust barrier to high levels of rain/ snow fall, wind driven rain, high wind speeds as well as high and low external temperatures. This will be delivered through robust construction detailing and materials. The key focus of the buildings climate change resilience will be to protect people, the environment, continuity of business and the asset.

The proposal aims to deliver climate resilience through Nature Based Solutions (NBS) such as planting and green roof areas which also have benefits in terms of energy saving, noise reduction, biodiversity enhancement and asset value increase as illustrated in the UK GBC NBS research below.

Green Roof - Vegetation growing on any structure's horizontal surface

Common alternative terms: Living Roof, eco-roof, roof garden, brown roofs, green-blue roofs, biodiverse roofs



6.7%

Total energy savings for the space directly below the green roof



11db

Noise reduction by an extensive green roof



6.9%

Uplift to property value by an accessible green roof



Average CAPEX installation cost (£ per m²)		Average OPEX maintenance cost (£ per m²yr)	
£126 extensive green roof	£176 intensive green roof	£6 extensive green roof	£11 intensive green roof

Sustainable Drainage System (SuDS)

The management of surface water runoff within the urban environment to mimic the natural drainage processes, while supporting broader biodiversity and amenity aims.

Common alternative terms: Drainage systems, natural drainage systems, Water Sensitive Urban Design (WSuDS)



60–72%

Rainwater runoff retained



60–80%

Similarity in species richness to a natural pond



79%

Total suspended solids removed in filter strip/swale SuDS system



Average CAPEX installation cost (£ per m²)		Average OPEX maintenance cost (£ per m²yr)	
£30 detention ponds/basin	£26 retention ponds/basin	£0.33 detention ponds/basin	£1.10 retention ponds/basin
£366 soakaway	£23 swale	£0.12 soakaway	£0.10 swale
£336 raingarden			

Figure 3.5 UK GBC Nature Based Solutions (SuDS and Green Roofs)

Sustainable Drainage Systems (SUDs) will be incorporated in the proposals. They will include raingardens, green roofs, swales and permeable paving.

Measures to protect people and the building from flood risk will be implemented within the designs, including allowance for climate change impacts. To minimise the impact on the sewer network arising from the buildings drainage requirements, surface water peak and volume run off will be managed on-site through on-site attenuation tanks and SuDS storage .

Nature Based Solutions such as green roofs and swales are proposed to provide a natural way to mitigate impact rather than resorting to technologies that add embodied carbon to the building.

In addition to stormwater and flood risk management, the development will minimise the consumption of potable water in sanitary and landscape irrigation applications following the zero water process outlined in Figure 3.6 below.

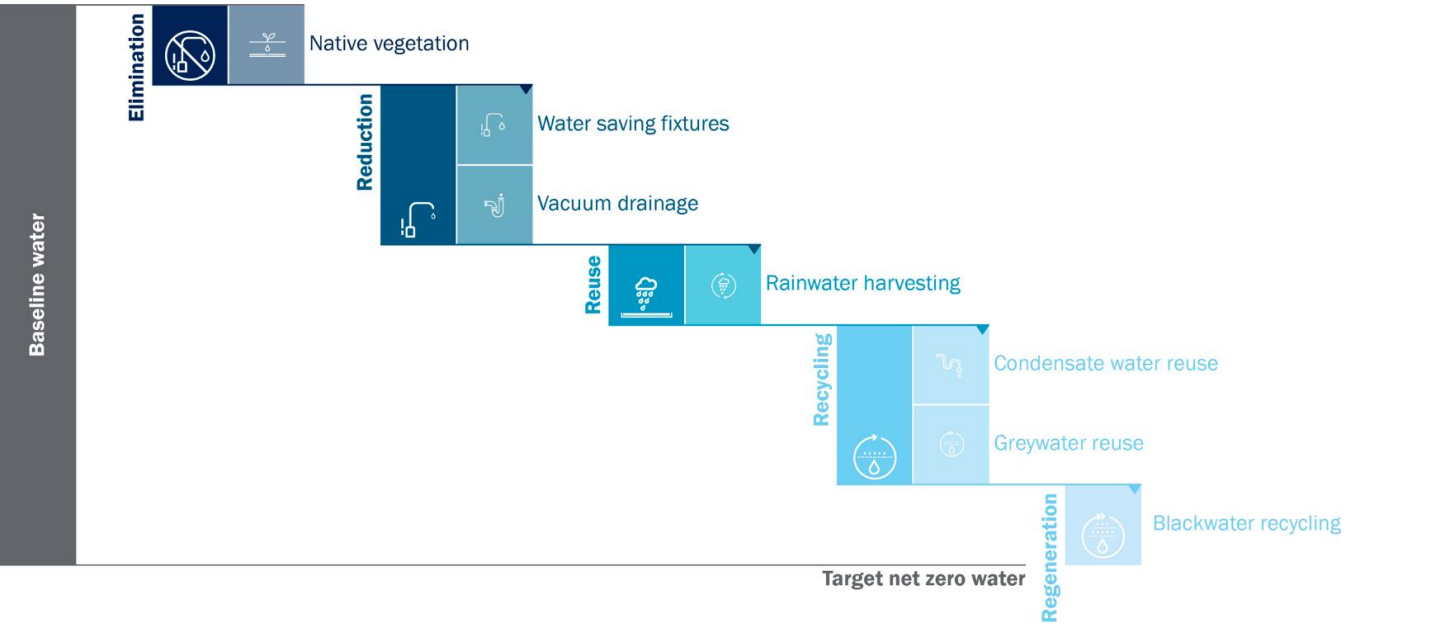


Figure 3.6 Water Consumption Reduction Strategy

This includes the use of native vegetation and soft landscaping that can thrive without the need for automatic irrigation systems. Low water use fixtures and fittings will be installed in the development. Fittings, such as flow restrictors will be fitted in taps and shower heads. WCs will be provided with dual flush cisterns and fitted with delayed action inlet valves.

To achieve 3-4 credits under the BREEAM Wat 01 Issue, sanitaryware flow rates shall be limited to the following:

- WC - Flush volume 3.75L
- WHB taps - 5l/min
- Showers - 6L/min
- Baths - 140 litres
- Urinal - 2l/bowl/hour
- Kitchenette tap - 6l/min
- Kitchen taps - pre-rinse nozzle - 7.3l/min
- Domestic sized dishwashers - 12 l/cycle
- Domestic sized washing machines - 40 litres/use Commercial sized dishwashers - 5l/rack
- Commercial sized washing machines - 7.5l/kg.

The opportunities for rainwater harvesting/ grey water reuse and recycling will be investigated at the next design stages to minimise potable water use in sanitary applications.

The buildings public health systems will also include leak detection systems that will automatically notify any water leaks within the building. Automatic shut off valves will also be installed to prevent the unnecessary use of water such as taps being left on. The building will also include a building management and monitoring system that will record and monitor the buildings water consumption, allowing issues to be identified and remedial actions to reduce consumptions to be implemented.

By implementing these water management and weather resilience strategies, the proposed Victoria Point development achieves the aims and objectives of the Manchester Supplementary Planning Guidance (Adopted April 2007).

3.5 Waste Management

Reducing the operational waste generated from the occupants is a key objective of the projects sustainability strategy. To achieve this, the provision of suitable infrastructure along with building occupant education materials will be provided.

In terms of infrastructure the buildings refuse storage will be located either within the ground floor of each building or in a separate refuse building, providing ease of access for refuse collection. This refuse location is also convenient for the buildings users with the store accessed directly from within the building or within proximity to the building entrances/ exits. Bin provision has been calculated based on anticipated waste generated from each building occupant and a 2 week collection frequency. To reduce the frequency of bin collections and to allow for more efficient storage a pin press compactor is also proposed.

The bins will be clearly labelled to allow for on-site waste segregation for key waste types (e.g. cardboard, plastic, metals etc.) to reduce the risk of recyclable waste going to landfill and off-site waste segregation. Within the student bedrooms/ studios and communal facilities, local waste recycling bins will also be provided to allow the ease of sorting, segregating and recycling waste.

By providing dedicated recyclable waste storage along with education materials and a site waste manage plan, the Victoria Point development implements the guidance set out within the Manchester Supplementary Planning Guidance (Adopted April 2007).

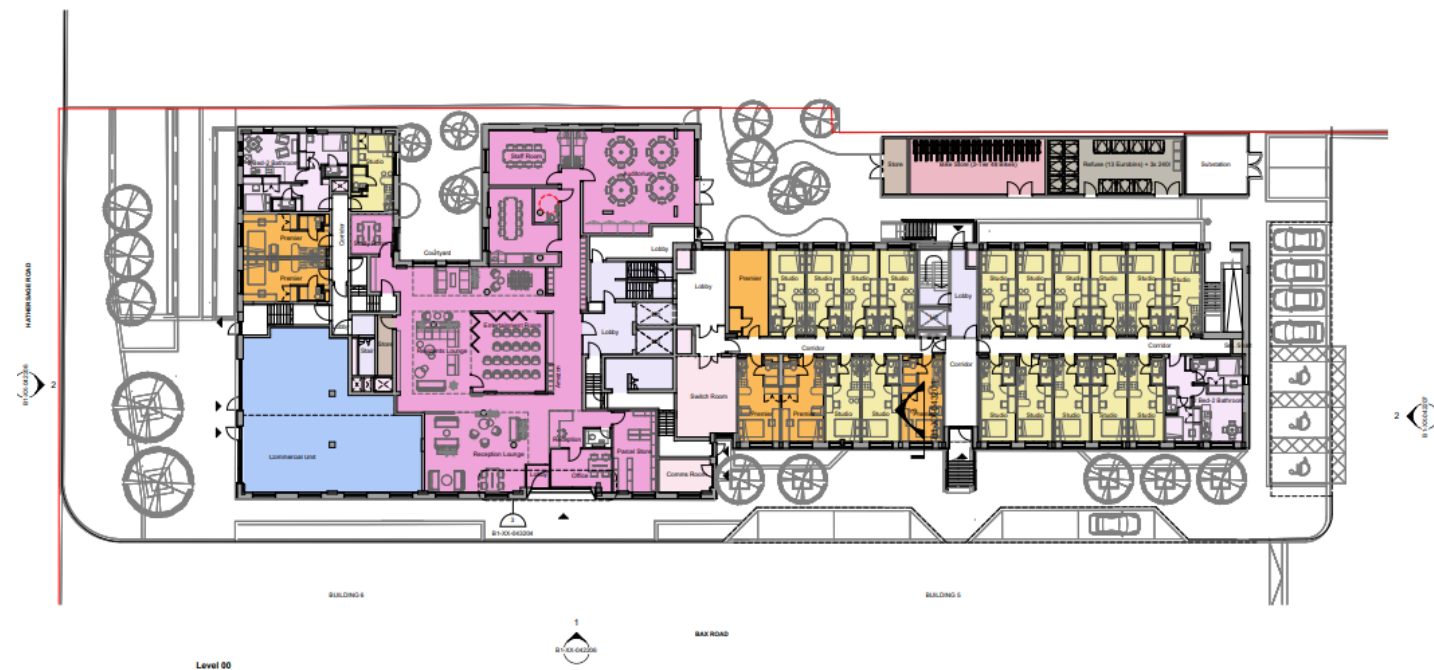


Figure 3.7 Victoria Point Block 5&6 Refuse Storage Area (Highlighted in Brown)

Although suitable waste storage provisions are proposed, a key strategy to reduce operational waste will be in education materials to building occupants. A building specific waste management plan will be developed that will give advice and guidance to students on measures that they can adopt to reduce waste, optimise the opportunities to re-use materials and implement circular economy principles. Details of the buildings waste storage provisions and management strategy will also be provided to all students in the form of a Building User Guide.

3.6 Construction Management

Net Zero Carbon and circular economy features high on the agenda at national and local levels. To assist the construction industry to deliver Net Zero Carbon buildings, there are several industry guidelines, frameworks and assessment methodologies published by LETI, UK GBC and RIBA that provide a road map to assessing quantifying and target setting whole life carbon performance of buildings.

LETI, UKGBC and RIBA all refer to Whole Life Carbon (WLC) of buildings which considers the carbon emissions associated with embodied carbon (i.e. the carbon that is inherent in the manufacture, construction, and maintenance of the building fabric) and operational carbon (i.e. carbon associated with energy consumption of the building in its operation). WLC therefore are emissions resulting from the construction and use of a building over its entire life, including its demolition and disposal.

To reduce a buildings WLC, it is vital that circular economy principles and low carbon measures are implemented at the earliest stages of design and continually quantified and optimised against benchmark targets. This is the approach that is being applied at Victoria Point, where the evaluation and re-evaluation of key strategies have been applied to the design process as illustrated in the graphic below.

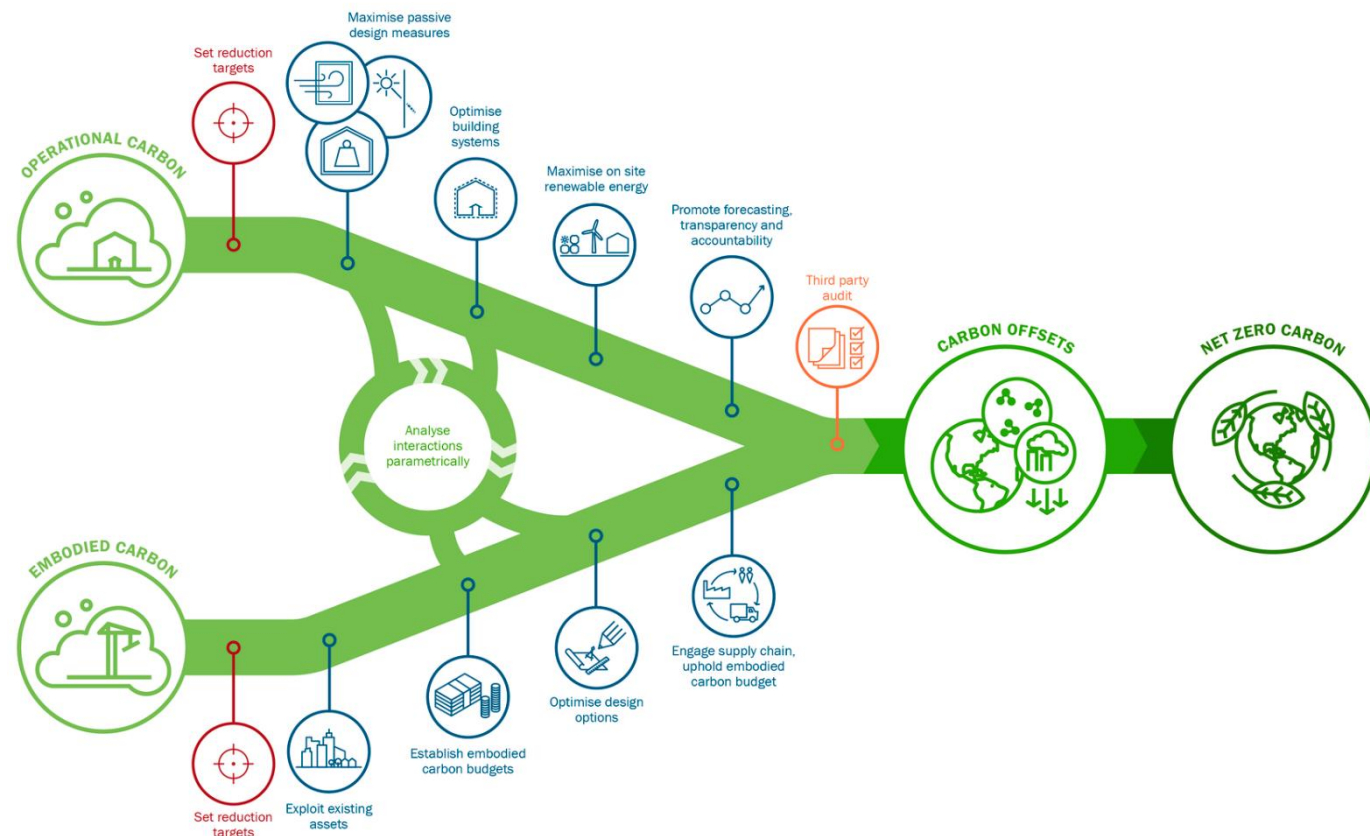


Figure 3.8 Victoria Point Net Zero Carbon Strategy

These strategies and measures have and will continue to be implemented in the design, construction and operation of the Victoria Point development to deliver a site that responds to the climate emergency and follows the UKs trajectory to net zero carbon in accordance with the Paris Agreement 1.5°C science-based targets.

3.6.1 Circular Economy

With annual global extraction of primary materials set to triple by 2050 and global waste also on pace to triple by 2100, there needs to be a fundamental shift in the way resources are consumed with a move away from a linear 'take - make - dispose' model to a circular model that re-uses, repairs, re-manufactures and recycles materials.

This move towards a circular society is at the heart of the Victoria Point proposals with the existing buildings within the development refurbished and extended saving both embodied carbon and waste generation arising from demolition. This strategy of refurbishment and extension of existing assets is in compliance with the national preference of re-purposing and re-use over demolition.

In terms of the new development designs circular economy is also being implemented. This includes designing the refurbished/ extended buildings for future re-use and adaptability. This will extend the life cycle of an asset and reduce the quantum of buildings that will be demolished in the future. Eventually when a build does come to the end of its lifecycle and is to be deconstructed, it is important that the building has been designed for ease of disassembly so that the materials can be recovered and re-used/ up-cycled for use in new construction projects. This allows the de-constructed building to become a material bank for new construction projects within the city and the wider UK construction industry.

To respond to need for society and the construction industry to move towards a circular model, measures that will allow the future retrofit, refurbishment, repurposing, and re-use of the Victoria Point proposals have been implemented to extend the life cycle of the asset. This includes, applying a regular construction grid that allows a wide range of retro-fit options to be explored such as conversion to private residential, hotel & leisure, academia as well as various forms of office spaces.

The opportunities for disassembly have also been explored as part of the buildings design evolution to maximise material recovery and potential re-use. Similarly material recovery and circular economy will be explored in more detail in the building services systems and fit out elements with engagement with manufacturers who provide circular solutions for their services and products.

In terms of the existing buildings that are to be demolished, a pre-demolition audit will be undertaken to identify the end use of materials with preference to re-use, repurposing, and up-cycling. Where this is not possible, materials will be recycled and diverted from landfill as far as possible.

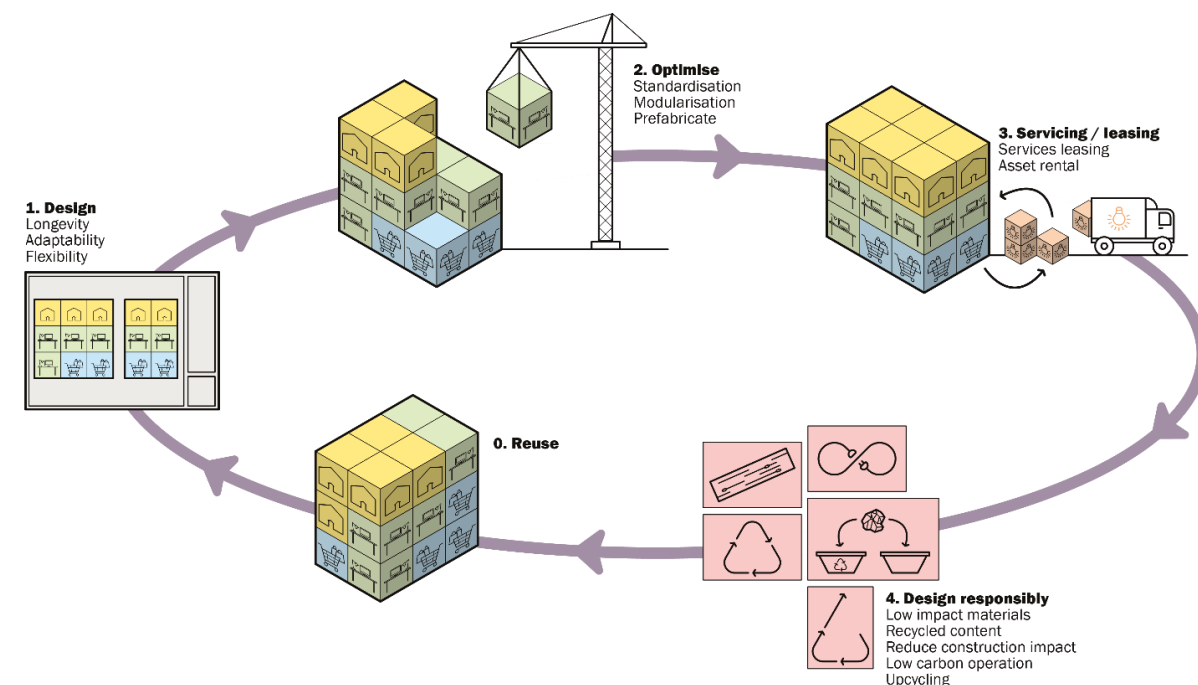


Figure 3.9 Victoria Point Circular Economy Strategy

3.7 Embodied Carbon

The Embodied Carbon of a building is equivalent carbon emissions resulting from the materials, construction, operation, and disposal of a building as illustrated in the figure below.



Figure 3.10 Scope of Embodied Carbon

A buildings embodied carbon is measured and quantified in terms of kgCO2e/ m² (GIA). It is calculated by completing a Life Cycle Assessment (LCA) which calculates the total embodied carbon by considering the areas, volumes and tonnages of materials against predefined embodied carbon factors for typical construction products (e.g. concrete, steel, timber etc.). The total embodied carbon is then divided by the floor area of the building to provide an embodied carbon performance figure which is benchmarked against industry guide, such as LETI.

The UK GBC NZC Framework requires developments to assess, quantify and minimise construction embodied carbon throughout the design and construction process. This involves implementing embodied carbon reduction measures and strategies within the building design, such as building light, building low carbon, building for the future and setting embodied carbon targets in-line with industry guidance.

The Victoria Point development aims to implement the measures and recommendations of industry guidance to reduce the embodied carbon impact of the development. This includes designing, procuring, and constructing the building through measures such as building light, building low carbon, and building for the future as outlined in the adjacent Table. Whole life embodied carbon modelling has been undertaken to inform the building design and material selections with the aim reduce the assets carbon emissions over its life cycle. Such measures include the use of materials with a low embodied carbon footprint, high recycled content, and products that hold Environmental Product Declarations (EPDs) that confirms their carbon and environmental performance. This has been quantified and optimised through Life Cycle Analysis (LCA) modelling which will continue to be applied throughout the design and construction of the building with performance benchmarked against industry best practice for embodied carbon and whole life carbon.

Table 3.3 Victoria Point Embodied Carbon Strategy

	A fundamental feature of the development is to re-purpose and re-use the existing buildings which results in significantly reducing embodied carbon and waste that would arising from demolition and new construction. In terms of the new extensions, these have been designed to minimise the structural loadings, such as minimising long spans and large cantilever building form and massing. Opportunities to design lean have been implemented such as focusing of passive design to reduce building services along with careful glazing fenestration to reduce secondary steel work requirements. The extensions have also been designed with a low building form factor that demonstrates efficient design in terms of both operational energy and embodied carbon reduction/ material efficiency.
	Locally sourced new materials will be specified and procured to minimise transport emissions to and from site. Also, ground works will be retained on site as far as possible to reduce the embodied and environmental impact of removing earth off site. Modular construction will be applied where possible to minimise waste and avoid the un-necessary use of materials. Site emissions will be reduced as far as possible through prioritising where possible electricity for site equipment.
	The use of low embodied carbon materials will be minimised throughout the design, procurement and construction of the building. This will involve identifying and focusing on the inherently high carbon emission materials such as steel and concrete and maximising the recycle content and low emission solutions for these materials as far as possible. The opportunities to apply natural materials such as timber as a replacement to steel will be investigated through embodied carbon calculations. A material passport will also be implemented that will set the environmental and embodied carbon performances of materials used in the construction of the building and landscaping.
	The proposed building has been designed with flexibility and future adaptation in mind. Measures include applying a regular structural grid and developing risers and plant space to facilitate adaption. Durable and resilience materials will also be specified to minimise the embodied carbon impact of maintenance and replacement over the lifetime of the buildings and landscaping. Finally, measure to facilitate the ease of future disassembly at the end of the building life cycle will be developed. This will aim to maximise the recycling, reclaim and re-use potential of the materials in line with the circular economy principles.
	The buildings embodied carbon performance will be assessed against the BREEAM Mat O1 (Life Cycle Analysis) issue, including benchmarking against the BREEAM embodied carbon target for offices. To measure and quantify performance against this target, embodied carbon Life Cycle Assessment calculations (LCA) will be completed at each RIBA Stage. These calculations will not only quantify performance against the BREEAM target, but also include option appraisals that identify solutions and strategies that reduce the carbon impact of the overall development.

3.7.1 Site Environmental Management Procedures

During the construction phases of the project, the contractor will be obligated to implement site environmental management procedures with regards to pollution minimisation (air, water, noise and light pollution), resource efficiency (energy, water and transport emissions) as well as responsible construction practices. The principle contractor will be obligated to implement the following as part of their contract.

Contractor will set targets for 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. Set targets for the potable water consumption (m³) arising from the use of construction plant, equipment (mobile and fixed) and site accommodation. Set targets for transportation movements and impacts resulting from delivery of the majority of construction materials to site and construction waste from site.

Contractor shall implement the following construction site impact measures. To ensure robust collection of energy, water and transport consumption data, the project site manager (or other relevant person) shall be assigned to oversee the monitoring, recording and reporting duties.

- Energy consumption – Energy consumed from the use of construction plant, equipment (mobile and fixed) and site accommodation necessary for completion of all construction processes will be monitored with targets set. The data collected will be provided to the BREEAM Assessor in the following forms; total kWh and kWh/project value and total kgCO2eq and kgCO2eq/project value.
- Water consumption – Water consumed from the use of construction plant, equipment (mobile and fixed) and site accommodation necessary for completion of all construction processes will be monitored with targets set. The data collected will be provided to the BREEAM Assessor in the following forms; potable water consumed in m3 (minus any recycled water) and m³/£100k.
- Transport of construction materials and waste – Transportation (fuel consumptions, distances etc.) of deliveries to the site and waste removed from the site will be monitored. This will include
 - a. Transportation of materials from the point of supply to the building site, including any transport, intermediate storage and point of supply. Monitor as a minimum: materials used in major building elements, ground works and landscaping materials.
 - b. Transport of construction waste from the construction gate to the waste disposal processing/ recovery centre gate. This will include the monitoring of the key waste groups as outlined in the projects resource management plan.

The data will be provided to the BREEAM Assessor in terms of the total fuel consumption (litres), total carbon dioxide emissions (kgCO2 eq), plus total distance travelled (km) for both deliveries and waste separately.

Contractor shall also comply with the following requirements:

- Timber Procurement – All timber used on the project (including site timber) will be sourced in accordance with the UK Government’s Timber Procurement Policy. All timber will be legal and from a sustainable source.
- Construction Site Management – operate under a valid ISO 14001 Certification
- Watercourse and dust pollution –implement best practice pollution prevention policies and procedures on-site in accordance with Pollution Prevention Guidelines, Working at construction and demolition-sites: PPG6
- Responsible Construction Practices –register project against the Considerate Constructors Scheme (2013 Code of Considerate Practice) achieve an overall score of 40 or more and a minimum score of 7 achieved in each of the 5 section.
- Sustainability Champion –appoint certified construction sustainability champion (e.g. BREEAM AP or BRE Site sustainability Manager Membership Scheme) to monitor BREEAM compliance throughout the construction, handover and close out stages of the project. The Sustainability Champion shall work with the project team, including the client, to consider the links between BREEAM issues and assist them in achieving and if possible, going beyond the design intent, to maximise the project’s performance against the agreed performance targets throughout the Construction, Handover and Close Out stages. Monitor construction progress against the BREEAM performance targets agreed throughout all stages where decisions critically impact BREEAM performance. Proactively identify risks and opportunities related to the procurement and construction process and the achievement of the targets agreed. Provide feedback to the constructors and the project team as appropriate, to support them in taking corrective actions and achieving their agreed performance targets. Monitor and, where relevant, coordinate the generation of appropriate evidence by the project team and the provision to the assessor.

To reduce waste arising from the construction process and to minimise waste diverted to landfill, the principle contractor will be obligated to implement a site waste management plan and achieve specific resource efficiency benchmarks as per the requirements below.

The contractor will complete a pre-demolition audit of any existing buildings, structures or hard surfaces being considered for demolition. This must be used to determine whether refurbishment or reuse is feasible and, in the case of demolition, to maximise the recovery of material for subsequent high grade or value applications. The audit must cover the content of Pre-demolition audit scope and be carried out at Concept Design stage by a competent person. prior to strip-out or demolition works. It should guide the design, consider materials for reuse and set targets for waste management and engage all contractors in the process of maximising high grade reuse and recycling opportunities

The contractor shall compare actual waste arisings and waste management routes used with those forecast and investigate significant deviations from planned targets.

The Contractor implement a BREEAM compliant Resource and Site Waste Management Plan as per the requirements of the Relevant Definitions Section of the Wst 1 Issue, in the BREEAM 2018 New Construction Manual. The Resource Management plan should make reference to the pre-demolition audit. In addition, the contractor shall achieve the following waste resource efficiency benchmarks:

- Non-hazardous construction waste resource efficiency benchmark of 3.4 m3/100m² gross internal floor area (or 3.2 tonnes/100m²)
- Non-hazardous construction waste diverted from landfill of 70% volume (or 80% tonnage)

By implementing the above construction management strategies and procedures, it can be concluded that the Victoria Point development implements the guidance set out within the Manchester Supplementary Planning Guidance (Adopted April 2007).

3.8 Biodiversity

A site ecological appraisal has been completed to identify any existing wildlife and wildlife habitats and protection measures to be undertaken to protect and sustain existing wildlife as part of the new development. The appraisal has identified a high potential for roosting bats within the existing buildings and potential for breeding birds. As such the ecological appraisal recommends that further surveys are undertaken prior to works at appropriate times of the year.

As such the ecological appraisal recommends the inclusion of bird and bat boxes within the proposed scheme which will be implemented in the designs. This includes the use of native fruiting/ flowering species within the soft landscaping proposals which will be implemented to support post-completion foraging.

The landscape proposals aim to introduce urban greening to this area of the city through street level planting and trees as well as landscaped terraces. A Biodiversity Net Gain (BNG) improvement of 15% is targeted (assessed under the BREEAM methodology) which will be delivered through the incorporation of native planting that provide habitats for wildlife and nature to flourish.

Similarly, the landscaping proposals aim to provide building occupants with a connection to nature with planting selected to reflect the changing of seasons and the visual and smell senses that this provides.

By protecting and enhancing existing site ecology, the soft landscaping proposals of the Victoria Point development implements Manchester Supplementary Planning Guidance (Adopted April 2007).

3.9 Waterways

The Victoria Point development is not located within close proximity to the cities waterways and as such has minimal opportunities to enhance the public access, environmental conditions and management of these assets. The development is however committed to the protection of local watercourses by applying Nature Based Solution (NBS) to manage water run off from the building and also implementing water course pollution prevention measures during the construction phases of the project. This is detailed within the responses to the water and construction management headings above.

4 Summary

The world is in a climate emergency and in response to this the UK Government has set a legally binding target to be Net Zero Carbon economy by 2050. Similarly, Manchester City Council have set targets to be a carbon neutral city by 2038. To achieve these goals, new developments must respond to the climate emergency and implement measures that reduce carbon impact both in construction and operation, minimise pollution impact, and enhance ecology and the wellness of people.

It is for these reasons why sustainability is a fundamental aspect of the proposed Victoria Point development, where all the above aspects are embedded within the project brief and building design.

This Environmental Standards Statement presents the measures and strategies that have, and will continue, to be implemented in the design, procurement and construction of the Victoria Point development against the 9 headings of the Manchester Supplementary Planning Guidance (Adopted April 2007). A key strategy of delivering a highly sustainable building is the implementation of assessing the building against the BREEAM environmental benchmarking scheme, with Excellent certification targeted.

The core sustainability aims of the Victoria Point student residential campus is to deliver a site that achieves net zero carbon, circular economy, biodiversity enhancement, health & wellbeing and green travel infrastructure. The repurposing of the existing buildings over demolition also follows national campaigns for the repurposing and refurbishment of existing buildings. By implementing the environmental standards outlined within this report, the Victoria Point development will provide a productive, healthy and enjoyable space for people that treads lightly on the planet.

As illustrated in this report, the proposals implement all of the 9 environmental headings of the planning supplementary guidance, while also responding to the national net zero carbon strategies and circular economy objectives to deliver a truly sustainable development.

Appendices

Appendix A BREEAM Pre-assessment

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BREEAM Pre-assessment

Victoria Point

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Executive Summary

Victoria Point student residential development aims to achieve a high standard of sustainable design and construction and is thus targeting BREEAM Excellent certification.

This BREEAM Pre-assessment outlines the BREEAM credits to achieve Excellent with an overall targeted score of 69.94% and an action plan for achieving 75% and Excellent. This is subject to achieving the credits outlined in this report.

This report presents a BREEAM Pre-Assessment for the proposed Victoria Point student residential development in Manchester. The development will be assessed against the current revision of the BREEAM 2018 New Construction scheme as a multi-residential, fully fitted, long term stay assessment.

The development is targeting a BREEAM Excellent and as such, this report provides a pre-assessment of the development against the BREEAM criteria and identifies the key sustainability measures and strategies required to secure this certification.

By implementing the measures outlined within this report, Atelier Ten calculate that an Very Good rating with an overall BREEAM score of 69.94% can be accomplished, provided the early stage actions and appointments outlined in this report are achieved. A margin of at least 5% over the 70% required is recommended to achieve Excellent, potential credits have been highlighted for inclusion to increase the margin.

The pre-assessment presented in this report outlines credit ownership, along with a summary the applicable BREEAM credit criteria. The early stage actions have also been highlighted. A BREEAM workshop should be held with the developer and design team to review the pre-assessment and agree the credits that have been targeted.

Credits required for a Very Good rating have been identified in the pre-assessment in Section 2

1.0 Introduction

1.1 Introduction

BREEAM is arguably the most recognised environmental benchmarking scheme applied in the UK Construction Sector with over 600,013 buildings certified since its inception in 1990. The scheme can be applied to both refurbishment and new construction developments.

The scheme provides a system to measure the environmental impact of any construction project on a simple single scale of PASS to OUTSTANDING. This simple rating draws together a comprehensive environmental assessment process that considers the following aspects of construction: management; energy; transport; health and well-being; water; materials; land use; the ecological value; and pollution.

Under each sustainability heading, there are a range of specific sustainability criteria where compliance results in credits being awarded. The overall BREEAM certification level is based on the number of credits achieved, where the more credits awarded, the higher the overall BREEAM certification achieved.

1.2 Project BREEAM Target

The development is targeting a BREEAM Excellent rating. To accomplish this rating, an overall BREEAM assessment score of at least 70% must be achieved including minimum standards.

In order to secure an Excellent rating, Atelier Ten recommend that a score of at least 75% is targeted to allow for potential credit loss during the further design and construction stages of the project.

The development will be assessed against the BREEAM UK 2018 New Construction Scheme as a fully fitted, multi-residential development.

1.3 BREEAM 2018

BREEAM UK 2018 scheme was launched in March 2018 to supersede the BREEAM 2014 scheme. This scheme aims to further push UK construction sustainability agenda with more onerous criteria and standards. In addition, BREEAM 2018 aims to align with other benchmarking schemes that have emerged focused around healthy buildings, particularly the WELL Building Standard.

Under BREEAM 2018, the assessment and verification process remain the same as with 2014 scheme. Similarly, it is essential that early stage involvement and buy-in from the design team, contractor and client are achieved. This is of importance since the BREEAM assessment is a continuous process throughout the life cycle of a project with key miles stones and outputs required for credit compliance. The BREEAM timeline below illustrates the BREEAM involvement throughout the RIBA stages.

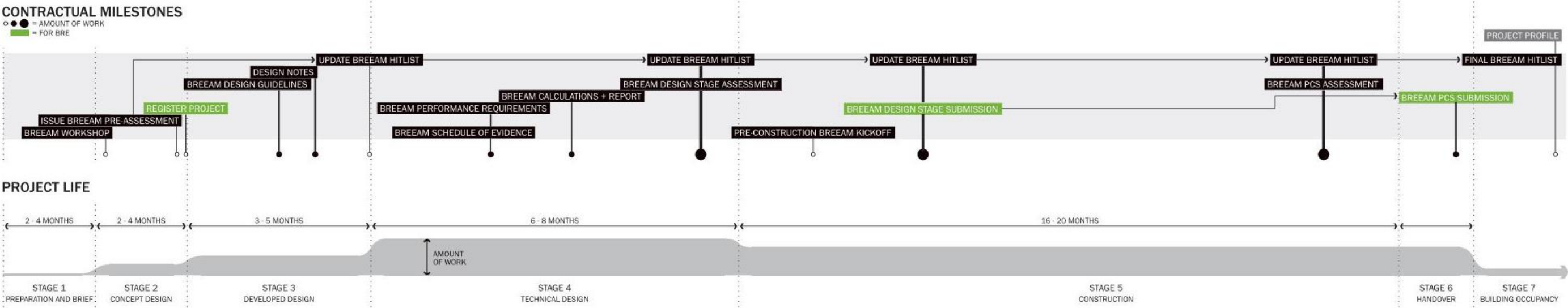
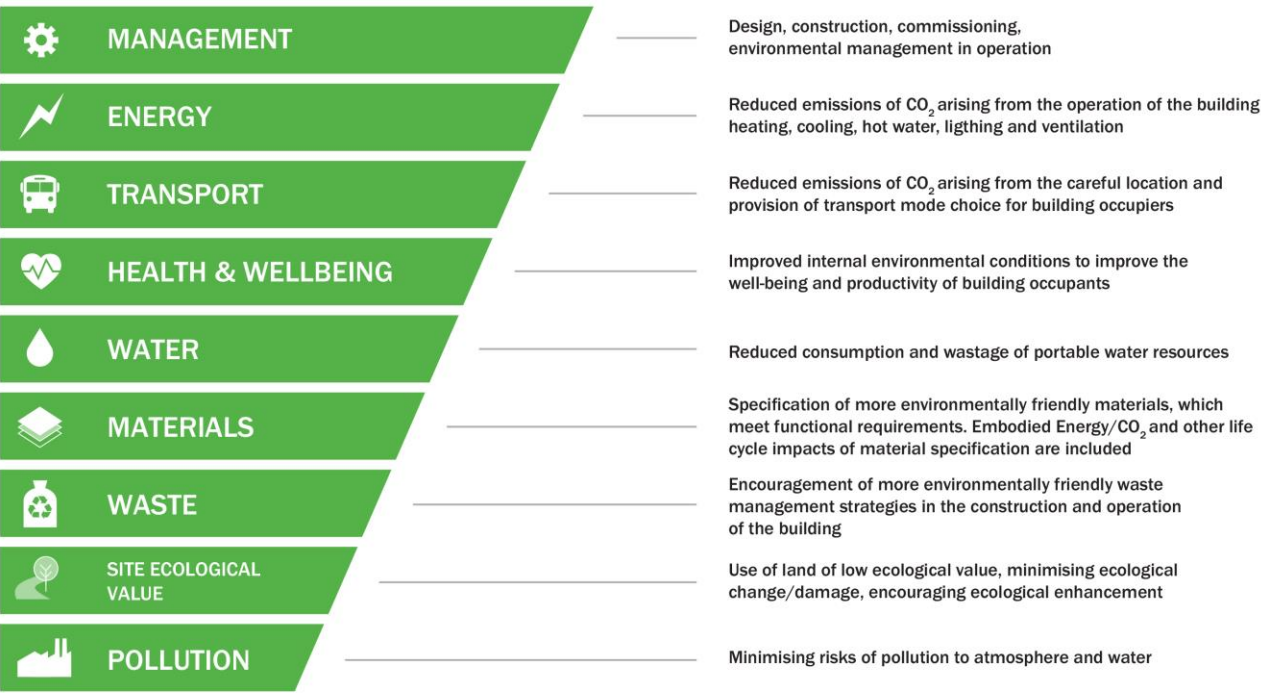


Figure 1: Project Life and Contractual Milestones

1.4 BREEAM Benchmarks & Minimum Requirements

The BREEAM ratings require a percentage level as well as compliance with certain minimum requirements. Higher ratings require more minimum standards. The minimum requirements to achieve Excellent and Outstanding ratings are listed in Table 1.1.

The percentage scores for each certification level are as follows:

- Outstanding ≥ 85%
- Excellent ≥ 70%
- Very Good ≥ 55%
- Good ≥ 45%
- Pass ≥ 30%

Table 1.1: BREEAM Minimum Standards

Credit	Summary of Criteria	Excellent	Outstanding
Man 03	1 Responsible Construction management credit for Excellent 2 Responsible Construction management credits for Outstanding	 M	 M
Man 04	1 credit for commissioning test schedule and responsibilities	 M	 M
Man 04	1 credit for Building User Guides for building user and facilities manager	 M	 M
Man 05	1 credit for commissioning implementation	 M	 M
Ene 01	Building energy performance significantly better than building regulation requirements. 4 credits for Excellent 6 credits for Outstanding	 M	 M
Ene 02	1 credit for submetering.	 M	 M
Wat 01	Water consumption reduction on BRE baseline 1 credit for Excellent 2 credits for Outstanding	 M	 M
Wat 02	Specify a water meter on the mains water supply to each building.	 M	 M
Mat 03	100% of timber and timber-based products used on the project are 'Legal' and 'Sustainable' as per the UK Government's Timber Procurement Policy.	 M	 M
Wst 01	1 credit to be achieved for Outstanding.	 M	 M
Wst 03	Installation of dedicated recyclable waste storage space	 M	 M

2 BREEAM Pre-Assessment

2.1 Target Score

This section of the report presents a summary of the BREEAM Pre-assessment of the Victoria Point development against the BREEAM New Construction 2018 scheme.

All BREEAM credits available to the project have been considered and are outlined fully in Appendix 1. Where credits have not been targeted, validation has been provided within the comment's column of Appendix A.

Table 2.1 below demonstrates the number of credits currently targeted in each section of the BREEAM assessment and how many credits are available. Credits have been chosen based on a desk top analysis of the site and the proposed drawings available at this time.

Following the design teams review of the selected credits a BREEAM pre-assessment workshop should take place between the assessor and the design team to discuss the BREEAM requirements and agree on the targeted credits and preferred score.

Table 2.1 Pre-assessment summary

Section	No. Credit available	No. Credits targeted	Percentage of credits targeted (%)	Section score with targeted credits (%)
Management	18	15	75.00%	8.3%
Health and Wellbeing	11	11	61.11%	8.6%
Energy	21	11	50.00%	8.0%
Transport	12	7	58.33%	5.8%
Water	8	7	87.50%	6.1%
Materials	14	10	71.43%	10.7%
Waste	11	8	80.00%	4.8%
Land Use and Ecology	13	12	92.31%	12.0%
Pollution	12	7	58.33%	4.7%
Innovation/ Exemplary	10	1	10.00%	1.0%
Total	139	89	64.03	69.94

2.2 BREEAM Early Stage Actions

Table 2.2 summarises the BREEAM credits that have early stage actions (up to RIBA Stage 2) that must be undertaken to secure the BREEAM Excellent rating. Further information and specific credit criteria can be found within the relevant sections of the BREEAM 2014 Refurbishment and Fit out Manual The following appointments are required to achieve the current targeted credits:

- Cost Consultant
- Acoustician to assess against
- Embodied Carbon Consultant
- Security Consultant
- Ecologist
- Transport Consultant
- Flood consultant

Table 2.2Early Stage Actions

BREEAM Issue	Requirement	Responsibility
Man 01	Project brief and design - Stakeholder consultation Action: Consultation with relevant stakeholders, organisations and bodies must be undertaken during preparation of the brief (see Man 04 Issue for specific consultation requirements). Consultation plan to be developed with feedback provided back to stakeholders and design influenced as a result of consultation.	Developer/ Architect
	Action: The roles, responsibilities and contributions of the client and design team to be confirmed within a responsibility matrix for all RIBA Stages.	Project manager
Man 02	Life cycle cost and service life planning Action: An asset elemental life cycle cost (LCC) plan to be carried out at Process Stage 2 in line with 'Standardised method of life cycle costing for construction procurement' PD 156865:20081	Cost consultant
Hea 01	Visual comfort - View Out Action: Early analysis should be completed to determine if it will be achievable.	Architect
	Visual comfort - Daylighting Action: Potential to achieve daylighting credits should be investigated	Architect/ MEP
Hea 05	Acoustic Performance - Indoor ambient noise level Appointment: An acoustician must be appointed to provide early design advice and solutions in order to achieve the credit.	Project manager
Hea 06	Security Appointment: Suitably Qualified Security Specialist to complete an evidence based Security Needs Assessment during or prior to Concept Design	Project manager/ Architect
Ene 04	Low Carbon Design - Passive Design Action: project team carries out an analysis of the existing building fabric, form, site location and outline scheme design to influence decisions made during the Concept Design stage and identifies opportunities for the implementation of passive design solutions and retrofit measures that reduce demands for energy consuming building services.	MEP energy consultant
	Low Carbon Design - Low and Zero Carbon Technologies Action: An energy specialist completes a low and zero carbon technology	MEP energy consultant
Tra 01	Transport assessment and travel plan Action: Undertake a site-specific Transport Assessment and Travel Plan	Transport Consultant
Mat 01	Environmental impacts from construction products - Building life cycle assessment (LCA) Action: Complete an embodied carbon assessment of the stage 2 design and demonstrate options considered to reduce embodied carbon going forward.	Project manager/ Embodied carbon consultant
Mat 06	Material efficiency Action: Design team to demonstrate at each stage how material efficiency has been considered	Design team
Wst 01	Construction waste management Action: Complete a pre-demolition audit of any existing buildings, structures or hard surfaces being considered for demolition. This must be used to determine whether refurbishment or reuse is feasible and, in the case of demolition, to maximise the recovery of material for subsequent high grade or value applications	Project Manager
Wst 05	Adaptation to climate change Action: Design team to complete an Adaption to Climate Change strategy appraisal on the structural & fabric resilience over the lifetime of the building.	Design team
Wst 06	Design for disassembly and adaptability Action: Design team to complete a functional adaption strategy that considers measures to be incorporated into building design to allow potential future functional change of the building use.	Design team
LE 02	Ecological risks and opportunities Appointment: Ecologist is appointed to assess the existing ecological value of the site and provide recommendations to enhance the ecology post development. Site wide approach being used.	Ecologist

2.3 Potential Credits

Within the full pre-assessment in Appendix A some potential credits have been identified for possible inclusion in the assessment. These credits are either tentative until further investigated or can involve additional fee's which may not yet have been considered and accounted for in the cost plan. Table 2.3 below lists the potential credits and their percentage worth to increase the score. Atelier Ten advise that a 5% margin is allowed for in the target score to better ensure the preferred BREEAM rating is achieved.

Table 2.3 Potential credits

BREEAM Issue		Number of credits	Summary of requirement	Percentage worth each (%)
Man 05	Seasonal Commissioning	1	Commit to seasonal commissioning activities for 12 months after occupation	0.55
Hea 01	Daylighting	Up to 2	A daylighting report and model is completed. Daylighting standards are met within all occupied areas	0.78
Ene 01	Reduction of energy use and carbon emissions	Up to 3	BRUKL documents to demonstrate high energy efficiency when compared against the BRE benchmark.	0.73
Tra 02	Sustainable transport measures	Up to 2	Implement additional sustainable transport measures such as public transport information point, car share group, connection to existing cycle network	0.83
Mat 02	Environmental Product Declarations	1	A number of products with recognised environmental product declarations are specified, with the Mat 02 Results Submission Tool completed.	1.07
LE 01	Contaminated Land	1	Demonstrate an increase in the ecological value of the site through the LE 04 ecology calculator.	1.00
Pol 03	Flood Risk Assessment and Drainage Strategy	Up to 3	A BREEAM compliant Flood Risk Assessment is completed for all sources of potential flooding. A drainage strategy is completed to monitor the surface water run-off rate and volume and targets are met	0.67

3 Conclusion

This report presents the results from a BREEAM Pre-assessment for the proposed Victoria Point development of Manchester. The project is provisionally targeting BREEAM Excellent certification against the BREEAM 2018 New Construction scheme as a fully-fitted student residential scheme.

Appendix A of this report presents the initial pre-assessment of the project and has a target score of 69.94% and a Very Good rating. This is a margin of 5.06% under the 75% recommended for Excellent. Section 2.3 of this report identifies potential credits consideration by the team.

It is expected that the design team will review the targeted credits in the pre-assessment and advise if any are not achievable and suggest alternative credits which can be included.

There are several early stage actions that must be completed in order to secure credits, these have been outlined within this report. Similarly, there are specialist consultants required such as an acoustician and transport consultant and their cost implications should be considered.

Appendix A BREEAM Hit List

Pass 30% / Good 45% / Very Good 55% / Excellent 70% / Outstanding 85%

Credit Information				Rating	Targeted	Targeted +Potential	Achieved	Action Needed by Planning Application			
Credits Available	Credits Targeted	Potential Credit	Credits not targeted	Percentage	VERY GOOD	EXCELLENT	UNCLASSIFIED				
				Credit Issue	Title	Mandatory Credits	Aim	Summary of criteria	Comments and Actions	Responsible	Actions Required by
For full details of credit compliance requirements, refer to the BREEAM 2018 Scheme Document (manual), which takes precedence to this document											
20	15	1	4	Management							
4	1		0	Man 01 (4 credits)	Project brief and design - <u>Project delivery planning</u>	N/A	To optimise final building design through recognising and encouraging an integrated design process and robust stakeholder engagement.	1 credit: <u>Prior to completion of RIBA Stage 2</u> - Identify stakeholder roles, responsibilities and contributions and prepare and undertake consultation.		QSP	RIBA Stage 1
	1		0		Project brief and design - <u>Stakeholder consultation (interested parties)</u>			1 credit: Prior to completion of RIBA Stage 2 - Undertake consultation and demonstrate stakeholders' contributions. <u>Prior to completion of RIBA Stage 4</u> - consultation feedback is given to all relevant parties.		Keeble Brown / ESP / Turley	RIBA Stage 1
	1		0		Project brief and design - <u>BREEAM AP (Concept Design)</u>			1 credit: BREEAM AP appointment <u>no later than RIBA Stage 1</u> . BREEAM performance targets are formally agreed.	A10 Proposed to cover	A10	RIBA Stage 1
	1		0		Project brief and design - <u>BREEAM AP (Developed Design)</u>			1 credit: Achieve 'project brief and design - BREEAM AP (Concept Design)' + monitor progress against the agreed BREEAM performance targets.	A10 Proposed to cover		RIBA Stage 3
4	0		2	Man 02 (4 credits)	Life cycle cost and service life planning - <u>Elemental life cycle cost</u>	N/A	To promote the business case for sustainable buildings and to deliver whole life value by encouraging the use of life cycle costing to improve design, specification, through-life maintenance and operation.	2 credits: <u>At RIBA Stage 2</u> - An elemental life cycle cost (LCC) analysis by a competent person.	Confirm if credit will be pursued, and appoint cost consultant to undertake BREEAM LCC by Stage 2.	ESP	RIBA Stage 2
	0		1		Life cycle cost and service life planning - <u>Component level life options appraisal</u>			1 credit: <u>At RIBA Stage 4</u> - a component level LCC analysis. The results of the analysis and consideration of LCC have been implemented.	Cost Consultant to undertake component level life options appraisal by Stage 4		RIBA Stage 4
	1		0		Life cycle cost and service life planning - <u>Capital cost reporting</u>			1 credit: Report the capital cost for the building in pounds per m².	Cost Consultant to report capital cost by Stage 4.	QSP	RIBA Stage 4
6	-	-	-	Man 03 (6 credits + 1 Exemplary)	Responsible construction practices - <u>Prerequisite</u>	Excellent: Minimum 1 credit in responsible construction management Outstanding: Minimum 2 credits in responsible construction management	To recognise and encourage construction sites which are managed in an environmentally and socially considerate, responsible and accountable manner.	Prerequisite: All timber to be 'legally harvested and traded timber'.	A10 to generate Contractors Requirements document detailing requirements	QSP	RIBA Stage 4
	1		0		Responsible construction practices - <u>Environmental management</u>			1 credit: All parties who at any stage manage construction site operate a qualifying EMS and practice pollution prevention policies and procedures.			RIBA Stage 4
	1		0		Responsible construction practices - <u>BREEAM AP (Site)</u>			1 credit: Establish formally agreed performance targets and appoint a BREEAM AP to consult and monitor progress during construction.			RIBA Stage 4
	2		0		Responsible construction practices - <u>Responsible construction management</u>			1 credit: achieve 9 required responsible construction management items listed in the BREEAM manual. 2 credits: achieve 6 more listed items in addition to the 9 required items.			RIBA Stage 4
	1		0		Responsible construction practices - <u>Monitoring of construction site impacts</u>			Appoint an individual to monitor, record, report & target: Energy and water consumption			RIBA Stage 4
	1		0		Responsible construction practices - <u>Monitoring of construction site impacts</u>			Appoint an individual to monitor, record, report & target: Transport of construction materials & waste			RIBA Stage 4
4	1		0	Man 04 (4 credits)	Commissioning and handover - <u>Commissioning - testing schedule and responsibilities</u>	Very Good, Excellent & Outstanding: Criterion 11 for two building user guides + Minimum 1 credit in commissioning test schedule and responsibilities.	To encourage a properly planned handover and commissioning process that reflects the needs of the building occupants.	1 credit: Commissioning programme, roles and responsibilities	A10 to generate Contractors Requirements document detailing requirements	QSP	RIBA Stage 4
	1		0		Commissioning and handover - <u>Commissioning - Design and Preparation</u>			1 credit: In addition to achieving credit for 'commissioning - testing schedule and responsibilities', commissioning manager appointed during design stage to undertake design reviews, provide commissioning management and performance testing input .			RIBA Stage 4
	1		0		Commissioning and handover - <u>Handover</u>			1 credit: Building User Guide and building occupiers/premises managers training schedule			RIBA Stage 4

Pass 30% / Good 45% / Very Good 55% / Excellent 70% / Outstanding 85%

Credit Information				Rating	Targeted	Targeted +Potential	Achieved	Action Needed by Planning Application			
Credits Available	Credits Targeted	Potential Credit	Credits not targeted	Percentage	VERY GOOD	EXCELLENT	UNCLASSIFIED				
				Credit Issue	Title	Mandatory Credits	Aim	Summary of criteria	Comments and Actions	Responsible	Actions Required by
For full details of credit compliance requirements, refer to the BREEAM 2018 Scheme Document (manual), which takes precedence to this document											
2	1		0	Man 05 (3 Credits)	Aftercare - <u>Aftercare support</u>	<u>Excellent & Outstanding:</u> Minimum 1 credit in commissioning implementation.	To ensure the building operates in accordance with the design intent and operational demands, through providing aftercare to the building owner and occupants during the first year of occupation.	1 credit: Provision of the necessary infrastructure and resources to provide aftercare support to the building occupier(s), including collection and monitoring of energy and water consumption data for at least 12 months.	A10 to generate Contractors Requirements document detailing requirements: To provide confirmation that aftercare support and training will be provided, including: - initial meeting with aftercare team &FM/occupier - on-site facilities management training - initial and also longer-term aftercare support This will be included as part of Defects Liability Period / Service Agreement	QSP	RIBA Stage 4
	0	1	0		Aftercare - <u>Commissioning - implementation</u>			1 credit: Seasonal commissioning activities will be completed over a minimum 12 months, once the building becomes substantially occupied.	initial meeting with aftercare team &FM/occupier		RIBA Stage 4
	MAN sub totals				11.0%				initial and also longer-term aftercare support		

Pass 30% / Good 45% / Very Good 55% / Excellent 70% / Outstanding 85%

Credit Information				Rating	Targeted	Targeted +Potential	Achieved	Action Needed by Planning Application			
Credits Available	Credits Targeted	Potential Credit	Credits not targeted	Percentage	VERY GOOD	EXCELLENT	UNCLASSIFIED				
					69.94%	82.37%	0.00%				
				Credit Issue	Title	Mandatory Credits	Aim	Summary of criteria	Comments and Actions	Responsible	Actions Required by
For full details of credit compliance requirements, refer to the BREEAM 2018 Scheme Document (manual), which takes precedence to this document											

This will be included as part of Defects Liability Period / Service Agreement

18	11	2	6	Health & Wellbeing							
5	1	0	0	Hea 01 (Building type dependent with max 5 + 1 Exemplary)	Visual comfort - <u>Control of glare from sunlight</u>	N/A	To encourage best practice in visual performance and comfort by ensuring daylighting, artificial lighting and occupant controls are considered. Note: No. of credits will differ as per building types.	1 credit: Conduct glare assessment and develop control strategy	Blinds confirmed to be installed	A10	RIBA Stage 4
		2	0		Visual comfort - <u>Daylighting</u>			1-2 credits: Achieve specified average DF or annual illuminance requirement - building type dependent	A10 Proposed to cover		RIBA Stage 2
	1		0		Visual comfort - <u>View Out</u>			1 credit: Achieve view out requirements	A10 and architect to confirm feasibility for achieving		RIBA Stage 2
	1		0		Visual comfort - <u>Internal and external lighting levels, zoning and control</u>			1 credit: Develop external lighting design based on BS5489-1:2013+ BS EN 12464-2:2014	To be assessed for external lighting provision. Credit not applicable if there is no external lighting.		RIBA Stage 4
4	-	-	-	Hea 02 (1 credit)	Indoor air quality - <u>Indoor Air Quality (IAQ) plan</u>	N/A	To encourage and support healthy internal environments with good indoor air quality.	Prerequisite: Develop and implement site specific IAQ plan as per Guidance Note GN06.		A10	RIBA Stage 2
	0		1		Indoor air quality - <u>Ventilation</u>			1 credit: Provide fresh air into the building in accordance with the criteria of the relevant standard for ventilation.			RIBA Stage 3
	1		1		Indoor air quality - <u>Emissions from construction products</u>			1-2 credits: Meet volatile organic compound (VOC) emission levels in 3 (for 1 credit) or all (for 2 credits) listed product categories.	wood products in the building specified with low VOC emissions	Bell Phillips/5Plus	RIBA Stage 4
			1		Indoor air quality - <u>Post-construction indoor air quality measurement</u>			1 credit: Conduct post-construction, yet pre-occupancy air quality testing according to relevant standards and carry out corrective action.	Testing of building for VOC content after handover but before occupation.	QSP	RIBA Stage 4
3	1		0	Hea 04 (2 credits)	Thermal comfort - <u>Thermal modelling</u>	N/A	To ensure the building is capable of providing an appropriate level of thermal comfort.	1 credit: Thermal modelling as per CIBSE AM11, to demonstrate compliance with CIBSE Guide A or CIBSE TM52/TM59 .	A10 to undertake thermal modelling for typical climate conditions throughout the design process and develop final model for Stage 4.	A10	RIBA Stage 4
	1		0		Thermal comfort - <u>Design for future thermal comfort</u>			1 credit: Achieve 'Thermal comfort - Thermal modelling' and show pathway for thermal comfort compliance based on projected climate change environment.	A10 to undertake thermal modelling for projected climate conditions throughout the design process and develop final model for Stage 4.		RIBA Stage 4
	1		0		Thermal comfort - <u>Thermal zoning and controls</u>			1 credit: Achieve 'Thermal comfort - Thermal modelling' and use modelling outputs to inform thermal control strategy addressing listed issues.	A10 to provide layout drawings showing occupant control of each zoned space.		RIBA Stage 4
3	1		2	Hea 05 (Building type dependent with max 4)	Acoustic performance - <u>Acoustic performance</u>	N/A	To ensure the building is capable of providing an appropriate acoustic environment to provide comfort for building users.	3 credits: Achieve the noise level standards below. 1.a Sound insulation 1.b Indoor ambient noise level 1.c Room acoustics.	A10 to liase with Sandy Brown regarding specific requirements	Sandy Brown	RIBA Stage 2
1	1		0	Hea 06 (1 credit + 1 Exemplary)	Security - <u>Security of site and building</u>	N/A	To encourage the planning and implementation of effective measures that provide an appropriate level of security to the building and site.	1 credit: Security Needs Assessment by a suitably qualified security specialist latest by RIBA Stage 2.	Crime Impact Statement being produced by Manchester Police - A10 to confirm if applicable	QSP	RIBA Stage 2
2	1		0	Hea 07 (2 credits)	Safety and healthy surroundings - <u>Safe access</u>	N/A	To encourage the provision of safe access around the site and outdoor space that enhances the wellbeing of building users.	1 credit: Develop foot- and cycle-paths, drop off and parking areas to provide safe access to building users.	Architect to develop foot- and cycle-paths, drop-off, delivery and parking areas to ensure safe access.	Bell Phillips/5Plus	RIBA Stage 2
	1		0		Safety and healthy surroundings - <u>Outside space</u>			1 credit: Include outside space providing building users with an external amenity area.	Architect to include suitably size outdoor amenity space.		RIBA Stage 2
HEA sub totals				14.0%							

Pass 30% / Good 45% / Very Good 55% / Excellent 70% / Outstanding 85%

Credit Information				Rating	Targeted	Targeted +Potential	Achieved	Action Needed by Planning Application			
Credits Available	Credits Targeted	Potential Credit	Credits not targeted	Percentage	VERY GOOD	EXCELLENT	UNCLASSIFIED				
					69.94%	82.37%	0.00%	Credit Issue	Title	Mandatory Credits	Aim
Summary of criteria											
Comments and Actions											
Responsible											
Actions Required by											
For full details of credit compliance requirements, refer to the BREEAM 2018 Scheme Document (manual), which takes precedence to this document											

22	11	4	16	Energy							
13	4	2	3	Ene 01 (13 credits + up to 5 Exemplary credits)	Reduction of energy use and carbon emissions - <u>Energy performance</u>	<u>Excellent:</u> minimum 4 credits in Energy Performance or Operational Energy <u>Outstanding:</u> minimum 6 credits in Energy performance + 4 credits in Energy modelling and reporting	To minimise operational energy demand, primary energy consumption and CO ₂ emissions. Info needed: i. Building floor area (m ²) ii. Notional building energy demand (MJ/m ²) iii. Actual building energy demand (MJ/m ²) iv. Notional building energy consumption (kWh/m ²) v. Actual building energy consumption (kWh/m ²) vi. Target Emission Rate (kgCO ₂ /m ²) vii. Building Emission Rate (kgCO ₂ /m ²)	Up to 9 credits: Calculate an Energy Performance Ratio for New Constructions (EPR _{NC}) using BREEAM's Ene 01 calculator for: 1 credit: EPR _{NC} = 0.1 4 credits: EPR _{NC} = 0.4 = <u>Excellent</u> . 6 credits: EPR _{NC} = 0.6 = <u>Outstanding</u> . 9 credits: EPR _{NC} = 0.90 AND zero net regulated CO ₂ emissions	Environmental Designer/A10 to undertake early stage energy modelling to understand the likely credits to be achieved in this issue	A10	RIBA Stage 2
	0		4		Reduction of energy use and carbon emissions - <u>Prediction of operational energy consumption</u>						
2	1		0	Ene 02 (Building type dependent with max 2)	Energy monitoring - <u>Sub-metering of end-use categories</u>	<u>Very Good, Excellent & Outstanding:</u> Minimum 1 credit in sub-metering of end-use categories	To encourage the installation of energy sub-metering to facilitate the monitoring of operational energy consumption. To enable managers and consultants post-handover to compare actual performance with targets in order to inform ongoing management and help in reducing the performance gap.	1 credit: Energy metering systems for 90% of the estimated annual energy consumption of each fuel separated by end-use categories.		A10	RIBA Stage 4
	1		0		Energy monitoring - <u>Sub-metering of high energy load and tenancy areas</u>						RIBA Stage 4
1	1		0	Ene 03 (1 credit)	External lighting	N/A	To reduce energy consumption through the specification of energy efficient light fittings for external areas of the development.	1 credit: No external lighting, or energy-efficient external lighting with less than 70 luminaire lumens per circuit watt, automated daylight control and presence detection in areas with intermittent pedestrian traffic.		A10	RIBA Stage 4
3	1		0	Ene 04 (3 credits)	Low carbon design - <u>Passive design analysis</u>	N/A	To encourage the adoption of design measures, which reduce building energy consumption and associated carbon emissions and minimise reliance on active building services systems.	1 credit: Achieve Hea 04 criterion 1, assess and adopt passive design solutions analysis at RIBA Stage 2 and quantify reduced energy metrics.		A10	RIBA Stage 2
			1		Low carbon design - <u>Free cooling</u>			1 credit: Achieve "Low carbon design - Free cooling" credit and assess/adopt free cooling strategies.			RIBA Stage 2
	1		0		Low carbon design - <u>Low and zero carbon technologies</u>			1 credit: Conduct feasibility study at RIBA Stage 2, adopt suitable technologies and quantify reduced CO2 emissions resulting from study.			RIBA Stage 2
3	1		0	Ene 06 (3 credits)	Energy efficient transportation systems - <u>Energy consumption</u>	N/A	To encourage the specification of energy efficient transportation systems within buildings.	1 credit: Analysis of transport demand, usage and energy use of lifts, escalators, etc.		A10	RIBA Stage 2
	1		1		Energy efficient transportation systems - <u>Energy efficient features</u>			Up to 2 credits: Achieve 'Energy efficient transportation systems - Energy consumption' and specify lifts (1 credit) and/or escalators (1 credit) meeting efficiency requirements.			RIBA Stage 4
ENE sub totals				16.0%							

12	7	2	3	Transport							
2	2		0	Tra 01 (2 credits)	Transport assessment and travel plan	N/A	To reward awareness of existing local transport and identify improvements to make it more sustainable.	2 credits: Develop a travel plan during feasibility and design stages based on site specific travel assessment to improve sustainable modes of transport and movement.		SLR	RIBA Stage 2
10			0	Tra 02 (10 credits)	Sustainable transport measures - <u>Prerequisite</u>	N/A	To maximise the potential for local public, private and active transport through provision of sustainable transport measures appropriate to the site.	Prerequisite: Achieve Transport assessment and travel plan credit.		SLR/Bell Phillips/5Plus	RIBA Stage 2
	5	2	3		Sustainable transport measures - <u>Transport options implementation</u>			Up to 10 credits: Adopt sustainable, private and active transport measures as listed in the credit guidance.		SLR/Bell Phillips/5Plus	RIBA Stage 2
TRA sub totals				10.0%							

Pass 30% / Good 45% / Very Good 55% / Excellent 70% / Outstanding 85%

Credit Information				Rating	Targeted	Targeted +Potential	Achieved	Action Needed by Planning Application			
Credits Available	Credits Targeted	Potential Credit	Credits not targeted	Percentage	VERY GOOD	EXCELLENT	UNCLASSIFIED				
					69.94%	82.37%	0.00%				
				Credit Issue	Title	Mandatory Credits	Aim	Summary of criteria	Comments and Actions	Responsible	Actions Required by
For full details of credit compliance requirements, refer to the BREEAM 2018 Scheme Document (manual), which takes precedence to this document											

8	7	0	2	Water							
5	3	0	2	Wat 01 (5 credits + 1 Exemplary)	Water consumption	<u>Good, Very good & Excellent:</u> Minimum 1 credit <u>Outstanding:</u> Minimum 2 credits.	To reduce the consumption of potable water for sanitary use in new buildings through the use of water efficient components and water recycling systems.	Up to 5 credits: Improvement over baseline case: 1 credit: 12.5%, 2 credits: 25%, 3 credits: 40%, 4 credits: 50%, 5 credits: 55%.	A10 to test model consumption based on water fitting specification	Bell Phillips/5Plus	RIBA Stage 2
1	1		0	Wat 02 (1 credit)	Water monitoring	<u>Good, Very good, Excellent & Outstanding:</u> Minimum criterion 1	To reduce the consumption of potable water in new buildings through the effective management and monitoring of water consumption.	Specifying a water meter, with pulsed output, on the mains water supply to each building (including borehole or other source). Water-consuming plant or building areas, (with 10% or more of the total water demand) fitted with sub meters or water monitoring equipment.	A10 to include BREEAM requirements for leak detection into their specification.	A10	RIBA Stage 3/4
2	1		0	Wat 03 (2 credits)	Water leak detection - <u>Leak detection system</u>	N/A	To reduce the consumption of potable water in new buildings through minimising wastage due to water leaks.	1 credit: A compliant leak detection system is specified or installed on the building's water supply.	A10 to include BREEAM requirements for leak detection into their specification.	A10	RIBA Stage 4
	1		0		Water leak detection - <u>Flow control devices</u>			1 credit: Flow control devices are fitted to each WC area/facility to regulate water supply according to demand.	A10 to incorporate required flow control devices into their specification.		RIBA Stage 4
				WAT sub totals	7.0%						

14	10	2	2	Materials							
7	5	1	0	Mat 01 (7 credits + 3 exemplary)	Environmental impacts from construction products - Building life cycle assessment (LCA) - <u>Superstructure</u>	N/A	To reduce the burden on the environment from construction products by recognising and encouraging measures to optimise construction product consumption efficiency and the selection of products with a low environmental impact (including embodied carbon), over the life cycle of the building.	Up to 6 credits: Conduct and submit superstructure LCA comparison with BREEAM benchmark during Stage 2, and/or Stage 4 and compare 2 to 4 significantly different superstructure design options during Stage 2 and/or Stage 4 to identify opportunities reducing environmental impacts and justify decisions for adopted designs.		A10	Before planning
	1		0		Environmental impacts from construction products - Building life cycle assessment (LCA) - <u>Substructure and hard landscaping options appraisal during Concept Design</u>			1 credit: Assess option appraisal criteria for superstructure during Stage 2 and carry out building LCA options appraisal for a total of at least 6 significantly different substructure or hard landscaping design options (at least two of each category is required).		A10	RIBA Stage 2
1	0	1	0	Mat 02 (1 credit)	Environmental impacts from construction products - Environmental Product Declarations (EPD)	N/A	To encourage availability of robust and comparable data on the impacts of construction products through the provision of EPD.	1 credit: Achieve total EPD points score of at least 20 according to the methodology described in the credit by selecting materials with EPDs.	Architect to identify and specify materials with compliant EPDs.	Bell Phillips/5Plus	RIBA Stage 4
4	-	-	-	Mat 03 (4 credits + 1 Exemplary)	Responsible sourcing of construction products - <u>Prerequisite</u>	<u>All rating levels:</u> Minimum Criterion 1	To facilitate the selection of products that involve lower levels of negative environmental, economic and social impact across their supply chain including extraction, processing and manufacture.	Pre-requisite: All timber used on the project is sourced in accordance with the UK Government's Timber Procurement Policy.	Compliant timber products must be specified throughout the project.	QPS	RIBA Stage 4
	1		0		Responsible sourcing of construction products - <u>Enabling Sustainable procurement</u>			1 credit: Materials must be procured in accordance with a documented sustainable procurement plan put in place before Concept Design.	A sustainable procurement plan must be adopted before Concept Design.		RIBA Stage 1
	1		2		Responsible sourcing of construction products - <u>Measuring responsible sourcing</u>			Based on the achieved Responsible Sourcing of Materials (RSM) points: 1 credit: RSM point => 10% (superstructure only) 2 credits: RSM point >= 20% (superstructure, internal finishes and substructure + hardscaping.) 3 credits: RSM point >= 30% (superstructure, internal finishes and substructure + hardscaping.)	Responsibly sourced materials to be specified as per the credit requirements (BES6001, FSC, CARES, ISO 14001).		RIBA Stage 4
1	1		0	Mat 05 (1 credit)	Designing for durability and resilience	N/A	To reduce the need to repair and replace materials resulting from damage to exposed elements of the building and landscape.	1 credit: Protect vulnerable parts of the building from damage and exposed parts of the building from material degradation.	Architect to consider appropriate robustness measures and cost consultant to allow for their additional cost.	Bell Phillips/5Plus	RIBA Stage 2
1	1		0	Mat 06 (1 credit)	Material efficiency	N/A	To avoid unnecessary materials use arising from over specification without compromising structural stability, durability or the service life of the building.	1 credit: Set targets, implement and record measures <u>at each RIBA stage</u> to optimise the use of materials in building design, procurement, construction, maintenance and end of life.	Design team to ensure that building materials are optimised at each stage	Bell Phillips/5Plus / A10/ Heyne Tillett Steel	RIBA Stage 1
				MAT sub totals	15.0%						

Pass 30% / Good 45% / Very Good 55% / Excellent 70% / Outstanding 85%

				Targeted	Targeted +Potential	Achieved					
Credit Information				Rating	VERY GOOD	EXCELLENT	UNCLASSIFIED	Action Needed by Planning Application			
				Percentage	69.94%	82.37%	0.00%				
Credits Available	Credits Targeted	Potential Credit	Credits not targeted	Credit Issue	Title	Mandatory Credits	Aim	Summary of criteria	Comments and Actions	Responsible	Actions Required by
				For full details of credit compliance requirements, refer to the BREEAM 2018 Scheme Document (manual), which takes precedence to this document							

10	8	1	2	Waste								
5	1		0	Wst 01 (5 credits + 1 Exemplary)	Construction waste management - <u>Pre-demolition audit</u>	<u>Outstanding:</u> Minimum 1 credit	To reduce construction waste by encouraging reuse, recovery and best practice waste management practices to minimise waste going to landfill.	1 credit: Complete a pre-demolition audit during Stage 2 for opportunities to reuse and minimise waste, and reference it in the RMP.	Pre-demolition audit to be conducted during Stage 2 and findings to be incorporated into the resource management plan.	Demolition contractor	RIBA Stage 2	
	2	1	0		Construction waste management - <u>Construction resource efficiency</u>			Up to 3 credits: RMP + the amount of non-hazardous on-site/off-site construction waste (m³/100m² or tonnes/100m²) generated: 1 credit: 13.3 / 11.1, 2 credits: 7.5 / 6.5, 3 credits: 3.4 / 3.2.		Target currently set at 7.5m²/100m² of non demolition, construction waste generated. This will be included in contractor requirements document generated by A10.	QSP	RIBA Stage 2
	1		0		Construction waste management - <u>Diversion of resources from landfill</u>			1 credit: Divert from landfill (volume or tonnage) Demolition = 80%/90% Non-demolition = 70%/ 80%.		Target currently set at 90% of demolition waste and 80% of non demolition waste (both by tonnage) to be diverted from landfill. This will be included in contractor requirements document generated by A10.	QSP	RIBA Stage 4
1	0	0	1	Wst 02 (1 credit + 1 Exemplary)	Use of recycled and sustainably sourced aggregates	N/A	To encourage the use of more sustainably sourced aggregates, encourage reuse where appropriate and avoid waste and pollution arising from disposal of demolition and other forms of waste.	Prerequisite: Achieve Wst-01-1 by completing pre-demolition audit. 1 credit: Identify all aggregate uses, types and quantities and regionally source sustainable aggregates to calculate Sustainable Aggregate Points.	HTS report received, confirmation from contractor needed for full compliance	Heynes Tillett Steel	RIBA Stage 4	
1	1		0	Wst 03 (1 credit)	Operational waste	<u>Excellent & Outstanding:</u> Minimum 1 credit	To encourage the recycling of operational waste through the provision of dedicated storage facilities and space.	Clearly labelled, accessible, dedicated space for segregation and storage of operational recyclable waste and static waste compactor(s) or baler(s), composting (if applicable).	Confirm the size of waste management areas and potential need for static waste compactor and composter with specialist, dedicate space in plans.	Bell Phillips/5Plus	RIBA Stage 4	
1	1		0	Wst 05 (1 credit + 1 exemplary)	Adaptation to climate change	N/A	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.	1 credit: Climate change adaptation strategy appraisal including risk assessment for resiliency of structural, fabric, building services and renewables installations <u>RIBA Stage 2</u> .	Design team led by the architect to produce climate change adaptation strategy appraisal for building services, renewables, structural and fabric resiliency at RIBA Stage 2.	Bell Phillips/5Plus	RIBA Stage 2	
2	1		0	Wst 06 (2 credits)	Design for disassembly and adaptability - <u>Recommendations</u>	N/A	To avoid 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.	1 credit: Conduct a study to explore the ease of disassembly and functional adaptation potential of different design scenarios by <u>RIBA Stage 2</u> and develop recommendations.	Design team led by Architect to develop building adaptation options at RIBA Stage 2.	Bell Phillips/5Plus	RIBA Stage 2	
	1		0		Design for disassembly and adaptability - <u>Implementation</u>			1 credit: Achieve 'Design for disassembly and adaptability - Recommendations,' update the study during <u>RIBA Stage 4</u> to include revised and adopted recommendations and produce a guide for tenants.	Design team led by Architect to update the building adaptation study and develop guide for tenants.		RIBA Stage 4	
WST sub totals				6.0%								

13	12	1	0	Land Use & Ecology							
2	1		0	LE 01 (2 credits)	Site selection - <u>Previously occupied land</u>	N/A	To encourage the use of previously occupied or contaminated land and avoid land which has not been previously disturbed.	1 credit: 75% footprint on previously developed land.	Contamination report confirms contamination unlikely	HTS	RIBA Stage 1
		1	0		Site selection - <u>Contaminated land</u>			1 credit: Contaminated land investigation by a contaminated land specialist and remediation.			RIBA Stage 1
2	-	-	-	LE 02 (Up to 2 credits + 1 Exemplary)	Ecological risks and opportunities - Statutory obligations - <u>Prerequisite</u>	N/A	To determine the ecological baseline and zone of influence of the site and identify risks and opportunities for achieving optimum outcomes.	Prerequisite: Identify assessment methodology using GN34 and commit to monitor compliance against all relevant legislation relating to ecology.		Greengage	RIBA Stage 1
	1		0		Ecological risks and opportunities - <u>Survey and evaluation</u>			1 credit: Establish ecological baseline and capacity and feasibility for enhancement of the ecological value for the project.			RIBA Stage 1
	1		0		Ecological risks and opportunities - <u>Determining the ecological outcomes</u>			1 credit: Achieve Survey and evaluation requirements, and select optimal ecological outcome for the site after liaising with representative stakeholders and the project team.			RIBA Stage 1
3	-	-	-	LE 03 (Up to 3 credits)	Managing impacts on ecology - Ecological risks and opportunities - <u>Prerequisite</u>	N/A	To avoid, or limit as far as possible, negative impacts on the ecology of the site and its zone of influence arising as a result of the project.	Prerequisite: Achieve L02 'Survey and evaluation and Determining ecological outcomes' criteria		Greengage	RIBA Stage 1
	1		0		Managing impacts on ecology - <u>Planning and measures on-site</u>			1 credit: Roles and responsibilities are clearly defined during Stage 2 through liaison with representative stakeholders and works on site have been developed accordingly.			RIBA Stage 1
	2		0		Managing impacts on ecology - <u>Managing negative impacts</u>			1 credit: Change in site ecological value is minimised to the extent possible. 2 credits: No overall loss of ecological value.			RIBA Stage 1
4	-	-	-	LE 04 (Up to 4 credits)	Ecological change and enhancement - managing negative impacts on ecology - <u>Prerequisite</u>	N/A	To enhance the ecological value of the site and areas within its zone of influence in support of local, regional and national priorities.	Prerequisite: Achieve L03 for managing negative impacts on ecology and commit to monitor compliance against all relevant ecology legislations.		Greengage	RIBA Stage 1
	1		0		Ecological change and enhancement - <u>Ecological enhancement</u>			1 credit (available only if an SQE has been appointed): Coordination with representative stakeholders and available data.			RIBA Stage 1
	3		0		Ecological change and enhancement - <u>Change and enhancement of ecology</u>			Up to 3 credits: Credits are awarded based on change of ecological value.			RIBA Stage 1

Pass 30% / Good 45% / Very Good 55% / Excellent 70% / Outstanding 85%

Credit Information				Targeted	Targeted +Potential	Achieved	Action Needed by Planning Application				
Credits Available	Credits Targeted	Potential Credit	Credits not targeted	Rating	VERY GOOD	EXCELLENT	UNCLASSIFIED				
				Percentage	69.94%	82.37%	0.00%				
				Credit Issue	Title	Mandatory Credits	Aim	Summary of criteria	Comments and Actions	Responsible	Actions Required by
For full details of credit compliance requirements, refer to the BREEAM 2018 Scheme Document (manual), which takes precedence to this document											
2	-	-	-	LE 05 (Up to 2 credits)	Long term ecological management and maintenance - <u>Prerequisite</u>	N/A	To secure ongoing monitoring, management and maintenance of the site and, its habitats ecological features to ensure intended outcomes are realised for the long term.	Prerequisite: Monitor compliance with all relevant national and international standards related to ecology + LE 04 is achieved including role distribution and site preparation planning.		Greengage	RIBA Stage 1
	1		0		Long term ecological management and maintenance - <u>Management and maintenance throughout the project</u>			If a qualified ecologist has been appointed: 1 credit: Put in place applicable review, monitoring, information sharing and maintenance measures to ensure long term success of ecological strategies. 1 credit: Landscape and ecology management plan in accordance with BS42020:2013 covering at least first five years after completion. If no qualified ecologist appointed, project can earn only 1 credit for meeting requirements of BOTH credits above.			RIBA Stage 1
	1		0		Long term ecological management and maintenance - <u>Landscape and ecology management plan</u>						RIBA Stage 1
	LE sub totals				13%						

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12	7	3	2	Pollution							
3				Pol 01 (3 credits)	Impact of refrigerants - <u>No refrigerant use</u>	N/A	To reduce the level of greenhouse gas emissions arising from the leakage of refrigerants from building systems.	3 credits: Use no refrigerants.		A10	RIBA Stage 4
	1		1		Impact of refrigerants - <u>Impact of refrigerant</u>			Pre-requisite: All systems comply with the requirements of BS EN 378:2016 (parts 2 and 3) and if applicable, IRARSCP. 2 credits: Refrigerants have Direct Effect Life Cycle CO ₂ equivalent. emissions (DEL _C CO _{2e}) of ≤100 kgCO _{2e} /kW cooling/heating capacity OR GWP ≤ 10. OR 1 credit: Refrigerants have Direct Effect Life Cycle CO ₂ equivalent emissions (DEL _C CO _{2e}) of ≤1000 kgCO _{2e} /kW cooling/heating capacity.	A10 to specify compliant refrigerants.		RIBA Stage 4
	1				Impact of refrigerants - <u>Leak detection</u>			1 credit: Use hermetically sealed or environmentally benign refrigerants, OR install leak detection system & automatic response to reduce leak.	A10 to specify robust leak detection systems and response mechanisms.		RIBA Stage 4
2	2		0	Pol 02 (2 credits)	Local air quality	N/A	To contribute to a reduction in local air pollution through the use of low emission combustion appliances in the building.	Up to 2 credits based on project location, type of heating equipment and NO ₂ , VOC and PM emission rates for combustion systems (if any).	A10 to explore the feasibility of this credit.	A10	RIBA Stage 4
5	-	-	-	Pol 03 (5 credits)	Flood and surface water management - <u>Prerequisite</u>	N/A	To avoid, reduce and delay the discharge of rainfall to public sewers and watercourses, thereby minimising the risk and impact of localised flooding on-site and off-site, watercourse pollution and other environmental damage.	Prerequisite: An appropriate consultant must be appointed to carry out and demonstrate compliance.		HTS	RIBA Stage 1
		2	0		Flood and surface water management - <u>Flood resilience</u>			2 credits: Site specific FRA confirming low risk zone. OR 1 credit: FRA confirms medium or high risk zone yet outside of functional floodplain. Increase the resilience and resistance to flooding by raising ground floor levels or reflecting measures in BS8533:2017.			RIBA Stage 1
	1		0		Surface water run-off - <u>Surface water run-off rate</u>			Pre-requisite: run-off design solutions must be bespoke and justified for the specific site. 1 credit: Peak rate of run-off is 30% less than the pre-developed site also accounting for climate change, with long term maintenance in place.			RIBA Stage 1
		1	0		Surface water run-off - <u>Surface water run-off volume</u>			1 credit: Flooding will not occur if local drainage system fails AND SuDS techniques are adopted to limit run-off volume to pre-developed levels.			
			1		Surface water run-off - <u>Minimising watercourse pollution</u>			1 credit: SuDS or source control systems with no discharge from site for rainfall up to 5mm and containment of pollution sources.			RIBA Stage 2
1	1		0	Pol 04 (1 credit)	Reduction of night time light pollution	N/A	To ensure that external lighting is concentrated in the appropriate areas and that upward lighting is minimised, thereby reducing unnecessary light pollution, energy consumption and nuisance to neighbouring properties.	1 credit: EITHER eliminate external lighting without adversely affecting safety and security, OR design external lighting in line with ILP Guidance Notes for the reduction of obtrusive light, 2011 and include required control measures for external lighting.		A10	RIBA Stage 4
1	1		0	Pol 05 (1 credit)	Reduction of noise pollution	N/A	To reduce the likelihood of noise arising from fixed installations on the new development affecting nearby noise-sensitive buildings.	1 credit: EITHER there are no noise-sensitive areas or buildings within 800m radius OR noise impact assessment in compliance with BS 4142:2014 by a suitably qualified acoustician, along with necessary remediations.		Sandy Brown	RIBA Stage 1
POL sub totals					8.0%						