TWIN EARTH

SUSTAINABILITY STATEMENT

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TE0636

Prepared for:
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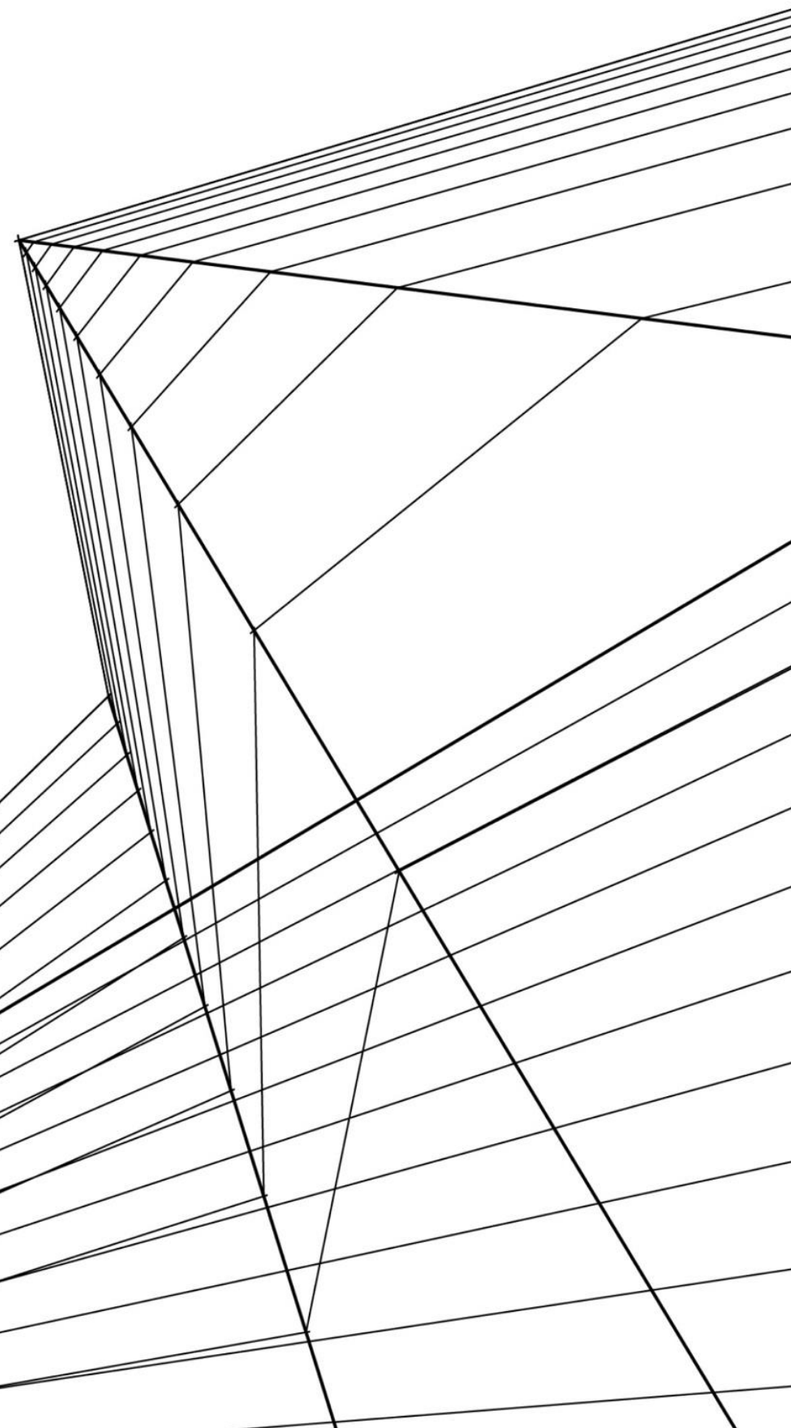

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ABOUT TWIN & EARTH

Twin & Earth provides independent engineering solutions with sustainability at its core.

Our vision is to seamlessly integrate sustainability into the entire construction process, without it being seen as an afterthought or inconvenience. From the initial concept, through planning, construction and operation, we will ensure sustainability is woven into the process and a priority for all stakeholders.

We listen and respond to our customers. We are open and flexible to their needs and concerns, breaking down complex concepts into simple solutions that work both on paper and in practice. Our consultants take a holistic view of each proposal, focusing on responsible and technical strategies that are pragmatic and inspiring.

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GLOSSARY

ASHP	Air Source Heat Pump – Electrically powered heating and cooling system that transfers heat from the outside air to the inside, and vice versa when in cooling mode.
CIBSE	Chartered Institute of Building Services Engineers
Circular Economy	An economic system based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems.
CO_2	Carbon dioxide emissions – released as a result of burning fossil fuels.
GLA	Greater London Authority
LBC	London Borough of Camden
SPG	Supplementary Planning Guidance
SuDS	Sustainable Urban Drainage Systems - A sequence of management practices and control structures designed to drain surface water in a more sustainable fashion than some conventional techniques.
SWMP	Site Waste Management Plan
TM52	Methodology for assessing the overheating risk in non-residential buildings
VOC	Volatile Organic Compounds - Compounds which easily become vapours or gases and influence the indoor air quality when present in construction products.

EXECUTIVE SUMMARY

“All cities must face up to the reality of climate change and the need to limit their future contribution to this major global problem” (The London Plan – March 2021).

This report summarises the proposed Sustainability Strategy and BREEAM Pre-Assessment for the alteration, extension and associated works for Tavis House (‘the Site’), located within the London Borough of Camden (‘LBC’).

1 EXECUTIVE SUMMARY

This report summarises the proposed Sustainability Strategy and BREEAM Pre-Assessment for the alteration, extension and associated works for Tavis House ('the Site'), located within the London Borough of Camden ('LBC').

1.1 Sustainability Strategy

This Sustainability Statement and BREEAM Pre-Assessments have been prepared by Twin & Earth on behalf of Tempus Realty Holdings 1 (Jersey) Ltd ('the Applicant') in support of the planning application for Tavis House. This report sets out the proposed strategy for the development.

The proposal is to develop the building for life sciences use, integrating both office and laboratory spaces. Planning permission was previously granted for Tavis House in December 2021 for office space, therefore this is an application for section 73 to amend conditions 2, 9, 13 and 15.

The development proposal intends to deliver a development that is socially, economically and environmentally conscious. Therefore, this Sustainability Statement adopts a holistic approach to best practice design measures to deliver sustainable development. Moreover, the proposed scheme will continue to meet the targets contained in the S106 agreement for application reference 2021/6105/P.

The development aims to implement best practice sustainability criteria throughout. A summary of the key sustainability features proposed is provided below:

	BREEAM Assessment	BREEAM Assessment undertaken with a target of at least BREEAM 'Excellent' is considered achievable for the proposed development. The scheme will attain at least 60% of the credits in the Energy section and Water section and at least 40% of the credits in the Materials category.
	Energy and Operational Carbon Emissions	It is proposed that new thermal fabric will be high performance, improving upon the limiting values stipulated within ADL2. It is proposed that heating and cooling will be provided by high efficiency Variable Refrigerant Flow (VRF) units. Based on the proposed energy strategy, a total 36% reduction in carbon emissions against the GLA's Baseline will be achieved.
	Water Efficiency	Highly efficient water-saving fixtures, fittings and appliances and water metering will be incorporated to achieve at least 40% water reduction, equivalent to 3 points under BREEAM water consumption credit.
	Circular Economy and Waste Reduction	The development will apply the principles of circular economy and analysis of the life cycle of the building, targeting a low-carbon development at both refurbishment and operational stages. Based on a pre-strip-out audit at an early design stage, the opportunities for on-site and off-waste re-use are maximised. The development aims to minimise the amount of waste sent to landfill during the building's construction through the development and implementation of a Resource Management Plan (RMP).
	Ecology & Biodiversity	The inclusion of greening around the substation and rooflights will deliver an increase in biodiversity on-site.
	Floor Risk & Surface Water	The development is located with in Flood Zone One and has been designed to minimise the risk of flooding and limit surface water run-off.
	Sustainable Transport	Cycle storage and EV changing facilities are to be provided to encourage sustainable transport. Transport-related emissions and traffic congestion will be minimal due to the highly sustainable location of the proposed development, within close proximity to an excellent public transport network and local amenities.
	Minimising Pollution	Night time light pollution will be minimised through best practice design. A Noise Assessment report has been produced which recommends mitigation measures to minimise noise pollution from the plant. An updated Air Quality Assessment has been produced in support of the application. The review has shown that air quality has improved from 2019, the baseline year in the Previous AQA, to 2022, the current baseline year. As such, the conclusions of the Previous AQA remain the same; that the Site remains suitable for its intended use.

Table 1. Sustainability Strategy Key Features

INTRODUCTION

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

This section introduces the Tavis House development and the proposed scope of works as context to the sustainability statement.

2 INTRODUCTION

This section introduces Tavis House and the proposed scope of works as context to the Sustainability statement.

2.1 Introduction

This Sustainability Statement has been prepared by Twin & Earth on behalf of Tempus Realty Holdings (Jersey) Ltd ('the Applicant') in support of the Section 73 application for Tavis House within the London Borough of Camden ('LBC'). This report sets out the proposed strategy for the development.

2.2 The Existing Site

Tavis House is an existing office building located at 1-6 Tavistock Square on the corner of Woburn Place and Tavis Stock Place. The building was originally constructed in the 1940s for the Ministry of Labour and National Service and comprises of a basement and nine storeys. There is an existing car park at ground floor level to the east of the building.

The building sits within Bloomsbury Conservation Area and within sub area group 6: Bloomsbury Square/Russell Square/Tavistock Square and is located within the Central Activities Zone (CAZ).

Planning permission has previously been granted by the London Borough of Camden for the refurbishment and extension of the building under planning reference 2021/6105/P.

2.3 The Proposed Development

The new proposal comprises the development of the building for life sciences use, integrating both office and laboratory spaces. As a result of some changes to the original use of the building, the project is to be submitted back to Camden under a S73 application.

Planning permission for a similar scheme was approved on 1 December 2023 under reference 2021/6105/P for the: "Refurbishment and extension of the existing building to provide new entrances, a new roof top pavilion, roof top plant equipment and enclosures, rear extension and cycle parking associated with Class E use together with new hard and soft landscaping and other ancillary works".

A Section 73 is sought for "Variation of condition 2, 9, 13 and 15 approved under planning permission reference 2021/6105/P on 1 December 2023 for 'Refurbishment and extension of the existing building to provide new entrances, a new roof top pavilion, roof top plant equipment and enclosures, rear extension and cycle parking associated with Class E use together with new hard and soft landscaping and other ancillary works'. NAMELY amendments to external rear facades, rooftop plant and other associated works."

This S73 application has been submitted to allow the building to be used for flexible lab-enabled space resulting in changes to the rear façade and roof top level to allow for additional plant associated with laboratories.

2.4 The Sustainability Strategy

The proposals are aiming to deliver a development that is socially, economically and environmentally conscious. Therefore, the sustainability strategy takes a holistic approach to best practice design measures to deliver a sustainable development.

Underpinning the sustainability principles for the development is a BREEAM assessment, which encompasses a broad range of sustainability topics.

The development aims to implement best practice sustainability criteria throughout. Section 4 provides a holistic summary of the key sustainability features proposed, and covers the following concepts:

- BREEAM Pre-Assessment
- Energy and Operational Carbon Emissions
- Water Efficiency
- Circular Economy and Waste Reduction
- Ecology & Biodiversity
- Floor Risk & Surface Water
- Sustainable Transport
- Minimising Pollution

Figure 1 Tavis House, proposed development CGI. Source: Gort Scott

POLICY CONTEXT

“The planning system should support the transition to a low carbon future in a changing climate. It should help to shape places in ways that contribute to radical reductions in greenhouse gas emissions minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated infrastructure.” (NPPF, 2023)

This section summarises the relevant national, regional and local planning policy and applicable regulations to the development, which form the basis of the proposed Sustainability Strategy

3 POLICY CONTEXT

This section summarises the relevant national and local planning policy and applicable regulations to the development, which form the basis of the proposed Sustainability Strategy.

3.1 Applicable Planning Policy & Guidance

The development will need to meet sustainability requirements established by the following:

- National Policy
  - NPPF – Updated in 2023

- Greater London Authority (GLA)
  - The London Plan 2021
  - GLA's Energy Assessment Guidance – June 2022
  - GLA Note on new Part L 2021

- Local Policies from the London Borough of Camden (LBC)
  - Camden Local Plan – 2017
  - Camden Energy efficiency and adaptation planning guidance (2021)

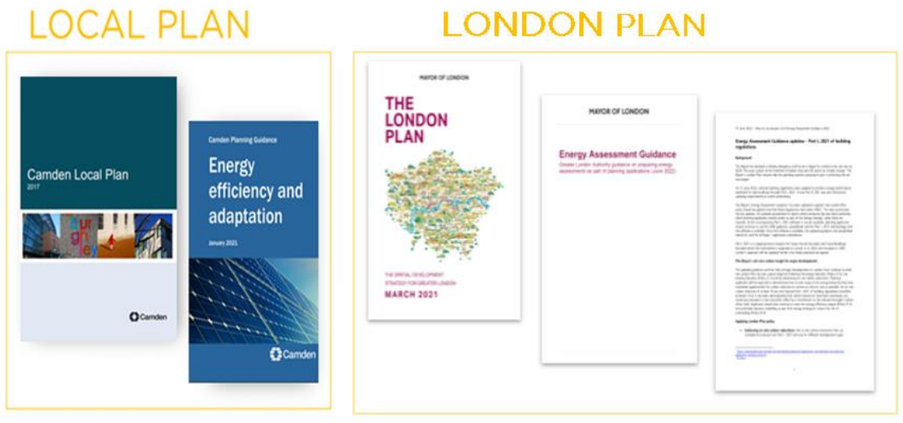


Figure 2 Applicable Planning Policy & Guidance

3.1.1 National Planning Policy Framework (NPPF)

The NPPF stipulates that the purpose of the planning system is to contribute to the achievement of sustainable development. At a very high level, the objective of sustainable development can be summarised as meeting the needs of the present without compromising the ability of future generations to meet their own needs.

The National Planning Policy Framework (NPPF) was first published on 27 March 2012 and revised most recently in December 2023 as a key part of Government reforms to make the planning system less complex and more accessible, to protect the environment and to promote sustainable growth. The revised NPPF emphasises the delivery of new homes, and for the design community to put design quality at the heart of the system. The Government have also published a series of National Planning Practice Guidance covering different topics to support the framework.

3.1.2 The London Plan (2021)

The London Plan (March 2021) is the overall strategic plan for London which sets out an integrated economic, environmental, transport and social framework for the development of London over the next 20–25 years.

The plan brings together the geographic and locational (although not site specific) aspects of the Mayor's other strategies including those dealing with: Transport, Economic Development, Housing, Culture, Social issues and the Environment including climate change (adaptation and mitigation), air quality, noise and waste.

3.1.3 London Borough of Camden Plan (2017)

The latest Camden Plan was adopted in 2017. The key aims of the plan are to deliver sustainable growth while continuing to preserve and enhance the features that make Camden an attractive place to live, work and visit.

Key policies relating to the sustainability of any development proposals are set out in the LBC's Local Plan (adopted in 2017) and Energy Efficiency and Adaptation Planning Guidance (adopted 2021). The key messages of each are summarised below.

3.1.4 LBC's Local Plan (Adopted 2017)

The specific policies that have been considered when developing the energy strategy for the development are listed below.

Policy CC1: Climate change mitigation

The Council will require all development to minimise the effects of climate change and encourage all developments to meet the highest feasible environmental standards that are financially viable during construction and occupation. We will:

a. promote zero carbon development and require all development to reduce carbon dioxide emissions through following the steps in the energy hierarchy;
b. require all major development to demonstrate how London Plan targets for carbon dioxide emissions have been met;
c. ensure that the location of development and mix of land uses minimise the need to travel by car and help to support decentralised energy networks;
d. support and encourage sensitive energy efficiency improvements to existing buildings;
e. require all proposals that involve substantial demolition to demonstrate that it is not possible to retain and improve the existing building; and
f. expect all developments to optimise resource efficiency.

For decentralised energy networks, we will promote decentralised energy by:

g. working with local organisations and developers to implement decentralised energy networks in the parts of Camden most likely to support them;
h. protecting existing decentralised energy networks (e.g. at Gower Street, Bloomsbury, King's Cross, Gospel Oak and Somers Town) and safeguarding potential network routes; and
i. requiring all major developments to assess the feasibility of connecting to an existing decentralised energy network, or where this is not possible establishing a new network.

To ensure that the Council can monitor the effectiveness of renewable and low carbon technologies, major developments will be required to install appropriate monitoring equipment.

Policy CC2: Adapting to climate change

The Council will require development to be resilient to climate change. All development should adopt appropriate climate change adaptation measures such as:

a. the protection of existing green spaces and promoting new appropriate green infrastructure;
b. not increasing, and wherever possible reducing, surface water runoff through increasing permeable surfaces and use of Sustainable Drainage Systems;
c. incorporating bio-diverse roofs, combination green and blue roofs and green walls where appropriate; and
d. measures to reduce the impact of urban and dwelling overheating, including application of the cooling hierarchy.

Any development involving 5 or more residential units or 500 sqm or more of any additional floorspace is required to demonstrate the above in a Sustainability Statement.

Sustainable design and construction measures

The Council will promote and measure sustainable design and construction by:

e. ensuring development schemes demonstrate how adaptation measures and sustainable development principles have been incorporated into the design and proposed implementation;
f. encourage new build residential development to use the Home Quality Mark and Passivhaus design standards;
g. encouraging conversions and extensions of 500 sqm of residential floorspace or above or five or more dwellings to achieve "excellent" in BREEAM domestic refurbishment; and
h. expecting non-domestic developments of 500 sqm of floorspace or above to achieve "excellent" in BREEAM assessments and encouraging zero carbon in new development from 2019.

Policy CC3: Water and flooding

The Council will seek to ensure that development does not increase flood risk and reduces the risk of flooding where possible. We will require development to:

a. incorporate water efficiency measures;
b. avoid harm to the water environment and improve water quality;
c. consider the impact of development in areas at risk of flooding (including drainage);
d. incorporate flood resilient measures in areas prone to flooding;
e. utilise Sustainable Drainage Systems (SuDS) in line with the drainage hierarchy to achieve a greenfield run-off rate where feasible; and
f. not locate vulnerable development in flood-prone areas.

Where an assessment of flood risk is required, developments should consider surface water flooding in detail and groundwater flooding where applicable.

The Council will protect the borough's existing drinking water and foul water infrastructure, including the reservoirs at Barrow Hill, Hampstead Heath, Highgate and Kidderpore.

Policy CC4: Air quality

The Council will ensure that the impact of development on air quality is mitigated and ensure that exposure to poor air quality is reduced in the borough.

The Council will take into account the impact of air quality when assessing development proposals, through the consideration of both the exposure of occupants to air pollution and the effect of the development on air quality. Consideration must be taken to the actions identified in the Council's Air Quality Action Plan.

Air Quality Assessments (AQAs) are required where development is likely to expose residents to high levels of air pollution. Where the AQA shows that a development would cause harm to air quality, the Council will not grant planning permission unless measures are adopted to mitigate the impact. Similarly, developments that introduce sensitive receptors (i.e. housing, schools) in locations of poor air quality will not be acceptable unless designed to mitigate the impact.

Development that involves significant demolition, construction or earthworks will also be required to assess the risk of dust and emissions impacts in an AQA and include appropriate mitigation measures to be secured in a Construction Management Plan.

Policy CC5: Waste

The Council will seek to make Camden a low waste borough. We will:

a. aim to reduce the amount of waste produced in the borough and increase recycling and the reuse of materials to meet the London Plan targets of 50% of household waste recycled/composted by 2020 and aspiring to achieve 60% by 2031;
b. deal with North London's waste by working with our partner boroughs in North London to produce a Waste Plan, which will ensure that sufficient land is allocated to manage the amount of waste apportioned to the area in the London Plan;
c. safeguard Camden's existing waste site at Regis Road unless a suitable compensatory waste site is provided that replaces the maximum throughput achievable at the existing site; and
d. make sure that developments include facilities for the storage and collection of waste and recycling.

Policy A1: Managing the impact of development

The Council will seek to protect the quality of life of occupiers and neighbours. We will grant permission for development unless this causes unacceptable harm to amenity.
We will:

a. seek to ensure that the amenity of communities, occupiers and neighbours is protected;
b. seek to ensure development contributes towards strong and successful communities by balancing the needs of development with the needs and characteristics of local areas and communities;
c. resist development that fails to adequately assess and address transport impacts affecting communities, occupiers, neighbours and the existing transport network; and
d. require mitigation measures where necessary. The factors we will consider include:
e. visual privacy, outlook;
f. sunlight, daylight and overshadowing;
g. artificial lighting levels;
h. transport impacts, including the use of Transport Assessments, Travel Plans and Delivery and Servicing Management Plans;
i. impacts of the construction phase, including the use of Construction Management Plans;
j. noise and vibration levels;
k. odour, fumes and dust;
l. microclimate;
m. contaminated land; and
n. impact upon water and wastewater infrastructure

3.1.5 LBC's Planning Guidance – Energy efficiency and adaptation (2021)

The Supplementary Planning Guidance (SPG) has been produced to establish more detailed guidance on the application of policies within the Local Plan and any neighbourhood plans that may come into effect.

The specific policies that have been considered when developing the energy strategy for the development are listed below.

Energy Hierarchy – key messages

- All development in Camden is expected to reduce carbon dioxide emissions by following the energy hierarchy in accordance with Local Plan policy CC1.
- Energy strategies are to be designed following the steps set out in the energy hierarchy

Making buildings more energy efficient – key messages

- Natural 'passive' measures should be prioritised over active measures to reduce energy.
- Major residential development to achieve 10%, and non-residential development to achieve 15% reduction (beyond part L Building regulations), in accordance with the new London Plan, through on-site energy efficient measures (Be lean stage)

Decentralised energy – key messages

All new major developments in Camden are expected to assess the feasibility of decentralised energy network growth (paragraph 8.25 Local Plan).

Renewable energy technologies

- There are a variety of renewable energy technologies that can be installed to supplement a development's energy needs.
- Developments are to target a 20% reduction in carbon dioxide emissions from on-site renewable energy technologies.

Energy statements – key messages

- Energy statements are required for all developments involving 5 or more dwellings and/or more than 500sqm of any (gross internal) floorspace.
- Energy statements should demonstrate how a development has been designed following the steps in the energy hierarchy.
- The energy reductions should accord with those set out in the Chapter below 'Energy reduction'.

Energy reduction – key messages

- All development in Camden is expected to reduce carbon dioxide emissions through the application of the energy hierarchy.
- All new build major developments to demonstrate compliance with London Plan targets for carbon dioxide emissions.
- Deep refurbishments (i.e. refurbishments assessed under Building Regulations Part L2B/L2B) should also meet the London Plan carbon reduction targets for new buildings.
- All new build residential development (of 1 – 9 dwellings) must meet 19% carbon dioxide reduction; and
- Developments of five or more dwellings and/or more than 500sqm of any gross internal floorspace to achieve 20% reduction in carbon dioxide emissions from on-site renewable energy generation

Energy efficiency in existing buildings – key messages

- All developments should demonstrate how sustainable design principles have been considered and incorporated.
- Sensitive improvements can be made to historic buildings to reduce carbon dioxide emissions.
- Warm homes and buildings are key to good health and wellbeing. As a guide, at least 10% of the project cost should be spent on environmental improvements.
- The 20% carbon reduction target (using on-site renewable energy technologies) applies for developments of five or more dwellings and/or more than 500 sqm of any gross internal floorspace (see Chapters 2 and 4).

Reuse and optimizing resource efficiency – key messages

- We will expect creative and innovative solutions to repurposing existing buildings, and avoiding demolition where feasible;
- All development should seek to optimise resource efficiency and use circular economy principles.

Sustainable design and construction – key messages

- All developments involving 5 or more residential units or 500 sqm or more of any additional floorspace should address sustainable design and construction measures (proposed in design and implementation) in a Sustainability Statement (Local Plan policy CC2).
- Active cooling (air conditioning) will only be permitted where its need is demonstrated and the steps in the cooling hierarchy are followed (Local Plan policy CC2).
- Development is expected to reduce overheating risk through following the steps in the cooling hierarchy. All new development should submit a statement demonstrating how the cooling hierarchy has been followed (Local Plan policy CC2).
- All developments should seek opportunities to make a positive contribution to green space provision or greening.

Sustainable assessment tools – key messages

- BREEAM Excellent is required for all non-residential development of 500sqm or more floorspace
- Other assessment tools such as Home Quality Mark and Passivhaus are encouraged, they can serve to demonstrate the incorporation of sustainable design principles.

SUSTAINABILITY STRATEGY

“Achieving sustainable development means that the planning system has three overarching objectives [economic, social and environmental], which are interdependent and need to be pursued in mutually supportive ways” (NPPF, 2023).

This section summarises the proposed Sustainability Strategy for Tavis House and explains how the development responds to regional and local policies on sustainable design and construction.

4 SUSTAINABILITY STRATEGY

This section summarises the proposed Sustainability Strategy for Tavis House and explains how the development responds to local policies on sustainable design and construction.

4.1 Introduction

The proposed development aims to achieve high standards of sustainability and occupant health and wellbeing. A holistic approach has been sought from the outset, and strategies have been proposed where possible to achieve a sustainable building in line with the Applicant's sustainability brief and in collaboration with the design team.

The development proposes to tackle the following key areas of sustainability: benchmarking, energy and carbon emissions, water use, sustainable materials, waste, pollution, health and wellbeing, management, ecology and land use, and sustainable transport.

References to other supporting documents that have been submitted as part of this planning application are included in the body of the text. The documents that are referenced are listed within the 'References' section of this report.

4.2 Benchmarking

4.1.1 Introduction

The Camden Plan (2017) requires new and refurbished non-residential developments to achieve a BREEAM 'Excellent' rating; there are no BREEAM requirements in the London Plan (2021). BREEAM Excellent rating corresponds to the top 10% of sustainable building.

BREEAM is the main environmental certification rating in the UK and it is linked to planning policy, building regulations and general design standards such as CIBSE or the British Council for Offices (BCO) Specifications. First published in 1990, BREEAM (Building Research Establishment's Environmental Assessment Method) is the world's longest established method of assessing, rating, and certifying the sustainability of buildings.

A BREEAM assessment uses recognised measures of performance, which are set against established benchmarks, to evaluate a building's specification, design, construction and use. The measures represent a broad range of categories and criteria, which include Management, Health & Wellbeing, Energy, Transport, Water, Materials, Waste, Land Use & Ecology, Pollution, and Innovations. BREEAM is a points-based system, with weighted credits achieved for compliance with set requirements. Ratings include Very Good (minimum 55% of available credits achieved), Excellent (70%) and Outstanding (85%)

The BREEAM Pre-assessment for previously approved development indicated a score of 74.32%, whilst the proposed development under the S73 application has a slightly increased anticipated score of 75.28%.

4.1.2 Proposed Strategy

In accordance with the Camden Plan (2017), the development is seeking to achieve a minimum BREEAM 'Excellent' rating for both Design and Post-construction stage assessments.

The proposed development will be assessed under the BREEAM Bespoke scheme for part refurbishment, part new build extension, based on the Refurbishment and Fit-out 2014 scheme. The development will be assessed as a shell and core project.

4.1.3 Results

As the appointed BREEAM assessors and APs for the development, Twin&Earth have undertaken a BREEAM pre-assessment of the proposed development at RIBA Stage 2. The pre-assessment indicates that the development achieves a score of 75.28%. Emphasis has been placed upon maximising the credits in the energy, water and materials section as far as practically possible to meet the requirements set out in policy CC2, where a minimum of 60% of the energy and water credits, as well as 40% of the materials credits should be achieved. The anticipated scores for these sections are as follows:

- Energy: 61%
- Water: 75%
- Materials: 69%

Beyond exceeding the minimum score threshold of 70%, the development will also need to meet a set of minimum requirements for 'Excellent' certification. These requirements are:

- Man03 Responsible construction practices: 1 credit
- Man 04 Commissioning and hand over: criterion 9
- Ene 01 Reduction of energy use and carbon emissions: 6 credits
- Ene02 Energy Monitoring: 1 credit
- Wat01 Water consumption: 1 credit
- Wat02 Water monitoring: Criterion 1 only
- Mat 03 Responsible sourcing of construction products: Criterion 1 only
- Wst03 Operational waste: 1 credit

All of these credits and criteria are currently targeted and tracked. The BREEAM pre-assessment tracker can be found in Appendix A.

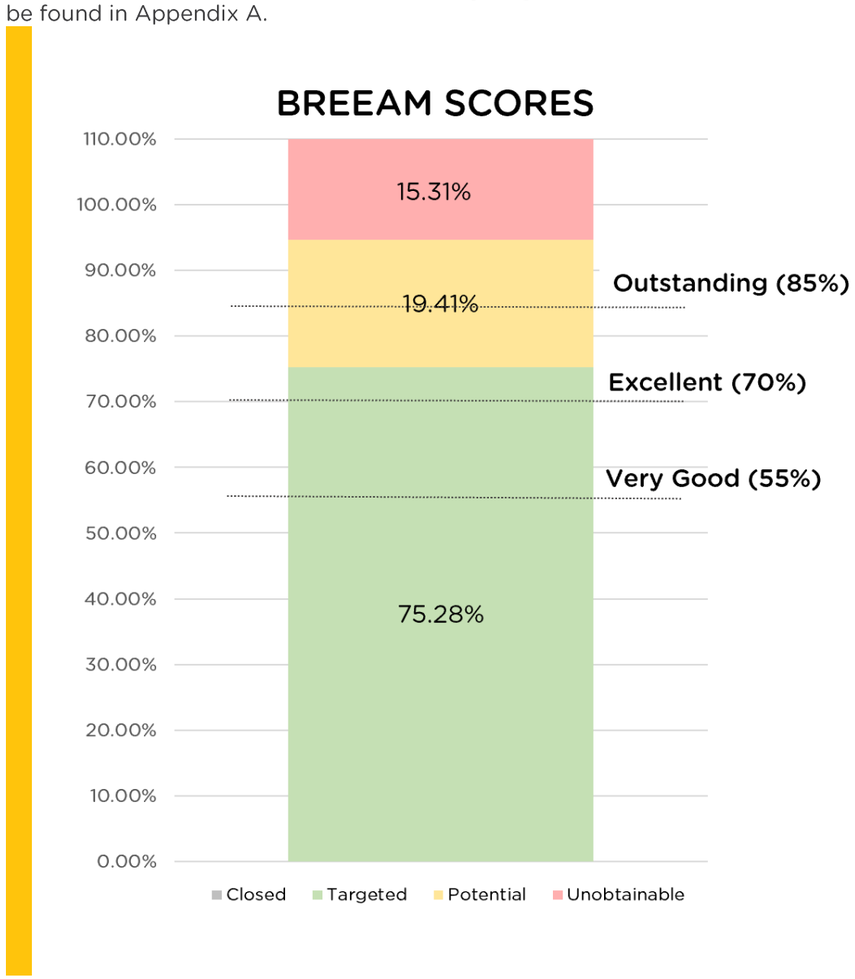


Figure 3 BREEAM Pre-Assessment Rating & Score

4.2 Energy and Operational Carbon Emissions

In order to minimise CO_2 emissions on site, the proposed development follows the energy hierarchy, which prioritises passive energy efficiency and demand reduction measures in combination with energy-efficient active design systems served by low-carbon technologies.

The following measures are proposed in order for the development to use less energy and manage demand during operation:

- For the new build extension, high levels of insulation and high-performance glazing will be incorporated, going beyond Part L 2021 targets and notional building specifications, in order to reduce the demand for space conditioning.
- Provision of openable windows providing natural ventilation enabling a mixed mode strategy within the office areas.
- Improved air tightness as the new build portions will target low air permeability rates.
- Low energy lighting will be provided throughout.
- Air source heat pumps providing space heating and cooling to office and laboratory areas.
- Air source heat pumps will provide DHW to the showers and end of journey facilities located in the basement.
- Renewable on-site generation will be provided by highly efficient PV panels on the roof providing 6.6 kW peak.

The proposed development will achieve a 36% reduction over the GLA's baseline building. Its difficult to compare the consented and proposed scheme as the contented scheme is based on an open planned office, whereas the addition of labs within the proposed scheme means that the proposal is more energy-intensive. For further details on the energy strategy, please refer to the accompanying Energy Statement.

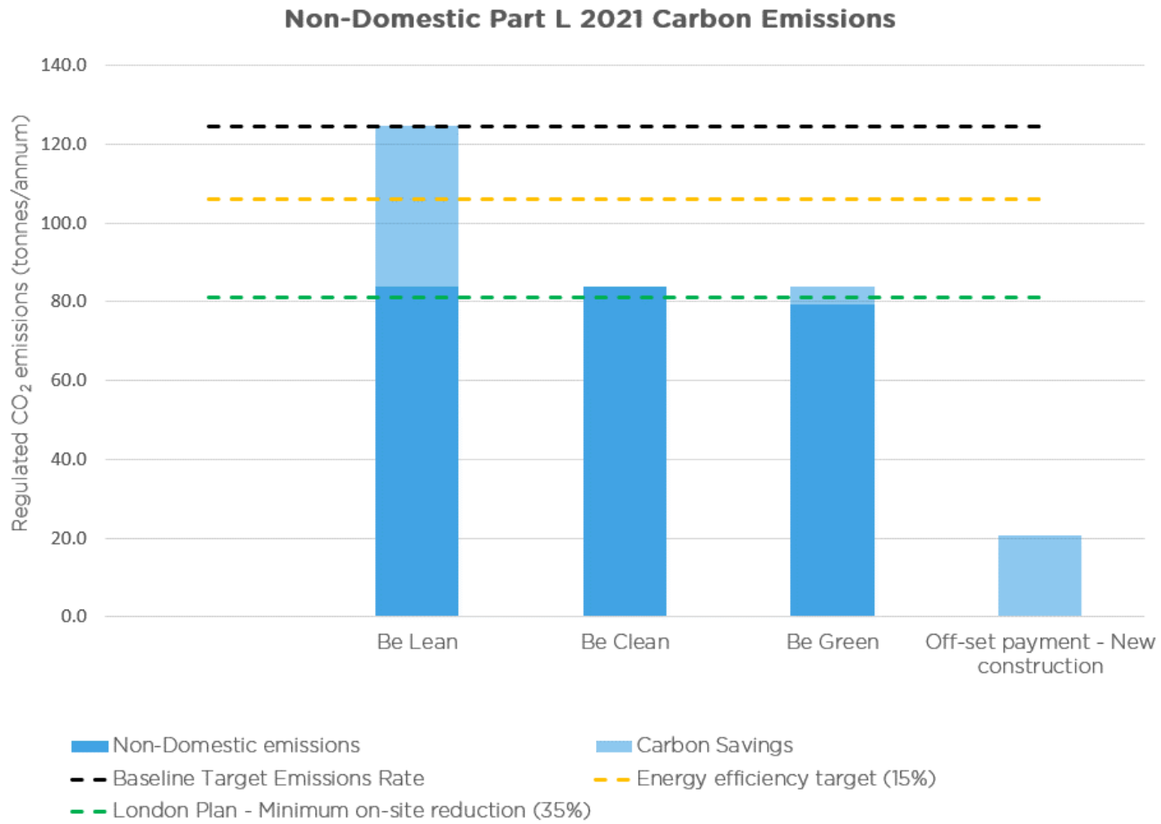


Figure 4 Site Wide Carbon Savings throughout the energy hierarchy (Part L 2021)

4.3 Management

Through a consultation process the project team has involved the relevant stakeholders in an integrated design process in order to optimise the building's performance. Further details of stakeholder consultation can be seen in the Covering Letter.

The construction of the building will be managed in an environmentally and socially considerate and accountable manner, through contractual requirement for contractors to comply with and go significantly beyond best practice principles under the Considerate Constructors Scheme (CCS).

Furthermore, the construction site will be managed in an environmentally sound manner in terms of resource use(including construction materials), energy and water consumption, as well as air and water pollution. A Construction Management Plan will be used as a live document to help minimise construction impacts, this relates to all construction activity both on and off-site that impacts the wider environment.

Sustainable management practices relating to commissioning and handover will be sought in order to ensure robust sustainability objectives are set and then followed from construction through to operation. Appropriate building user guides will be provided to facilities managers and the building occupants in order to operate the building optimally. A training schedule will also be prepared for building occupiers/premises managers outlining the design intent, aftercare provisions, installed systems, the building user guide and any maintenance requirements.

An elemental life cycle cost analysis will be carried out by the end of RIBA stage 2 in accordance with PD 156865-2008.

A Security Consultant has been appointed to develop security measures across the site. All appropriate security recommendations shall be incorporated, and will promote low risk, safe and secure access to and use of the building.

Figure 5 Considerate Constructors Logo

4.4 Health and Wellbeing

The building aims to provide views out to building users, to promote positive impacts on both mood and productivity of building users. Adequate solar and glare control will be provided to new build areas through the provision of high-performance glazing.

The Daylight, Sunlight and Overshadowing Report confirms that the proposed development will not cause any noticeable effects on the daylight and sunlight amenity of the neighbouring residential properties.

Internal and external lighting will be designed in line with best practice for visual performance and comfort. Daylight dimming and/or occupancy sensors will be specified where possible, and time switches and daylight or occupancy sensors will be provided to all external lighting.

The building will achieve adequate indoor ambient noise levels and appropriate sound insulation levels as required for different zone functions.

A comprehensive indoor air quality plan will be prepared to ensure that sources of air pollution are minimised.

A thermal comfort analysis will be carried out at during the detailed design stages to ensure occupant thermal comfort with the current and future climate scenarios.

The roof terrace, designed as a shared amenity for all occupiers of the building, aims to provide an important space for social interaction as well as serving as a restorative space.

The laboratory space will be designed following the risk assessment which ensures that all potential risks are considered in the design of the laboratory.

4.5 Transport

A Site-Specific Transport Statement and Framework Travel Plan has been developed for Tavis House, this outlines the current transport network to the site. The reports highlight that Tavis House is within close proximity to an excellent public transport network, thereby helping reduce transport-related emissions and traffic congestion. This is supported by the results of the Public Transport Accessibility Levels (PTALs) which indicates that the site achieves a PTAL of 6b, demonstrating an excellent level of accessibility to public transport.

The majority of trips to the development are expected to be made via public transport given the site's excellent location near to Euston and King's Cross underground and train stations. The site is also well connected to local amenities, such as Pret A Manger, Starbucks and Tavistock Hotel, helping reduce the need for multiple or extended building user journeys.

The development has been designed to prioritise active and sustainable modes of transportation, through a car-free strategy combined with 36 cycle parking spaces and end-of-trip cycle facilities, such as showers, and lockers to allow for lab-enabled use. Additionally, there will be one EV charging point as part of the development

A Framework Travel Plan includes recommendations and an action plan to improve sustainable transport to Tavis House, each action has a timescale and responsibility assigned to it. This can be found in Table 9.1 of the Framework Travel Plan. Examples of actions include the production of travel information pacts before occupation and appointing an occupier travel plan co-ordinator within one month of occupation.

The Delivery and Service Plan also concludes that the servicing strategy will not change from the approved applications.

4.6 Water Efficiency

The proposed development will minimise the consumption of potable water in sanitary applications. Water efficient fixtures and fittings, such as dual-flush WCs and low flow rate hand wash basin taps, shower heads and kitchen taps will be installed within toilets, changing facilities and kitchens/kitchenettes where these are fitted out. These measures will contribute towards the overall target of 40% reduction against the BREEAM baseline water consumption rate which would achieve 3 out of 5 credits. The feasibility of a greywater/rainwater harvesting system is to be explored as the design progresses.

A water meter with pulsed or other open protocol communication output to enable connection to an appropriate utility monitoring and management system, e.g. a building management system (BMS) will be specified on the mains water supply to the building. Additionally, sub-meters of the same type will be fitted on the supply to individual water-consuming plant or building areas. This metering strategy will ensure water consumption can be monitored and managed, therefore encouraging use reduction.

A leak detection system capable of detecting major water leaks on the mains water supply within, and to the building, will be installed to reduce the impact of major water leaks that may otherwise go undetected. Flow control devices will be fitted to toilet facilities to further minimise the risk of undetected water leaks.

4.7 Materials

4.7.1Pre-demolition and refurbishment audit

Strip-out of the existing building will be carefully carried out, and any elements or materials that are deemed not feasible to be re-used in the new development will be appropriately recycled or re-used off-site, in accordance with the pre-demolition and refurbishment audit.
The audit carried out in 2022 identifies key materials with the building to guide the design, consider materials for reuse and set targets for waste management. All suggestions within the audit are in accordance with the waste hierarchy.

4.7.2 Circular economy

Being a mostly refurbishment development, with associated extension of the existing asset, the Tavis House development will inherently minimise the embodied carbon impact when compared to a new build development. This will ensure that the lifetime of the existing building will be extended, along with providing additional accommodation space as well as improving its energy efficiency, reducing carbon emissions during both construction and operation. In addition, the strip-out required to enable works for the development will allow for the reuse of existing components and recycling wherever possible.

For the new build extension, a whole-life cycle carbon assessment will be carried out to demonstrate efficiency in the design, which will allow for the quantity of materials, and associated building weight, to be reduced. An efficient building design which minimises the use of energy and water during building operation, will ensure that resource use is optimised and materials will be sourced in a responsible and sustainable manner, through the development of a sustainable procurement plan.

The removal and reinstatement of part of the 8th floor will avoid using temporary steel which is carbon-intensive. The following carbon calculations have been carried out which demonstrate that removing and reinstating part of the 8th floor is the lower carbon option, this is shown in Figure 6.
Option 1 is represents the demolition and retention of part of the façade, whereas option 2 is full retention of the façade which would require temporary steel works.

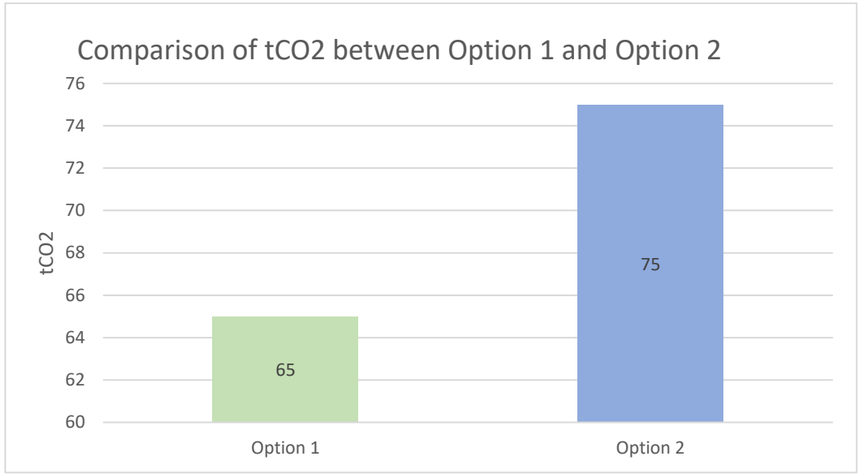


Figure 6 Carbon comparison between option 1 and option 2.

To demonstrate how generating waste 'at source' could be minimised, the design follows the below principles, as relevant to each building layer, and its associated design life:

- Designing for longevity, adaptability or flexibility and reusability or recoverability.
- Design out construction, demolition, excavation and municipal waste arising.

As far as possible, within the constraints of the existing structures, ease of disassembly has been designed in through prioritising mechanical fixings and pre-fabrication.

Adequate protection will be provided to vulnerable parts of the building fabric and landscape to minimise the frequency of material replacement. Areas exposed to high pedestrian traffic, vehicular and trolley movements will be considered for such treatments. In addition, materials in exposed parts of the building will be specified to provide adequate protection from material degradation due to environmental factors.

Ways to maximise material efficiency have also been considered at Tavis House, this will aid in minimising the environmental impacts of material use and waste. Opportunities to increase material efficiency will be continually reviewed throughout the design and construction process.

4.8 Waste Reduction

A resource management plan (RMP) will be developed and implemented according to best practice. This will promote resource efficiency via the effective management and reduction of construction waste and will aim to reduce the amount of construction waste diverted from landfill. Construction waste materials will be separated into key waste groups either on or off-site and diverted from landfill.

Wherever feasible, non-hazardous construction waste generated by the project will be reused, salvaged/reclaimed, recycled, composted, recovered on or off site and/or returned to the supplier through a take-back scheme. As discussed in section 4.7.1 above the pre-demolition and refurbishment audit identifies a target of 97% overall diversion rate from landfill, adding that it may be possible to raise this further with the careful selection of waste processors.

In line with the BREEAM WST 01 Construction resource efficiency criteria, the contractor will ensure that construction waste related to on-site construction and dedicated off-site manufacture/fabrication (excluding demolition and excavation waste) meets or is lower than ≤11.3m^3 or ≤3.5 tonnes per 100m2 (gross internal floor area).

Adequate dedicated storage facilities for non-recyclable and recyclable waste generated by the building's occupants will be provided, this is shown in figure 7 below This will enable appropriate management of waste disposal during the building's operation.

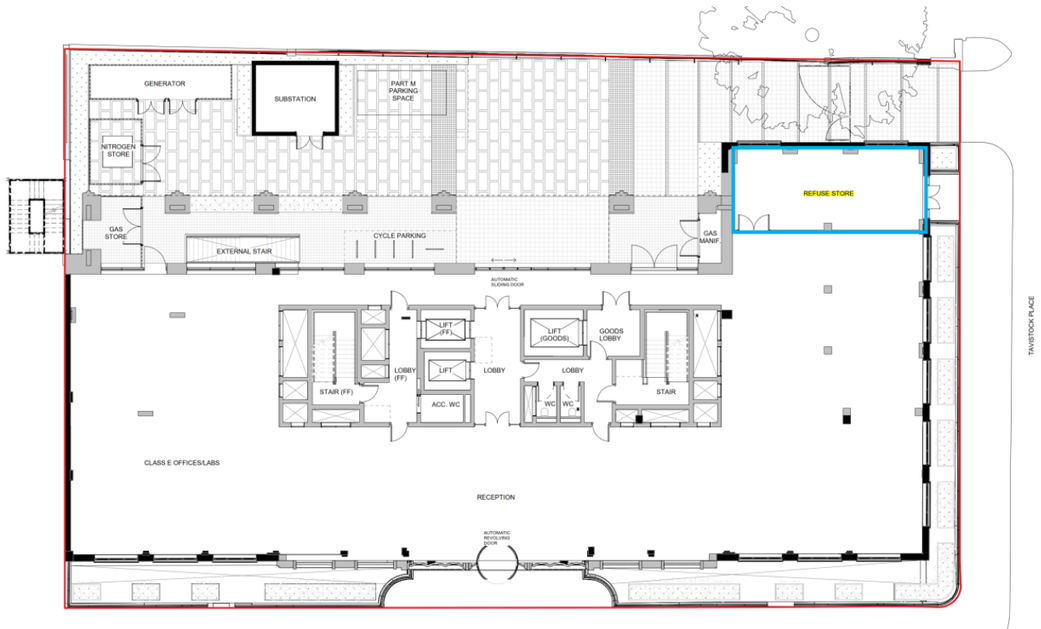


Figure 7 Ground floor layout showing the location of the refuse store, source Gort Scott

4.9 Land Use and Ecology

Although the development is constrained by a relatively small footprint, the design includes opportunities to improve local biodiversity. The design incorporates biodiverse planting within the roof terrace, vertical greening on either side of the sub-station and the inclusion of a winter garden. These green areas within the site will increase the quality and quantity of biodiversity, leading to an enhancement of the ecological value.

Greengage has been appointed as the Ecologists for Tavis House. The Ecologist's recommendations for the protection of ecological features and enhancing the site ecology will be implemented where feasible, incorporating these measures into the design will improve the biodiversity.

4.10 Pollution

A fossil-fuel free heating and cooling strategy is proposed for the development, improving local air quality and delivering lower carbon emissions as the national electrical grid continues to decarbonise from the use of solar and wind power. The electric-led energy strategy will be based on the utilisation of heat pumps for the provision of space heating, domestic hot water, and non-domestic cooling. This means that particulates and NOx emissions associated with gas-fired boilers will not be present.

An electric vehicle charging point is proposed, reducing the need for residents to own petrol or diesel vehicles.

An updated Air Quality Assessment has been produced in support of the application. The review of updated baseline air quality conditions has shown that air quality has improved from 2019, the baseline year in the Previous Air Quality Assessment, to 2022, the current baseline year. As such, the conclusions of the Previous AQA remain valid and in line with all relevant Policy, Guidance and Legislation documents. A review of the trip generation associated with the Updated Scheme has confirmed that the impacts on air quality from operational phase traffic generation remain to be not significant.

Moreover, the building services design will aim to use refrigerants with low global warming potential. The feasibility of a leak detection system with automatic response will be explored as a way to reduce the impact of refrigerants.

Night time light pollution will be minimised through the appropriate location and selection of external luminaires and light controls as per ILP Guidance. All external lighting will have the capacity to be switched off automatically between 11 pm and 7 am.

A Noise Assessment Report has been undertaken for the development, this has considered the methodology within BS4142:2014 and the requirements of the LBC in order to set plant noise emissions limits at the closest noise-sensitive receptors. The report demonstrated that with the mitigation measures included in the proposal, the planning noise emissions limits are achievable.

4.11 Flood Risk & Surface Water

A Flood Risk Assessment has been undertaken for the development to evaluate the risk of flooding which has been submitted separately as part of the Planning Application. As shown in Figure 8, the site is located in Flood Risk Zone 1 and therefore is at very low risk of fluvial flooding. This means that the site has less than 0.1% annual probability of river and sea flooding in a given year.

The Flood Risk Assessment considers all other potential sources of risk to have a low probability of flooding – this includes overland flow, artificial waterbodies, infrastructure failure/sewer flooding and groundwater flooding.

Sustainable Drainage Systems (SuDS) are proposed which will assist in removing water and help achieve water management on site, as well as enhance the quality of the landscape and maximise greening. This includes the following measures:

- The development will incorporate a blue roof system to control rainwater in accordance with the SUDS hierarchy, which will significantly slow down the volume of water leaving the site during a storm, event enhancing the development's resistance to climate change.
- Subject to feasibility a rainwater harvesting system may be proposed at the next stage to collect run-off from external areas and store water for irrigation purposes.

The Flood risk assessment also highlights that the proposed development does not increase flood risk to the site or surrounding area and is considered safe from the risk of flooding for its lifetime.

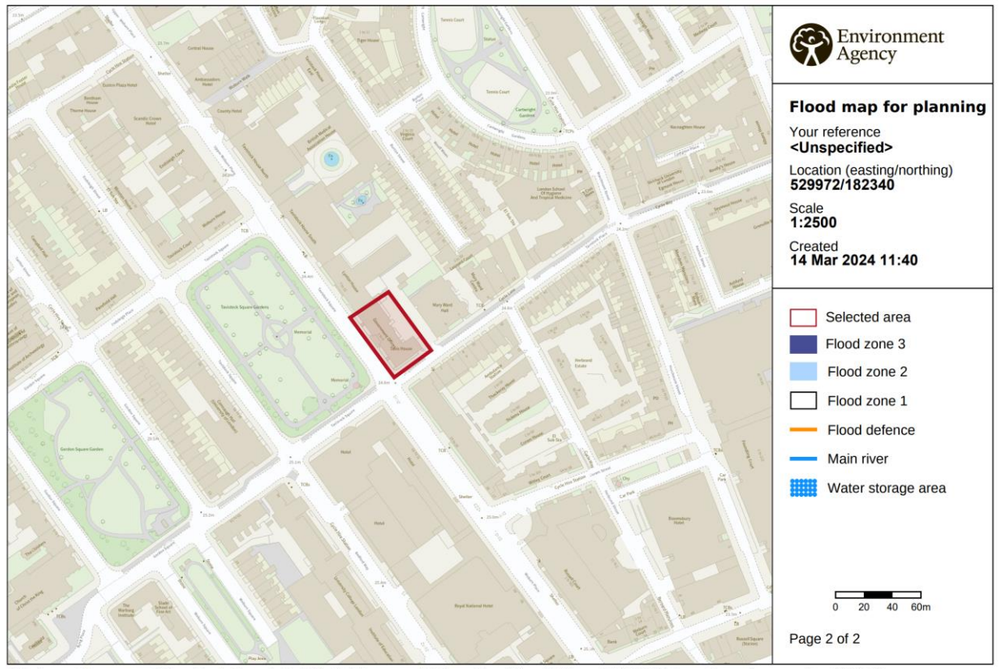


Figure 8 Environment Agency flood map showing the location of Tavis House.

REFERENCES

5 REFERENCES

The following reports have been referenced within this Sustainability Statement and are being submitted in support of the planning application for the redevelopment of Tavis House:

Reference	Report	Author
1	Air Quality Assessment	Hoare Lea
2	Delivery and Servicing Plan	Motion
3	Design and Access Statement	Gort Scott
4	Flood Risk Assessment	Elliot Wood
5	Energy Statement	Twin&Earth
6	Noise Impact Assessment	Hoare Lea
7	Transport Assessment	Motion
8	Travel Plan	Motion
9	Outline Construction Management Plan/ Construction Waste Management Plan	Motion
10	Covering letter	Gerald Eve
11	Daylight, Sunlight, Overshadowing and Solar Glare Assessment	Point2

APPENDIX A – BREEAM Pre-Assessment

TAVIS HOUSE BREEAM PRE ASSESSMENT CHECKLIST

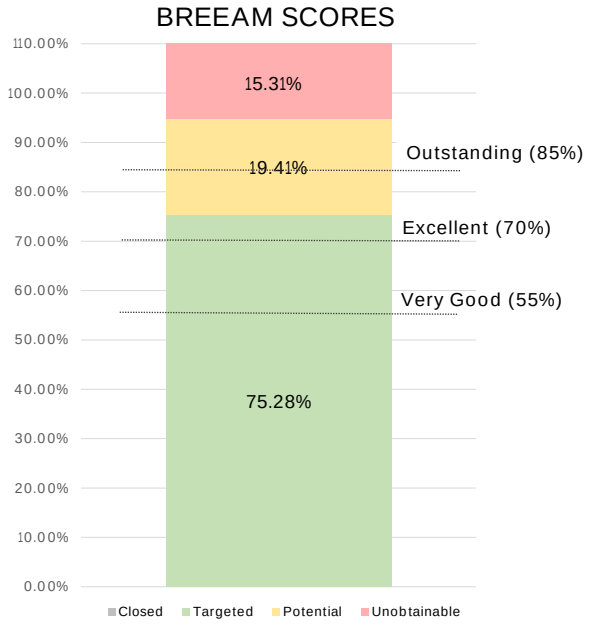
TAVIS HOUSE

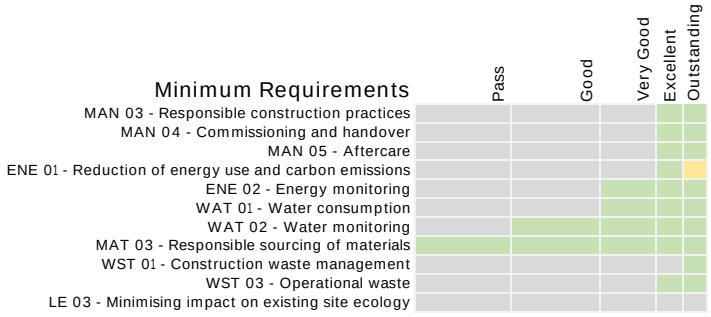
13.03.24

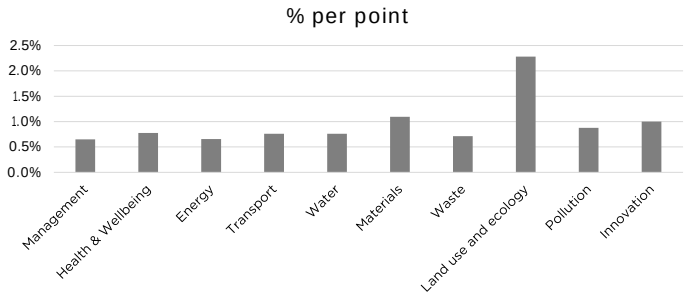
ASSESSMENT STATUS

DESKTOP PRE-ASSESSMENT	PRE-ASSESSMENT	DESIGN STAGE ASSESSMENT	CONSTRUCTION STAGE ASSESSMENT
Desktop Pre-assessment completed based on Stage 2 information	Pre- assessment workshop carried out on 12.03.24 where credits where reviewed with the team.		

SUMMARY OF RESULTS







KEY ASSUMPTIONS

Site details

Site Name	Tavis House
Address	1-6 Tavistock Place
Local planning authority	Camden

Assessment

BREEAM Scheme	BREEAM 2014 RFO (RFO-NC)
BREEAM Version	RFO: SD216 Issue 2
Project type	Bespoke - Office with research and development areas (Part New/ Part Refurbishment)
Boundary	Office areas with labs

ASSESSMENT 'PARTS'

Part 1: Fabric and Structure	INCLUDED
CRITERIA	The refurbishment project includes one or more of the following alterations to the building fabric and where the area to be renovated is greater than 50 per cent of the surface of the individual element or 25 per cent of the total building envelope: - Building façade: where the external façade of the building is being upgraded/refurbished such as new cladding, rendering, façade system, internal dry lining etc. - Roof: where a new roof is being installed or where significant changes are being made to the roof structure or the replacement/refurbishment of roof coverings. - Windows: where changes are being made to the windows such as replacement, upgrade/refurbishment of existing windows with new glazing or the specification of secondary glazing. Note: A minor change to the building fabric (e.g. local upgrading of an external wall) below the above thresholds would not require a Part 1 assessment to be included, although it may be carried out in order to assess the overall performance of the building fabric.
COMMENTS	
Part 2: Core Services	**INCLUDED**
CRITERIA	Where at least two of the following are being installed or upgraded to a level that requires compliance with the Building Regulations Compliance Guide: - Central air handling unit - Heating boiler - More than 50% of heat distribution - Chiller plant - More than 50% of chiller distribution - Water services (sanitary fittings in core) - Building management system - Community heating system (e.g. CCHP) - Low and zero carbon technologies. Note: Where works comprise of 'like for like' component replacements e.g. a fan motor of an air handling unit a Part 2 assessment may not be appropriate although it may still be carried out in order to assess the performance of the core services.
COMMENTS	
Part 3: Local Services	**INCLUDED**
CRITERIA	Where at least two of the following fixed local building services are being installed or upgraded e.g. a replacement or new installation of local heating/cooling units. Replacement of more than 50% of light fittings, system and controls Upgrade of zone controls Local ventilation Local heating units (including sources not connected to core services) Local cooling units (including sources not connected to core services) Point of use water heaters. Note: If there is a requirement to replace a component of a local service as part of the refurbishment or fit-out and that component is a direct replacement then a Part 3 assessment may not be appropriate, although it may still be carried out in order to assess the performance of local services. Examples of component replacements include new lamps within existing fittings, circulation pumps or individual heat emitters and valves.
COMMENTS	
Part 4: Interior Design	**EXCLUDED**
CRITERIA	Where the refurbishment or fit-out works involve changes to the layout and/or redecoration of the refurbishment or fit-out area. including: Remodelling/changes to interior spaces including two or more of the following: - Wall coverings (alterations to at least 50% by area) - Floor coverings (alterations to at least 50% by area) - Ceiling covering or systems (alterations to at least 50% by area) - Partitions (alterations to at least 50% by area) - Raised floor system (alterations to at least 50% by area) - Furniture and fittings e.g. office furniture, retail display furniture and fittings etc. (alterations to at least 50% by area) AND at least one of the following: - Sanitary fittings e.g. tea/coffee points, kitchenette and washrooms (alterations to at least 50% of fittings) - Equipment e.g. Office equipment, display lighting, display chillers/freezers (alterations to at least 50% of equipment) - Local electrical installations e.g. sub-metering Part 4 is broadly in line with a Category B fit-out and where the fit-out works also include changes or additions to local services, a Part 3 assessment may also be relevant.
COMMENTS	

SCOPE

Building type (main description)	Bespoke - Office
Building type (sub-group)	Office- With research and development areas
Is this a speculative building?	Yes
Refurbished floor area (GIA) m2	6295
Refurbished floor area (NIA) m2	4080
New build extension floor area (GIA) m2	1578
New build extension floor area (NIA) m2	1340
What range does the project's value fall into?	>£2M
Is the project a change of use?	No
Historic building (listed building or building in a conservation area)	Conservation area
Commercial/industrial refrigeration and storage systems	No
Building user transportation systems (lifts and/or escalators) present within the project boundary?	Yes
Laboratory function/area and size category	Yes- Over 25% of total area
Laboratory containment level	2
Are there systems that significantly contribute towards unregulated energy demands? Ex: plug in loads/office equipment, Server room, etc.	Yes
For tenant fit-out projects, are sanitary fittings within scope of the refurbishment or fit-out zone?	Yes
Unregulated water uses present? (e.g. vehicle wash system, irrigation)	No
Are there landscaping areas within the refurbishment or fit-out zone?	Yes
If the asset undergoing refurbishment or fit-out is part of a larger building, is the cooling generation plant centralised or localised?	N/A
If the asset undergoing refurbishment or fit-out is part of a larger building, is the heating generation plant centralised or localised?	N/A
Is any externally mounted plant present or specified?	Yes
Is external lighting within scope of the refurbishment or fit-out zone?	Yes
Is any new insulation specified?	Yes
Are high grade aggregates to be used in the refurbishment scheme?	Yes
Selection Option used for credit Ene 01	Whole Building Energy Model- Option 1

BREEAM PRE-ASSESSMENT CHECKLIST

TAVIS HOUSE

BREEAM 2014(RFO)

13.03.24

Key

Targeted
Potential
Unobtainable
Minimum Requirements

	Av	MANAGEMENT - Requirements	T	P	U	Comments	Resp.
MAN 01 - Project Brief and Design	1	**One credit-Stakeholder consultation (project delivery)** 1. Project delivery stakeholders meet no later than RIBA Stage 2 to identify and define their roles, responsibilities and contributions for each of the key phases of project delivery. 2. Defining the roles and responsibilities for each key phase of the project, including (but not limited to): End user requirements, Aims of the design and design strategy, Particular installation and construction requirements/limitations, Design and construction risk assessments e.g. CDM, legionella risk assessment, Legislative requirements e.g. building control notification, heritage requirements, Procurement and supply chain, Identifying and measuring project success in line with project brief objectives, Occupiers' budget and technical expertise in maintaining any proposed systems, Maintainability and adaptability of the proposals, requirements for the production of project and end user documentation, Requirements for commissioning, training and aftercare support. 3. Demonstrate how the outcomes of the consultation process have influenced or changed the Initial Project Brief, including if appropriate, the Project Execution Plan, Communication Strategy, and the Concept Design. A clear sustainability brief is developed prior to Concept Design which sets out: a. Client requirements e.g. internal environmental conditions required b. Sustainability objectives and targets including target BREEAM rating, business objectives etc. c. Timescales and budget d. List of consultees and professional appointments that may be required e.g. Suitably Qualified Acoustician etc. e. Constraints for the project e.g. technical, legal, physical, environmental.	1			STAGE 2 CREDIT - QUARTZ 050324 - Quartz confirmed that evidence will be drafted	QUARTZ
	1	**One credit-Stakeholder consultation (third party)** Undertake consultation in line with the established by BREEAM (which sets stakeholders and consultation topics). Consultation must be undertaken by Concept Design, feedback must be incorporated into the proposal and consultation feedback must be given to and received by, all relevant parties no later than detailed Design (RIBA Stage 4). Minimum consultation content: 1. Functionality, build quality and impact (including aesthetics). 2. Provision of appropriate internal and external facilities (for future building occupants and visitors/users). 3. Management and operational implications. 4. Maintenance resources implications. 5. Impacts on the local community, e.g. local traffic/transport impact. 6. Opportunities for shared use of facilities and infrastructure with the community/appropriate stakeholders, if relevant/appropriate to building type. 7. Compliance with statutory (national/local) consultation requirements. 8. Inclusive and accessible design. 9. Where services are taken from outside of the refurbishment area that affect the suitability of the service, e.g. domestic hot water services and legionella prevention. **Relevant consultation parties:** 1. Actual/intended building users (if known) including facilities management (FM) staff or those responsible for the day-to-day operation of the building and grounds. 2. Existing partnerships and networks that have knowledge of, and experience working on, existing buildings of the same type. 3. Potential users of any shared facilities, e.g. operators of clubs and community groups.AND the following where relevant: 4. For change of use projects and public buildings, a representative consultation group from the existing community. 5. In educational buildings, representatives of Local Education Authority, Board of Governors etc. 6. Local or national historic/heritage groups (over and above any requirements relating to statutory consultees). 7. Specialist service and maintenance contractors/representatives where the building function has particular technical requirements in complex environments, e.g. buildings containing laboratories.	1			STAGE 2 CREDIT - QUARTZ 050324- Kanda to provide summary note. Could use original planning statement of community involvement as evidence. Statement of community involvement received.	QUARTZ
	1	**One credit-Sustainability Champion (design)** 1. A Sustainability Champion (BREEAM AP) is appointed no later than RIBA Stage 1. 2. BREEAM Rating Target is set by the Sustainability champion and agreed by client and design team no later than RIBA Stage 2. 3. The targeted BREEAM rating is achieved.	1			Twin&Earth appointed as BREEAM AP	T&E
	1	**One credit-Sustainability Champion (monitoring)** 1. The credit above is achieved. 2. The Sustainability Champion is appointed to monitor and report progress throughout the project. As a minimum must attend key project/design team meetings during the Concept Design, Developed Design and Technical Design stages and reporting during, and prior to, completion of each stage.	1			As above	T&E
MAN 02 - Life cycle cost and service life planning	2	**Two credits-Elemental life cycle cost (LCC)** 1. An outline, entire asset elemental life cycle cost (LCC) plan has been carried out at Process Stage 2 (equivalent to Concept Design - RIBA Stage 2) in line with 'Standardised method of life cycle costing for construction procurement' PD 156865:20081. 2. The elemental LCC plan: a. An outline LCC plan has been undertaken for the project based on the building's basic structure and envelope, appraising a range of options and based on the life expectancy of the refurbished building, e.g. 20, 30, 50+ years. b. The servicing strategy for the project outlining services component over a 15 -year period, in the form of an 'elemental LCC Plan'. c. A fit-out strategy is developed outlining fit-out options over a 10-year period.	2			STAGE 2 CREDIT LCC for previous project recieved- ADW to be appointed to update and will be confirmed shortly.	COST CONSULTANT-QUARTZ
	1	**One credit-Component level LCC Plan** 1. A component level LCC plan has been developed by the end of RIBA Stage 4 in line with PD 156865:2008 and includes: Envelope, Services, Finishes and External spaces. 2. Demonstrate, how the LCC plan has influenced building and systems design/specification to minimise life cycle costs and maximise critical value. - Part 1 assessments, including components within scope of works. - Envelope, e.g. cladding, windows, and/or roofing - Part 2 & 3 assessments including newly specified local and core services. - Newly specified local and/or core service equipment, e.g. boiler, air-conditioning, air handling unit, and/or controls etc. - Parts 1 – 4, where finishes are within scope of works. - Finishes, e.g. walls, partitions, floors and/or ceilings etc. - Where external spaces are within scope of works. - External spaces, e.g. alternative hard landscaping, boundary protection	1			Cost consultant to confirm.	COST CONSULTANT-QUARTZ
	1	**One credit-Capital Cost Reporting** 1. Report the capital cost for the building in pounds per square metre (£k/ m2), via the BREEAM Assessment Scoring and Reporting tool, Assessment Issue Scoring tab, Management section. Data will be treated as confidential and will only be used anonymously. Data for Design Stage compliance can be based on predicted capital cost, including contingencies.	1			Assumes that capital cost will be reported to the BRE.	COST CONSULTANT-QUARTZ
MAN 03 - Responsible Construction Practices		**Pre-requisite** All timber and timber based products used on the project is 'Legally harvested and traded timber'.				To be included within contractor prelims.	CONTRACTOR
	1	**One credit-Environmental management** 1. The principal contractor operates an environmental management system (EMS) covering their main operations (ISO 14001/EMAS) or equivalent standard; or have a structure that is in compliance with BS 8555:2003 and has reached phase four of the implementation stage, 'implementation and operation of the environmental management system', and has completed phase audits one to four, as defined in BS 8555. 2. The principal contractor implements best practice on-site in accordance with Pollution Prevention Guidelines, Working at construction and demolition-sites: PPG61.	1			To be included within contractor prelims.	CONTRACTOR
	1	**One credit-Sustainability Champion** 1. A Sustainability Champion (like the contractor's environmental manager) to monitor environmental performance and ensure implementation of relevant measures during the Construction, Handover and Close Out stages 2. Will ideally be site based or will visit the site regularly to carry out spot checks (and record evidence including photos), with the relevant authority to do so and require action to be taken to address shortcomings in compliance, which should be reported at relevant project team meetings. 3. The BREEAM target rating forms a requirement of the principal contractor's contract and the rating is achieve at PC.	1			To be included within contractor prelims.	CONTRACTOR
	2	**Two credits-Considerate construction** 1. One credit: a CCS score between 25 and 34 with at least 5 points achieved per section. 2. Two credits: a CCS score between 35 and 39 with at least 7 points achieved per section. **1 credit minimum requirement for Excellent rating.** **2 credits minimum requirement for Outstanding rating.**	2			To be included within contractor prelims.	CONTRACTOR
		EXEMPLARY CRITERIA - Considerate construction A CCS score of 40 or more with at least 7 points achieved per section is achieved.	1			To be included within contractor prelims.	CONTRACTOR
	2	**Two credits-Monitoring of refurbishment or fit-out-site impacts** 1. One credit: monitoring of water and energy consumption. 2. Two credits: monitoring of transport of construction materials to site and waste from site. Specific requirements apply depending on the parts being assessed. Contractor to liaise with BREEAM assessor.	2			To be included within contractor prelims.	CONTRACTOR

MAN 04 - Commissioning and handover	1	**One credit-Commissioning and testing schedule and responsibilities** 1. Commissioning schedule covering commissioning and re-commissioning of building services and control systems and testing. 2. The schedule will identify the appropriate standards such as current Building Regulations, BSRIA and CIBSE guidelines. Specific requirements apply to BMS commissioning. 3. An appropriate project team member(s) is appointed to monitor and programme pre-commissioning, commissioning, testing and, where necessary, re-commissioning activities on behalf of the client. 4. The principal contractor accounts for the commissioning and testing programme, responsibilities and criteria within their budget and main programme of works.	1			Contractor will be required to comply with the credit requirements. HL and contractor- the HL spec will outline what the contractor needs to follow.	CONTRACTOR AND HOARE LEA
MAN 04 - Commissioning and handover	1	**One credit-Commissioning Building Services** 1. The above credit is achieved. 2. A specialist commissioning manager is appointed for complex building systems during the design stage (by either the client or the principal contractor) with responsibility for: - Undertaking design reviews and giving advice on suitability for ease of commissioning. - Providing commissioning management input to construction programming and during installation stages. - Management of commissioning, performance testing and handover/post-handover stages.	1			Assumes that a specialist commissioning manager will be appointed to oversee commissioning. Requires that the commissioning agent undertakes a review of the design and provides design input. The commissioning manager needs to be independent from the design, but not necessarily third party.	CONTRACTOR
MAN 04 - Commissioning and handover	1	**One credit-Testing and inspection building fabric** 1. Where the fabric of the building is being upgraded, a thermographic survey as well as an airtightness test and inspection is undertaken by a Suitably Qualified Professional in accordance with the appropriate standard. 2. Any defects identified are rectified prior to building handover and close out.	1			To be included within contractor prelims.	CONTRACTOR
MAN 04 - Commissioning and handover	1	**One credit-Handover** 1. A Building User Guide (BUG) is developed **This is a minimum requirement for Excellent and Outstanding ratings.** 2. A training schedule is prepared for building occupiers/premises managers, timed appropriately around handover and proposed occupation plans, which includes the following content as a minimum: - The building's design intent - The available aftercare provision and aftercare team main contact(s), including any scheduled seasonal commissioning and post occupancy evaluation - Introduction to, and demonstration of, installed systems and key features, particularly building management systems, controls and their interfaces - Introduction to the Building User Guide and other relevant building documentation, e.g. design data, technical guides, maintenance strategy, operations and maintenance (O&M) manual, commissioning records, log book etc. - Maintenance requirements, including any maintenance contracts and regimes in place.	1			Assumes BUG will be included within contractor prelims. Client to confirm regarding training schedule.	CONTRACTOR/CLIENT
MAN 05 - Aftercare		**One credit-Aftercare support** 1.The following will be provided: - A meeting between the aftercare team/individual and the building occupier/management (prior to initial occupation, or as soon as possible thereafter) to introduce the aftercare team and support (BUG and training schedule/content) AND Present key information about the building to ensure it operates as efficiently and effectively as possible. - On-site facilities management training. - Aftercare support for at least the first month of building occupation - on-site attendance on a weekly basis (flexible) to support building users and management. - Aftercare support provision for occupants for at least the first 12 months from occupation (helpline, nominated individual, etc.). 2. Collection and monitoring of energy and water consumption data for a minimum of 12 months, once the building is occupied.				Tavis House considered a specualtive deveopment for now, if this changes Man 05 will be scoped back into the assessment. Requires that the commissioning agent undertakes a review of the design and provides design input.	
		One credit-Seasonal commissioning Seasonal commissioning activities will be completed over a minimum 12-month period, once the building becomes substantially occupied (building services testing, interview with occupants ,etc.). **This is a minimum requirement for Excellent and Outstanding ratings for Parts 2 & 3.**				N.A as speculative development The commissioning manager needs to be independent from the design, but not necessarily third party.	
		One credit-Post occupancy evaluation (POE) 1. The client or building occupier makes a commitment to carry out a post occupancy evaluation (POE) exercise one year after initial building occupation (see compliance note CN7). This is done to gain in-use performance feedback from building users to inform operational processes, including re-commissioning activities, and maintain or improve productivity, health, safety and comfort. The POE is carried out by an independent party (see Man 01 Project brief and design - Relevant definitions) and needs to cover: a. A review of the design intent and construction process (review of design, procurement, construction and handover processes). b. Feedback from a wide range of building users including facilities management on the design and environmental conditions of the building covering: i. Internal environmental conditions (light, noise, temperature, air quality) ii. Control, operation and maintenance iii. Facilities and amenities iv. Access and layout v. Other relevant issues. c. Sustainability performance (energy/water consumption, performance of any sustainable features or technologies, e.g. materials, renewable energy, rainwater harvesting etc.). 2.. The client or building occupier makes a commitment to carry out the appropriate dissemination of information on the building's post occupancy performance. This is done to share good practice and lessons learned and inform changes in user behaviour, building operational processes and procedures, and system controls.				N.A as speculative development	
		EXEMPLARY CRITERIA Provision of the following at quarterly intervals for the first three years of building occupation: - Collection and analysis of occupant satisfaction, energy consumption and water consumption data. - Setting targets for reducing water and energy consumption and monitor progress towards these. - Feedback any 'lessons learned' to the design team and developer. - Provision of the actual annual building energy, water consumption and occupant satisfaction data to BRE.				N.A as speculative development	
	Av	HEALTH & WELLBEING - Requirements	T	P	U	Comments	Resp.
HEA 01 - Visual Comfort	3	**REFURBISHMENT** **Three credits -Daylighting** Credits are awarded on a sliding scale as follows: **Option 1** - 1 credit if 40% of the areas achieve a DF of 2% - 2 credits if 60% of the areas achieve a DF of 2% - 3 credits if 80% of the areas achieve a DF of 2% AND The areas achieve a uniformity ratio of at least 0.3 or a minimum point daylight factor of at least 0.3 times the relevant average daylight factor below. For spaces with glazed roofs, such as atria, a 0.7 figure should be taken instead of 0.3. OR 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) and the depth criteria is met. **Option 2** - 1 credit if 40% if the occupied spaces achieve average daylight illuminance of at least 300 lux for 2000 hours per year or more and a minimum illuminance at the worst lit point of at least 90 lux for 2000 hours per year or more. - 2 credits if 60% of the areas achieve a DF of 2% - 3 credits if 80% **Two credits -Daylighting** Daylighting provision, averaged over all relevant spaces, has improved after refurbishment or fit-out by 30% or more and there is a minimum glazing to floor area ratio of either: 5% glass to floor area ratio for side windows; OR 2.5% glass to floor area ratio for roof lights; **One credit -Daylighting** When it achieves 15% improvement.		2	1	Potential credit based on internal layouts and windows locations. Daylight modelling will need to be carried out to confirm this.	TBC (Daylight consultant)
		NEW BUILD **Two credits -Daylighting** **ROUTE 1** When 80% of the occupied areas achieve an Average Daylight Factor (ADF) ≥2% AND one of the following: A uniformity ratio of at least 0.3 or a minimum point daylight factor of at least 0.3 times the above ADF. Glazed roofs, such as atria, must achieve a uniformity ratio of at least 0.7 or a minimum point daylight factor of at least 0.7 times the ADF. OR **ROUTE 2** When 80% of the other occupied areas achieve an average daylight illuminance of a least 300 lux for 2000 hours per year and a minimum daylight illuminance at worst lit point of at least 90 lux for 2000 hours per year. **One credit - Daylighting** As above, but for 60% of the occupied areas.					
		EXEMPLARY CRITERIA-Daylighting When daylighting levels in compliance with BREEAM exemplary performance criteria are achieved.					

	2	**Two credits-View out** 1. 95% of the floor area in relevant building areas (areas with workstations/benches or where close work will be undertaken or visual aids will be used) is within 7m of a wall with an adequate view out. **One credit-View out** 1. Where 80% of the floor area achieved compliance with Criterion 1 above. 2. The window/opening is ≥ 20% of the surrounding wall area. Where the room depth >7m, compliance is only possible where the %window/opening ≥ values in table 1.0 of BS 8206. It must be noted that specific criteria applies to the type of view out depending on the building use. Additional criteria applies to Prison, Multi-residential and Healthcare buildings.	1	1		Gort Scott to confirm feasibility of credits based on layouts- from our high level review the drawings show the work stations with in 7m of a view out. Labs potentially could be excluded from the calculation but needs further confirmation on if the exclusion of light is a functional requirement or if any workstations will be in the lab areas, especially the open labs and incubation rooms.	GORT SCOTT
HEA 01 - Visual Comfort	1	**One credit-Internal and external lighting levels, zoning and control** **INTERNAL LIGHTING** - All fluorescent and compact fluorescent lamps are fitted with high frequency ballasts. - Illuminance levels in accordance with the SLL Code for Lighting 2012 and any other relevant industry standard. - Compliance with CIBSE LG7 for areas where computer screens are regularly used **EXTERNAL LIGHTING** Must be specified in accordance with BS 5489-1:2013 Lighting of roads and public amenity areas and BS EN 12464-2:2014 Light and lighting - Lighting of work places - Part 2: Outdoor work places. **ZONING AND OCCUPANT CONTROL** - Independent occupant control of areas including -but not limited to-: **office zones of no more than four workplaces, workstations adjacent to windows/atria, presentation and audience areas in seminar and lecture rooms, zoning of seating areas, circulation space and lectern area in auditoria, servery and seating/dining areas in dining restaurant and café areas, bar and seating areas in bar areas.** **AUDITORIUM LIGHTING CONTROL:** The controls specified will depend on the size and use of the space, but a typical auditorium or lecture theatre with stepped seating and a formal lectern/demonstration/performance area would typically be expected to have lighting controls as follows: 1. Full normal lighting (to allow for entry/exit, cleaning etc.) 2. Demonstration area lighting off and audience area lighting reduced to a low level (for the purpose of line slide projection, but allowing enough light for the audience to take notes) 3. All lighting off (for the projection of tone slides, colour slides, and for the purposes of visual demonstrations/performances) 4. Separate localised lectern lighting.	1			Hoare Lea to confirm. Zoning to applicable to non part 4 projects.	HOARE LEA
HEA 02 - Indoor air quality	1	**One credit-Indoor air quality (IAQ) plan** An indoor air quality plan has been produced which considers: removal of contaminant sources, dilution and control of contaminant sources, procedures for pre-occupancy flush out, protection of HVAC systems, procedures for protecting areas outside of the refurbishment zone that may be affected, third party testing and analysis and commitments for maintaining indoor air quality in-use.	1			Assumes an IAQP will be commissioned. Twin&Earth can provide a fee proposal if needed.	TBC
	1	**One credit-Ventilation** 1. Provide fresh air into the building in accordance with the criteria of the relevant standard for ventilation. 2. The building's air intakes and exhausts are over 10m apart and intakes are over 20m from sources of external pollution (unless relative position is designed in accordance with BS EN 13779:2007 Annex A2). 3. In naturally ventilated buildings/spaces: openable windows/ventilators are over 10m from sources of external pollution. 4. HVAC systems incorporate filtration as defined in BS EN 13779:2007 Annex A3. 5. Areas of the building subject to large and unpredictable or variable occupancy patterns (such as Auditoria, gyms, retail stores or malls, cinemas and waiting rooms) have carbon dioxide (CO2) or air quality sensors specified which are linked to the mechanical ventilation system and provide demand-controlled ventilation to the space. **In naturally ventilated buildings/spaces:** sensors either have the ability to alert the building owner or manager when CO2 levels exceed the recommended set point, or are linked to controls with the ability to adjust the quantity of fresh air, i.e. automatic opening windows/roof vents.			1	12.03.24 Credit confrimed unachieveable ad the 10m criterion cannot be met	
HEA 02 - Indoor air quality	1	**One credit-Adaptability - Potential for natural ventilation** 1. Occupied spaces of the building are designed to be capable of providing fresh air entirely via a natural ventilation strategy. This is demonstrated when: - Room depths are designed in accordance with CIBSE AM10 (section 2.4) and the openable window area in each occupied space is equivalent to 5% of the gross internal floor area of that room/floor plate. OR - Cross ventilation is demonstrated via design tools recommended in CIBSE AM10. 2. The natural ventilation strategy is capable of providing at least two levels of user-control on the supply of fresh air to the occupied space (see compliance note CN9 for further details). **CN9**: The two levels of ventilation must be able to achieve the following: Higher level: higher rates of ventilation achievable to remove short term odours and/or prevent summertime overheating Lower level: adequate levels of draught-free fresh air to meet the need for good indoor air quality throughout the year, sufficient for the occupancy load and the internal pollution loads of the space. Note: Any opening mechanisms must be easily accessible and provide adequate user-control over air flow rates to avoid draughts. Relevant industry standards for ventilation can be used to define 'adequate levels of fresh air' sufficient for occupancy and internal air pollution loads relevant to the building type.		1			HOARE LEA
HEA 03 - Safe containment in laboratories	1	**One credit - Laboratory containment devices and containment areas** 1. A objective risk assessment of the proposed/existing laboratory facilities has been carried out prior to completion of the design to ensure potential risks are considered in the design/refurbishment of the laboratory. 2. Where containment devices such as fume cupboards are specified/present, their manufacture and installation meet best practice safety and performance requirements and objectives referenced in the BREEAM manual 3. Where laboratory containment devices that are ducted to discharge externally are specified, the guidance in the National Annex of BS EN 14175-2 must be followed to ensure an appropriate discharge velocity is achieved.	1			Criteria requires a risk assessment to be carried out. This is not provided as part of the basebuild but there will be a provision for it to be achieved by the fit-out	
	1	**One credit - Buildings with containment level 2 and 3 laboratory facilities** Where containment level 2 and 3 laboratory facilities are specified/present they must meet best practice safety and performance criteria and objectives. This is demonstrated as follows: - Criterion 1 has been achieved. - Ventilation systems comply with the best practice guidance set out in 'DRAFT HSE Biological Agents and Genetically Modified Organisms (Contained Use) Regulations 2010'9. - Filters for all areas designated as containment level 2 and 3 are located outside the main laboratory space for ease of cleaning/replacement and the filters are easily accessible by maintenance staff or technicians. The design team demonstrate that the individual fume cupboard location and stack heights have been considered in accordance with HMIP Technical Guidance Note (Dispersion) D10.	1				

	Av	ENERGY - Requirements	T	P	U	Comments	Resp.
HEA 04 - Thermal comfort	1	**One credit-Thermal modelling** 1. Thermal modelling is carried out using CIBSE AM11 compliant software. 2. The modelling demonstrates compliance with CIBSE Guide A summer and winter operative temperatures for A/C buildings or compliance with CIBSE Guide A winter temperature and compliance with CIBSE TM52 for summer temperatures. 3. For air conditioned buildings, the PMV (predicted mean vote) and PPD (predicted percentage of dissatisfied) indices based on the above modelling are reported via the BREEAM assessment scoring and reporting tool. Note: Where undertaking a Part 4 assessment a competent person (e.g. chartered building services engineer) must assess the suitability of existing building services and controls to identify any changes that may be required as a result of fit-out works.	1			Thermal modelling to be carried out at Stage 3	TBC
	1	**One credit-Adaptability - for a projected climate change scenario** 1. The above credit is achieved. 2.The thermal modelling demonstrates compliance with the requirements of the thermal comfort credit for a projected climate change environment. 3. Where criteria 2 is not met, the project team demonstrates how the building has been adapted, or designed to be easily adapted in future using passive design solutions in order to subsequently meet the requirements . 4. For air conditioned buildings, the PMV and PPD indices based on the above modelling are reported via the BREEAM assessment scoring and reporting tool.	1			Thermal modelling to be carried out at Stage 3	TBC
	1	**One credit-Thermal zoning and controls** 1. The thermal comfort credit is achieved. 2. The thermal modelling analysis has informed the temperature control strategy for the building and its users. 3. The strategy for proposed heating/cooling system(s) has addressed the following: - Zones within the building and how the building services could efficiently and appropriately heat or cool these areas (for example different requirements for the central and perimeter areas). - Degree of occupant control (based on discussions with the end user or alternatively design guidance, case studies, feedback) considers: User knowledge of building services, Occupancy type, patterns and room functions, How the user is likely to operate or interact with the system(s), The user expectations and degree of individual control, How the proposed systems will interact with each other and how this may affect the thermal comfort of the building occupants and The need or otherwise for an accessible building user actuated manual override for any automatic systems.	1			Control strategy by Hoare Lea to be informed by the thermal modelling.	HOARE LEA
HEA 05 - Acoustic performance	2	**Up to Three Credits - Bespoke Acoustic Strategy (Indoor ambient noise, sound insulation, reverberation)** Where a Suitably Qualified Acoustician (see relevant definitions) is appointed to define a bespoke set of performance requirements for all function areas in the building using the three acoustic principles defined in criterion 1, setting out the performance requirements for each and the testing regime required.	2			Acoustician to provide performance and testing regime required.	ACOUSTICIAN- Part of Hoare Lea's scope
HEA 06 - Safety & Security	1	**One credit-Security of site and building** 1. A Suitably Qualified Security Specialist (SQSS) conducts an evidence-based Security Needs Assessment (SNA) and develops a set of recommendations no later than RIBA Stage 2. 2. The recommendations are implemented. Security Needs Assessment scope: The project and site specific assessment of security needs, including: 1. A visual audit of the site and surroundings, identifying environmental cues and features pertinent to the security of the proposed development. 2. Formal consultation with relevant stakeholders, including the local ALO, CPDA & CTSA (as applicable), in order to obtain a summary of crime and disorder issues in the immediate vicinity of the proposed development. 3. Identify risks specific to the proposed, likely or potential use of the building(s). 4. Identify risks specific to the proposed, likely or potential user groups of the building(s). 5. Identify any detrimental effects the development may have on the existing community. The purpose of the assessment is to inform stakeholder decision-making and allow the identification and evaluation of security recommendations and solutions.	1			STAGE 2 CREDIT Security specialist to carry out a Security Needs Assessment and provide a set of recommendations. 050324 Hea 06 evidence received but will need to be updated by the consultant.	SECURITY CONSULTANT
ENE 01 - Reduction of energy use and carbon emissions	15.0	**Energy Performance - Up to 15 credits** Credits achieved depending on the energy performance of the building. **Minimum requirements vary for different assessment types** For this issue, two options are available: 1. The refurbished area shall be assessed under the RFO criteria, and the new construction areas shall be assessed under the NC criteria. In order to determine the correct number of RFI credits the RFO Scoring tool on BREEAM Projects is used to determine the number of credits scored for the RFO part of the building. The bespoke Excel Scoring tool will perform an area weighting to determine the number of credits achieved for the project. 2. If the design team would prefer, both areas can be included in the same energy models and follow CN6 'Extensions to existing buildings and newly constructed thermal elements' - as below: CN6: Where the refurbishment project also includes a newly constructed extension with new thermal elements, the modelled performance of the baseline for new thermal elements should be based upon compliance with the appropriate Building Regulations for new thermal elements as defined for the notional building.	10.0	3.0	2.0	Energy modelling to inform the number of BREEAM credits achieved.	TWIN&EARTH
		Two Credits - Historic Energy Study Undertake a study at RIBA Stage 2 to optimise the building's energy consumption, whilst taking into consideration the historic nature of the building.				STAGE 2 CREDIT Located in a conservation area so the criteria is in scope 060324 Heritage and Townscape statement received, updated statement to be received	JL Heritage
		EXEMPLARY CRITERIA **Up to four credits - Zero regulated carbon** An equivalent percentage of the building's modelled 'regulated' operational energy consumption, is generated by carbon neutral on-site or near-site sources and used to meet energy demand from 'unregulated' building systems or processes. **Five credits - Carbon negative** The building is 'carbon negative' in terms of its total modelled operational energy consumption, including regulated and unregulated energy.					
ENE 02 - Energy monitoring	2	**One credit-Sub-metering of major energy consuming systems** 1.Energy metering systems are installed that enable at least 90% of the estimated annual energy consumption of each fuel. 2. Buildings with a total useful floor area > 1,000m2 are metered using an appropriate energy monitoring and management system (BMS or equivalent). 3. The end energy consuming uses are identifiable to the building users (labelling or data outputs). **This credit is a minimum requirement for Very Good, Excellent and Outstanding rating for Parts 2, 3 and 4.** **One credit - Sub-metering of high energy load and tenancy areas** An accessible energy monitoring and management system or separate accessible energy sub-meters with pulsed or other open protocol communication outputs to enable future connection to an energy monitoring and management system are provided, covering a significant majority of the energy supply to tenanted areas or, in the case of single occupancy buildings, relevant function areas or departments within the building/unit.	2				HOARE LEA
ENE 03 - Ext. lighting	1	**One credit-External lighting** The average initial luminous efficacy of the external light fittings is > 60 luminaire lumens per circuit Watt. All external light fittings are automatically controlled (timer or photocell).	1				HOARE LEA

ENE 04 - Low carbon design	1	**One credit-Passive design analysis** 1. The thermal comfort credit has been achieved. 2. A passive design analysis is undertaken no later than RIBA Stage 2 or equivalent) 3. Total heating, cooling, mechanical ventilation and lighting load reductions result in at least 5% of overall building energy demand and/or CO2 emissions savings. **Scope of Passive design analysis:** As a minimum, the passive design analysis should cover: 1. Site location 2. Site weather 3. Microclimate 4. Building layout 5. Building orientation 6. Building form 7. Building fabric 8. Thermal mass or other fabric thermal storage 9. Building occupancy type 10. Daylighting strategy 11. Ventilation strategy 12. Adaptation to climate change.	1			STAGE 2 CREDIT Twin&Earth to develop analysis for the redesign as part of Planning Requirements.	T&E
	1	**One credit-Free Cooling** 1. The above credit has been achieved. 2. The passive design analysis reviews opportunities for the implementation of free cooling solutions. 3. Free cooling is provided. Free cooling includes: Night time cooling, Ground coupled air cooling, Displacement ventilation, Ground water cooling, Surface water cooling, Evaporative cooling, direct or indirect, Desiccant dehumidification and evaporative cooling using waste heat, Absorption cooling using waste heat, and Natural ventilation or Mechanical Ventilation (not linked to active cooling). **NOTE - FREE COOLING SCOPE:** The free cooling should apply to all occupied spaces in the building. Small IT rooms and lift motor rooms are excluded. Mechanical ventilation may only be used for small areas, e.g. for kitchenettes and toilets.		1			-
	1	**One credit-Low Zero Carbon Technologies** 1. A feasibility study is carried out by an energy specialist no later than RIBA Stage 2. 2. LZC technologies are specified in line with the recommendations of the report and result on at least 5% of overall building energy demand and/or CO2 emissions savings.	1			STAGE 2 CREDIT Twin&Earth to develop analysis for the redesign as part of Planning Requirements.	T&E

ENE 06 - Energy efficient transportation systems	1	**One credit-Energy consumption** For new lifts: 1. An analysis of the transportation demand and usage patterns for the building has been carried out to determine the optimum number and size of lifts, escalators and/or moving walks. 2. The energy consumption has been calculated in accordance with BS EN ISO 25745 for one of the following: At least two types of system, An arrangement of systems or A system strategy which is 'fit for purpose'. 3. Regenerative drives are specified where they save more energy than the additional standby energy used to support the drives (usually for high travel and high intensity use). 4. The transportation system with the lowest energy consumption is specified.	1				HOARE LEA
	2	**Two credits-Energy efficient features** 1. The first credit is achieved for new lifts - if applicable-. 2. For each newly specified lift, the following three energy efficient features are specified and for existing lifts, at least two of the following energy efficient features are specified: - Standby condition during off-peak periods - Energy efficient lift car lighting and display lighting (> 55 lamp lumens/circuit Watt) - Variable speed, variable-voltage, and variable-frequency (VVVF) controllers are specified. 3. Regenerative drives are specified is demonstrated to save energy. NOTE: other criteria apply to escalators which must be considered if specified.	2				HOARE LEA
Ene 07 - Energy efficient laboratory systems	1	**Pre-requisite** 1. Criteria 1 within Hea 03 safe containment in laboratories has been achieved **One credit - Design specification** 2. Client engagement is sought through consultation during the preparation of the initial project brief (RIBA Stage 1 or equivalent) to determine occupant requirements for new laboratory systems, or to review existing laboratory systems and define laboratory performance criteria to be met for any new systems or systems to be upgraded or refurbished. Performance criteria should include, but not be limited to the following aspects: Description of purpose Occupant/process activities Containment requirements and standards Air change requirements Ventilation system performance and efficiencies Heating and cooling requirements (including heat recovery) Interaction between systems Flexibility and adaptability of laboratory facilities 3. The design team demonstrates that the energy demand of the laboratory facilities has been minimised as a result of achieving the defined design performance criteria. This has informed the right-sizing (see Relevant definitions) of the services system equipment (including ventilation supply and extract). **Laboratory containment devices and containment areas (criteria only applicable to buildings containing these facilities)** 4. New or existing fume cupboards and other containment devices have a specification that is compliant with criteria 2 and 3 of issue Hea 03 Safe containment in laboratories, as appropriate to the containment device specification. 5. Where ducted fume cupboards are newly specified or present: Compliance with item A in Table 31 . The measurement of volume flow rate should be taken in the exhaust duct (at the boundary of the laboratory) to take account of reductions in (inward) volume flow rate from fume cupboard leakage. A reduction in air flow does not compromise the defined performance criteria and therefore does not increase the health and safety risk to future building occupants.	1			STAGE 1 CREDIT Feasibility of ENE 07 credits to be reviewed and confirmed with Lateral/Fairhurst - Stage 1 elements of the requirements to be reviewed.	LATERAL/FAIRHURST
	4	**Four credits- Best practice energy efficient measures** The following criteria are applicable where the laboratory area accounts for at least 10% of the total building floor area 6. Criteria 1 to 5 are achieved (or criteria 1 to 4 where ducted fume cupboards are not specified). 7. New or existing plant and systems are designed, specified and installed to promote energy efficiency, demonstrated through compliance with items B to L in Table 31 Up to 2 credits: the laboratory area (see Relevant definitions) accounts for at least 10% (but less than 25%) of the total building floor area; OR Up to 4 credits: the laboratory area accounts for 25% or more of the total building floor area. 8. To achieve credits for energy efficient measures, the chosen measure(s) must have a reasonably significant effect on the total energy consumption of the laboratory, i.e. 2% reduction or greater. This must be demonstrated by calculations or modelling. 9. The energy efficient measures specified do not compromise the defined performance criteria, and therefore do not increase the health and safety risk to future building occupants.	4			As above	LATERAL/FAIRHURST
ENE 8 - Energy efficient equipment	2	**Two credits-Energy efficient equipment** 1. Identify which of the following is the highest unregulated building energy demand: Small power & plug-in equipment, Swimming pool, Communal laundry facilities with commercial sized appliances, Data centres, IT-intensive operating areas, Residential areas with domestic scale appliances (individual and communal facilities), Healthcare and Kitchen and catering facilities. 2. Specify the energy efficiency measures established by BREEAM for that energy consumption. Small Power - plug-in equipment Office equipment, other small powered equipment and supplementary electric heating have an Energy Star1 rating OR has been procured in accordance with the Government Buying Standards. Additional requirements apply for domestic scale white goods. Data centres Design is in accordance with the 'Best practices for the EU Code of Conduct on Data Centres' principles with the data centre achieving at least the 'Expected minimum practice' level (as defined in the Code of Conduct). Temperature set points are not less than 24°C, as measured at the inlet of the equipment in the rack. IT-Intensive operating areas - Uses a natural ventilation and cooling strategy as standard, with forced ventilation only to be used when the internal temperature exceeds 20°C and active cooling only when the internal temperature exceeds 22°C. - There is a mechanism to achieve automatic power-down of equipment when not in-use, including overnight. REUSED EQUIPMENT: Reuse of electrical equipment does not comply by default, as it may not be the most energy efficient option. However, the credit could be awarded if either of the following criteria are demonstrated: 1.The existing electrical appliances meet the criteria for inclusion on the Enhanced Capital Allowance Scheme Energy Technology Product List. 2. Reusing the old equipment would, over the course of its life, be a more energy efficient option than specifying new equipment.	2				HOARE LEA/GORT SCOTT

	Av	TRANSPORT - Requirements	T	P	U	Comments	Resp.
TRA 01 - Public transport accessibility	3	**Up to 3 credits- Accessibility to public transport** Achieved depending on the Accessibility Index of the site. **Up to three credits - Alternative transport measures** Where alternative transport measures in Table 35 are provided, credits can be awarded based upon the number of measures implemented as detailed in Table 33. 1 credit = Two Measures, 2 credits = Four Measures, 3 credits = Six Measures. A (worth two measures) - For buildings with a fixed shift pattern, i.e. where building users will predominantly arrive/depart at set times, this measure is achieved where the building occupier provides, or commits to providing a dedicated bus service to and from the building at the beginning and end of each shift/day. B - Where two credits under BREEAM issue Tra 03 have been achieved and the number of compliant cycle storage spaces provided is 10% greater than is required within 'Tra 03 Cyclist facilities', thus providing extra capacity for future growth and allowing more building users to cycle as a result. C - Where two credits under BREEAM issue Tra 03 have been achieved and three or more types of compliant cycle facilities that are required within Tra 03 Cyclist facilities are to be provided, which includes the following facilities: showers, changing facilities, lockers and drying spaces. D - Where at least 5% of the car parking spaces provided for the building users include electrical charging points, with a minimum of two spaces being provided. E - Where priority spaces for car sharers are provided for at least 5% of the total car parking capacity for the building, with a minimum of two spaces being provided. F - Where the building has digital information points providing details on alternative transport options; this could include bus times, car sharing and cycle routes. These information points must be well positioned and accessible to all building users. G - Where on-site facilities have been provided that reduce the need to travel (taking into account the activities being undertaken in the building), for example the specification of video conferencing systems or where the appropriate amenities are available on-site. H - Where negotiations with local bus companies have resulted in an increase of the local service provision in the building's local area that results in improving the existing Accessibility Index (AI) for the building by at least one point.	3			Transport consultant to confirm.	MOTION TRANSPORT PLANNING
TRA 02 - Proximity to amenities	1	**One credit-Proximity to amenities** At least two of the following amenities must be found within 500m of the building entrance: food outlet(required), access to cash (required), access to an outdoor open space, access to a recreation/leisure facility for fitness/sports.	1			Transport consultant to confirm.	MOTION TRANSPORT PLANNING
TRA 03 - Cyclist facilities	1	**One credit-Cycle store** Number of spaces is dependent on the building type. For offices, 1 space per 10 staff members	1			36 spaces proposed.	GORT SCOTT
	1	**One credit-Cyclist facilities** The Cycle Storage credit is achieved. At least two of the following types of compliant cyclist facilities are provided - Showers - 1 per 10 cycle racks - Changing facilities (Toilet/shower cubicles cannot be counted as changing facilities) - Lockers - 1 per cycle rack - Dedicated drying spaces .	1			4 showers confirmed and lockers provided.	GORT SCOTT
TRA 05 - Travel plan	1	**One credit-Travel plan** Achieved when a BREEAM compliant site specific travel plan is developed and the recommendations are implemented.	1			STAGE 2 CREDIT Planning stage transport statement received, this will be updated to reflect the changes.	MOTION TRANSPORT PLANNING

	Av	WATER - Requirements	T	P	U	Comments	Resp.
WAT 01 - Water consumption	5	**Up to three credits-Water consumption** Achieved for reducing the water consumption on site via water efficient fittings and/or water recycling systems. The water consumption (L/person/day) is calculated based on the following 'domestic scale' water-consuming components: WCs, Urinals, Taps, Showers, Baths, Dishwashers (domestic and commercial sized) and Washing machines (domestic and commercial or industrial sized). Any greywater systems must be specified and installed in compliance with BS 8525-1:2010. **One credit minimum requirement for Very Good and Excellent ratings.** **Two credits minimum requirement for Outstanding rating.** **Note: Systems applicability depends on the scope of works of the project and needs to be discussed in detail with the assessor.**	3	2		No rainwater harvesting/greywater harvesting specified at the moment.	GORT SCOTT
		EXEMPLARY CRITERIA One credit when a 65% water reduction over the BREEAM base case is achieved.					

WAT 02 - Water monitoring	1	**One credit-Water monitoring** 1. A water meter on the mains water supply to each building is specified. **This is a minimum requirement for Good rating and above for Part 2 assessments.** 2. Water-consuming plant or building areas, consuming 10% or more of the building's total water demand, are either fitted with easily accessible sub-meters or have water monitoring equipment integral to the plant or area. 3. Each meter (main and sub) has a pulsed output and is connected to the BMS is present. If the refurbishment or fit-out zone is within a building that is leasehold, the pulsed/digital water meter(s) for the refurbishment or fit-out zone must be connected to the incoming water supply for water using equipment in tenanted areas.	1			Hoare Lea to include in design.	HOARE LEA
WAT 03 - Major leak detection	1	**One credit-Leak detection system** A system is installed which is able to detect any leak within the building as well as between the building and the site boundary and which is also: - Audible when activated - Activated when the flow of water passes through the water meter/data logger at a flow rate above a pre-set maximum for a pre-set period of time - Able to identify different flow and therefore leakage rates, e.g. continuous, high and/or low level, over set time periods - Programmable to suit the owner/occupiers' water consumption criteria - Where applicable, designed to avoid false alarms caused by normal operation of large water-consuming plant such as chillers.	1			Hoare Lea to include in design.	HOARE LEA
WAT 03 - Major leak detection	1	**One credit-Flow control device** A time controller, a programmed time controller, a volume controller, a presence detector and controller or a central control unit is installed to regulate the supply of water to each WC area/facility according to demand. Flow control devices also should be provided to shower blocks if present.	1			Hoare Lea to include in design.	HOARE LEA
Av		**MATERIALS - Requirements**	T	P	U	Comments	Resp.
MAT 01 - Life cycle impacts	6	**ROUTE 1** **Up to six credits-Project lifecycle assessment study** A LCA study is undertaken via modelling. **ROUTE 1 Up to four credits** **(Refurbished Areas) - Elemental assessment of environmental performance information** Achieved for optimising the reuse of materials and specifying materials with the EPD for main materials including the following: - Part 1 includes elements of the fabric and structure - Part 2 and 3 includes elements used for core and local services - Part 4 includes interior fit-out elements - Hard landscaping and boundary protection are included where within scope of works Plus, **Green Guide Elemental Analysis - (Newly Constructed Areas)** Credits are awarded on the basis of the total number of points achieved, as set out in Table 39 , and calculated using the BREEAM Mat 01 calculator. This point's score is based on the Green Guide rating(s) achieved for the specifications that make-up the main building elements (as in Table 38). Note: Where an independently verified third party Environmental Product Declaration (EPD), covering part of or the **ROUTE 2** Up to six credits-Project lifecycle assessment study A LCA study is undertaken via modelling to review opportunities to reduce embodied carbon associated with the building.	4	2		Gort Scott to provide marked-up drawings highlighting new build/retained building fabric. Quartz/Cost Consultant to provide Cost Plan to Twin&Earth to enable life cycle analysis to be carried out.	GORT SCOTT COST CONSULTANT T&E
		EXEMPLARY CRITERIA-Life cycle impact One credit can be achieve following any of the two routes above for demonstrating that an exemplary performance number of points has been achieved.					
MAT 03 - Responsible sourcing of materials		**Pre-requisite** All timber and timber based products used on the project is 'Legally harvested and traded timber' in accordance with UK Government Timber Procurement Policy. **This is a minimum requirement for achieving any BREEAM rating.**	Y				CONTRACTOR
	1	**One credit - Sustainable procurement plan** The principal contractor sources materials for the project in accordance with a documented sustainable procurement plan covering: 1. Risks and opportunities are identified against a broad range of social, environmental and economic issues. BS 8902:2009 guidance. 2. Aims, objectives and targets to guide sustainable procurement activities. 3. The strategic assessment of sustainably sourced materials available locally and nationally. There should be a policy to procure materials locally where possible. 4. Procedures are in place to check and verify that the plan is being implemented/adhered to (KPI's).	1			T&E can provide a fee for the sustainable procurement plan if required	TBC
	3	**Up to three credits-Responsible sourcing of materials (RSM)** Credits can be achieved by ensuring that materials are responsibly sourced (BES 6001 certification, EMS/ISO14001 certification etc.). Availability of responsible sourcing certification should be checked with the manufacturer prior to procurement. 1 credit- ≥ 18% of points achieved 2 credits - ≥ 36% of points achieved 3 credits - ≥ 54%	1	1	1	Materials location/use categories include: External wall (e.g. bricks, blocks) External wall finishes (plastering, cladding, render, internal dry lining, wall coverings etc.) Insulation Roof (structure) Roof finishes (e.g. tiles, cladding systems, etc.) Upper floors (mezzanines) Floor (structure) Flooring finishes (including coatings) Internal partitions/internal walls (structure) Internal partitions/internal walls (finishes, wall coverings) Ceiling (structure) Ceiling finishes (including coatings) External/internal doors/ windows Staircases/ramps Fittings (shop fittings, railings, screens, gutters, vents, air grilles) Furniture (desks, chairs, display cabinets, shelving) Building services (equipment, distribution systems) Hard landscaping Other Materials categories include: Timber/timber-based products (TBP) Concrete/cementitious (plaster, mortar, screed etc.) Metal Stone/aggregate Clay-based (pavers, blocks, bricks) Gypsum Glass Plastic, polymer, resin, paint, chemicals and bituminous Animal fibre/skin, cellulose fibre Other	GORT SCOTT FAÇADE SPECIALIST HOARE LEA
		EXEMPLARY CRITERIA-Responsible sourcing of materials (RSM) When high levels of responsible sourcing (achievement of 70% of the available points) are achieved.					

	Av		T	P	U	Comments	Resp.
MAT 04 - Insulation	1	One credit - Embodied impact Insulation specified for Building envelope and building services has an Insulation index no lower than 2.5. The Insulation Index is a parameter created by the BRE to measure Embodied Impact of materials which depends on the thermal properties of the insulation, the amount of insulation and the Green Guide rating of the product. Materials selected should have low thermal conductivity and a Green Guide rating of A or A+.	1				GORT SCOTT FAÇADE SPECIALIST HOARE LEA
MAT 05 - Designing for durability and resilience	1	Protecting vulnerable parts of the building for damage Measures to prevent damage to vulnerable parts of the internal and external building and landscaping elements are specified including: - Protection from the effects of high pedestrian traffic in main entrances, public areas and thoroughfares (corridors, lifts, stairs, doors etc.). - Protection against any internal vehicular/trolley movement within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas. - Protection against, or prevention from, any potential vehicular collision where vehicular parking and manoeuvring occurs within 1m of the external building façade for all car parking areas and within 2m for all delivery areas. Protecting exposed parts of the building from material degradation Measures prevent from environmental factors and biological factors are implemented to prevent degradation from: Corrosion, dimensional change, fading/discolouration, rotting, leaching, blistering, melting, salt crystallisation and abrasion. Existing applicable building elements are surveyed, an assessment of the impact of material degradation has been undertaken and measures have been recommended and implemented.	1			Gort Scott to ensure measures to prevent damage to exterior and interior building fabric are included within design.	GORT SCOTT
MAT 06 - Material efficiency	1	One credit-Material efficiency 1. Opportunities have been identified, and appropriate measures investigated and implemented, to optimise the use of materials in building design, procurement, construction, maintenance and end of life. Example measures are: reusing existing demolition/strip-out materials, procuring materials with higher levels of recycled content, off-site manufacture or use of pre-assembled service pods. 2. Review is carried out by the design/construction team in consultation with the relevant parties at: Preparation and Brief, Concept Design, Developed Design, Technical Design and Construction.	1			Credit requires consideration of reducing materials use and reducing waste at each RIBA stage. Gort Scott to forward any Stage 1 reports, meeting minutes, presentations, emails etc that refer to material efficiency. Note that BREEAM Mat 06 Materials Efficiency requires a narrative on the following for each RIBA stage: - Designing to standard material dimensions to reduce off-cuts and waste on site - Removing redundant materials from the design - Using materials that can be recycled or reused at the end of their service life - Making use of recycled or reclaimed materials - Designing for deconstruction and material reuse - Using pre-fabricated elements where appropriate to reduce material waste - Making use of bespoke structural elements where this will reduce overall material use - 'Rationalisation' of structural elements - Can existing elements be reused, preferably on-site? - Can materials with a high recycled content be used? - Consider the waste hierarchy for waste materials removed as part of the refurbishment STAGE 1, 2, 3, 4 & 5 ACTION 060324 T&E advised on what information if needed- template to be provided	GORT SCOTT
	Av	WASTE - Requirements	T	P	U	Comments	Resp.
WST 01 - Construction waste management	1	**One credit - Pre-refurbishment Audit (refurbished areas only)** 1. A pre-refurbishment audit is carried out at the Concept Design Stage (equivalent to RIBA stage 2) prior to strip-out or demolition works by a competent person (see Relevant Definitions) who is independent of the project. 2. Actual waste arising and waste management routes used should be compared with those forecast from the audit and barriers to achieving targets should be investigated. 3. The audit must be referenced in the resource management plan and cover: Identification and quantification of the key materials where present on the project, Potential applications and any related issues for the reuse and recycling of the key materials in accordance with the waste hierarchy, Identification of local reprocesses or recyclers, Identification of overall recycling rate for all key materials, Identification of reuse targets where appropriate and Identification of overall landfill diversion rate for all key materials.	1			STAGE 2 ACTION Predemo audit received	QUARTZ
	2	**Two credits - Reuse and direct recycling of materials (refurbished areas only)** Credits are achieved when waste materials are either directly re-used on-site or off-site or are sent back to the manufacturer for closed loop recycling. 1 credit is achieved when 50% of the materials achieve comply with the above and 2 credits when compliance is achieved for 75% of the materials.	2			To be included within contractor prelims- strip out already happened, to be confirmed if this credit is still achievable.	CONTRACTOR
WST 01 - Construction waste management	3	**Up to three credits - Construction resource efficiency** 1. A Resource Management Plan (RMP) has been developed covering the non-hazardous waste related to on-site construction and dedicated off-site manufacture or fabrication (including demolition and excavation waste) generated by the building's design and construction. 2. Where construction waste related to on-site construction and dedicated off-site manufacture/fabrication (excluding demolition and excavation waste) meets or is lower than the following: - One credit ≤12.3m3 or ≤7.3 tonnes - Two credits ≤6m3 or ≤3.85 tonnes - Three credits ≤2.75m3 or ≤1.8 tonnes 3. Where existing buildings on the site will be demolished a pre-demolition audit of any existing buildings, structures or hard surfaces is completed and referenced in the RMP. **1 credit minimum requirement for Outstanding rating.**	1	1	1	To be included within contractor prelims.	CONTRACTOR
WST 01 - Construction waste management	1	**One credit - Diversion of resources from landfill** 1. The following percentages of non-hazardous construction (on-site and off-site manufacture/fabrication in a dedicated facility), demolition and excavation waste (where applicable) generated by the project have been diverted from landfill: - One credit: 77% by volume or 85% by weight of the construction waste and 85% by volume or 92% by weight of the demolition waste.	1			To be included within contractor prelims.	CONTRACTOR
		EXEMPLARY CRITERIA When the above targets are increased as follows: - ≤1.5m3 or ≤1.1 tonnes -90% by volume or 93% by weight of the construction waste, 90% by volume or 93% by weight of the demolition waste.					
WST 02 - Recycled aggregates	1	**One credit-Recycled aggregates** 1. At least 25% (by weight or volume) of the high grade aggregate specified is recycled or secondary aggregate. In addition to this, there are minimum % for each application that must be met. 2. The recycled or secondary aggregates must be either: Construction, demolition and excavation waste obtained on-site or off-site or secondary aggregates obtained from a non-construction post-consumer industrial by product source.		1			
		EXEMPLARY CRITERIA-Recycled aggregates 1. In addition to the above, the total high grade recycled aggregate specified is 35% (by weight or volume) and the contributing recycled or secondary aggregate are not be transported more than 30 km by road transport.					
WST 03 - Operational waste	1	**One credit-Operational waste** 1. A dedicated, clearly labelled, and accessible area is provided for the storage of recyclable materials compliant with the following size: - At least 2m2 per 1000m2 of net floor area for buildings < 5000m - A minimum of 10m2 for buildings ≥5000m2 - An additional 2m2 per 1000m2 of net floor area where catering is provided (with an additional minimum of 10m2 for buildings ≥5000m2). The net floor area should be rounded up to the nearest 1000m 2. Where the consistent generation in volume of the appropriate operational waste streams is likely to exist, the following facilities are provided: - Static waste compactor(s) or baler(s); - Vessel(s) for composting OR adequate space(s) for storing segregated food waste and compostable organic material. - Where organic waste is to be stored/composted on-site, a water outlet is provided adjacent to or within the facility. **This credit is a minimum requirement for Excellent and Outstanding ratings.**	1			Gort Scott to ensure waste storage space complies with space requirements.	GORT SCOTT

WST 04 - Speculative finishes	1	**One credit-Speculative Floors and ceilings** For tenanted areas (where the future occupant is not known), prior to full fit-out works, interior finishes (including carpets, other floor finishes, ceiling finishes and any other interior finishes) have been installed in a show area only. In a building being refurbished or fitted out for a specific occupant, that occupant has selected (or agreed to) the specified interior finishes	1			Not being provided- TBC if credit is still achievable.	CLIENT
WST 05 - Adaptation to climate change	1	One credit-Adaptation to climate change – structural and fabric resilience Conduct a climate change adaptation strategy appraisal for structural and fabric resilience no later than RIBA Stage 2 or equivalent. The strategy should be based on an iterative risk assessment to identify and evaluate the impact on the building over its projected life cycle from expected extreme weather conditions arising from climate change and, where feasible, mitigate against these impacts. The assessment should cover the following stages: Hazard identification, Hazard assessment, Risk estimation, Risk evaluation and Risk management.	1			STAGE 2 CREDIT Quartz to arrange a workshop for this month with the design team- appointment is being finalised	GORT SCOTT HOARE LEA ELLIOT WOOD
		EXEMPLARY CRITERIA In addition to the above, the following credits have been achieved: - HEA 04 thermal comfort credit - At least 8 credits under ENE 01 - The passive design credit of ENE 04 - A minimum of 3 credits under WAT 01 - Material degradation credit of MAT 05 - One flood risk credit and two surface run-off credits under POL 03	1				
WST 06 - Functional adaptability	1	**One credit-Functional adaptability** 1. A building-specific functional adaptation strategy study has been undertaken by the client and design team no later than RIBA Stage 2, which includes recommendations for measures to be incorporated to facilitate future adaptation. the strategy should consider: - The potential for major refurbishment, including replacing the façade. - Replacement of all major plant within the life of the building - Adaptability of the internal environment to accommodate changes in working practices. - Adaptability to change in-use. - Accessibility to local services. 2. Measures are adopted no later than RIBA Stage 4 unless unfeasibility is demonstrated.	1			STAGE 2 CREDIT 060324 Quartz confirmed this will be instructed- appointment is being finalised	GORT SCOTT/HOARE LEA
	Av	**LAND USE AND ECOLOGY - Requirements**	T	P	U	**Comments**	**Resp.**
LE 02 - Protection of ecological features	1	**One credit - Protection of ecological features** 2. All existing features of ecological value (see Relevant definitions) within the assessment zone are adequately protected from damage during clearance, site preparation and construction activities in line with BS42020: 2013. 3. In all cases, the principal contractor is required to construct ecological protection recommended by the Suitably Qualified Ecologist (SQE), prior to any preliminary site construction or preparation works (e.g. clearing of the site or erection of temporary site facilities)..	1			STAGE 2 CREDIT Ecologist to confirm if site has features of ecological values. If confirmed, protection measures to be recommended. Winter garden proposed on the roof 050324 Quartz confirmed that Greengage were undertaking these works and are waiting for the landscape designs to be progressed- Quartz confirmed this is to be picked back up.	ECOLOGIST
LE 04 - Enhancing site ecology	1	**One credit-Ecologist's report and recommendations** A suitably qualified ecologist (SQE) is appointed no later than RIBA Stage 1 an Ecology Report based on a site visit/survey by the SQE is developed no later than RIBA Stage 2 and the recommendations are implemented.	1			STAGE 2 CREDIT	ECOLOGIST
LE 05 - Long term impact on biodiversity	2	**Up to two credits-Long term impact on biodiversity** 1. A Suitably Qualified Ecologist (SQE) is appointed prior to commencement of activities on-site and they confirm that all relevant UK and EU legislation relating to the protection and enhancement of ecology has been complied with during the design and construction process. 2.A landscape and habitat management plan, is produced covering at least the first five years after project completion in accordance with BS 42020:2013 Section 11.1. 3.Where in addition to the above the below is implemented (2 measures - 1 point; 4 measures - 2 points). - The contractor nominates a Biodiversity Champion. - The contractor trains the site workforce on how to protect site ecology during the project. - The contractor records actions taken to protect biodiversity and monitor their effectiveness throughout key stages of the construction process. - Where a new ecologically valuable habitat appropriate to the local area is created. - Where flora and/or fauna habitats exist on-site, the contractor programmes site works to minimise disturbance to wildlife.	2			Ecologist to provide recommendations.	ECOLOGIST CONTRACTOR
	Av	**POLLUTION - Requirements**	T	P	U	**Comments**	**Resp.**
POL 01 - Impact of refrigerants		**Pre-requisite** All systems (with electric compressors) comply with the requirements of BS EN 378:2008 (parts 2 and 3) and where refrigeration systems containing ammonia are installed, the Institute of Refrigeration Ammonia Refrigeration Systems Code of Practice.	Y				
	2	**Up two credits - Impact of refrigerant** - Two credits - the Direct Effect Life Cycle CO2 equivalent emissions (DELC CO2e) ≤ 100 kgCO 2e /kW cooling/heating capacity or if GWP ≤10. - One credit - the DELC CO2e ≤ 1000 kgCO 2e /kW cooling/heating capacity.	1	1		Hoare Lea to confirm refrigerant being proposed and specification of plant. Twin&Earth to carry out calculations.	HOARE LEA
	1	**One credit-Leak detection** 1. A permanent automated refrigerant leak detection system or an in-built automated diagnostic procedure for detecting leakage is installed. 2. The system must be capable of continuously monitoring for leaks and of automatically isolating and containing the remaining refrigerant(s) charge in response to a leak detection incident.		1		Hoare Lea to confirm.	HOARE LEA
POL 02 - NOx emissions	3	**Up to three credits-NOx emissions** Where NOx emissions associated to heating and hot water demand under normal operating conditions are as follows: - One credit ≤100 mg/kWh - Two credits ≤70mg/kWh - Three credits ≤40mg/kWh			3	Credit not achievable.	
	2	**Up to two credits-Flood resilience** **Two credits - Low flood risk** 1. A site-specific flood risk assessment (FRA) confirms low annual probability of flooding from all sources. **OR,** 2. The project meets the requirements for avoidance of flooding in accordance with Checklist 1, (see Checklists and tables), e.g. where the refurbishment or fit-out zone is of a floor level that is 0.3m higher than the obtained/estimated flood level and safe access/escape routes are available/present **Two credits - Medium/high flood risk** 3. Where criterion 4 and either criterion 5 or 6 have been met 4. Where flood maps from the appropriate statutory body (see Relevant definitions) confirm the site has a medium or high flood risk and a site specific FRA has been undertaken (as relevant to size of project in accordance with CN7). The FRA must take all current and future sources of flooding into consideration in accordance with compliance note. 5. Where the refurbishment or fit-out zone achieves avoidance from flooding through either: The refurbishment and fit-out zone is located entirely on the first floor or above and a flood emergency plan has been developed in accordance with 'Would your business stay afloat? A Guide to preparing your business for flooding', Environment Agency, 2011 OR As a result of the building's floor level or measures to keep water away, the building is defined as achieving avoidance from flooding by following Checklist 1, Checklists and tables. 6. Where avoidance is not possible, two credits are achieved where a full flood resilience/resistance strategy is implemented for the building's scope of works in accordance with recommendations made by a Suitably Qualified Building Professional	2			Flood risk assessment to be carried out; likely low probability of flooding from all sources.	ELLIOT WOOD

POL 03 - Surface water run-off	2	**Two credits - Surface water run-off** **One credit - neutral impact on surface water** 7. There is no increase in the impermeable surfaces as a result of the refurbishment works; **OR** 8. If there is an increase in the impermeable surface as a result of the refurbishment works then the following must be met: a. **Hard standing areas** - where there is an extension or increase in the hardstanding areas and hence an increase in the total impermeable area as a result of the refurbishment works, the hardstanding area must be permeable or be provided with on-site SuDS to allow full infiltration of the additional volume, to achieve the same end result. The permeable hardstanding must include all pavements and public rights of way, car parks, driveways and non-adoptable roads, but exclude footpaths that cross soft landscaped areas which will drain onto a naturally permeable surface. b. **Building extension** - where there is an increase in building footprint, extending onto any previously permeable surfaces, the additional run-off caused by the area of the new extension must be managed on-site using an appropriate SuDS technique for rainfall depths up to 5mm. **Two credits - reducing run-off** 9. An Appropriate Consultant (see Pol 03 Flood risk management and reducing surface water run-off) has been used to design an appropriate drainage strategy for the site. 10. Either of the following criteria are met: a. There is a decrease in the impermeable area by 50% or more, from the pre-existing impermeable hard surfaces; **OR** b. Where run-off as a result of the refurbishment is managed on-site using source control achieving the following requirements: i. The peak rate of run-off as a result of the refurbishment for the 1 in 100 year event has been reduced by 50% from the existing site. ii. The total volume of run-off discharged into the watercourses and sewers as a result of the refurbishment, for a 1 in 100 year event of 6 hour duration has been reduced by 50%. iii. An allowance for climate change must be included for all of the above calculations; this should be made in accordance with current best practice planning guidance.	1	1		Flood risk specialist to confirm if two credits can be achieved.	ELLIOT WOOD
	1	**One credit-Minimising watercourse pollution** 1. There is no discharge from the developed site for rainfall up to 5mm. 2. Low risk source of watercourse pollution areas have appropriate SuDS techniques. 3. High risk areas have petrol and oil separators. 4. A means of containment is fitted to the site drainage system for chemical/liquid gas storage areas. 5. All water pollution prevention systems have been designed and installed in accordance with Pollution Prevention Guideline 3 (PPG 3). For vehicle washing areas systems comply with Pollution Prevention Guidelines 13 6. A comprehensive and up-to date drainage plan is developed. 7. Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS must be in place. 8. All external storage and delivery areas designed and detailed in accordance with the current best practice planning guidance.		1			ELLIOT WOOD
POL 04 - Reduction of night time light pollution	1	**One credit - Reduction of night time light pollution** 1. External lighting complies with Table 2 (and its accompanying notes) of the ILP Guidance notes for the reduction of obtrusive light, 2011. 2. All external lighting (except for safety and security lighting) can be automatically switched off between 23:00 and 07:00. 3. Safety or security lighting used between 23:00 and 07:00, complies with the lower levels of lighting in Table 2 of the ILP's Guidance notes. 4. Illuminated advertisements comply with ILE Technical Report 5 – The Brightness of Illuminated Advertisements.	1				HOARE LEA
POL 05 - Reduction of noise pollution	1	**One credit-Reduction of noise pollution** 1. The noise level from the proposed site/building, as measured in the locality of the nearest or most exposed noise-sensitive development (within 800m radius), is no greater than +5dB during the day (07:00 to 23:00) and +3dB at night (23:00 to 07:00) compared to the background noise level. The noise impact assessment must be undertaken by a suitably qualified acoustic consultant and must have been developed in compliance with BS 7445.	1			Ventilation needs to be run pretty much 24/7. T&E to clarify if there's any compliance notes on this	ACOUSTICIAN

	Av	INNOVATION - Requirements	T	P	U	Comments	Resp.
Inn.	1	Additional credits are available for Approved Innovations not currently recognised by an existing BREEAM issue.				No points assumed at this stage.	-

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