

Avonmouth House, London Borough of Southwark Sustainability Statement

24th May 2022

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Contents

Contents..... 2

1 Introduction..... 3

2 Policy..... 3

2.1 Southwark Core Strategy 2011 3

2.2 New Southwark Plan 4

2.3 The London Plan..... 5

3 Sustainability Strategy 8

3.1 Energy Performance 8

3.2 Water efficiency 8

3.3 Materials 9

3.4 Waste Management and Construction 9

3.5 Nature Conservation and Biodiversity..... 9

3.6 Climate Change Adaptation..... 9

3.7 Pollution Management..... 10

3.8 Transport and Accessibility..... 10

3.9 BREEAM 10

4 Conclusion..... 10

5 Appendix – BREEAM Pre-assessment 11

1 Introduction

This sustainability statement has been prepared for the proposed development of Avonmouth House in order to meet the sustainability requirements of the London Plan and the London Borough of Southwark. The proposed development consists of the demolition of existing building and structures and erection of a part 2, part 7, part 14, part 16 storey plus basement mixed-use development comprising 1733sqm (GIA) of space for Class E employment use and/or community health hub and/or Class F1(a) education use and 233 purpose-built student residential rooms with associated amenity space and public realm works, car and cycle parking, and ancillary infrastructure. The site area is shown in Figure 1-1 below.



Figure 1-1 – Avonmouth House Site location

2 Policy

2.1 Southwark Core Strategy 2011

Strategic Policy 1 – Sustainable Development

Our approach is:

Development will improve the places we live and work in and enable a better quality of life for Southwark's diverse population. It will help meet the needs of a growing population in a way that respects the limits of the planet's resources and protects the environment.

We will do this by:

1. Allowing more intense development for a mix of uses in the growth areas and making sure development makes the most of a site's potential and protects open space.
2. Regenerating areas like Aylesbury, Elephant and Castle, Peckham, Camberwell, Old Kent Road, and Canada Water.
3. Testing the impact of our development plan documents by carrying out sustainability appraisals and equalities impacts assessments and consulting on them widely.
4. Requiring a sustainability assessment with applications to show how a scheme is the best possible development for a place by balancing economic, social and environmental needs. This includes taking into account the needs of all the community, including people of different ages, genders, faith, ethnicity, sexual orientation, income and disability.

Strategic Policy 2 – Sustainable Transport

Our approach is:

We will encourage walking, cycling and the use of public transport rather than travel by car. This will help create safe, attractive, vibrant and healthy places for people to live and work by reducing congestion, traffic and pollution.

We will do this by:

1. Planning places and development with priority for walking and cycling, whilst maximising the use of public transport and minimising car use.
2. Directing large developments to areas that are very accessible by walking, cycling and public transport.
3. Safeguarding land for planned public transport improvements and where the need arises in the future.
4. Improving access to mixed use town and local centres.
5. Encouraging use of the River Thames for transport and improving links between Southwark and north of the river.
6. Requiring a transport assessment with applications to show that schemes minimise their impacts, minimise car parking and maximise cycle parking to provide as many sustainable transport options as possible

Strategic Policy 13 – High environmental standards

Our approach is:

Development will help us live and work in a way that respects the limits of the planet's natural resources, reduces pollution and damage to the environment and helps us adapt to climate change.

We will do this by:

1. Requiring development to meet the highest possible environmental standards, including targets based on the Code for Sustainable Homes and BREEAM.
2. Requiring all new development to be designed and built to minimise greenhouse gas emissions across its lifetime. This will be achieved by applying the energy hierarchy:
 - Designing all developments so that they require as little energy as possible to build and use.
 - Expecting all major developments to set up and/or connect to local energy generation networks where possible. We will develop local energy networks across Southwark.
 - Requiring developments to use low and zero carbon sources of energy.
3. Enabling existing buildings to become more energy efficient and make use of low and zero carbon sources of energy.
4. Increasing recycling and composting, minimising waste, reducing landfill and making more use of waste as a resource. By 2015 we will be recycling and composting at least 45% of municipal waste, 50% by 2020 and aspiring to achieve 60% by 2031. By 2020, we will be recycling at least 70% of commercial and industrial waste. We are aiming to meet the Mayor's target of recycling or reusing 95% of construction, excavation and demolition waste by 2020.
5. Requiring applicants to demonstrate how they will avoid waste and minimise landfill from construction and use of a development.
6. We will meet the London Plan waste apportionment target set for Southwark of managing at least 243,000 tonnes of waste by 2016, at least 275,000 tonnes by 2021 and at least 343,000 tonnes by 2031. We will implement this through a development plan document and our Waste Management strategy. We are building a state of the art resources centre at Old Kent Road to help us meet this target. We have set aside enough facilities and land to make sure we can fully meet our targets.
7. Requiring developments to minimise water use and use local sources of water where possible.

8. Setting high standards and supporting measures for reducing air, land, water, noise and light pollution and avoiding amenity and environmental problems that affect how we enjoy the environment in which we live and work. This includes making sure developments are designed to cope with climate conditions as they change during the development's lifetime.
9. Allowing development to occur in the protected Thames flood zone as long as it is designed to be safe and resilient to flooding and meets the Exceptions Test.
10. Requiring developments to help reduce flood risk by reducing water run-off, using sustainable urban drainage systems and avoiding the paving over of gardens and creation of hard standing areas

2.2 New Southwark Plan

The following policies from the draft New Southwark Plan have been identified as having relevance to the development's energy strategy.

P69 Energy

Energy Hierarchy

Development must minimise carbon emissions on site in accordance with the following energy hierarchy:

1. Be lean (energy efficient design and construction); then
2. Be clean (low carbon energy supply); then
3. Be green (on site renewable energy generation and storage).

Targets for major development

Major development must reduce carbon dioxide emissions on site by:

1. 100% on 2013 Building Regulations Part L standards for residential development; and
2. A minimum of 40% on 2013 Buildings Regulations Part L and zero carbon (100%) for non-residential developments.
3. Any shortfall against carbon emissions reduction requirements must be secured off site through, planning obligations or as a financial contribution.

Decentralised energy

Major development must be designed to incorporate decentralised energy in accordance with the following hierarchy:

1. Connect to an existing decentralised energy network; then
2. Be future-proofed to connect to a planned decentralised energy network; or

3. Implement a site-wide low carbon communal heating system; and
4. Explore and evaluate the potential to oversize the communal heating system for connection and supply to adjacent sites and, where feasible be implemented.

P68 Sustainability standards

Development must:

1. Achieve a BREEAM rating of 'Excellent' for non-residential development and non-self-contained residential development over 500sqm; and
2. Achieve BREEAM rating of 'Excellent' in domestic refurbishment for conversion, extension and change of use of residential floorspace over 500sqm; and
3. Achieve BREEAM rating of 'Excellent' in non-domestic refurbishment for conversion, extension and change of use of non-residential floorspace over 500sqm; and
4. Reduce the risk of overheating, taking into account climate change predictions over the life time of the building, in accordance with prioritised measures set out in the following cooling hierarchy:
 1. Minimise internal heat generation through energy efficient design; then
 2. Reduce the amount of heat entering a building through the orientation, shading, albedo, fenestration, insulation and green roofs and walls; then
 3. Manage the heat within the building through exposed internal thermal mass and high ceilings; then
 4. Passive ventilation; then
 5. Mechanical ventilation; then
 6. Active cooling systems (ensuring they are the lowest carbon options)

2.3 The London Plan

Policy SI 1: Improving Air Quality

- A. Development Plans, through relevant strategic, site-specific and area-based policies, should seek opportunities to identify and deliver further improvements to air quality and should not reduce air quality benefits that result from the Mayor's or boroughs' activities to improve air quality.
- B. To tackle poor air quality, protect health and meet legal obligations the following criteria should be addressed:
 1. Development proposals should not:
 - a) lead to further deterioration of existing poor air quality
 - b) create any new areas that exceed air quality limits, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits

- c) create unacceptable risk of high levels of exposure to poor air quality.

2. In order to meet the requirements in Part 1, as a minimum:

- a) Development proposals must be at least Air Quality Neutral
- b) Development proposals should use design solutions to prevent or minimise increased exposure to existing air pollution and make provision to address local problems of air quality in preference to post-design or retro-fitted mitigation measures
- c) Major development proposals must be submitted with an Air Quality Assessment. Air quality assessments should show how the development will meet the requirements of B1
- d) Development proposals in Air Quality Focus Areas or that are likely to be used by large numbers of people particularly vulnerable to poor air quality, such as children or older people should demonstrate that design measures have been used to minimise exposure.

- C. Masterplans and development briefs for large-scale development proposals subject to an Environmental Impact Assessment should consider how local air quality can be improved across the area of the proposal as part of an air quality positive approach. To achieve this a statement should be submitted demonstrating:
 - a) how proposals have considered ways to maximise benefits to local air quality, and
 - b) what measures or design features will be put in place to reduce exposure to pollution and how they will achieve this.
- D. In order to reduce the impact on air quality during the construction and demolition phase development proposals must demonstrate how they plan to comply with the Non-Road Mobile Machinery Low Emission Zone and reduce emissions from the demolition and construction of buildings following best practice guidance.
- E. Development proposals should ensure that where emissions need to be reduced to meet the requirements of Air Quality Neutral or to make the impact of development on local air quality acceptable, this is done on-site. Where it can be demonstrated that emissions cannot be further reduced by on-site measures, off-site measures to improve local air quality may be acceptable, provided that equivalent air quality benefits can be demonstrated within the area affected by the development.

Policy SI 2 Minimising greenhouse gas emissions

- A. Major development should be net zero-carbon. This means reducing greenhouse gas emissions in operation and minimising both annual and peak energy demand in accordance with the following energy hierarchy:
 - 1. be lean: use less energy and manage demand during operation
 - 2. be clean: exploit local energy resources (such as secondary heat) and supply energy efficiently and cleanly
 - 3. be green: maximise opportunities for renewable energy by producing, storing and using renewable energy on-site
 - 4. be seen: monitor, verify and report on energy performance.
 - B. Major development proposals should include a detailed energy strategy to demonstrate how the zero-carbon target will be met within the framework of the energy hierarchy.
 - C. A minimum on-site reduction of at least 35 per cent beyond Building Regulations is required for major development. Residential development should achieve 10 per cent, and non-residential development should achieve 15 per cent through energy efficiency measures. Where it is clearly demonstrated that the zero-carbon target cannot be fully achieved on-site, any shortfall should be provided, in agreement with the borough, either:
 - a. through a cash in lieu contribution to the borough's carbon offset fund, or
 - b. off-site provided that an alternative proposal is identified, and delivery is certain.
 - D. Boroughs must establish and administer a carbon offset fund. Offset fund payments must be ring-fenced to implement projects that deliver carbon reductions. The operation of offset funds should be monitored and reported on annually.
 - E. Major development proposals should calculate and minimise carbon emissions from any other part of the development, including plant or equipment, that are not covered by Building Regulations, i.e. unregulated emissions.
 - F. Development proposals referable to the Mayor should calculate whole life-cycle carbon emissions through a nationally recognised Whole Life-Cycle Carbon Assessment and demonstrate actions taken to reduce life-cycle carbon emissions.
- B. Energy masterplans should be developed for large-scale development locations (such as those outlined in Part A and other opportunities) which establish the most effective energy supply options. Energy masterplans should identify:
 - 1. major heat loads (including anchor heat loads, with particular reference to sites such as universities, hospitals and social housing)
 - 2. heat loads from existing buildings that can be connected to future phases of a heat network
 - 3. major heat supply plant including opportunities to utilise heat from energy from waste plants
 - 4. secondary heat sources, including both environmental and waste heat
 - 5. opportunities for low and ambient temperature heat networks
 - 6. possible land for energy centres and/or energy storage
 - 7. possible heating and cooling network routes
 - 8. opportunities for futureproofing utility infrastructure networks to minimise the impact from road works
 - 9. infrastructure and land requirements for electricity and gas supplies
 - 10. implementation options for delivering feasible projects, considering issues of procurement, funding and risk, and the role of the public sector
 - 11. opportunities to maximise renewable electricity generation and incorporate demand-side response measures.
 - C. Development Plans should:
 - 1. identify the need for, and suitable sites for, any necessary energy infrastructure requirements including energy centres, energy storage and upgrades to existing infrastructure
 - 2. identify existing heating and cooling networks, identify proposed locations for future heating and cooling networks and identify opportunities for expanding and inter-connecting existing networks as well as establishing new networks.
 - D. Major development proposals within Heat Network Priority Areas should have a communal low-temperature heating system:
 - 1. the heat source for the communal heating system should be selected in accordance with the following heating hierarchy:
 - 2. connect to local existing or planned heat networks
 - 3. use zero-emission or local secondary heat sources (in conjunction with heat pump, if required)

Policy SI 3 Energy infrastructure

- A. Boroughs and developers should engage at an early stage with relevant energy companies and bodies to establish the future energy and infrastructure requirements arising from large-scale development proposals such as Opportunity Areas, Town Centres, other growth areas or clusters of significant new development.

4. use low-emission combined heat and power (CHP) (only where there is a case for CHP to enable the delivery of an area-wide heat network, meet the development's electricity demand and provide demand response to the local electricity network)
 5. use ultra-low NOx gas boilers
 6. CHP and ultra-low NOx gas boiler communal or district heating systems should be designed to ensure that they meet the requirements in Part B of Policy SI 1 Improving air quality
 7. where a heat network is planned but not yet in existence the development should be designed to allow for the cost-effective connection at a later date.
- E. Heat networks should achieve good practice design and specification standards for primary, secondary and tertiary systems comparable to those set out in the CIBSE/ADE Code of Practice CP1 or equivalent.

Policy SI 4 Managing heat risk

- A. Development proposals should minimise adverse impacts on the urban heat island through design, layout, orientation, materials and the incorporation of green infrastructure.
- B. Major development proposals should demonstrate through an energy strategy how they will reduce the potential for internal overheating and reliance on air conditioning systems in accordance with the following cooling hierarchy:
1. reduce the amount of heat entering a building through orientation, shading, high albedo materials, fenestration, insulation and the provision of green infrastructure
 2. minimise internal heat generation through energy efficient design
 3. manage the heat within the building through exposed internal thermal mass and high ceilings
 4. provide passive ventilation
 5. provide mechanical ventilation
 6. provide active cooling systems.

Policy SI 5: Water infrastructure

- A. In order to minimise the use of mains water, water supplies and resources should be protected and conserved in a sustainable manner.
- B. Development Plans should promote improvements to water supply infrastructure to contribute to security of supply. This should be done in a timely, efficient and sustainable manner taking energy consumption into account.
- C. Development proposals should:

- 1) through the use of Planning Conditions minimise the use of mains water in line with the Optional Requirement of the Building Regulations (residential development), achieving mains water consumption of 105 litres or less per head per day (excluding allowance of up to five litres for external water consumption)
 - 2) achieve at least the BREEAM excellent standard for the 'Wat 01' water category¹⁶⁴ or equivalent (commercial development)
 - 3) incorporate measures such as smart metering, water saving and recycling measures, including retrofitting, to help to achieve lower water consumption rates and to maximise future-proofing.
- D. In terms of water quality, Development Plans should:
- 1) promote the protection and improvement of the water environment in line with the Thames River Basin Management Plan, and should take account of Catchment Plans
 - 2) support wastewater treatment infrastructure investment to accommodate London's growth and climate change impacts. Such infrastructure should be constructed in a timely and sustainable manner taking account of new, smart technologies, intensification opportunities on existing sites, and energy implications. Boroughs should work with Thames Water in relation to local wastewater infrastructure requirements.
- E. Development proposals should:
- 1) seek to improve the water environment and ensure that adequate wastewater infrastructure capacity is provided
 - 2) take action to minimise the potential for misconnections between foul and surface water networks.
- F. Development Plans and proposals for strategically or locally defined growth locations with particular flood risk constraints or where there is insufficient water infrastructure capacity should be informed by Integrated Water Management Strategies at an early stage.

3 Sustainability Strategy

3.1 Energy Performance

An energy strategy has been developed following the energy hierarchy ‘Be Lean, Be Clean, Be Green, Be Seen’. Energy calculations using Building Regulations approved and accredited software have been undertaken at each stage to calculate the savings associated with the measures incorporated. Please refer to the energy strategy for details.

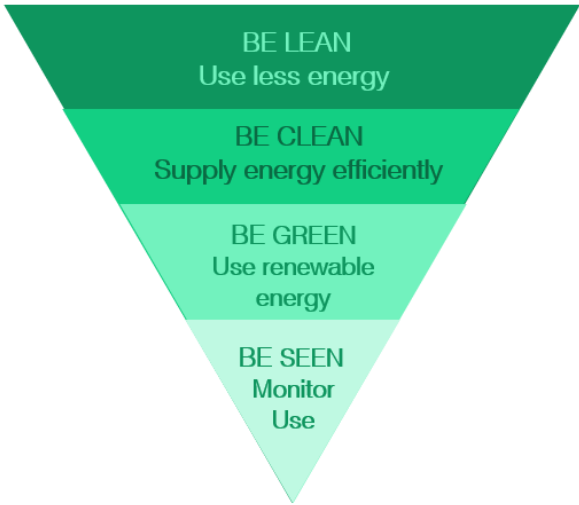


Figure 3-01 The Energy Hierarchy

The energy consumption and carbon emission figures have been calculated using IES VE Apache tool to produce separate BRUKLS for the employment and student section of the development.

As required by the London Plan, the development follows the energy hierarchy, incorporating passive design measures, energy efficient equipment and renewable energy.

The development employs an efficient building fabric, including well insulated walls and highly efficient glazing and efficient systems. At the be lean stage, this results in a 14.2% saving over the building regulation gas boiler baseline.

At the be green stage, PV Panels and air source heat pump heating and hot water are proposed to maximise carbon savings for the site. Overall, the development achieves a 58.9% improvement over the gas boiler baseline. The development will further achieve ‘zero carbon’ through an offset payment in line with the London Plan guidance.

Solar Gain Control and Daylight

Solar gains are a passive form of heating from the sun’s radiation and are beneficial to a building during winter months as they provide an effective source of heat and reduce internal heating requirements. However, summer months they must be controlled in order to mitigate the risk of

overheating. They can be controlled through glazing and shading design in order to allow low level winter sun to enter the building and to limit access to high level summer sun.

The glazing strategy design has carefully considered orientation and window size in order to maximise daylight while controlling excessive solar gains. Glazing will incorporate low emissivity coatings to limit overheating without compromising light transmittance

Overheating

The building follows the steps in the cooling hierarchy to minimise overheating. A separate dynamic overheating assessment has been conducted, please refer to the overheating report for further details. Please refer to the overheating assessment for details.

3.2 Water efficiency

The development will ensure water fitting and fixtures achieving mains water consumption of 105 litres or less per head per day (excluding allowance of up to five litres for external water consumption)

The commercial section of the development will aim to achieve BREEAM excellent standard for the ‘Wat 01’ or equivalent. Water fittings will be specified with the following or similar flow rates to meet the water consumption targets, and will be revised at the design stage to ensure relevant BREEAM credits are met:

- WC - 4 litre effective flush volume
- Urinal - 3 litre/bowl/hour
- WHB taps - 6 l/min
- Showers - 8 l/min
- Baths - 160 litres to overflow
- Kitchen taps - 8.3 l/min
- Kitchenette taps - 7 l/min
- Commercial sized dishwashers - 6 l/rack
- Commercial sized washing machines - 10 l/kg
- Domestic sized dishwashers - 13 l/cycle
- Domestic sized washing machines - 50 l/use

Building wide water use will be monitored by the BMS system, with separate meters for the student and commercial section of the development, to allow constant monitoring of the water use.

3.3 Materials

A circular economy statement and life cycle analysis have been conducted for the development, in line with the London Plan, outlining strategies to reduce the carbon impact of the development, and assessing the impact of the development.

Materials will be specified to reduce the embodied carbon of the development, wherever possible. Demolition waste will be used as hardcore where appropriate.

Insulating materials will be specified to maximise thermal performance whilst still paying attention to the environmental impact of the materials used, by specifying mineral wool. If possible, materials with a high recycled content will be specified.

Responsible sourcing will also be pursued. All timber used on site during the construction phase and within the building will be from legal sources. Where possible, FSC or equivalent timber will be used. Sourcing of other materials will include products where the manufacturer employs an environmental management system such as ISO 14001 or BES 6001. Where possible, materials will be sourced locally.

Non-toxic materials will be used wherever possible, including the specification of products with low VOC content in line with European testing standards.

All the building elements will achieve high ratings on the BRE Green Guide to Specification. Materials will be specified to have a low embodied energy, taking into account whole life cycle analysis.

3.4 Waste Management and Construction

Construction site waste will be managed in such a way to reduce the amount of waste produced as much as possible, and the waste hierarchy will be followed. In addition, the development will aim to achieve the GLA target of at least 95% of construction and demolition waste being diverted from landfill.

Regular waste and recycling bins will be provided in all the student communal areas for separation of waste to facilitate recycling.

3.5 Nature Conservation and Biodiversity

The site is occupied by existing buildings and is considered to be of negligible ecological value. Measures will be taken during construction to minimise impact on ecology by timing works appropriately and following best practice guidance. The green spaces will incorporate native planting. Green roofs are included in line with policy requirements.

3.6 Climate Change Adaptation

Tackling Increased Temperature and Drought

A separate overheating assessment was conducting, demonstrating the resilience of the development to overheating.

Windows will incorporate low emissivity coatings to reduce solar gain. Other than mandatory ventilation to meet AD Part F, the development utilises mechanical ventilation along with openable windows.

As described above in water consumption, measures will be put in place to reduce potable water use internally. There is limited planting associated with the development and this will all be specified to be drought resistant rely mainly on rainwater.

Flooding

The site is in an area of London at risk from flooding, but that benefits from flood defences. Please refer to the Flood Risk Assessment prepared by Ardent for details of measure taken.

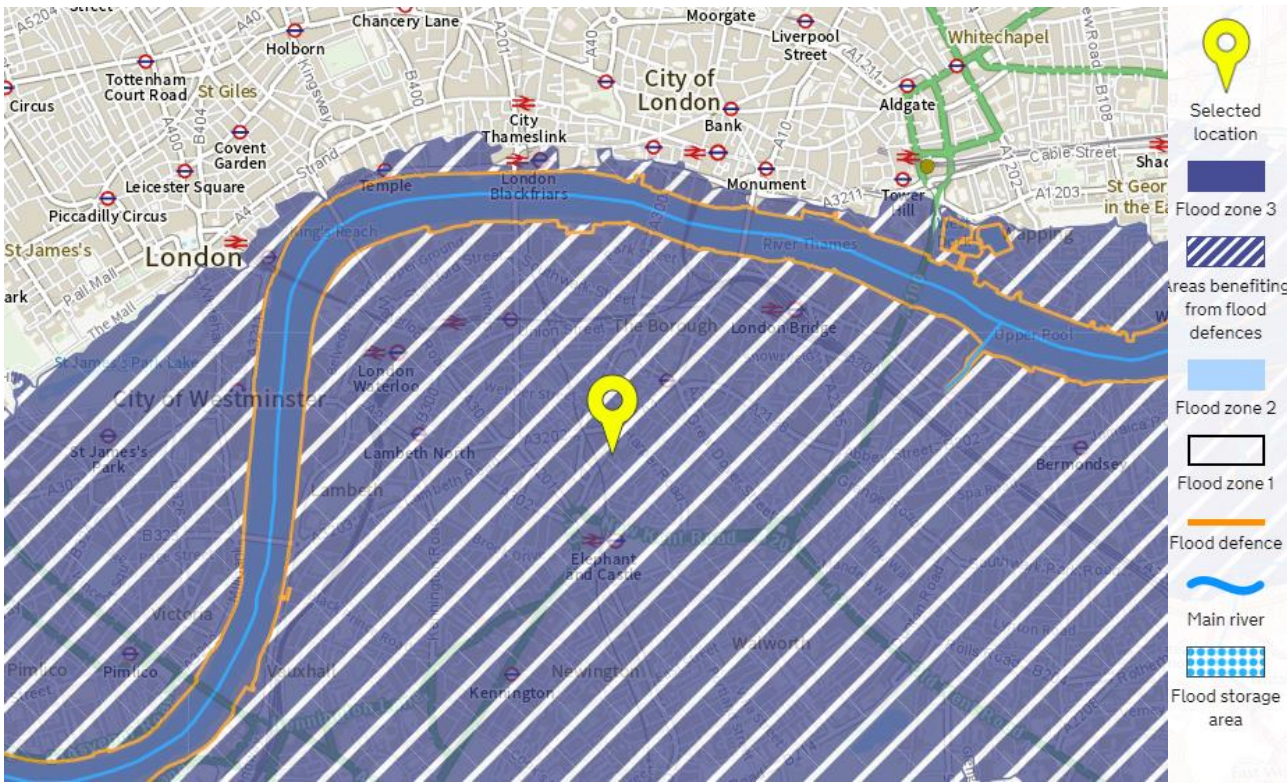


Figure 3-1 Avonmouth House Risk Map

3.7 Pollution Management

Air Quality

The construction site will be managed in such a way that the environmental impact is minimised. This includes following best practice policies for dust pollution by using dust sheets, covering skips and damping down where appropriate.

Plant and machinery

All plant and equipment installed in the development will be appropriately sized and selected for efficiency in order to reduce greenhouse gas emissions.

All equipment will be frequently maintained to ensure it continues to run efficiently and cleanly.

Insulating materials and heating systems will be specified to keep pollutants to a minimum. Insulation will have a low Global Warming Potential (GWP).

Noise

The development will comply with Building Regulations Part E, providing a good level of sound insulation. All windows are to be specified as high efficiency double glazing to minimise the transmission of noise between the property and surrounding area.

Light Pollution

100% of the proposed lighting will be provided by low energy light fittings specified to have a luminous efficacy greater than 40 lm/W. All external lighting will be adequately controlled to ensure that spaces are only lit out of daylight hours and when the area is occupied. The proposed dwelling is in a highly urbanised location, and therefore will not significantly contribute to increasing the effects of light pollution.

3.8 Transport and Accessibility

Sustainable methods of transport have been prioritised, with a high amount of bike storage being provided. Please refer to the transport assessment prepared but Ardent for further details.

Accessible studio flats have been provided throughout the development, with 5% of the total units being accessible.

3.9 BREEAM

The employment section of the development is targeting BREEAM excellent. Please refer to the BREEAM pre-assessment in the Appendix for details of the strategy.

4 Conclusion

The development follows the energy hierarchy, incorporating passive design measures and energy efficient equipment. The development employs an efficient building fabric, including new insulation and highly efficient glazing, efficient heating strategy and renewable systems. Measures are also incorporated to minimise pollution, reduce the embodied carbon footprint of the development and reduce water use. A separate energy strategy, overheating assessment, circular economy statement and life cycle analysis have been conducted. Please refer to these documents for more detail.

The development complies with sustainability policy of the London Borough of Southwark and the London Plan, for major developments.

5 Appendix – BREEAM Pre-assessment

Avonmouth House

BREEAM 2018 Pre-Assessment Report

Job No: 0353
Report Version: 1

Prepared by: Jess James
Date: 04 October 2021



BREEAM®

Contents

1. Introduction
2. Policy
3. BREEAM 2018 New Construction
4. BREEAM Scoring
5. Score Summary
6. Pre-Assessment Credit Summary
7. Conclusion

Appendices

- Appendix A - Management
- Appendix B - Health & Wellbeing
- Appendix C - Energy
- Appendix D - Transport
- Appendix E - Water
- Appendix F - Materials
- Appendix G - Waste
- Appendix H - Land Use & Ecology
- Appendix J - Pollution

1. Introduction

This pre-assessment has been prepared for the proposed development of Avonmouth House. The proposed development consists of the demolition of existing building and structures and erection of a part 2, part 7, part 14, part 16 storey plus basement mixed-use development comprising 1733sqm (GIA) of space for Class E employment use and/or community health hub and 233 purpose-built student residential rooms with associated amenity space and public realm works, car and cycle parking, and ancillary infrastructure.

This Pre Assessment Report demonstrates that the development has the potential to achieve an Excellent rating with a score of 70.59%. The minimum mandatory requirements are met.

The following pre-assessment details all the credits that can and can't be achieved for the development.

2. BREEAM 2018 New Construction

BREEAM 2018 is an environmental assessment method used to evaluate new build non-domestic buildings.

The performance of the building is assessed using a framework of environmental benchmarks. The standards against which the building is evaluated encapsulate the following categories:

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

3. BREEAM Scoring

There are a wide range of credits to be achieved within the categories listed above. There are a number of minimum mandatory standards that must be met and tradable credits that can be achieved in order to meet the target score.

Once an appropriate credit strategy has been targets, environmental weightings are applied, that vary between each category to demonstrate their environmental impact.

The current rating benchmarks for the BREEAM 2018 scheme are detailed in the table below:

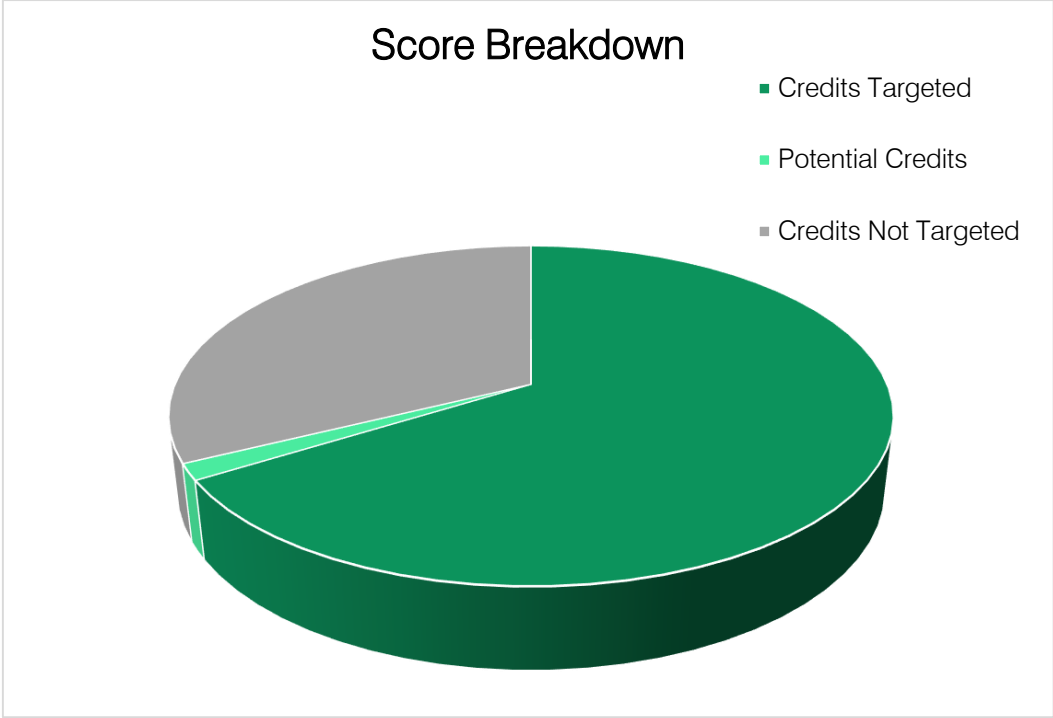
BREEAM Rating	% Score
Outstanding	≥ 85
Excellent	≥ 70
Very Good	≥ 55
Good	≥ 45
Pass	≥ 30
Unclassified	< 30

Table 2.1 - BREEAM 2018 rating benchmarks

4. Score Summary

Building Type	Office
Project Type	Shell Only
Target BREEAM Score	70.59
Target BREEAM Rating	Excellent
Minimum Standards for target rating met?	YES
Potential BREEAM Score	71.92
Potential BREEAM Rating	Excellent

BREEAM Category	Credits Available	Targeted Credits	Potential Credits	% of Credits Achieved	Environmental Weighting	Section Score
Management	18	17	0	94.4%	11.0%	10.39
Health & Wellbeing	11	7	0	63.6%	8.0%	5.09
Energy	21	16	2	76.2%	14.0%	10.67
Transport	12	2	0	16.7%	11.5%	1.92
Water	8	9	0	112.5%	7.0%	7.88
Materials	14	12	0	85.7%	17.5%	15.00
Waste	11	9	0	81.8%	7.0%	5.73
Land Use & Ecology	13	6	0	46.2%	15.0%	6.92
Pollution	12	8	0	66.7%	9.0%	6.00
Innovation	10	1	0	10.0%	10.0%	1.00



This report demonstrates that the development has met all of the minimum standards and can achieve a Excellent rating on the BREEAM 2018 scheme.

5. Pre-Assessment Credit Strategy Summary Report

The following table details the BREEAM credit strategy targeted for the development. Comments are provided against each credit to demonstrate why they have been deemed feasible or unfeasible.

Management							
Credit Summary	BREEAM Assessor Comments	Action at RIBA Stage	DT Responsibility	Minimum Standard for Rating	Points Available	Status	Points Targeted
Man 01 Project Brief and Design							
Project delivery stakeholders meet to set out compliant roles and responsibilities established in accordance with details in Appendix A1	The design team have met from Stage 2 to identify and define their roles, responsibilities and contributions for each of the key phases of project delivery.	2	Architect / Client	-	0.61	Targeted	0.61
Third party consultation activities undertaken in line with requirements in Appendix A1	No BREEAM compliant consultation was undertaken at the correct stage so this is not achievable.	2	Architect / Client	-	0.61	Not Targeted	0.00
The project team, including the client, formally agree strategic performance targets	A BREEAM AP has been involved in the project.				Prerequisite	Targeted	Prerequisite
BREEAM AP appointed and a target rating contractually agreed. To achieve the credit at the Design Stage Assessment the agreed performance targets must be demonstrably achieved by the project design and demonstrated via the BREEAM Assessor's Design Stage report.		2	JAW	-	0.61	Targeted	0.61
BREEAM AP involved and reports on progress. The BREEAM AP will monitor against agreed targets throughout the design process and formally report the progress. The previous credit must be achieved to receive this credit.		2-4	JAW	-	0.61	Targeted	0.61
Man 02 Life Cycle Cost and Service Life Planning							
An elemental LCC analysis is commissioned in line with requirements in Appendix A2	This has not been undertaken.	2	Client / QS	-	1.22	Not Targeted	0.00
A component level LCC plan has been developed in line with requirements in Appendix A2		4	Client / QS	-	0.61	Not Targeted	0.00
The capital cost of the building will be reported in £k/m ² via the BREEAM Assessment Scoring and Reporting tool	The capital cost will be confirmed in the BREEAM tool.	-	Contractor	-	0.61	Targeted	0.61
Man 03 Responsible Construction Practices							
All timber and timber-based products used during the construction process of the project are legally harvested and traded timber (FSC compliant or equivalent)	All site timber (including formwork, hoarding, shuttering etc.) will be from FSC sources, with CoC	-	Contractor	-	Prerequisite	Targeted	Prerequisite
All parties who at any stage manage the construction site (e.g. the principal contractor, the demolition contractor) must operate an environmental management system (EMS) covering their main operations and implement best practice pollution prevention policies (air & water pollution).	The main contractor is expected to operate an EMS (ISO 14001 or equivalent) and implement best practice pollution prevention policies and procedures on-site in accordance with Pollution Prevention Guidelines, Working at construction and demolition-sites: PPG6 The demolition contractors will also need to comply for this to be achievable.	-	Contractor	-	0.61	Targeted	0.61
The client and the contractor formally agree BREEAM performance targets	This will be undertaken.				Prerequisite	Targeted	Prerequisite
BREEAM AP monitors and reports progress through construction.	A sustainability champion will be appointed by the contractor.	5-6	Contractor	-	0.61	Targeted	0.61
Responsible construction management checklist followed, with all minimum requirements met and 6 additional items	The Responsible construction management checklist will be followed on site to achieve 2 credits.		Contractor	Very Good	0.61	Targeted	0.61
		-		Excellent	0.61	Targeted	0.61
Site energy and water consumption recorded / monitored. See Appendix A3 for details of the requirements.	All site energy, water and transport of materials and waste will be monitored during the construction process and reported monthly.	-	Contractor	-	0.61	Targeted	0.61
Transport of construction materials and waste metered / monitored. See Appendix A3 for details of the requirements.					0.61	Targeted	0.61

Man 04 Commissioning and Handover							
A schedule of commissioning and testing is required. Commissioning and testing of building services to CIBSE, BSRIA regs, monitored on behalf of the client by an appropriate person. Refer to Appendix A4 for detailed requirements	A schedule of commissioning and testing will be prepared. An appropriate project team member will be appointed to monitor and programme pre-commissioning, commissioning and, where necessary, re-commissioning. All commissioning will be carried out in accordance with the relevant guidelines.	-	M&E / Contractor	Very Good	0.61	Targeted	0.61
During the design stage, an appropriate project team member is appointed, provided they are not involved in the general installation works for the building services systems, with responsibility for: a. Undertaking design reviews and giving advice on suitability for ease of commissioning. b. Providing commissioning management input to construction programming and during installation stages. c. Management of commissioning, performance testing and handover or post-handover stages. For complex systems, a specialist commissioning agent must be appointed during the design stage. Refer to Appendix A4 for detailed requirements	An appropriate project team member will be appointed to carry out the commissioning requirements. A specialist commissioning manager will be appointed during the design stage to provide design advice regarding commissioning of complex systems.	-	Contractor	-	0.61	Targeted	0.61
Complete post-construction testing and inspection to quality-assure the integrity of the building fabric, including continuity of insulation, avoidance of thermal bridging and air leakage paths (this is through airtightness testing and a thermographic survey). defects must be rectified. See Appendix A4 for details	Thermographic surveys will be undertaken on completion.	-	Client / Contractor to appoint specialist	-	0.61	Targeted	0.61
Two Building User Guides (BUGs) and training schedules are developed to provide: - Non-technical guidance for distribution to the building occupiers. - Technical guidance for premises facilities managers. Refer to Appendix A4 for detailed contents requirements	The contractor will produce compliant BUGs & training schedules.	-	Contractor	Very Good	0.61	Targeted	0.61
Man 05 Aftercare							
Commitment to provide aftercare support to building occupants for at least the first 12 months from occupation, in accordance with requirements in Appendix A5	There will be a mechanism to collect the energy and water consumption data for at least 12 months after occupation, compare this with expectations and analyse any differences. There will also be a contract or commitment to provide aftercare support to all the building occupiers. See Appendix A5 for details.	-	Contractor / Client	-	0.61	Targeted	0.61
Seasonal commissioning of building services over a minimum 12-month period, once the building becomes substantially occupied. See Appendix A5	The contractor will be required to undertake seasonal commissioning responsibilities will be completed over a minimum 12 month period.	-	M&E / Contractor	Very Good	0.61	Targeted	0.61
Post occupancy evaluation (POE) is undertaken by a third party. The client or building occupier commits funds to pay for the POE in advance. Refer to Appendix A5 for detailed requirements	Post Occupancy Evaluation will be undertaken.	-	Client	-	0.61	Targeted	0.61

Health & Wellbeing							
Credit Summary	BREEAM Assessor Comments	Action at RIBA Stage	DT Responsibility	Minimum Standard for Rating	Points Available	Status	Points Targeted
Hea 01 Visual Comfort							
Daylighting Should be met following either option A. or B. A. 2% daylight factor AND either (a) OR {(b) and (c)} (a) Uniformity ratio of 0.3 or point daylight factor of 0.3 times the relevant average daylight factor Uniformity ratio of 0.7 or point daylight factor of 0.7 times the relevant average daylight factor where the spaces with glazed roofs, atria (b) At least 80% of the room has a view of sky from desk or table top height (0.85m in multi-residential buildings, 0.7m in other buildings). (c) The room depth criterion d/w + d/HW < 2/(1-RB) is satisfied B. Minimum 80% of the relevant building areas meet 300 lux Average daylight illuminance and 90 lux Minimum daylight illuminance for 2000 hours per year or more	Due to basement areas, this will not be achievable.	-	Architect / M&E	-	0.73	Not Targeted	0.00
					0.73	Not Targeted	0.00
View Out 95% of the floor area in 95% of spaces for each relevant building area is within 8 m of an external wall. The external wall has a window or permanent opening that provides an adequate view out.. The window or opening must be ≥ 20% of the surrounding wall area See Appendix B1.	Due to basement areas, this will not be achievable.	-	Architect	-	0.73	Not Targeted	0.00
Internal / external lighting specified to SLL and CIBSE standards and adequately zoned and controlled. Refer to Appendix B1 for detailed requirements	All internal and external lighting will be designed to meet the required standards.	-	M&E	-	0.73	Targeted	0.73
Hea 02 Indoor Air Quality							
A site-specific indoor air quality plan has been produced and implemented no later than the end of Concept Design Refer to Appendix B2 for detailed requirements	An air quality plan will be developed.	2	M&E	-	Pre-Requisite	Targeted	
The building is designed to minimise the indoor concentration and recirculation of pollutants: - Positioning the building's air intakes and exhausts at least 10 m of horizontal distance apart. Positioning intakes at least 10 m horizontal distance from sources of external pollution (including the location of air exhausts from other buildings). - CO ₂ sensors are provided for high/variable occupancy areas - For naturally ventilated or mixed mode buildings, the design demonstrates that the ventilation strategy provides adequate cross flow of air to maintain the required thermal comfort conditions and ventilation rates in accordance with CIBSE AM10	Intakes will need to be located suitably to ensure that this is achievable.	-	Architect / M&E	-	0.73	Targeted	0.73

Hea 04 Thermal Comfort							
Thermal modelling is carried out using software in accordance with CIBSE AM11 and confirms: - For air conditioned buildings - comfort levels meet CIBSE Guide A - For naturally ventilated buildings - comfort levels meet CIBSE Guide A and CIBSE TM52 or CIBSE TM59 See Appendix B3 for full details	Thermal modelling will be carried out and it is expected that the design will demonstrate summer comfort levels within CIBSE Guide A can be met.	-	M&E	-	0.73	Targeted	0.73
Thermal modelling demonstrates the relevant requirements set out in the above credit for a projected climate change environment. See Appendix B3 for full details	Thermal modelling will include an analysis of internal temperatures in a projected climate change environment.	-	M&E	-	0.73	Targeted	0.73
Appropriate thermal zoning strategy, providing user control within the zone. Less complex systems require separate occupant control for perimeter zone (7m from perimeter) and central zone. See Appendix B3 for full details	The thermal modelling analysis will aim to inform the temperature control strategy for the building and it's users. Adequate user control will be provided for each thermal zone and areas appropriately zoned.	-	M&E	-	0.73	Targeted	0.73
Hea 05 Acoustic Performance							
Achieve indoor ambient noise levels that comply with the design ranges given in Section 7 of BS 8233:2014 A programme of acoustic measurements is carried out by a compliant test body.	The acoustic requirements will be designed in.	-	Acoustician	-	0.73	Targeted	0.73
Hea 06 Security							
A Suitably Qualified Security Specialist (SQSS) conducts an evidence-based Security Needs Assessment (SNA). They produce a set of recommendations and solutions to ensure the design of the development is planned, designed and specified to address the issues identified in the preceding SNA.	A SQSS was not appointed at the correct stage so this can no longer be achieved.	2	Client appointed specialist & Architect	-	0.73	Not Targeted	0.00
Hea 07 Safe and Healthy Surroundings							
Dedicated and safe cycle paths are provided from the site entrance to any cycle storage, and connect to offsite cycle paths where applicable. Dedicated and safe footpaths are provided on and around the site providing suitable links between site areas (e.g. car park to building entrance) Pedestrian drop-off areas provide direct access to footpaths Delivery areas are not accessed through general parking areas and there are dedicated parking/waiting/turning areas for delivery vehicles	Access to the building will be directly from the street.	-	Architect	-	0.73	Targeted	0.73
There is an outside space providing building users with an external amenity area.	Outside space is not provided.	-	Architect	-	0.73	Not Targeted	0.00

Energy							
Credit Summary	BREEAM Assessor Comments	Action at RIBA Stage	DT Responsibility	Minimum Standard for Rating	Points Available	Status	Points Targeted
Ene 01 Reduction of Energy Use and Carbon Emissions							
Energy Performance Ratio for New Constructions (EPRNC) (Based the EPRNC achieved):	The current strategy can achieve 5 credits. This could potentially be improved upon at the detailed design stage.	-	M&E		0.67	Targeted	0.67
0.100					0.67	Targeted	0.67
0.200					0.67	Targeted	0.67
0.300					0.67	Targeted	0.67
0.400				Excellent	0.67	Targeted	0.67
0.500					0.67	Targeted	0.67
0.600				Outstanding	0.67	Potential	0.00
0.700					0.67	Potential	0.00
0.800					0.67	Not Targeted	0.00
0.900 AND zero net regulated CO ₂ emissions					0.67	Not Targeted	0.00
Prior to completion of the Concept Design, a preliminary design workshop focusing on operational energy performance is held by relevant members of the design team.	A preliminary design workshop will be held focusing on operational energy performance.		M&E	-	Prerequisite	Targeted	Prerequisite
Additional energy modelling is undertaken during the design and post-construction stage to generate predicted operational energy consumption figures	This modelling will be undertaken.	-	M&E	-	2.67	Targeted	2.67
Predicted energy consumption targets by end use, design assumptions and input data are reported							
A risk assessment will be carried out to highlight any significant design, technical, and process risks that should be monitored and managed throughout the construction and commissioning process.							
Ene 02 Energy Monitoring							
Install energy metering systems so that at least 90% of the estimated annual energy consumption of each fuel is assigned to the end-use categories Meter the energy consumption in buildings according to the total useful floor area Through labelling or data outputs, building users can identify energy consuming end uses See Appendix C1 for further details	All major energy consuming items will be metered (with a pulsed output and/or connected to a BMS): - Space Heating - Domestic Hot Water Heating - Humidification - Cooling - Ventilation i.e. fans (major) - Pumps - Lighting - Small Power (lighting and small power can be on the same sub-meter where supplies taken at each floor/department) - Renewable or Low Carbon Systems (separately) - Controls - Other major energy-consuming items where appropriate	-	M&E	Very Good	0.67	Targeted	0.67
Monitor a significant majority of the energy supply Sub-meter per floor plate in large single occupancy or single-tenancy buildings with one homogeneous function	As one single space this will be achieved.		M&E	-	0.67	Targeted	0.67
Ene 03 External Lighting							
The building has been designed to operate without the need for any external lighting OR Specification of energy-efficient light fittings for external areas (in line with Appendix C2), controlled through a time switch, or daylight sensor, to prevent operation during daylight hours, with average initial luminous efficacy of not less than 70 l/W, and with presence detection in areas of intermittent pedestrian traffic	The luminous efficacy of the external light fittings will be greater than 70 lumens per circuit Watt. All lighting will be on daylight & presence detection.	-	M&E	-	0.67	Targeted	0.67

Ene 04 Low Carbon Design							
Analysis of the proposed building design/development before RIBA Stage 2 was undertaken and identified opportunities for passive design solutions have been implemented and reduced total energy demand has been quantified.	The energy report includes passive measures.	2	M&E	-	0.67	Targeted	0.67
BREEAM issue Hea 04 Thermal Comfort has to have been achieved. See Appendix C3.							
The building utilises a free cooling strategy and the first credit within the BREEAM issue 'Ene 04 Low Carbon Design' (passive design analysis) has been achieved	This will not be achievable.	-	M&E	-	0.67	Not Targeted	0.00
Feasibility study is carried out and implemented, covering points listed in Appendix C3.	The renewable energy provision of the site is applied to the residential part of the development. This credit is therefore not achievable.	2	M&E	-	0.67	Not Targeted	0.00
The reduction in reduced regulated CO ₂ shown by the feasibility study is quantified and the requirements of Appendix C3 can be achieved.							
Ene 06 Energy Efficient Transportation Systems							
Where lifts are being installed; an analysis of the transportation demand and usage patterns for the building has been carried out and energy consumption calculated in accordance with BS EN ISO 25745 Part 2	An analysis of the transportation demand and usage patterns for the building will be carried out in order to appropriately specify lifts. The lift manufacturer will be asked to undertake energy calculations and specify the features that make the most savings.	-	M&E / Lift Specialist	-	0.67	Targeted	0.67
Specify energy efficient features (specified in Appendix C4) for each lift and specify regenerative drives where their use is demonstrated to save energy (one credit) AND specify some method of motor synchronisation to passenger variables for escalators/moving walkways (second credit)	The lift and/or escalators specified must meet the required energy efficiency features		M&E / Lift Specialist		0.67	Targeted	0.67
					0.67	Targeted	0.67
Transport							
Credit Summary	BREEAM Assessor Comments	Action at RIBA Stage	DT Responsibility	Minimum Standard for Rating	Points Available	Status	Points Targeted
Tra 01 Transport Assessment and Travel Plan							
During the feasibility and design stages, a travel plan is developed based on a site-specific travel assessment or statement. See Appendix D1 for full requirements.	A compliant travel plan will be produced.	1 and 2	Transport Consultant	-	0.96	Targeted	0.96
					0.96	Targeted	0.96

Tra 02 Sustainable Transport Measures							
Achieve the Tra 01 Transport assessment and travel plan credits	Tra 01 will have been achieved	-		-	Prerequisite	Targeted	Prerequisite
Credits are awarded for Tra 02 according to the existing Accessible Index (AI) of the project, and the total number of points achieved for the options implemented, based on the table in Appendix D2. Please select in the next cell whether the existing building has < 25 points (Option A), ≥ 25 & < 40 (urban centre) points (Option B), or ≥ 40 points (Option C).	The development has an AI of 63.25.				9.58	Targeted	2.88
The existing AI calculated in Tra 01 achieves the following: ≥ 4 for prison or MOD sites, rural location sensitive buildings, and other building group 3 ≥ 8 for all other building types						Targeted	
Demonstrate an increase over the existing Accessibility Index through negotiation with local bus, train or tram companies to increase the frequency of the local service provision for the development;	No change will be made to influence the AI.					Not Targeted	
OR Demonstrate an increase over the existing Accessibility Index. This could be through provision of a diverted bus route, a new or enhanced bus stop, or other similar solutions.						Not Targeted	
OR Provide a dedicated service, such as a bus route or service.						Not Targeted	
Provide a public transport information system in a publicly accessible area, to allow building users access to up-to-date information on the available public transport and transport infrastructure. This may include signposting to public transport, cycling, walking infrastructure or local amenities.	This will be provided.					Targeted	
Provide electric recharging stations of a minimum of 3kW for at least 10% of the total car parking capacity for the development.	There is no parking provided so these criteria are not achievable.					Not Targeted	
Set up a car sharing group or facility to facilitate and encourage building users to car share. AND Raise awareness of the sharing scheme with marketing and communication materials. AND Provide priority spaces for car sharers for at least 5% of the total car parking capacity for the development. AND Locate priority parking spaces nearest the development entrance used by the sharing scheme participants.						Not Targeted	
During preparation of the brief, the design team consults with the local authority (LA) on the state of the local cycling network and public accessible pedestrian routes, to focus on whichever the LA deems most relevant to the project, and how to improve it. AND Agree and implement one proposition chosen with the local authority. The proposition supported by the development is additional to existing local plans and has a significant impact on the local cycling network or on pedestrian routes open to the public.	This is not appropriate for this scale of building.					Not Targeted	
Install compliant cycle storage spaces to meet the minimum levels set out in Appendix D2a.	Compliant cycle storage spaces will be installed					Targeted	
Provide at least two compliant cyclists' facilities for the building users, (including pupils where appropriate to the building type). See Appendix D2a for further information on compliance for the following: – Showers – Changing facilities – Lockers – Drying spaces.	Cyclist facilities will be provided.					Targeted	
Existing amenities: At least three existing accessible amenities are present, see Appendix D2b, where relevant for a Building Group.	There are sufficient local amenities in the areas.					Targeted	
Enhanced amenities: Ensure a minimum of one new accessible amenity, in accordance with Appendix D2b, for the relevant Building Group, is provided. OR Ensure more than one new accessible amenity, in accordance with Appendix D2b for the relevant Building Group, is provided.	No new amenities will be provided.					Not Targeted	
						Not Targeted	
Implement one site-specific improvement measure, not covered by the options already listed in this issue, in line with the recommendations of the travel plan. Submit this for review by BRE.	This is not achievable for this scale of project.					Not Targeted	
						Not Targeted	
						Not Targeted	

Water							
Credit Summary	BREEAM Assessor Comments	Action at RIBA Stage	DT Responsibility	Minimum Standard for Rating	Points Available	Status	Points Targeted
Wat 01 Water Consumption							
Improvement over notional baseline of 12.5% (based on BREEAM calculation taking into account flow rates/consumption of sanitary ware & appliances)	The following flow rates will be used as guidance to achieve more than a 40% improvement: WC - 4 litre effective flush volume Urinal - 3 litre/bowl/hour WHB taps - 4 l/min Showers - 6 l/min Kitchenette taps - 6 l/min	-	Architect / Contractor	Good	0.88	Targeted	0.88
Improvement over notional baseline of 25%				Outstanding	0.88	Targeted	0.88
Improvement over notional baseline of 40%					0.88	Targeted	0.88
Improvement over notional baseline of 50%					0.88	Not Targeted	0.00
Improvement over notional baseline of 55%					0.88	Not Targeted	0.00
Wat 02 Water Monitoring							
The specification of a water meter on the mains water supply to each building. AND Water-consuming plant or building areas, consuming 10% or more of the building's total water demand, are either fitted with sub meters or have water monitoring equipment integral to the plant or area AND Each meter (main and sub) has a pulsed output to enable connection to a Building Management System (BMS) and if there is an existing BMS any new build must be connected to the existing BMS	Sub-meters will be specified for the building and plant or area that consumes more than 10% of the building's water demand.	-	M&E	-	0.88	Targeted	0.88
Wat 03 Water Leak Detection							
A leak detection system capable of detecting major leaks on the water supply has been installed. The system must cover all mains water supply between and within the building and the site boundary. See Appendix E1 for details of requirements	Leak detection will be specified.	-	M&E	-	0.88	Targeted	0.88
Flow control devices are fitted in WC areas or sanitary facilities to ensure water is supplied only when needed (and therefore prevent minor water leaks). See Appendix E1 for details of compliant systems	Flow control devices (e.g. linked to a PIR) will be provided in the WC areas.	-	M&E	-	0.88	Targeted	0.88

Materials								
Credit Summary	BREEAM Assessor Comments	Action at RIBA Stage	DT Responsibility	Minimum Standard for Rating	Points Available	Status	Points Targeted	
Mat 01 Environmental Impacts from Construction Products - Building Life Cycle Assessment (LCA)								
Offices, Industrial and Retail buildings must complete a comparison with BREEAM benchmark during Concept Design and Technical Design (RIBA Stage 2 and 4). Refer to Appendix F1.	An LCA has been undertaken and 6 credits are thought to be achievable.	2 and 4	Architect / Contractor	-	1.25	Targeted	1.25	
During concept design (RIBA Stage 2) identify opportunities for reducing environmental impacts by carrying out a LCA options appraisal of 2 to 4 significantly different substructure design options using an appropriate LCA Tool in line with requirements in Appendix F1.					1.25	Targeted	1.25	
					1.25	Targeted	1.25	
					1.25	Targeted	1.25	
					1.25	Targeted	1.25	
During the Technical Design stage (RIBA Stage 4) carry out a LCA options appraisal of 2 to 3 significantly different superstructure design options using an appropriate LCA Tool in line with requirements in Appendix F1.					1.25	Targeted	1.25	
During Concept Design (RIBA Stage 2) carry out a LCA options appraisal of a combined total of at least six significantly different substructure or hard landscaping design options.					1.25	Not Targeted	0.00	
Mat 02 Mat 02 Environmental Impacts from Construction Products – Environmental Product Declaration (EPD)								
Construction products chosen with an EPD which will achieve a total EPD points score of at least 20 in compliance with requirements in Appendix F2.	Products will be specified with EPDs in order to achieve the credit requirements	-	Architect / Contractor	-	1.25	Targeted	1.25	
Enter the details of each EPD into the Mat 01/02 Results Submission Tool.								
Mat 03 Responsible Sourcing of Materials								
All timber and timber based products used are 'legally harvested and traded'	The design team will develop a sustainable procurement plan.		Contractor	-	Pass	Prerequisite	Targeted	Prerequisite
All materials for the project are sourced in accordance with a documented sustainable procurement plan						1.25	Targeted	1.25
Construction materials are responsibly sourced in line with requirements in Appendix F3.	The contractor will be required to ensure that materials for major building elements are responsibly sourced to achieve at least 2 credits.				1.25	Targeted	1.25	
Points calculated using Mat 03 Tool: % of available points achieved - Superstructure - 10%								
% of available points achieved - as above and internal finishes, substructure and hard landscaping - 20%					1.25	Targeted	1.25	
% of available points achieved - as above and internal finishes, substructure and hard landscaping - 30%					1.25	Not Targeted	0.00	
Mat 05 Designing for Durability and Resilience								
The design incorporates suitable durability and protection measures into building design and construction to prevent damage to the building fabric or materials in case of accidental or malicious damage to provide protection against criteria detailed in Appendix F4. AND The relevant building elements incorporate design and specification measures to limit material degradation due to environmental factors. See Appendix F4 for methodology of assessment.	The building will incorporate suitable durability and robustness features.	-	Architect / Contractor	-	1.25	Targeted	1.25	
Mat 06 Material Efficiency								
During RIBA Stages 1 and 2 targets have been set and opportunities and methods have been reported which optimise the use of materials for RIBA Stages 1-5. AND The development of the implementation of material efficiency has been recorded for RIBA Stages 3-5. Refer to Appendix F5 for methodology.	Opportunities to optimise the use of materials in building design, procurement, construction, maintenance and the end of life in order to maximise the material efficiency of the project, will be investigated and implemented at every stage.	1-5	Architect / Contractor	-	1.25	Targeted	1.25	

Waste							
Credit Summary	BREEAM Assessor Comments	Action at RIBA Stage	DT Responsibility	Minimum Standard for Rating	Points Available	Status	Points Targeted
Wst 01 Construction Waste Management							
A pre-demolition audit (during RIBA Stage 2) has been completed for existing buildings/structures being considered for demolition to determine if refurbishment/reuse is feasible and to maximise material recovery in line with Appendix G1.	A pre-demolition audit will be carried out by the Demolition Contractor to maximise the recovery of material from the demolition.	2	Contractor	Outstanding	0.64	Targeted	0.64
A Resource Management Plan (RMP) is developed including accurate data records on waste arising and waste management routes. Amount of waste generated per 100m ² = 13.3m ³ / 11.1 tonnes	A compliant RMP will be developed and the main contractor will be expected to ensure construction waste does not exceed 7.5m ³ / 6.5 tonnes per 100m ² floor space. At least 80% of non-demolition waste and 90% of demolition by weight will be diverted from landfill following the waste hierarchy.	-			0.64	Targeted	0.64
Amount of waste generated per 100m ² = 7.5 m ³ / 6.5 tonnes					0.64	Targeted	0.64
Amount of waste generated per 100m ² = 3.4m ³ / 3.2 tonnes					0.64	Not Targeted	0.00
Waste diverted from landfill: Volume (%) / Tonnage (%): Non-demolition 70% / 80% or Demolition 80% / 90%					0.64	Targeted	0.64
Wst 02 Use of Recycled and Sustainably Sourced Aggregates							
If demolition occurs onsite, a pre-demolition audit is completed of any existing buildings, structures or hard surfaces.					Prerequisite	Targeted	Prerequisite
3.5 - 6 Sustainable Aggregate Points achieved using the BREEAM Wst 02 calculator. See Appendix G2 for full details.	Recycled aggregates are not specified.	-	Contractor / Structural Engineer	-	0.64	Not Targeted	0.00
Wst 03 Operational Waste							
Provision of labelled, dedicated storage facilities for a building's operational recyclable waste of capacity appropriate to the building type, size and number of units (if relevant) and predicted volumes of waste. Sized either to meet known waste or 2m ² (4m ² if catering provided) for every 1000m ² of floor area Where significant food waste is produced or in multi-residential buildings, composting facilities are provided and where significant packaging waste, a compactor/baler is provided	At least an 2m ² space will be provided for the storage of recyclable waste.	-	Architect / Contractor	Excellent	0.64	Targeted	0.64
Wst 04 Speculative Floor and Ceiling Finishes							
For tenanted areas (where the future occupant is not known), prior to full fit-out works, carpets, other floor finishes and ceiling finishes have been installed in a show area only. In a building developed for a specific occupant, that occupant has selected (or agreed to) the specified floor and ceiling finishes.	Floor and ceiling finishes will not be installed.	-	Architect / Contractor	-	0.64	Targeted	0.64
Wst 05 Adaptation to Climate Change							
A Climate Change Adaptation Strategy Appraisal (structural and fabric resilience specific) has been conducted using a systematic risk assessment evaluating the impact on the building over its projected life cycle from expected extreme weather due to climate change and, where feasible, mitigating against these impacts. Review mitigation methods during RIBA Stage 4 . Develop recommendations or solutions based on Climate Change Adaptation Strategy Appraisal, and provide updates during Technical Design demonstrating how recommendations made at Concept Design have been implemented. See Appendix G3 for details	An assessment will be carried out to assess and mitigate the effects of climate change on the building.	2 & 4	Architect	-	0.64	Targeted	0.64
Wst 06 Design for Disassembly and Adaptability							
A study has been undertaken, and recommendations developed during the concept design, to explore ease of disassembly and the functional adaption potential of different design scenarios.	A functional adaptation strategy will be developed. This will include recommendations for measures to be incorporated to facilitate future adaptation.	2	Architect	-	0.64	Targeted	0.64
Updates have been provided during the Technical Design covering: - How recommendations (made during RIBA stage 2) have been implemented. - Changes to recommendations and solutions during the development of RIBA Stage 4 . A building adaptability and disassembly guide has been developed to communicate the characteristics allowing functional adaptability and disassembly to prospective tenants.	The strategy will be updated for implementation at Stage 4.	3 & 4		-	0.64	Targeted	0.64

Land Use & Ecology							
Credit Summary	BREEAM Assessor Comments	Action at RIBA Stage	DT Responsibility	Minimum Standard for Rating	Points Available	Status	Points Targeted
LE 01 Site Selection							
At least 75% of the proposed development's footprint is on an area of land which has previously been occupied	At least 75% of the proposed development's footprint is on land with was previously developed.	-	Architect	-	1.15	Targeted	1.15
The site is deemed to be significantly contaminated and will be remediated	The site is not contaminated therefore this credit is unavailable.	-	Architect / Client	-	1.15	Not Targeted	0.00
LE 02 Identifying and Understanding the Risks and Opportunities for the Project							
An assessment route has been determined and the client or contractor has confirmed it is compliant with all relevant UK and EU international legislation relating to the ecology of the site.	An ecologist has been appointed and the credits are targeted.	-		-	Prerequisite	Targeted	Prerequisite
Survey and evaluation: Route 1 has been adopted (Refer to Appendix H1 for details).		-	Project member	-	1.15	Targeted	1.15
LE 03 Managing Negative Impacts on Ecology							
LE 02 has been achieved. The client or contractor has confirmed that compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site.	An ecologist has been appointed and the credits are targeted.				Prerequisite	Targeted	Prerequisite
Planning, liaison, implementation and data: - Roles and responsibilities have been defined - Impact of site preparation and construction works on ecology are identified to optimise benefits and outputs - Project team collaborate with representative stakeholders to select measures to be implemented during site preparation and construction works		1			1.15	Targeted	1.15
Route 1: Negative impacts from site preparation and construction works have been managed according to the hierarchy and no net loss of ecological value has occurred. (Refer to Appendix H2 for full details)			Project member		1.15	Targeted	1.15
LE 04 Change and Enhancement of Ecological Value							
LE 03 has been achieved. The client or contractor has confirmed that compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site.	An ecologist has been appointed and the credits are targeted.	-			Prerequisite	Targeted	Prerequisite
Route 1: The project team, collaborating with representative stakeholders, have implemented locally relevant solutions and measures which enhance the site, based on recommendations from recognised 'local' ecological expertise. Refer to Appendix H3 for full details.		-	Project member	-	1.15	Targeted	1.15

LE 05 Long Term Ecology Management and Maintenance							
The client or contractor has confirmed that compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site. 'LE 03 - Planning, liaison, implementation and data' credit has been achieved. (At least one credit has been awarded under LE 04 for Route 2).	An ecologist has been appointed and the credits are targeted.	-		-	Prerequisite	Targeted	Prerequisite
Route 1 and 2: The project team have collaborated with stakeholders on solutions and measures implemented to monitor, review and develop management solutions. Monitor and report on ecological outcomes from the design and construction stages and overall project, and maintain ecological value of the site in line with its zone of influence and any sustainability linked activities. Include a section about Ecology and Biodiversity as part of the tenant or building owner information. (Refer to Appendix H4 for methodology)		-	Ecologist / Contractor	-	1.15	Targeted	1.15
Pollution							
Credit Summary	BREEAM Assessor Comments	Action at RIBA Stage	DT Responsibility	Minimum Standard for Rating	Points Available	Status	Points Targeted
Pol 01 Impact of Refrigerants							
All systems (with electric compressors) must comply with the requirements set out in BS EN 378:2016 (Parts 2 and 3)	The specified refrigerants will achieve a DELC CO ₂ e of ≤1000 kgCO ₂ e/kW.	-	M&E	-	Prerequisite	Targeted	Prerequisite
Systems using refrigerants have Direct Effect Life Cycle CO ₂ equivalent emissions (DELC CO ₂ e) of ≤100 kgCO ₂ e/kW cooling and heating capacity OR Refrigerants used have a Global Warming Potential (GWP) ≤10					1.50	Not Targeted	0.00
Systems using refrigerants have DELC CO ₂ e of ≤1000 kgCO ₂ e/kW cooling and heating capacity					0.75	Targeted	0.75
All systems are hermetically sealed or only use environmentally benign refrigerants. Refer to Appendix J1 for full details					0.75	Not Targeted	0.00

Pol 02 Local Air Quality							
All heating and hot water is supplied by non-combustion systems. OR Emissions from all installed combustion plant that provide space heating and domestic hot water do not exceed the levels set in Appendix J2.	The credits will be achieved as heating is electric.				0.75	Targeted	0.75
					0.75	Targeted	0.75
Pol 03 Flood and Surface Water Management							
An appropriate SuDS consultant is appointed	A consultant will be appointed to advise on SUDs.	-	Infrastructure	-	Prerequisite	Targeted	Prerequisite
A site specific Flood Risk Assessment (FRA) confirms there is a LOW annual probability of flooding	An FRA will be produced to show compliance.	-	Infrastructure	-	1.50	Targeted	1.50
Surface water run-off design solutions must be bespoke, i.e. they take account of the specific site requirements and natural or man-made environment of and surrounding the site.	Site specific solutions will be developed as the design progresses.	-	Infrastructure	-	Prerequisite	Targeted	Prerequisite
Flooding of property will not occur in the event of local drainage system failure AND For the 100 year 6 hour event, the post development run-off volume, over the development lifetime, is no greater than it would have been prior to the assessed site's development. Any additional predicted volume of run-off for this event must be prevented from leaving the site by using infiltration or other SuDS techniques. See Appendix J3 for full details.	SuDs will be designed to facilitate this being achieved.	-	Infrastructure	-	0.75	Targeted	0.75
Measures are implemented to minimise water course pollution in line with requirements in Appendix J3	This is not achievable on this site.	-	Infrastructure	-	0.75	Not Targeted	0.00
Pol 04 Reduction of Night Time Light Pollution							
External lighting pollution has been eliminated through effective design removing the need for external lighting OR It is designed in accordance with ILP Guidance and provided with a time switch to allow lighting to be switched off between 23:00 and 07:00	All external lighting will be designed in compliance with ILP guidance and can be automatically switched off between 23:00 hr and 07:00 hr. Safety and security lighting will be designed to meet the lower lighting levels.	-	M&E	-	0.75	Targeted	0.75
Pol 05 Reduction of Noise Pollution							
Where the development does have noise-sensitive areas or buildings within 800m, a noise impact assessment in compliance with BS 4142:2014 has been carried out by an acoustician, and the following noise levels measured/determined: - Existing background noise levels - Noise rating level from the assessed building The noise level from the proposed site/building must be at least 5dB lower than the background noise throughout the day and night. Attenuation must be used if required.	An acoustician will be appointed to ensure compliance with this criteria.	-	Acoustician	-	0.75	Targeted	0.75

Innovation							
Credit Summary	BREEAM Assessor Comments	Action at RIBA Stage	DT Responsibility	Minimum Standard?	Points Available	Status	Points Targeted
Man 03 Responsible Construction Practices							
Achieve all responsible construction management checklist items detailed in Appendix A3.	The contractor will be required to achieve this.	-		-	1.00	Targeted	1.00
Hea 01 Visual Comfort							
Daylighting criteria: Relevant building areas meet either; exemplary daylight factors, or, average and minimum point daylight illuminance criteria	This credit is not being targeted.	-		-	1.00	Not Targeted	0.00
Lighting levels and zoning: Lighting in each zone can be manually dimmed down to 20% of the maximum light output using dimmer switches	This credit is not being targeted.	-		-	1.00	Not Targeted	0.00
Hea 02 Indoor Air Quality							
Three out of the five product types meet exemplary emission limits, testing requirements and any additional requirements listed in Appendix B2	This credit is not being targeted.	-		-	1.00	Not Targeted	0.00
Hea 06 Security							
A compliant risk based security rating scheme has been used	Independent assessment and verification confirming performance against the scheme				1.00	Not Targeted	0.00
Ene 01 Reduction of Energy Use and Carbon Emissions							
The building achieves an $EPR_{NC} \geq 0.9$ and zero net regulated CO ₂ -eq emissions (up to two credits)	This credit is not being targeted.	-		-	1.00	Not Targeted	0.00
					1.00	Not Targeted	0.00
The building is deemed carbon negative where >100% of carbon emissions from unregulated (and regulated) energy use are offset by energy generated from on-site and near-site LZC sources (up to three credits)	This credit is not being targeted.				1.00	Not Targeted	0.00
		-		-	1.00	Not Targeted	0.00
					1.00	Not Targeted	0.00
Achieve maximum available credits in Ene 02 Energy monitoring, some buildings must meet the requirements of the second credit for sub-metering of high energy load and tenancy areas. The client or building occupier must commit funds to pay for the post-occupancy stage. The energy model must be submitted to BRE and retained by the building owner	This credit is not being targeted.	-		-	1.00	Not Targeted	0.00
	This credit is not being targeted.				1.00	Not Targeted	0.00
Wat 01 Water Consumption							
65% improvement over notional baseline	This credit is not being targeted.	-		-	1.00	Not Targeted	0.00
Mat 01 Environmental impacts from Construction Products - Building Life Cycle Assessment (LCA)							
During Concept Design identify opportunities for reducing environmental impacts	This credit is not being targeted.	-		-	1.00	Not Targeted	0.00
Achieve Elemental LCC plan and Component Level LCC options appraisal credits (Man 02 Life cycle cost and service life planning) AND Include design options appraised during Concept Design (Man 02 Life cycle cost and service life planning) AND Include the design options appraised during Technical Design (Man 02 Life cycle cost and service life planning) AND Integrate the aligned LCA and LCC options appraisal activity within the wider design decision-making process					1.00	Not Targeted	0.00
A suitably qualified third party carries out the building LCA work, or produces a report verifying it, with each LCA option itemised in the report and details of the suitably qualified third party and a declaration of their independence					1.00	Not Targeted	0.00
Mat 03 Responsible Sourcing of Construction Products							
Achieved Mat 03 credits AND Responsible sourcing % of available points achieved $\geq 50\%$	This credit is not being targeted.	-		-	1.00	Not Targeted	0.00
Wst 01 Construction Waste Management							
Amount of waste generated per 100m ² - 1.6m ³ / 1.9 tonnes AND Waste diverted from landfill: Volume (%) / Tonnage (%): Non-demolition 85% / 90% or Demolition 85% / 95% or Excavation 95% / 95%	This credit is not being targeted.	-		-	1.00	Not Targeted	0.00
Achieve the construction resource efficiency credits Allocate waste generated to specific projects Meet or better BREEAM exemplary level benchmark for diversion from landfill of non-hazardous construction and demolition waste	This credit is not being targeted.				1.00	Not Targeted	0.00

Wst 02 Use of Recycled and Sustainably Sourced Aggregates							
The Project Sustainable Aggregate Points score will be 6 or above	This credit is not being targeted.	-		-	1.00	Not Targeted	0.00
Wst 05 Adaptation to Climate Change							
Meet 'Wst 05 - Resilience of structure, fabric, building services and renewables installation' credit Meet criteria or achieve credits of issues detailed in Appendix G3	This credit is not being targeted.	-		-	1.00	Not Targeted	0.00
LE 02 Identifying and understanding the risks and opportunities for the project							
During Concept Design, wider site sustainability-related activities and the potential for ecosystem service related benefits are considered. Achieve the following credits: - Hea 07 Safe and healthy surroundings - Pol 03 Flood and surface water management: - 'Surface water run-off' credit - 'Minimising watercourse pollution' credit - Pol 05 Reduction of noise pollution	This credit is not being targeted.				1.00	Not Targeted	0.00
	This credit is not being targeted.						
	This credit is not being targeted.						
LE 04 Change and Enhancement of Ecological Value							
Achieve significant net gain of ecological value (≥110%), calculated in accordance with process set out in GN36 - BREEAM, CEEQUAL and HQM Ecology Calculation Methodology – Route 2.	This credit is not being targeted.				1.00	Not Targeted	0.00

6. Conclusion

This report assesses the potential of the commercial part of the development against the BREEAM 2018 New Construction criteria. The development can potentially achieve an Excellent rating with a target score of 70.59%. The minimum mandatory standards can all be achieved.

Appendices

Appendix A - Management

- A1: Man 01 - Project Brief and Design
- A2: Man 02 - Life Cycle Cost and Service Life Planning
- A3: Man 03 - Responsible Construction Practices
- A4: Man 04 - Commissioning and Handover
- A5: Man 05 - Aftercare

Appendix B - Health & Wellbeing

- B1: Hea 01 - Visual Comfort
- B2: Hea 02 - Indoor Air Quality
- B3: Hea 04 - Thermal Comfort
- B4: Hea 06 - Security
- B5: Hea 07 - Safe and Healthy Surroundings

Appendix C - Energy

- C1: Ene 02 - Energy Monitoring
- C2: Ene 03 - External Lighting
- C3: Ene 04 - Low Carbon Design
- C4: Ene 06 - Energy Efficient Transportation Systems
- C5: Ene 07 - Energy Efficient Laboratory Systems
- C6: Ene 08 - Energy Efficient Equipment

Appendix D - Transport

- D1: Tra 03 - Cyclist Facilities
- D2: Tra 05 - Travel Plan

Appendix E - Water

- E1: Wat 03 - Water Leak Detection and Prevention
- E2: Wat 04 - Water Efficient Equipment

Appendix F - Materials

- F1: Mat 03 - Responsible Sourcing of Materials
- F2: Mat 05 - Design for Durability and Resilience
- F3: Mat 06 – Material Efficiency

Appendix G - Waste

- G1: Wst 02 - Recycled Aggregates
- G2: Wst 05 - Adaptation to Climate Change
- G3: Wst 06 - Functional Adaptability

Appendix H - Land Use & Ecology

- H1: LE05 - Long Term Impact on Biodiversity

Appendix J - Pollution

- J1: Pol 01 - Impact of Refrigerants
- J2: Pol 03 - Surface Water Runoff
- J3: Pol 05 - Reduction of Noise Pollution