



# EUSTON TOWER

Sustainability Statement

December 2023





3XN GXN



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ASSOCIATES (INTERNATIONAL) LIMITED

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# Executive Summary

This Sustainability Statement has been prepared by GXN, on behalf of British Land Property Management Limited (hereafter British Land), in support of an application for planning permission for the redevelopment of Euston Tower. It summarises the overall sustainability strategy proposed for the development in response to the Greater London Authority's and London Borough of Camden's planning policies and guidance.

The application seeks permission for the redevelopment of Euston Tower, including the partial retention (retention of existing core, foundations and basement), disassembly, reuse and extension of the existing building, to provide a 32-storey building for use as offices and research and development floorspace (Class E(g)) and office, retail, café and restaurant space (Class E) and learning and community space (Class F) at ground, first and second floors, and associated external terraces. Provision of public realm enhancements, including new landscaping, and provision of new publicly accessible steps and ramp. Provision of short and long stay cycle storage, servicing, refuse storage, plant and other ancillary and associated works.

The proposed development creates a GIA of 77,542 m<sup>2</sup>, comprising the following:

• Commercial office (Class E(g))	46,465 m <sup>2</sup>
• Lab-enabled workspace (Class E(g))	21,603 m <sup>2</sup>
• Accelerator lab workspace (Class E(g))	2,893 m <sup>2</sup>
• Lobby (Class E(g))	3,830 m <sup>2</sup>
• Retail (Class E)	748 m <sup>2</sup>
• Retail/Community Space (Class E/F)	2,003 m <sup>2</sup> .

Sustainability lies at the centre of the proposed development, and it represents an opportunity to deliver a reimagined Euston Tower that is at the forefront of sustainability, net zero carbon in construction and operation, and fit for now and the future.

Special attention has been paid to the opportunities for the retention of the existing building through a detailed feasibility study, and the reuse/recycling/upcycling of any materials from the deconstruction.

The proposed development includes a range of sustainable strategies and approaches, as detailed in this statement and its supporting documents, including:

- **Targeting high quality certifications**
  - BREEAM "Outstanding" NC 2018 for offices with research and development areas, and BREEAM "Excellent" NC 2018 retail areas
  - WELL-ready with features to enable WELL "Gold" certification with aspiration for "Platinum"
  - Aspiring to at least NABERS 5\* in operation.
- **Net zero carbon in construction and operation**
  - Upfront embodied carbon of 733 kgCO<sub>2</sub>e/m<sup>2</sup> GIA (including demolition), outperforming the GLA benchmark for offices of 950 kgCO<sub>2</sub>e/m<sup>2</sup>
  - Whole life-cycle embodied carbon currently estimated as 1,262 kgCO<sub>2</sub>e/m<sup>2</sup> GIA [A-C excl. B6&B7], outperforming the GLA benchmark for offices of 1,400 kgCO<sub>2</sub>e/m<sup>2</sup>
  - Good embodied carbon performance taking into account Levels 03-11 are lab-enabled storeys which come with increased embodied carbon intensity not reflected in the GLA benchmarks
  - Residual embodied carbon offset through payment into British Land's transition fund
  - Residual regulated operational carbon emissions offset through payment into the Camden Climate Fund.
- **Fabric first and low energy**
  - An all-electric heating and cooling energy strategy is proposed to benefit from future electrical grid decarbonisation
  - Regulated operational carbon emissions are reduced by 10% due to energy efficiency measures alone compared to the GLA's Part L 2021 baseline ("Be Lean")
  - Through the use of renewable energy technologies, the regulated operational carbon emissions are reduced by 14% overall, compared to the GLA's Part L 2021 baseline ("Be Green")
  - Whole building energy demand estimated using a CIBSE TM54 approach as 244 kWh/m<sup>2</sup> for office and lab-enabled split ("Be Seen")
  - Base build provided by 100% Renewable Energy Guarantee of Origin backed (REGO) electricity, in line with British Land's net zero pathway.
- **Circular economy pioneer and waste minimisation**
  - Retention of 31% of the existing structure, the opportunities for which have been the subject of a thorough feasibility study which is submitted in support of the application (satisfying the GLA requirements for a pre-redevelopment audit)



- A pioneering material strategy and detailed assessment of opportunities for deconstruction waste reuse/upcycling/recycling
  - Prototyping innovative approaches for structural reuse of concrete and recycling of building glass at scale, with testing to investigate the potential underway
  - Embedding circular economy principles in the design, to deliver a long-lasting structure that is flexible and adaptable to the changing needs of the future, with elements designed for non-destructive disassembly
  - Using reused and/or high recycled content materials where possible, targeting 25% recycled content by value
  - Committing to capture useful data for key building elements in material passports to improve end of life reusability
  - Meeting or exceeding the GLA's waste targets:
    - Zero biodegradable waste to landfill
    - 98% of demolition waste to be diverted from landfill
    - 96% of construction waste to be diverted from landfill
    - 95% of excavation waste to beneficial use
    - Contributing to achieving the GLA's target of 65% municipal waste recycling by 2030
    - Contributing to achieving the London Environmental Strategy target of 75% business waste recycling by 2030.
  - **Climate resilience, greening, and biodiversity**
    - Use of green/blue roofs, in addition to vegetated areas and bio-retention features in the landscaping, as part of a Sustainable Drainage System (SuDS) that manages surface water runoff and filters rainwater
    - Surface water runoff rates of 3.0 l/s, and a 96% reduction in surface water discharge compared to the pre-development condition (1-in-100 year)
    - Mitigation of urban heat island effect through green roofs and biodiverse planting, achieving:
      - Urban Greening Factor (UGF) 0.386
      - Biodiversity Net Gain (BNG) 26.90%
    - Microclimate studies resulting in improved wind conditions compared to the existing situation, through the building and landscaping design.
  - **Water conservation**
    - Non-potable water use reduction through use of rainwater and greywater harvesting for WC flushing
    - Innovative StoFlow system designed to passively store rainwater for WC flushing
    - A minimum 40% potable water reduction compared to BREEAM NC 2018 baseline, exceeding the GLA requirement of BREEAM "Excellent" standards for water.
  - **Air quality impacts**
    - Air quality neutral achieved through an all-electric infrastructure with no on site combustion for heating and cooling, and car-free development except for accessible bays (space provision only for back-up tenant generator).
  - **Active travel and car-free**
    - A car-free development except two blue-badge parking spaces
    - Provision of end of trip facilities complete with 951 cycle parking spaces (long-stay spaces located in a secure basement), in line with London Plan minimum cycle parking standards
    - To further promote the cycle mode share, end of trip facilities includes changing rooms, lockers, showers, WCs, maintenance facilities, and water dispensers.
  - **Sustainable management**
    - A thorough co-design and consultation process, integrating the community and other relevant stakeholders in the design process
    - Commitment to managing the construction site in an environmentally sound manner, adhering to the Considerate Constructors Scheme, and considering its impacts during construction in a Construction Management Plan.
- To ensure successful implementation, the key initiatives and commitments detailed in this statement, and its supporting documents, will be implemented, monitored, and/or reviewed as the design develops, and subsequently during the operational phase of the proposed development.

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Euston Tower

# Introduction

# 1.1 Introduction

## 1.1.1 General

Euston Tower is a 36-storey tall building standing on the northern edge of central London, situated in the south-west of the London Borough of Camden (LBC). The proposed development at Euston Tower aims to create a world leading science, technology and innovation building and public realm for Camden and the Knowledge Quarter that inspires, connects, and creates opportunities for local people and businesses.

This will vision be achieved by:

- Transforming the disused Euston Tower ensuring it is fit for the future by adopting world leading sustainability targets and reusing, recycling, and offsetting where necessary, to reach net zero at completion and in operation.
- Putting social impact at the heart of the project from the start and ensure that communities play a key role in shaping new spaces which meet local needs.
- Creating pioneering workspaces in the Knowledge Quarter for businesses of all sizes to prosper, including flexible incubator and accelerator spaces, to support start-ups and knowledge sharing.
- Ensuring that the future use of Euston Tower is built upon identified needs and contributes to a thriving local, regional and national economy for our ever-changing world.
- Reimagining the public spaces of Regent's Place, creating safe, inclusive, connected and sustainable spaces for Camden's communities.
- Contributing to meeting Camden's housing needs.

## 1.1.2 The applicant

British Land Property Management Limited (hereafter British Land).

## 1.1.3 Purpose of this document

This document is the Sustainability Statement that has been prepared in support of an application for planning permission for the redevelopment of Euston Tower, 286 Euston Road, London, NW1 3DP. It summarises the overall sustainability strategies for the proposed for development, in response to the Greater London Authority's (GLA's) and London Borough of Camden's planning policies and guidance.

Sustainability lies at the heart of the proposed development. By adopting a sustainable approach in design, construction and operation, the proposed development not only aims to meet the requirements of current planning policies, but go beyond these, wherever it is technically, practically, and economically feasible.

The document has been prepared by GXN on behalf of British Land.

## 1.1.4 The site

The site is situated within LBC, and the ward of Regent's Park. The site is bounded by Euston Road (south), Hampstead Road (east), Brock Street (north) and Regent's Place Plaza (west). The site covers an area of 8,079 m<sup>2</sup>, comprising a single, ground plus an existing 36-storey tower. Comprising predominantly office uses on the upper floors, the tower has been fully vacant since April 2021, however there are still retail units currently in operation at ground floor level.

## 1.1.5 Summary of the proposed development

The proposal is for the redevelopment of Euston Tower, including the partial retention (retention of existing core, foundations and basement), disassembly, reuse and extension of the existing building, to provide a 32-storey building for use as offices and research and development floorspace (Class E(g)) and office, retail, café and restaurant space (Class E) and learning and community space (Class F) at ground, first and second floors, and associated external terraces. Provision of public realm enhancements, including new landscaping, and provision of new publicly accessible steps and ramp. Provision of short and long stay cycle storage, servicing, refuse storage, plant and other ancillary and associated works.

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Figure 1.1 Render of the proposed development as seen from Euston Road





### 1.1.6 Outline of this document

Section 1.2 summarises the relevant requirements and targets from planning policy.

BREEAM and WELL pre-assessments have been conducted by Sweco to demonstrate the environmental and well-being credentials of the proposed development. The pre-assessments are summarised in the certifications overview in Section 2.2.

The remainder of Section 2 outlines the sustainable design and construction strategies, the circular economy approach, and the anticipated energy and carbon emissions reduction achieved through the design measures adopted by the proposed development.

The Whole Life-cycle Carbon Assessment (WLCA) has been prepared by Sweco following GLA's Whole Life-cycle Carbon Assessment Guidance (WLCAG) (March 2022). A summary of the assessment is included in this document, and the full WLCA is submitted in the GLA spreadsheet template which forms part of this planning application.

The energy assessment has been prepared by Arup following GLA's Energy Assessment Guidance (EAG) (June 2022), and is also compared against the previous guidance (April 2020). A short summary of the energy performance is included in this document, and fully detailed in the Energy Statement which forms part of this planning application.

### 1.1.7 Team

3XN is the architect and lead designer for the proposed development, and is supported by a team of key consultants:

Executive Architect & Principal Designer:	Adamson Associates
Landscape Architect:	DSDHA
Planning Consultant:	Gerald Eve
Services Engineer:	Arup
Structural Engineer:	Arup
Sustainability Consultant:	GXN & SWECO
Transport & Logistics:	Velocity
Visual Impact Assessment:	Cityscape Digital
Townscape Consultant:	Tavernor Consultancy
Public Use Consultant:	Forth
EIA Co-ordinator:	Trium Environmental
Ecological Consultant:	Greengage
Daylight Consultant:	Point2
Rights to Light Consultant:	Point2
Fire Engineering:	Arup
Access Consultant:	David Bonnett Assoc.
Security Consultant:	QCIC
Acoustic Consultant:	Hann Tucker
Wind Analysis:	Arup
Facade & Access & Maintenance Consultant:	Thornton Tomasetti
Cost Consultant:	Gardiner & Theobald
Planning Legal Advisors:	Herbert Smith Freehills
Community Consultation:	LCA
Project Manager:	Gardiner & Theobald
Construction & Logistics Consultant:	Lendlease
Employment & Training and Regeneration Advisor:	Volterra
Community Engagement & Social Impact Consultant:	Beyond The Box
Community Engagement Consultant:	Something Collective





Figure 1.2 Render of the proposed development



## 1.2 Planning Policy

### 1.2.1 General

The relevant documents setting out current and emerging planning policy on environmental sustainability are the following:

- The National Planning Policy Framework, September 2023 (NPPF)
- The London Plan, March 2021 (LP)
- Energy Assessment Guidance, June 2022 (EAG)
- Whole Life-cycle Carbon Assessment Guidance, March 2022 (WLCAG)
- Circular Economy Statement Guidance, March 2022 (CESG)
- Camden Local Plan, 2017 (CLP)
- Camden Planning Guidance, Energy Efficiency and Adaptation, January 2021 (CPG).

### 1.2.2 National planning policy

#### **National Planning Policy Framework (NPPF)**

The National Planning Policy Framework (NPPF) sets out Government's planning policies for England and how these are expected to be applied to achieve "sustainable development".

The NPPF replaced the previous suite of national Planning Policy Statements, Planning Policy Guidance Notes and some Circulars in 2012. The 2023 revisions replaces the previous NPPF last revised in July 2021.

The NPPF Chapter 14 states how the planning system should support the transition to a low carbon future in a changing climate. It does not contain specific targets for sustainability or energy.

### 1.2.3 Regional planning policy

#### **The London Plan (LP)**

The London Plan (LP) (March 2021) sets out the spatial development strategy for Greater London. It is the overall strategic plan for London, setting out an integrated economic, environmental, transport and social framework for how London will develop over the next 20 - 25 years.

London Borough planning authorities' local plans need to be in general conformity with the LP, and its policies guide decisions on planning applications by the Borough Council's and the Mayor.

The LP contains several specific sustainability and energy targets, these are summarised below:

- Policy SI 1 Improving air quality
  - Requires all new developments to be air quality neutral, aiming positive.
- Policy SI 2 Minimising greenhouse gas emissions
  - Requires all new non-domestic buildings to achieve net zero carbon
  - On-site reduction of at least 35% beyond the baseline of Part L of the Building Regulations 2021
  - Developments should achieve at least 15% carbon reduction beyond Part L from energy efficiency measures alone
  - Any remaining regulated emissions must be offset by payment into the borough's carbon offset fund
  - Report whole life cycle carbon emissions and demonstrate how these have been reduced including comparison with the benchmarks (contained within the Whole Life-cycle Carbon Assessment Guidance).
- Policy SI 3 Energy infrastructure
  - Prioritises the use of waste heat and connection to district heating networks.



- Policy SI 4 Managing heat risk
    - Minimise adverse impacts on the urban heat island
    - Requires demonstrating through an energy strategy how the potential for internal overheating and reliance on air conditioning systems will be reduced
    - Requires carrying out overheating analyses for new developments (referred to in the energy assessment guidance).
  - Policy SI 5 Water infrastructure
    - Requires commercial developments to achieve:
      - C (1) achieving mains water consumption of 105 litres or less per head per day
      - C (2) BREEAM "Excellent" performance for water consumption, i.e. a 12.5% improvement over BREEAM UK New Construction 2018 baseline
      - C (3) incorporate measures such as smart metering, water saving and recycling measures, including retrofitting, to help to achieve lower water consumption rates and to maximise future-proofing.
  - Policy SI 7 Reducing waste and supporting the circular economy
    - Requires meeting the target of zero biodegradable or recyclable waste to landfill by 2026
    - 95% reduction of construction and demolition waste to be reused/recycled/recovered
    - 95% of excavation waste to be put to beneficial use
    - Circular Economy Statement demonstrating how circular economy outcomes are promoted and waste is minimised (aimed to be net-zero waste) including how performance will be monitored and reported.
  - Policy SI 13 Sustainable drainage
    - Requires development proposals to aim to achieve greenfield runoff rates
    - Aim to ensure that surface water runoff is managed as close to source as possible.
  - Policy G 5 Urban greening
    - Requires all new developments to calculate an Urban Greening Factor (UGF)
    - New predominantly-commercial developments should achieve an UGF of at least 0.3.
  - Policy G 6 Biodiversity and Access to Nature
    - Protect Sites of Importance for Nature Conservation (SINCs)
    - Identify ecological networks, areas with limited access to nature, and promote conservation of species and habitats
    - Mitigate harm to SINCs through a hierarchy of measures
    - Aim for net biodiversity gain in development proposals
    - Consider proposals positively if they reduce deficiencies in access to nature.
- Other policies in the London Plan which relate to sustainability but do not have specific sustainability / energy targets include:
- Policy D 8 Public Realm
  - Policy G 1 Green infrastructure
  - Policy G 7 Trees and Woodlands
  - Policy GG 6 Increasing efficiency and resilience
  - Policy SI 10 Aggregates
  - Policy SI 12 Flood Risk Management.

### **Energy Assessment Guidance (EAG)**

The Energy Assessment Guidance (EAG) provides guidance on preparing energy assessments and complying with the energy policies in the London Plan.

All energy assessments are expected to comply with the carbon reduction targets in LP Policy SI 2 including achieving a minimum 35% on-site carbon reduction under Part L 2021 and making net-zero offset payments to the local borough as a cash-in-lieu contribution.

Non-domestic buildings should follow CIBSE TM52 for demonstrating compliance with the overheating requirements of LP Policy SI 4.

### **Whole Life-cycle Carbon Assessment Guidance (WLCAG)**

The Whole Life-cycle Assessment Guidance (WLCAG) provides guidance on how to prepare a WLCA and demonstrate compliance with the requirements of LP Policy SI 2.

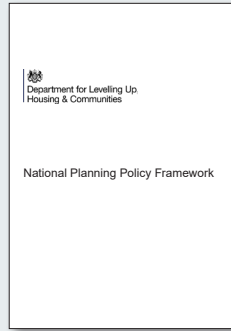
All referable applications are required to submit a WLCA, though the guidance encourages even non-referable applications to do so. Developments should compare WLCA performance with the GLA's benchmark figures contained within the guidance.

### **Circular Economy Statement Guidance (CESG)**

The Circular Economy Statement Guidance (CESG) provides guidance on how to prepare a CE Statement and demonstrate compliance with LP Policy SI 7.

All referable applications are required to submit a CE Statement demonstrating how the principles of the circular economy are being applied and how performance will be monitored and reported.

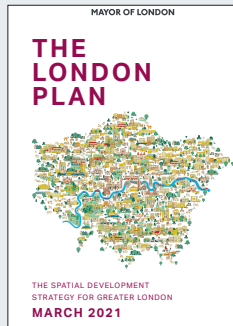
NATIONAL PLANNING POLICY



**National Planning Policy Framework**

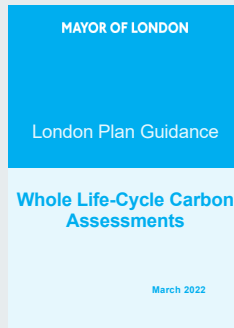
Sets out Government’s planning policies for England and how these are expected to be applied.

REGIONAL PLANNING POLICY



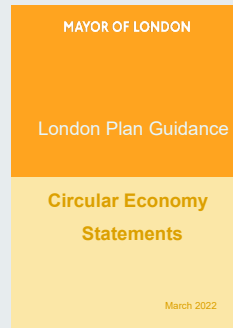
**The London Plan**

Sets out the spatial development strategy for Greater London



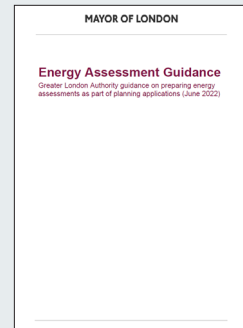
**Whole Life-cycle Carbon Assessment Guidance**

Provides guidance on how to prepare a WLCA and demonstrate compliance with the requirements of LP Policy SI 2



**Circular Economy Statement Guidance**

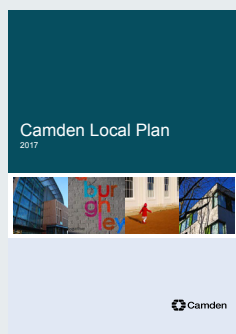
Provides guidance on how to prepare a CE Statement and demonstrate compliance with LP Policy SI 7



**Energy Assessment Guidance**

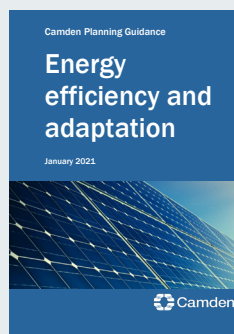
Provides guidance on preparing energy assessments and complying with the energy policies in the London Plan 2021

LOCAL PLANNING POLICY



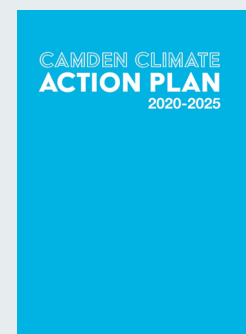
**The Camden Local Plan 2017**

Sets out Camden’s planning policies, ensuring Camden has robust planning policies that contribute to delivering the Camden Plan



**Camden Planning Guidance Energy Efficiency and Adaptation**

Supports the policies in the Camden Local Plan 2017 (CLP)



**Camden's Climate Action Plan**

Creates a framework for action across all aspects of the borough with the aim of achieving zero carbon by 2030

Figure 1.3 Overview of key planning documents and guidance relating to sustainability

#### 1.2.4 Local planning policy

##### **The Camden Local Plan 2017 (CLP)**

The Camden Local Plan 2017 (CLP) set's out Camden's planning policies, ensuring Camden has robust planning policies that contribute to delivering the Camden Plan. The CLP covers the period from 2016 – 2031. The CLP focusses on creating the conditions for harnessing the benefits of economic growth, reducing inequality, and securing sustainable neighbourhoods.

Pre-dating the London Plan 2021, the CLP is less well harmonised with the LP on sustainability, but this has been improved with the publication of Camden Planning Guidance Energy Efficiency and Adaptation in January 2021 with the CPG on energy efficiency and adaptation.

The CLP contains several specific sustainability and energy targets, these are summarised below:

- Policy D1 Design
  - Requires that development is sustainable in design and construction, incorporating best practice in resource management, and climate change mitigation and adaptation
  - Requires that development is of sustainable and durable construction and adaptable to different activities and land uses (no specific detail is provided in Policy D1, but specific detail is contained in the CC suite of policies and the CPG)
  - Requires that development incorporates high quality landscape design (including public art, where appropriate) and maximises opportunities for greening (e.g. through planting of trees and other soft landscaping).
- Policy CC1 Climate change mitigation
  - Requires developments to minimise CO<sub>2</sub> emissions by following the steps in the energy hierarchy and demonstrate how this has been applied within the Energy Statement
  - Requires development to meet the London Plan targets for CO<sub>2</sub> emissions (15% at be lean, 35% overall).
- Policy CC2 Adapting to climate change
  - Requires a financial contribution where these targets cannot be met on site
  - Requires developments that involve substantial demolition to demonstrate that it is not possible to retain and improve the existing building, and proposals for substantial demolition should be fully justified in terms of the optimisation of resources and energy use
  - 85% construction, demolition, and excavation waste diversion from landfill
  - Expects developments to optimise resource efficiency by reducing waste, reducing energy and water use in construction and operation, minimising materials required, using low embodied carbon materials
  - Encourages all developments above 500m<sup>2</sup> to assess embodied carbon and report it with in the Sustainability Statement.
- Policy CC3 Water and flooding
  - Requires developments to incorporate water efficiency measures, major developments should include grey and/or rainwater harvesting
  - Requires developments to use Sustainable Drainage Systems (SuDS) in line with the drainage hierarchy to achieve a greenfield runoff rate where feasible
  - Non-domestic development is expected to meet BREEAM water efficiency credits.

Other policies in the CLP which relate to sustainability but do not have specific sustainability / energy targets include:

- Policy C1 Health and wellbeing
- Policy A1 Managing the impact of development
- Policy A3 Biodiversity
- Policy CC4 Air quality
- Policy CC5 Waste
- Policy T1 Prioritising walking, cycling, and public transport
- Policy T2 Parking and car-free development
- Policy T4 Sustainable movement of goods and materials.

### **Camden Planning Guidance Energy Efficiency and Adaptation (CPG)**

The Camden Planning Guidance Energy Efficiency and Adaptation (CPG) supports the policies in the Camden Local Plan 2017 (CLP). It is a Supplementary Planning Document (SPD) which is a "material consideration" in planning decisions.

The January 2021 version of the CPG replaces the Energy Efficiency and Adaptation CPG (March 2019), which itself replaced the CPG3 Sustainability (July 2015).

The CPG contains several specific sustainability and energy targets that build on the policies in the CLP, these are summarised below:

- (3) Making buildings more energy efficient
  - Major non-residential developments are required to achieve at least a 15% reduction (beyond Part L (2021) of the Building Regulations) through on-site energy efficient measures ("Be Lean" stage), in accordance with the London Plan 2021.
- (5) Renewable energy technologies
  - Developments of 500m<sup>2</sup> or larger are required to target a 20% reduction in carbon dioxide emissions from on-site renewable energy technologies ("Be Green" stage)
  - For developments that require a BREEAM certification, a BREEAM-compliant Low and Zero Carbon Feasibility Report is required alongside the Energy and Sustainability Statements. This is provided within the Energy Statement prepared by Arup dated December 2023.
- (6) Energy statements
  - Developments of 500m<sup>2</sup> or larger are required to submit an Energy Statement demonstrating how the development has been designed following the energy hierarchy
- (7) Energy reduction
  - All new build major developments are required to demonstrate compliance with London Plan 2021 targets for carbon dioxide emissions (overall 35% reduction below Part L with 15% reduction through on site energy efficiency measures)
- Developments of 500m<sup>2</sup> or larger are required to target a 20% reduction in carbon dioxide emissions from on-site renewable energy technologies ("Be Green" stage).
- (9) Reuse and optimising resource efficiency
  - Any developments proposing substantial demolition are required to submit an existing building condition and feasibility study, as well as an options appraisal with the aim of optimising resource efficiency
  - Any developments, where the chosen option is substantial demolition, are required to submit a Whole Life-cycle Carbon Assessment (WLCA) submitted as Appendix D to this statement and a Pre-demolition Audit (PDA) submitted as Appendix A to the Circular Economy Statement
  - Developments should meet the London Plan 2021 targets for construction and demolition waste diversion from landfill (95% reused/ recycled/recovered), and 95% of excavation waste to be put to beneficial use
  - All major applications and new buildings are required to submit a Resource Efficiency Plan showing how resource efficiency has been optimised. The Circular Economy Statement prepared by GXN dated December 2023 and Sustainability Statement (this document) satisfy this requirement.
- (10) Sustainable design and construction measures
  - Developments of 500m<sup>2</sup> or larger are required to address sustainable design and construction measures in a Sustainability Statement
  - Developments are required to reduce overheating risk by following the cooling hierarchy.
- (11) Sustainable Assessment Tools
  - Non-residential developments of 500m<sup>2</sup> or larger are required to achieve BREEAM "Excellent", achieving 60% of all available Energy and Water credits and 40% of available Materials credits.

### **Camden's Climate Action Plan**

In June 2020, Camden approved a 5 year "Climate Action Plan" which creates a framework for action across all aspects of the borough with the aim of achieving zero carbon by 2030.

Objectives and actions that affect the proposed development include:

- From 2020, all major developments in Camden are required to be zero carbon (as per the London Plan 2021 definition)
- From 2020, all major developments in Camden are required to calculate whole life-cycle carbon emissions to include all operational and embodied carbon.
- Public spaces will encourage and enable healthy and sustainable travel choices and promote biodiversity.
- Enable electric transport with infrastructure and incentives.

Health and wellness are critical social issues and the Camden Health and Wellbeing Strategy 2022-30 is one of the Council's initiatives to improve the health and wellbeing of Camden residents and reduce health inequalities across the borough.

## 1.3 British Land Sustainability Brief

British Land is committed to sustainability leadership across the development and operation of its buildings. The British Land Sustainability Brief 2030 sets out its ambitions across a range of topics that impact environmental sustainability, many of which go beyond standard practice and/or policy requirements.

Chief amongst these ambitions, British Land is focussed on making the whole portfolio net zero carbon by 2030. This starts with reducing embodied and operational carbon in design by:

- Prioritising retrofit above new build
- Employing circular economy principles in design and construction
- Being innovative in the use of sustainable materials
- Prioritising energy efficiency and renewable energy sources.

Recognising that there will be some residual emissions that cannot be eliminated, British Land offsets these emissions, as a last resort, through payment into its Transition Vehicle. The Transition Vehicle charges projects an internal levy of £60 per tonne of residual embodied carbon. A portion of this levy is used to fund certified carbon offsets, that focus on true carbon absorption, and comply with the BBP and UKGBC guidance on offsetting. The remainder of the levy is used to finance retrofit projects to improve energy efficiency and reduce carbon emissions from the standing portfolio.





Figure 1.4 The British Land Sustainability Brief goes beyond planning policy in several areas

## 1.4 Response to Planning Requirements

In response to the planning policy and the strategic objectives of the London Borough of Camden and the Greater London Authority, the following is how the proposed development responds to these environmental sustainability requirements.

### 1.4.1 Certification

- High-quality certification to validate sustainability claims:
  - The proposed development is targeting BREEAM NC 2018 "Outstanding" for offices with research and development areas
  - Retail areas in the proposed development are targeting BREEAM NC 2018 "Excellent"
  - WELL-ready with sufficient features to enable WELL "Gold" certification with aspiration for "Platinum"
  - Aspiring to at least NABERS 5\* in operation.

### 1.4.2 Energy and carbon

- Net zero embodied carbon:
  - Achieved through embodied carbon design optimisation and carbon-considered procurement
  - Current upfront embodied carbon of 733 kgCO<sub>2</sub>e/m<sup>2</sup> GIA [A1-A5]
  - Current whole life-cycle embodied carbon of 1,262 kgCO<sub>2</sub>e/m<sup>2</sup> GIA [A-C excl. B6&B7]
  - Levels 03-11 are lab-enabled storeys which come with increased embodied carbon intensity not reflected in the GLA benchmarks
  - Residual embodied carbon offset through payment into the British Land transition fund, going beyond the requirements of planning policy
- Net zero operational carbon:
  - Through energy efficiency measures, the development is anticipated to achieve 10% emissions reduction compared to the baseline Part L 2021 building ("Be Lean" stage)
  - The development is anticipated to achieve a further 4% emissions reduction at the "Be Green" stage, bringing the total on site carbon emissions reduction to 14%
  - Residual regulated operational carbon offset through a cash in lieu payment of £795,581 into the Camden Climate Fund

- Current whole building energy demand estimated using a CIBSE TM54 approach as 244 kWh/m<sup>2</sup> for office and lab-enabled split ("Be Seen").

### 1.4.3 Circular economy, materials, and waste

- An exemplar of circular economy, material use, and waste management strategy:
  - Achieved by retaining as much as possible of the existing building, reducing waste and the need for new materials
  - A thorough and transparent Feasibility Study studying the condition of the existing building, and assessing options for redevelopment has been undertaken and is submitted in support of the application for planning permission
  - A pre-demolition audit has been undertaken which is submitted as part of the application for planning permission
  - A detailed assessment of opportunities for on site and off site deconstruction waste reuse/upcycling/recycling are considered and captured in the Strategy for Material Recovery submitted as Appendix B to the Circular Economy Statement
  - Prototyping innovative approaches for structural reuse of concrete and recycling of building glass at scale, with ambition to publish the findings
  - Designing a structure that is long-lasting and adaptable, with elements designed to be disassembled and recovered for reuse
  - Considering the different building elements in layers to enable maintenance and replacement that minimises destructive impacts on other building elements (especially structure)
  - Designing a modular facade with the intention of utilising off-site manufacturing to reduce waste
  - Using reused and/or high recycled content materials where possible, targeting 25% recycled content by value
  - Improving end of life reusability by committing to capture useful data for key building elements in material passports
  - Landfill diversion and waste management, targeting:
    - Zero biodegradable waste to landfill
    - 98% of demolition waste diverted from landfill
    - 96% of construction waste diverted from landfill
    - 95% of excavation waste to beneficial use.

## Carbon and Energy

- 01 **Net zero carbon in construction and operation** with embodied carbon offsetting into British Land's Transition Vehicle, and regulated operational carbon offsetting into the Camden Climate Fund
- 02 **Carbon-driven system design** following "use less stuff" hierarchy
- 03 **Low-carbon material specification** and procurement
- 04 **Fabric-first passive design approach** (optimised glazing ratios and passive solar shading) to reduce energy demand and operational carbon emissions
- 05 **Decentralised ventilation strategy** for closer matching of systems to building demand
- 06 Photovoltaic panels located at roof for **on-site renewable electricity generation**.

## Circular Economy

- 01 **Retention of existing foundation and core** structures to avoid new carbon emissions and waste
- 02 Innovative strategy for **prototyping reuse of existing in-situ concrete elements**
- 03 Pioneering approach to **building glass recovery** to facilitate closed loop recycling
- 04 Unique material strategies aiming to **minimise downcycling and maximise reuse / upcycling**
- 05 Clear floorplates with **regular grids designed for flexibility** in use
- 06 Primary structure designed to be **adaptable and disassemblable**
- 07 **Soft core structural principle** enables further adaptability by enabling flexibility in core elements.

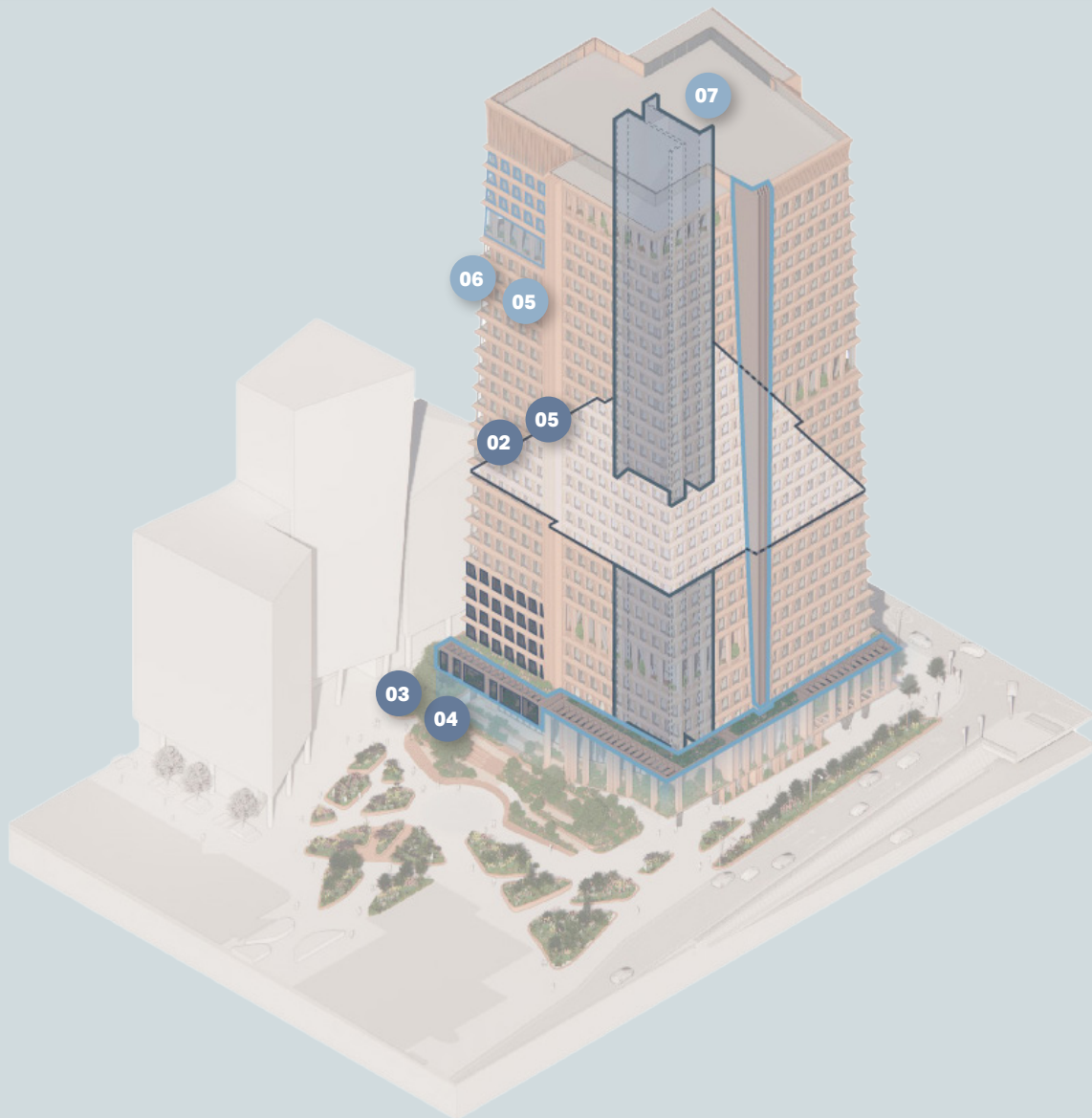


Figure 1.5 Overview of key carbon, energy, and circular economy strategies in the proposed development

#### 1.4.4 Climate resilience, greening, and biodiversity

- Climate resilient, green, and future-proofed:
  - Use of green/blue roofs, in addition to vegetated areas and bio-retention features in the landscaping, as part of a Sustainable Drainage System (SuDS) that manages surface water runoff and filters rainwater
  - Achieve surface water runoff rates of 3.0 l/s, and a 96% reduction in surface water discharge compared to the pre-development condition (1-in-100 year)
  - Mitigation of urban heat island effect through green roofs and biodiverse planting, achieving:
    - Urban Greening Factor (UGF) 0.386
    - Biodiversity Net Gain (BNG) 26.90%
  - Microclimate studies resulting in improved wind conditions compared to the existing situation, through the building and landscaping design
  - Extensive passive design measures and facade design to limit solar heat gain and admit daylight as a means of future proofing the proposed development and managing overheating risk
  - Strategic integration of openable vents as a means of passive ventilation and cooling
  - Mechanical system design and stormwater drainage designs with allowances for future climate change.

#### 1.4.5 Water conservation

- Responsible water use and reuse:
  - Targeting a minimum 40% potable water reduction compared to BREEAM NC 2018 baseline, exceeding the London Plan requirement of BREEAM "Excellent" standards for Wat 01 water category

- Specification of low-flow fittings and fixtures wherever possible
- Innovative StoFlow system designed to passively store rainwater for WC flushing
- Non-potable water use reduction through use of rainwater and greywater harvesting.

#### 1.4.6 Local impacts and pollution

- Air quality neutral:
  - Achieved through an all-electric infrastructure with no on site combustion for heating and cooling, and car-free development except for accessible bays (space provision only for back-up tenant generator).

#### 1.4.7 Sustainable transport and active travel

- Incentivising low carbon transport:
  - Provision of end of trip facilities complete with 951 cycle parking spaces (long-stay spaces located in a secure basement), in line with London Plan minimum cycle parking standards
  - To further promote the cycle mode share, end of trip facilities includes changing rooms, lockers, showers, WCs, maintenance facilities, and water dispensers
  - A car-free development with car parking only for accessibility needs (two blue-badge bays).



## Green and Blue

- 01** External planting targeting **0.3 urban greening factor (UGF)**
- 02** Improved biodiversity targeting at least **10% biodiversity net gain (BNG)**
- 03** External and internal environments designed to incorporate **direct and abstract biophilia**, potential for incorporation of planted terraces / amenity areas
- 04** Investigation of **biodiversity enhancing measures** as identified in the preliminary ecological assessment
- 05** **Water efficient fixtures and fittings** as standard
- 06** **Greywater and rainwater harvesting** to reduce potable water demand
- 07** **Innovative StoFlow system** to passively store rainwater for WC flushing and reduce potable water demand
- 08** **Green links** connecting into green corridors of biodiversity within Camden.

## Wellbeing and Social Sustainability

- 01** Co-design for publicly-accessible space and programming with **extensive community engagement**
- 02** **Activated public realm** that invites users up and into the podium
- 03** Design guidelines developed considering a **broader view of diversity and inclusivity** (experience, comfort, and health and addition to accessibility)
- 04** Innovation pushed to the facade to let **the building attract and showcase** what's happening inside
- 05** Inclusion of **restorative spaces** to allow people to relax and regenerate
- 06** Opportunities for **natural ventilation** for direct environmental control and improved well-being
- 07** **Underfloor air supply** with 100% fresh air for improved indoor air quality and low-energy cooling.



Figure 1.6 Overview of key green, blue, and wellbeing strategies in the proposed development

## 1.5 Supporting Information

This Sustainability Statement should be read in conjunction with the documentation forming the full planning application, and in particular:

- Design & Access Statement prepared by 3XN dated December 2023
- Planning Statement prepared by Gerald Eve dated December 2023
- Feasibility Study<sup>1</sup> prepared by GXN dated November 2023
- Circular Economy Statement prepared by GXN dated December 2023
- GLA Whole Life-cycle Carbon Assessment Template prepared by Sweco dated December 2023
- Energy Statement prepared by Arup dated December 2023
- Noise Impact Assessment prepared by Hann Tucker Associates dated December 2023
- Operational Waste Management Plan prepared by Velocity Transport Planning dated December 2023
- Arboricultural Impact Assessment prepared by SJ Stephens Associates dated December 2023
- Drainage and SuDS Strategy prepared by Arup dated December 2023
- Flood Risk Assessment prepared by Arup dated December 2023
- Statement of Community Involvement and Social Impact prepared by London Communications Agency dated December 2023
- Public Realm and Landscape Design Statement prepared by DSDHA dated December 2023
- Biodiversity Net Gain Assessment prepared by Greengage dated December 2023
- Environmental Statement prepared by Trium Environmental Consulting dated December 2023.

<sup>1</sup> In response to London Plan Policies D 3 and SI 7 for a pre-redevelopment audit and Camden Local Plan Policy CC1 to justify proposals with significant demolition



Figure 1.7 Model of the proposed development





2



Euston Tower

# Environmental Design and Sustainability

## 2.1 Approach

The proposed development takes a holistic approach to sustainability, using GXN's three-tier methodology. This approach ensures that sustainability and wellbeing are considered in a systematic manner, and integrated within the design process. It also facilitates continuous innovation and the exploration of ideas that go beyond planning policy and best-practice.

Together with regional and local planning policy, the approach is founded on third-party, verified certifications, and the British Land Sustainability Brief. The proposed development is targeting BREEAM "Outstanding" and WELL-ready with sufficient features to enable WELL "Gold" certification with aspiration for "Platinum". As a measure of its in-use energy performance, the proposed development is aspiring to achieve at least NABERS 5\* in operation.

Beyond certification, the proposed development employs a series of best-in-class design strategies across all major areas of building design, construction, and operation: carbon, energy, water, materials, waste, biodiversity, circularity, and wellbeing.

As a marker of the scheme's ambitions, the proposed development seeks opportunities to challenge business as usual, and deliver innovative and inspirational sustainability solutions for key areas, such as the approach to deconstruction and material reuse, building glass recycling, and in-situ concrete reuse in structural applications.

The proposed development intends to be an exemplar of how to work with existing buildings at scale: conducting a detailed and forensic feasibility study to understand the potential of the existing building, and aspiring to be a Net Zero Carbon Frontrunner with certified offsetting used only as last resort.

The proposed development aims to be a Circular Economy Pioneer, by prototyping innovative approaches for reuse/ recycling of difficult-to-handle materials like concrete and glass from the deconstruction, and by ensuring that key elements of the redevelopment can be disassembled non-destructively and recovered for reuse at end of life.

Finally, the proposed development is designed to support eudaimonia and delight for its users, both those within the building and those experiencing it from the enhanced public realm.

Following this approach, the proposed development aims to set a new standard for how to transform existing buildings, and be an exemplar sustainable science, technology, and an innovation building that other developments can aspire to, as well as one with which the local community can identify and be proud.

The approach is shown diagrammatically in Figure 2.1.

## Approach to sustainable design

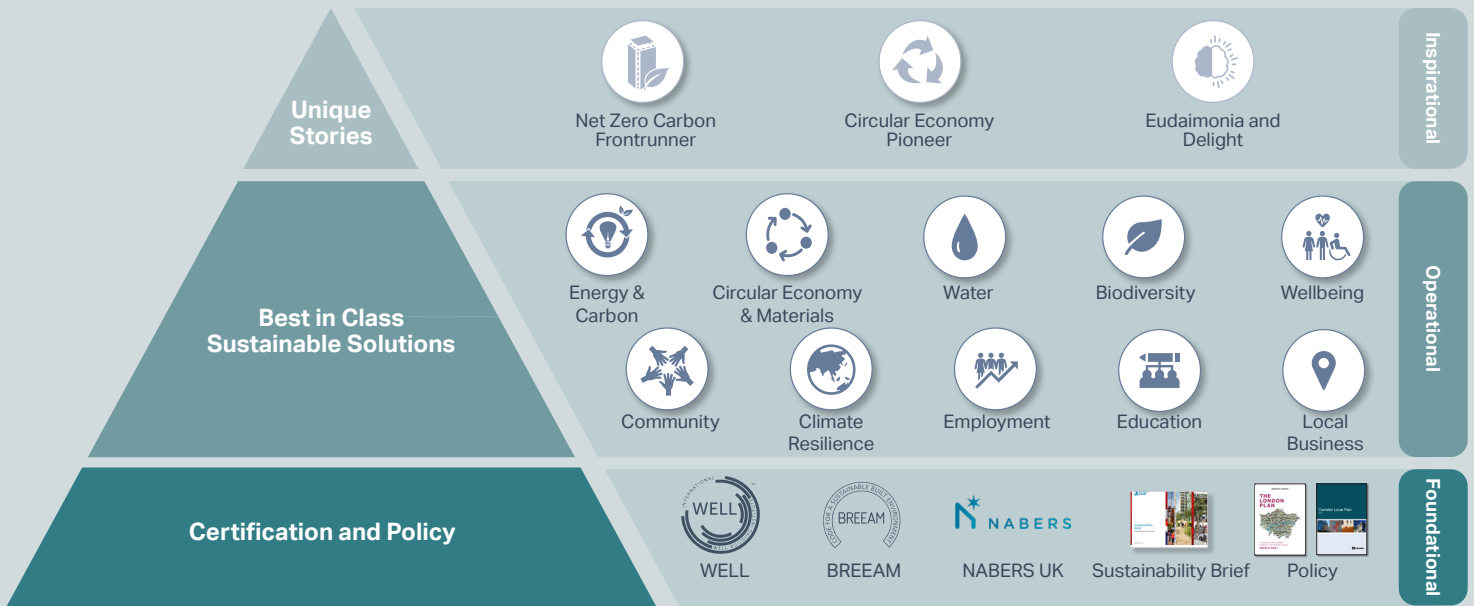


Figure 2.1 The proposed development's approach to delivering a sustainable building for now and the future

## 2.2 Certification

BREEAM and WELL pre-assessments have been conducted by Sweco to demonstrate the environmental and well-being credibility of the proposed development. These pre-assessments are summarised in this section.

### 2.2.1 BREEAM

The Camden Local Plan (2017) in Policy CC2 expects all non-residential development of at least 500 m<sup>2</sup> to achieve BREEAM "Excellent" certification. CPG Energy efficiency and adaptation (2021), requires achieving the following sub-targets in the BREEAM rating:

- 60% of all available Energy credits
- 60% of all available Water credits
- 40% of all available Materials credits.

The proposed development is targeting BREEAM "Outstanding" certification for Office with Research and Development Areas, exceeding local planning policy requirements. It will also achieve the minimum sub-targets as identified above. The retail portions of the proposed development are targeting BREEAM "Excellent". The proposed development will be assessed under the BREEAM New Construction (NC) 2018 scheme for shell & core.

To be awarded an "Outstanding" rating, the proposed development will need to achieve a score of at least 85% at both Design Stage (DS) and Post Construction Stage (PCS) assessments under the appropriate scheme.

The pre-assessment for the offices with research and development areas, conducted during RIBA Stage 2, indicates that the targeted credits result in a score of 85.99%. This exceeds the threshold of 85% required for "Outstanding" certification. The pre-assessment for retail areas indicates that the targeted credits result in a score of 76.92%. This exceeds the threshold of 70% required for "Excellent" certification.

The results of the current pre-assessment are shown in Figure 2.2.

A pre-assessment outlines a possible route for achieving the targeted BREEAM rating. The individual credits identified at this stage may vary as the design develops and during construction, although the overall target rating will still be tracked. In addition to the targeted credits, the pre-assessment identifies several potential credits that are continually monitored for possible adoption. These potential credits are intended to protect the "Outstanding" rating against future changes in design. The potential credits take the BREEAM score for the offices with research and development areas to 95.02%.

Beyond exceeding the minimum score threshold of 85%, the proposed development needs to meet a set of pre-requisites for "Outstanding" certification:

- Man 03 Responsible construction practices: 2 credits
- Man 04 Commissioning and hand over: 1 credit and Criterion 11
- Ene 01 Reduction of energy use and carbon emissions: 6 credits
- Ene 02 Energy Monitoring: 1 credit
- Wat 01 Water consumption: 2 credits
- Wat 02 Water monitoring: Criterion 1 only
- Mat 03 Responsible sourcing of construction products: Criterion 1 only
- Wst 01 Construction waste management: 1 credit
- Wst 03 Operational waste: 1 credit.

The full pre-assessment is included in Appendix A.

## BREEAM pre-assessment results

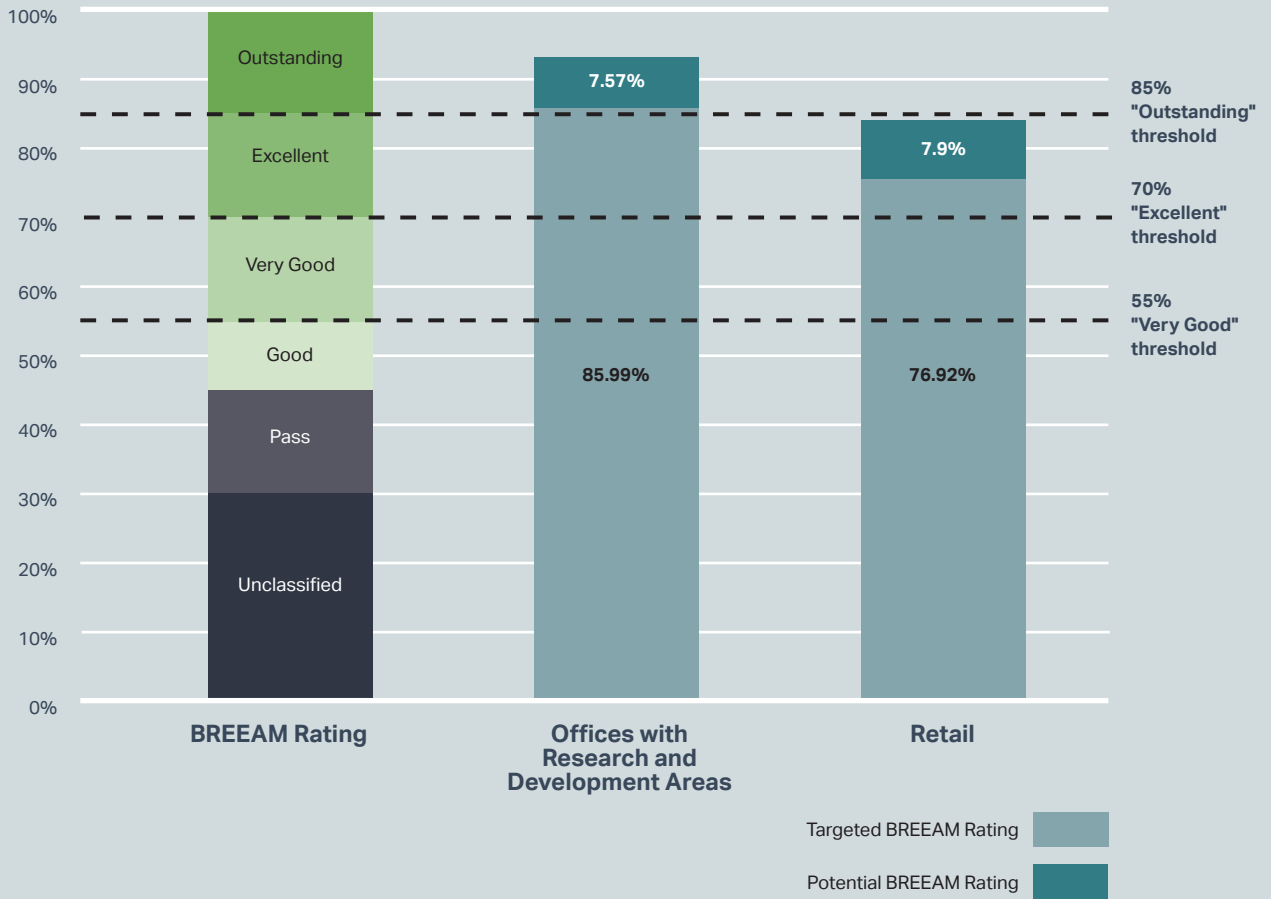


Figure 2.2 Figure: Chart illustrating the estimated project score comparison against BREEAM rating requirements for the offices with research and development areas, and retail areas.

## 2.2.2 WELL Building Standard

The WELL Building Standard is a relatively new building certification scheme that was launched in the United States in 2014. While BREEAM focuses on setting targets towards improving the environmental sustainability credentials and energy efficiency of the building itself, WELL is focused upon the health and wellbeing impacts of the building on its occupants.

While there is no planning policy requirement for WELL certification, British Land is committed to developing a scheme that is WELL-ready, as part of its holistic sustainability ambitions. WELL-ready involves including as many WELL v2 Core features in whole or in part as feasible into the design so that it enables a potential tenant's ability to achieve WELL v2 Certification.

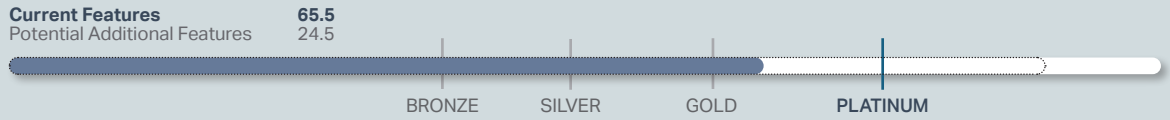
The proposed development is targeting features to enable WELL "Gold" certification with aspiration for "Platinum".

A full pre-assessment of the WELL Building Standard has been conducted by Sweco. The pre-assessment has been conducted under the WELL v2 Core Q4 2022 framework for Core & Shell buildings. The pre-assessment anticipates a score of 65.5 (sufficient for "Gold"), with a further potential of 24.5 points which would be sufficient for "Platinum".

The results of the current pre-assessment are shown in Figure 2.3.

The full pre-assessment is included in Appendix B.

## WELL pre-assessment results



### Feature Summary

WELL-ready

#### Totals by concept by response

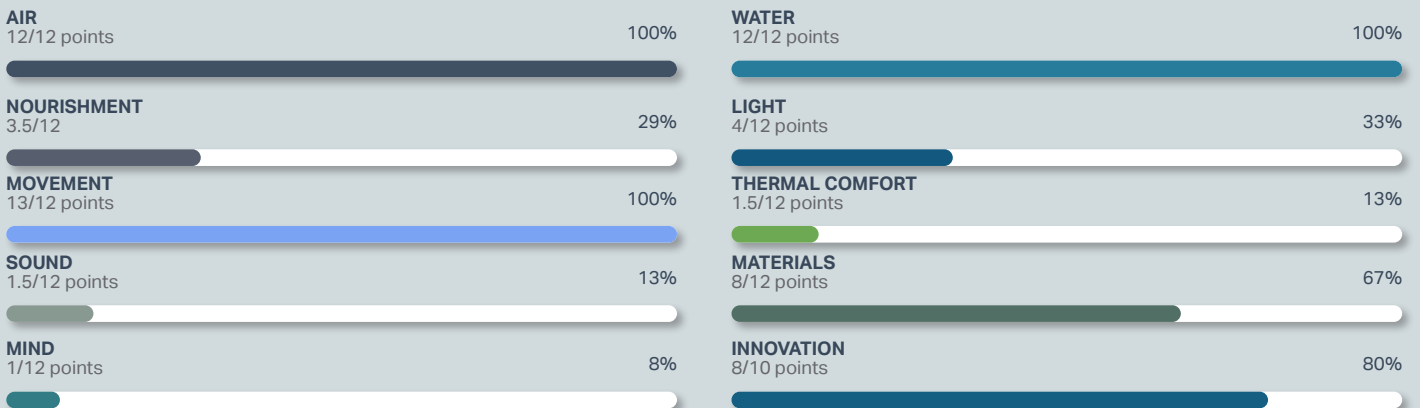


Figure 2.3 Current WELL scorecard based on the pre-assessment

## 2.3 Circular Economy

### 2.3.1 General

The proposed development supports London and Camden's ambition to transition from a linear to a circular economy. The circular economy refers to the concept of keeping materials/products in use at their highest value for as long as possible.

The proposed development aims to be an exemplar of the circular economy by:

- Conducting a detailed feasibility study to understand the potential of the existing building for reuse
- Prototyping approaches for reuse/recycling of difficult-to-handle materials from the deconstruction
- Driving innovation by upcycling/transforming materials from the deconstruction to reduce waste and the reliance on raw materials
- Ensuring that the proposed development is designed for longevity with an ability to flex and adapt to changing needs
- Enabling disassembly and reuse at end of life to minimise future waste.

### 2.3.2 Targets

The proposed development has ambitious aspirations for the circular economy and is targeting the following:

- Construction and demolition waste  
98% diversion from landfill\*
- Construction waste  
96% diversion from landfill\*
- Excavation waste  
95% to beneficial use
- Municipal waste  
Contributing to achieving 65% recycling by 2030
- Business waste  
Contributing to achieving 75% recycling by 2030.

### 2.3.3 Circular Economy Approach for Existing Building

The circular economy approach for the proposed development is to first maximise reuse of the existing building in accordance with London Plan Policies D3 and SI 7 and Camden Local Plan Policy CC1.

A considered and rigorous investigation into the condition of the existing Euston Tower was conducted, exploring opportunities for retention, reuse, and recycling while transforming the building into a building fit for the future. The detailed feasibility study was prepared in response to London Plan Policies D 3 and SI 7 for a pre-redevelopment audit and Camden Local Plan Policy CC1 to justify proposals with substantial demolition. It concluded that a scenario that retains the foundation, basement, and central core (31% of the existing structure) was the optimal proposal, as it enabled the best balance of retention, carbon, quality, future-proofing, and health & safety.

The full feasibility study is included as part of this planning application (refer to the *Feasibility Study prepared by GXN dated November 2023*).

Where retention is not feasible, opportunities for the best use of deconstruction waste have been considered. A pre-demolition audit has been conducted to assess the quantity and quality of the materials that are not retained in the proposed development.

A guiding hierarchy, based on the waste hierarchy, has been developed to approach the end of life routes for the material generated in the deconstruction. The hierarchy is shown in Figure 2.4. The proposed development aims to keep elements as high up the hierarchy as possible, with downcycling as a last resort.

Special attention is given to difficult-to-handle materials like concrete and glass, and the proposed development is prototyping approaches for reusing in-situ concrete in structural applications, and returning disused facade glass to the float lines for recycling into high-quality flat glass.

Following this approach, at least 98% of the demolition waste will be diverted from landfill, 96% of the construction waste will be diverted from landfill and 95% of excavation waste will be put to beneficial use. This satisfies the requirements of London Plan Policy SI 7 and Camden Local Plan Policy CC1.

More details on the strategies for specific materials are detailed in the Circular Economy Statement which forms part of this planning application. Refer to the *Circular Economy Statement prepared by GXN dated December 2023*.



## Material Reuse and Recycling Hierarchy

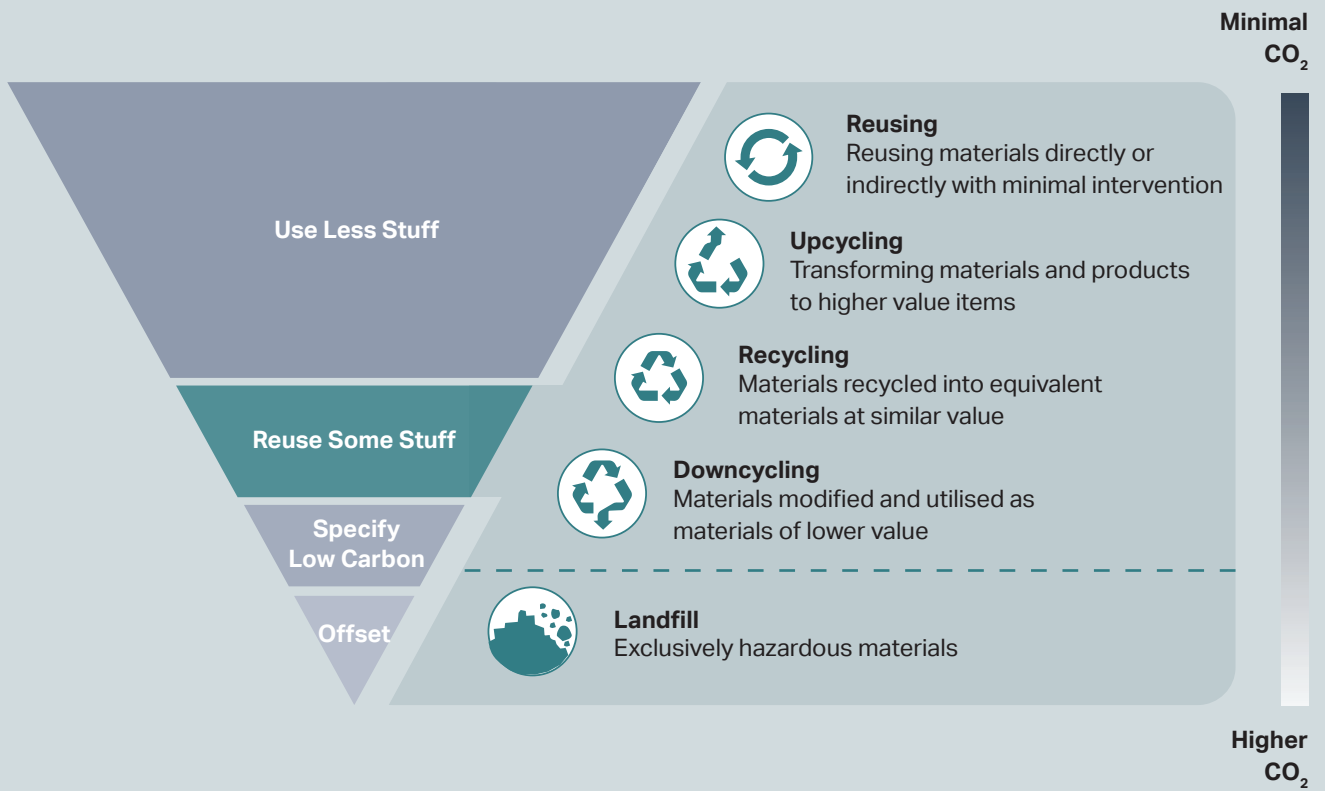


Figure 2.4 The guiding hierarchy used to approach end of life routes for all deconstruction materials as per of wider net zero carbon design hierarchy

#### 2.3.4 Feasibility Study Summary

The feasibility study into the condition of the existing Euston Tower and opportunities for retention was prepared in response to London Plan Policies D3 and SI 7 and Camden Local Plan Policy CC1.

In the context of London Plan Policy SI 7, it satisfies the requirement for a pre-redevelopment audit that demonstrates that options for retention are fully explored before considering any demolition. In the context of Camden Local Plan Policy CC1, it satisfies the requirement for a condition and feasibility study, and options appraisal for any development proposing substantial demolition.

The full feasibility study comprises three volumes (in addition to a summary known as Volume Zero), and has been third-party, independently reviewed on behalf of London Borough of Camden. The process is shown in Figure 2.2. The full feasibility study is included as part of this planning application (refer to *Feasibility Study prepared by GXN dated November 2023*), and the following provides a summary for reference.

# Feasibility Study Process

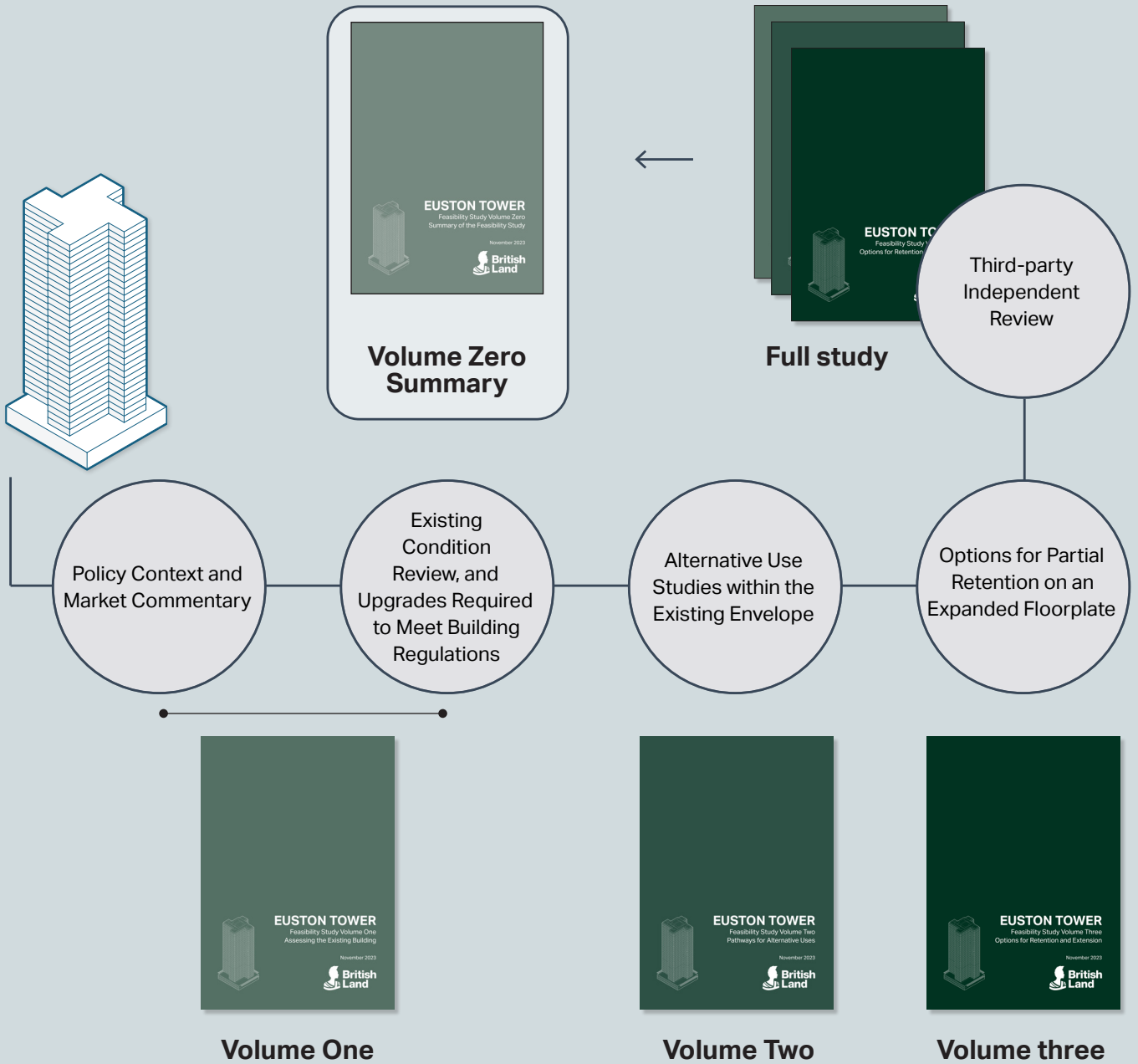


Figure 2.5 Overview of the feasibility study process

### **Volume One - Assessing the Existing Building**

Volume One explored, in detail, the condition of the existing tower. It considered the planning policy relating to the future use of Euston Tower, as well as market requirements for continued commercial use of the tower. It presented an appraisal of the operation of the existing building, including an assessment of the building services. Finally, it sets out the upgrades required to comply with current legislation, based on a technical review looking at the condition of the architecture, structures, and facade.

The assessment identified the following primary points about the existing building:

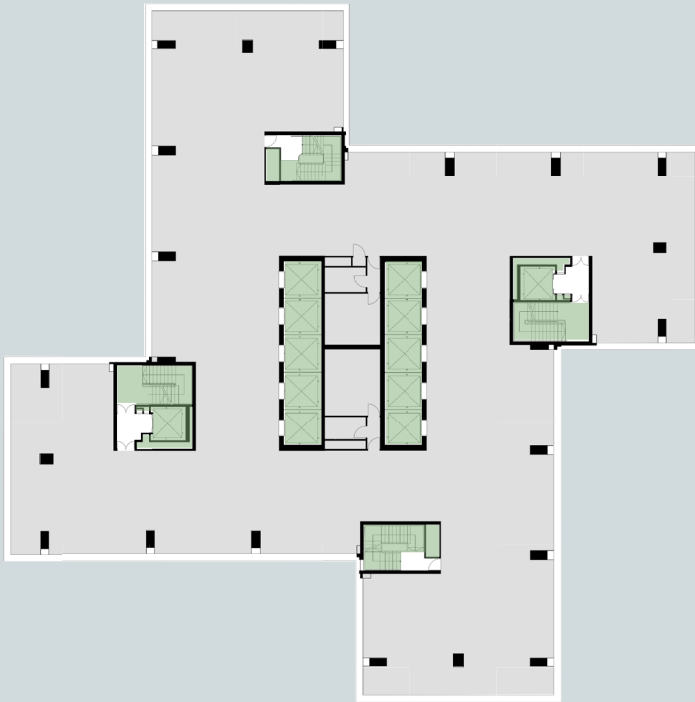
- Concrete structure is generally in a reasonable condition and able to support the current building loads
- The layout of the floorplates is disconnected meaning that the existing space hard to navigate for modern open-plan offices
- Uninviting and closed-off building with a reflective glass facade
- A facade that does not meet modern fire or energy performance requirements
- No current connection or use to local residents or the wider community
- A challenging structure to adapt and improve through minor refurbishment, due to the ribbed slab structure resulting in service penetrations being larger than they need (see Figure 2.6)
- Unattractive and undesirable to modern occupiers, and has been challenging to let since the early 2010s, and vacant since 2021
- Low floor to ceiling heights (2.38 – 2.48m depending on the upgrade strategy pursued), meaning that it would be challenging to accommodate modern occupiers' needs and servicing requirements (floor to ceiling heights of 2.6m and above) and lab-enabled commercial space fit for the future
- Services equipment is beyond its serviceable life
- Building doesn't comply with current Building Regulations and would need significant changes to make it safe and suitable for modern occupiers including fire safety measures such as sprinklers, mechanical smoke ventilation and dedicated fire fighting lifts.

Options were studied for how to address the Building Regulation non-compliances, and bring the building back into use. Where structural interventions would be required, the resulting impact on the structure is exaggerated because entire slab zones need to be removed if any portion of the existing ribbed system is overlapped by new vertical penetrations. Refer to Figure 2.6.

Ultimately, the building does not support the level of services required for a modern commercial development, particularly with regards to fire, ventilation and energy performance (Approved Documents B, F, and L respectively).

Volume One concluded that the extent of upgrades required for continued office use, and the quality and quantum of compromised space delivered, would make the resulting product challenging in the leasing market and confirmed that the refurbishment of the existing Euston Tower for commercial use was not a feasible option.

## Existing Floorplate



## Upgraded Floorplate

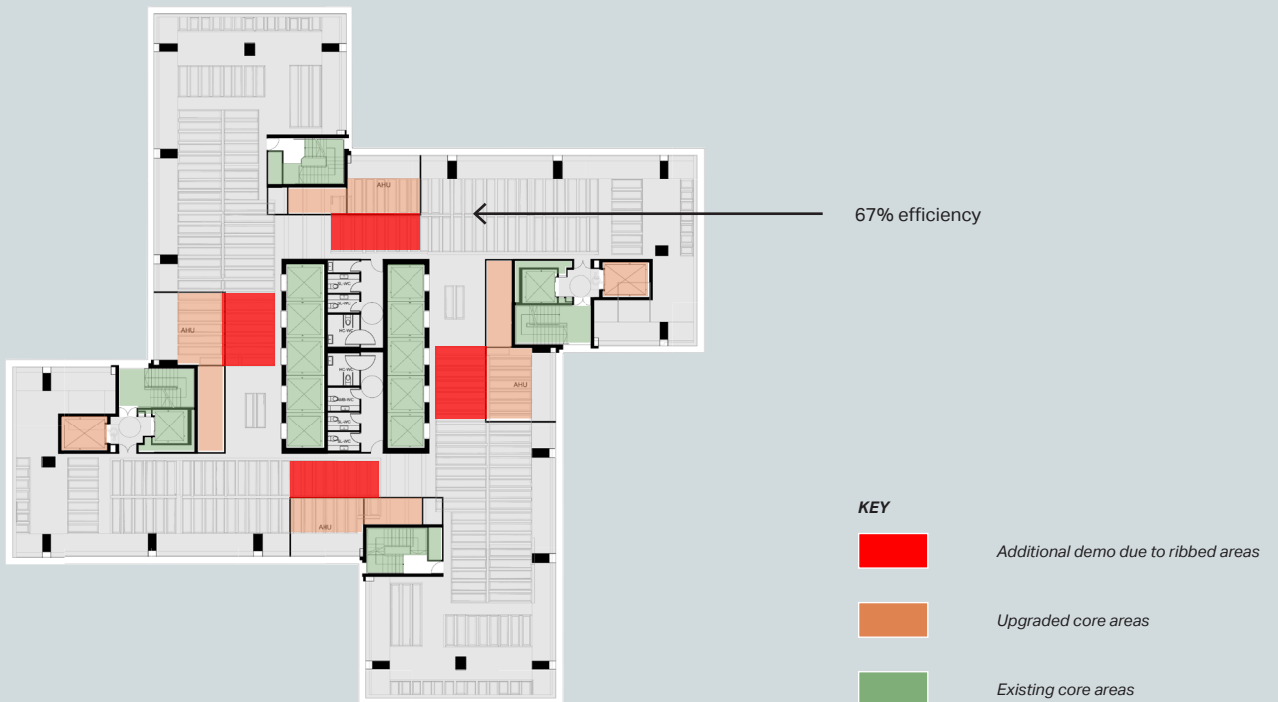


Figure 2.6 Diagram showing erosion of floor slab and exaggerated penetrations due to upgrades to meet current Building Regulations

## Volume Two - Pathways for Alternative Uses

Notwithstanding the strong policy position which protects against losing existing office space, the following alternative uses were studied for the existing building, refer to Figure 2.7:

- **Commercial developments**
  - Commercial office only (Volume One)
  - Commercial office with laboratory (life sciences / innovation)
- **Residential-led mixed use**
  - Residential with commercial office
  - Residential with laboratory
  - Residential with hotel
- **Hotel/Student Housing developments**
  - Hotel only
  - Hotel with student housing.

For each use a thorough technical assessment was undertaken, and regardless of use, the same primary issues identified in the existing building assessment (building regulations, fire safety, performance) need to be addressed before the building can be brought back to life.

As for offices, the existing structural loading capacity was shown to be sufficient for any of the alternative uses, with the exception of laboratories which require more extensive structure. However, the dynamic response of the structure (how much it vibrates at a microscopic scale) was shown to be more challenging, especially for uses with bedrooms where users are more likely to be sensitive to vibrations.

Fire safety was identified as a challenge for mixed-uses. In addition to providing dual fire escapes, each separate use requires independent firefighting provisions and fire escape routes. Practically this precludes combining more than two distinct uses, as the efficiency of the floor layout would be severely eroded with the additional space required for the independent fire safety requirements.

The ceiling zone required to accommodate modern, energy-efficient building services for residential use was challenging to fit within the height between the existing storeys of 3.2m, while delivering the clear ceiling heights recommended by The London Plan Policy D6, and the Mayor of London's Housing Design Standards published in June 2023.

It was shown that this junction of Euston Road and Hampstead Road is also not ideal for residential accommodation, due to the relatively poor air quality and the noisy environment on the junction. An Air Quality Assessment was undertaken and recommended against having openable windows in the lower portion of the tower, which further makes delivering good quality residential apartments in this area difficult. Similarly, the noisy environment due to the 24-hour road noise and the nearby A&E department are not ideal for noise sensitive uses like residential, hotel, and student accommodation.

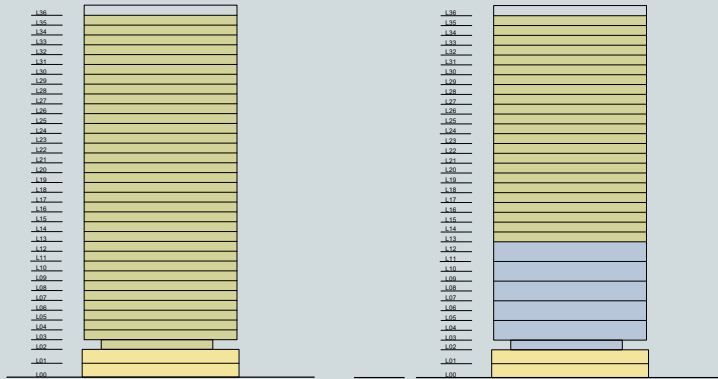
In addition to the issues outlined above, the resulting floor layouts for residential, hotel, and student accommodation are compromised due to the following:

- Several single-aspect units (and some north-only facing meaning they never get direct sun)
- Some self-shaded units due to overshadowing from the shape of the existing building
- Several narrow inefficient units with lots of wasteful circulation space
- In some cases, long corridors with no daylight
- No outdoor private amenity due to wind conditions.

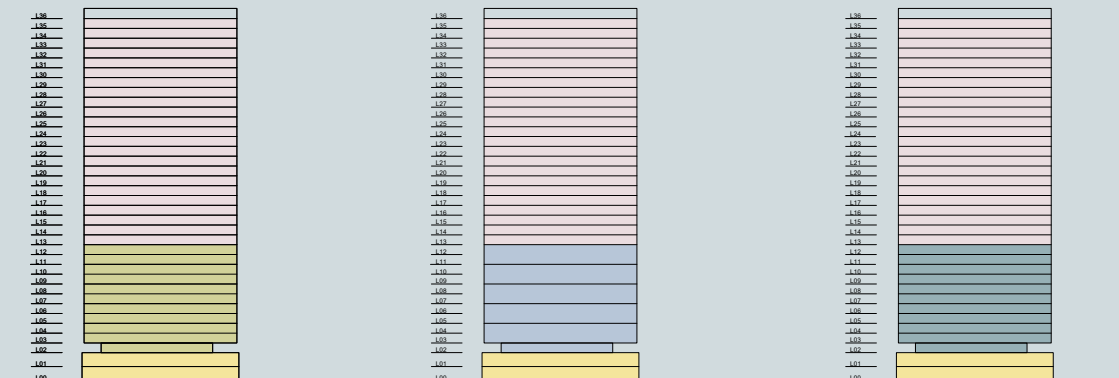
Notwithstanding the policy protection for commercial land use within the Central Activities Zone and the Knowledge Quarter, none of these options were ideal, and if pursued, would generally result in low quality, compromised accommodation that doesn't meet current GLA guidelines, and would be challenging to deliver cost-effectively.



## COMMERCIAL-LED DEVELOPMENTS



## RESIDENTIAL-LED DEVELOPMENTS



## HOTEL / STUDENT HOUSING DEVELOPMENTS

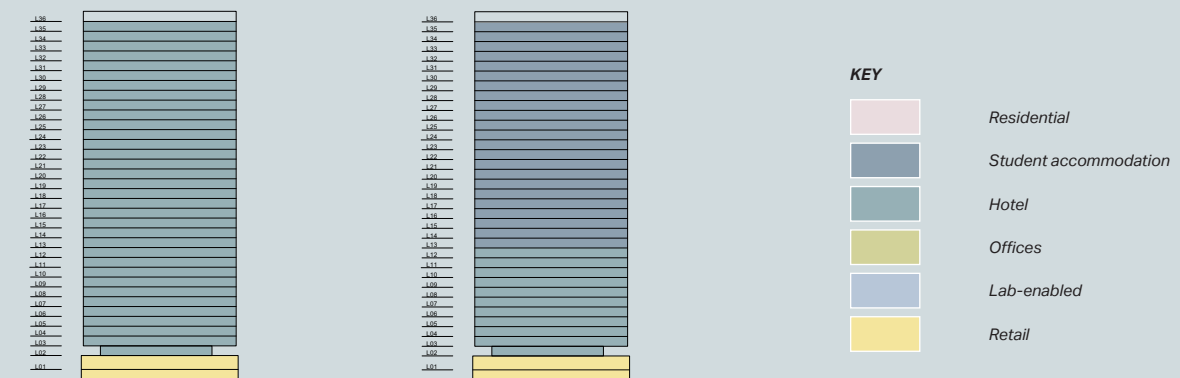


Figure 2.7 Stacking diagrams for use cases explored in Volume Two of the feasibility study

### **Volume Three - Options for Retention and Extension**

It was agreed that the best use of the existing building was continued commercial use, based on the findings of Volume Two of the Feasibility Study.

The following options were studied for delivering the project vision, generating additional value, while retaining as much of the existing building as possible, refer to Figure 2.8:

- **Major Refurbishment**
- **Retention and Partial Extension (Max Retention)**
- **Retention and Extension ("Full" Retention)**
- **Partial Retention and Extension (Disassemble and Reuse)**
  - Retain consecutive slabs (office)
  - Retain consecutive slabs (office and lab-enabled)
  - Retain interstitial slabs (office)
  - Retain interstitial slabs (office and lab-enabled)
  - Retain the core
- **New Build.**

For each option a thorough technical and design assessment was undertaken. The assessments considered: how much of the existing building could be retained (in terms of material and carbon emissions), the quality of the resulting floor layouts (to be attractive to a modern user), future flexibility and adaptability (the tower must be fit for the future), and health & safety (it must be buildable in the safest way possible).

Daylighting levels were assessed, and it was shown that the areas of well-daylit space reduce materially when the size of the floor is extended, even by a small amount. The reduction in well-daylit space is alleviated by increasing the floor to floor height. Increasing the existing floor to floor height to deliver more well-daylit space is necessary to create the high quality spaces that are attractive to large tenants, who are essential to a successful letting strategy for a building of this scale, and to deliver on the environment the Knowledge Quarter is seeking to foster.

Whole Life-cycle Carbon Assessments (WLCAs) were conducted for selected options with varying degrees of existing building retention. For each option, these assessments estimated the total carbon emissions (considering deconstruction, construction, and operation of the buildings) anticipated to be emitted over the building's lifetime, assuming all office use so as to provide a clear comparative assessment. The Retain the Core option has the lowest estimated whole life-cycle carbon emissions when compared with the other options that resolve the floor to floor height issues previously described. This is in spite of the Retain the Core Option retaining 31% (by volume) of the existing structure compared to 42% (by volume) for the Retain Interstitial Slabs option.

On balance, the Retain the Core option is identified to be preferable. This is because it offers the best balance of structural retention, quality, flexibility (it does not inherit many of the limitations of the existing building risking premature obsolescence), and adaptability (a floor system that could be adapted over time and disassembled easily at its eventual end of life). And it does so with a whole life-cycle carbon position that is the lowest of the options that deliver the quality of space which is necessary for the redevelopment of Euston Tower to be successful.

### **Third-party Independent Review**

Throughout the pre-application process, which began in February 2022, there has been constant dialogue and review with the London Borough of Camden.

In April 2023, Camden Council appointed third-party experts to conduct a technical review on their behalf. The full study has undergone review by the appointed third-party assessor, and their report has been issued to Camden.

Least Deconstruction

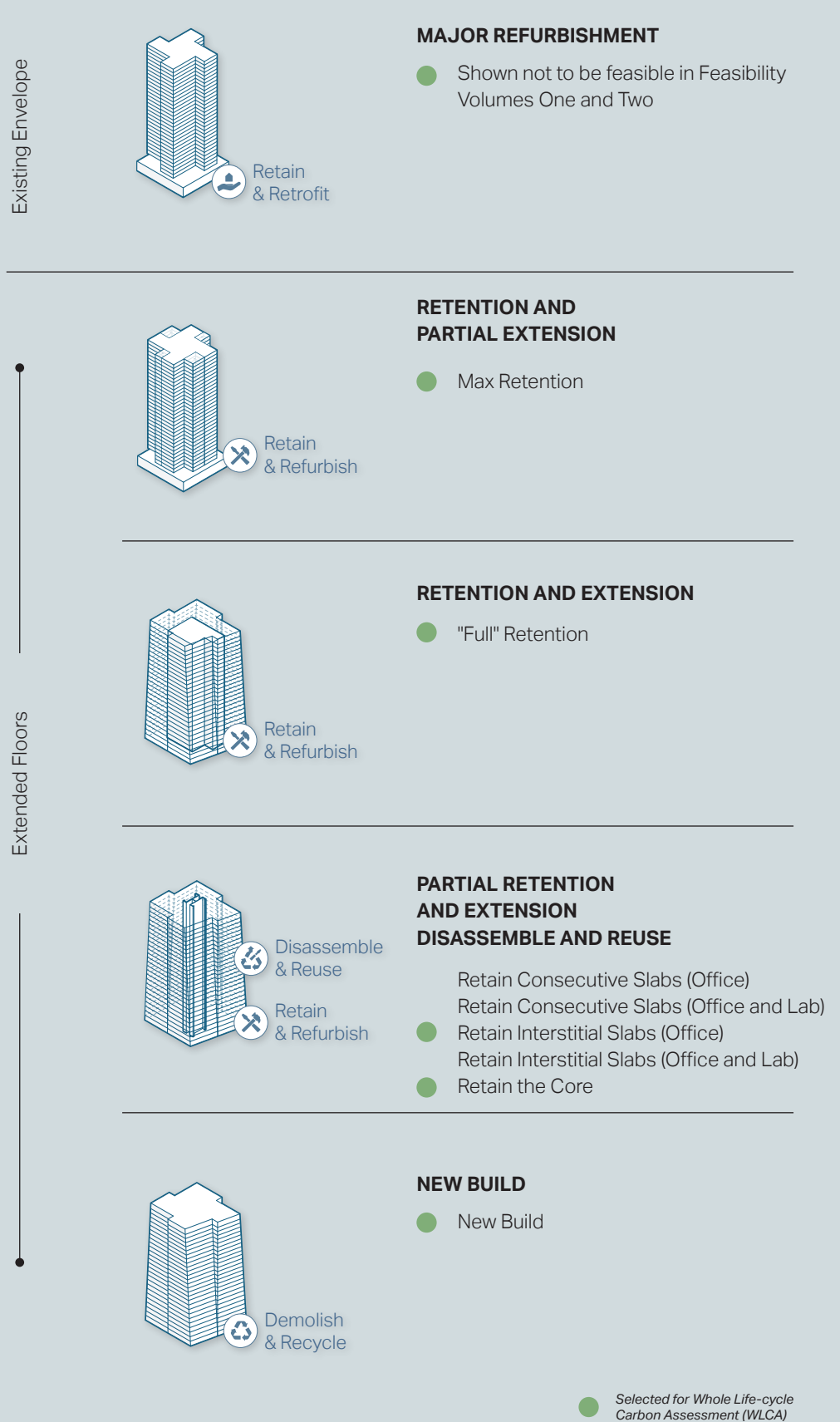


Figure 2.8 Overview of options studied

### 2.3.5 Circular Economy Approach for New Building

The decision tree for design approaches for new buildings provided in the GLA Circular Economy Statement Guidance has been used for determining the most appropriate circular economy approach for the proposed development. This is shown in Figure 2.9.

The proposed development will be designed for longevity, flexibility, and adaptability, aiming to prevent the premature obsolescence exhibited by the existing tower. The overall recycled content (by value) target is 25%.

The design principles to enable this are considered across all layers of the building, with special focus applied to the structure as it is the most carbon-intensive element, and is seen as foundational for achieving meaningful long-term adaptability.

The principles adopted in the proposed development include:

- A structure designed for adaptability, disassembly, and recoverability at end of life
- Other building layers designed to be independent from the primary structure as far as possible
- A "soft core" that enables expansion of the core elements with minimised intrusion and waste
- A modular facade on a regular grid that makes it flexible to changing internal layouts
- Internal flexibility through a rational grid, central core and generous floor to floor height
- Decentralised ventilation systems with minimal on-floor services enabling easier reconfiguration and accessibility for maintenance and replacement
- Space plans that can accommodate single or multi-tenant layouts, with certain storeys (Levels 03 - 11) accommodating lab spaces or typical office.

The proposed development applies all six principles and maximises their implementation across the different building layers.

The principles are:

1. Building in Layers
2. Designing out Waste
3. Designing for Longevity
4. Designing for Adaptability or Flexibility
5. Design for Disassembly
6. Using systems, elements or materials that can be reused and recycled.

The approaches have been developed collaboratively through regular workshops during RIBA Stages 1 & 2. The key aim is to deliver a tower that has low whole life-cycle carbon emissions, and one that can be easily adapted to flex to the changing needs of the future.

Full details are included in the Circular Economy Statement which forms part of this planning application. Refer to the *Circular Economy Statement prepared by GXN dated December 2023*.

### 2.3.6 Waste in Operation

An Operational Waste Management Plan (OWMP) has been prepared by Velocity Transport Planning. The OWMP sets out how waste will be managed in accordance with waste hierarchy to improve recycling rates.

The proposed development will contribute to achieving the London Plan Policy SI 7 target of 65% municipal waste recycling by 2030, and the London Environment Strategy target of 75% business waste recycling by 2030.

To facilitate this, dedicated areas will be provided on site for the following segregated waste streams:

- Residual waste
- Dry mixed recycling
- Food waste
- Glass waste.

The OWMP is included as part of this planning application. Refer to the *Operational Waste Management Strategy prepared by Velocity Transport Planning dated December 2023*.

## GLA CE Decision Tree for New Buildings

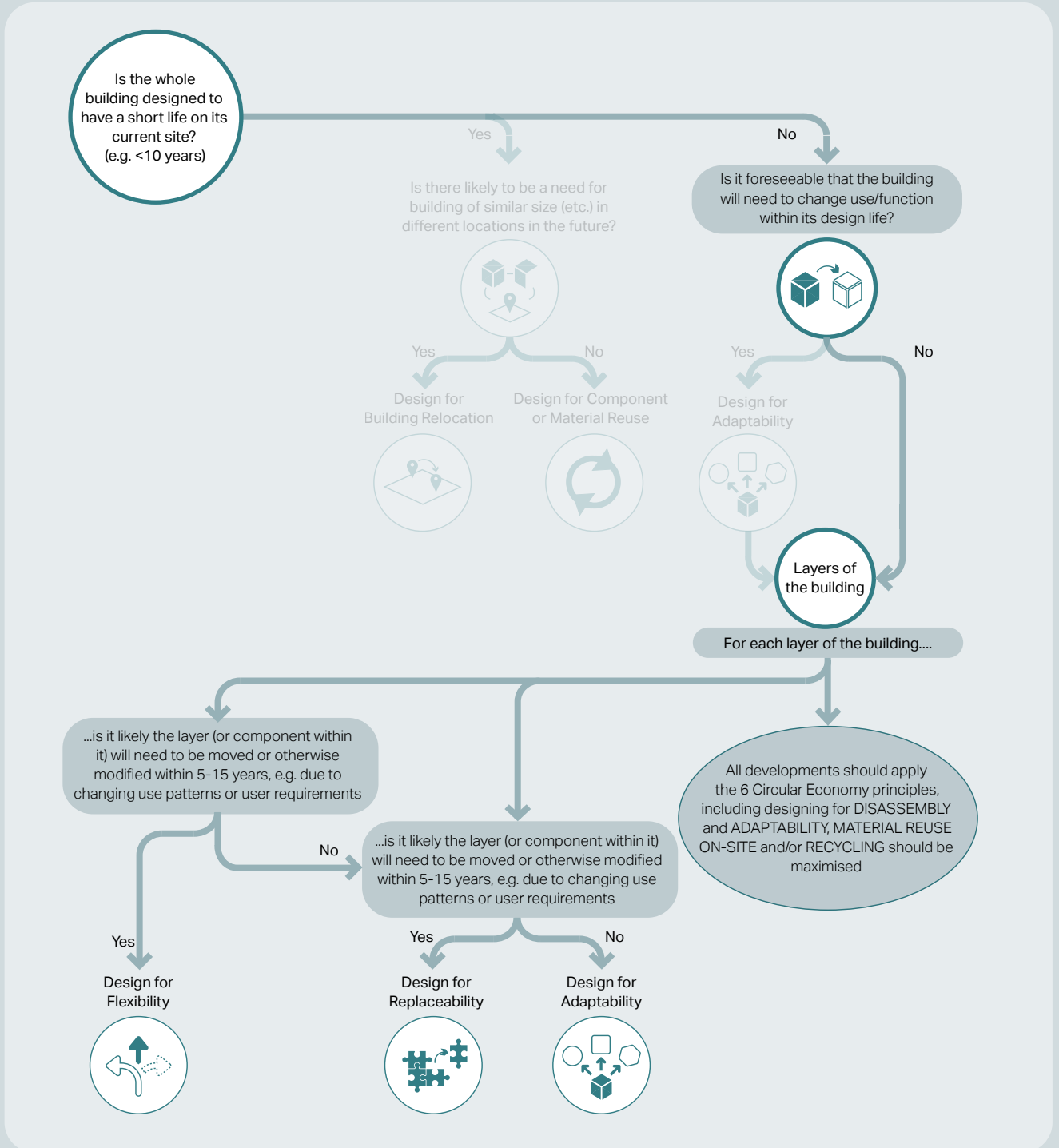


Figure 2.9 The circular economy decision approach decision tree for new buildings from the GLA Circular Economy Guidance

## 2.4 Carbon Emissions

### 2.4.1 General

As the operational energy use and associated carbon emissions of new buildings declines, the relative importance of the embodied carbon emitted during their construction increases. For contemporary high performance buildings in London, embodied carbon emitted up until their practical completion can be greater than the operational carbon emissions due to their energy use throughout their life time.

Emitted during an intense period of manufacture and construction even before the building is occupied, this embodied carbon can also lead to a more immediate and greater damage than the operational carbon emitted gradually over long periods.

In response to this emerging challenge, and in line with the GLA's policies, the potential whole life-cycle carbon emission impact of the proposed development has been assessed.

### 2.4.2 Benchmarks

The GLA benchmarks for upfront and whole life-cycle carbon are:

- Upfront carbon [A1-A5]  
950 kgCO<sub>2</sub>e/m<sup>2</sup> GIA
- Whole life-cycle carbon [A-C excl. B6&B7]  
1,400 kgCO<sub>2</sub>e/m<sup>2</sup> GIA.

The GLA aspirational benchmarks are:

- Upfront carbon [A1-A5]  
600 kgCO<sub>2</sub>e/m<sup>2</sup> GIA
- Whole life-cycle carbon [A-C excl. B6&B7]  
970 kgCO<sub>2</sub>e/m<sup>2</sup> GIA.

It is acknowledged that these benchmarks are intended for typical office uses of all typologies, and they do not differentiate for the increased embodied carbon in tall buildings. They also do not take account for the increased embodied carbon in laboratory uses, the impact of which is explored in Section 2.4.4.

### 2.4.3 Approach

The approach to embodied carbon for the proposed development is to use as little as possible. This starts with existing building retention (refer to Section 2.3), and then focuses on designing the key building elements (structure, facades, MEP, etc.) to minimise material intensity.

To further reduce embodied carbon, low carbon materials and/or those containing high proportions of recycled content will be specified, where it is practical and feasibility possible to do so.

After minimising carbon emissions so far as possible, the proposed development will employ certified offsets as a last resort through payment into British Land's transition fund, so that it will be net zero carbon in construction.

The approach is summarised in the "use less stuff" hierarchy shown in Figure 2.10. Any deconstruction will generate waste materials which should be reused/recycled/upcycled, and links directly to the proposed development's circular economy approach (see Section 2.3.3).



## Approach to Low Carbon Design

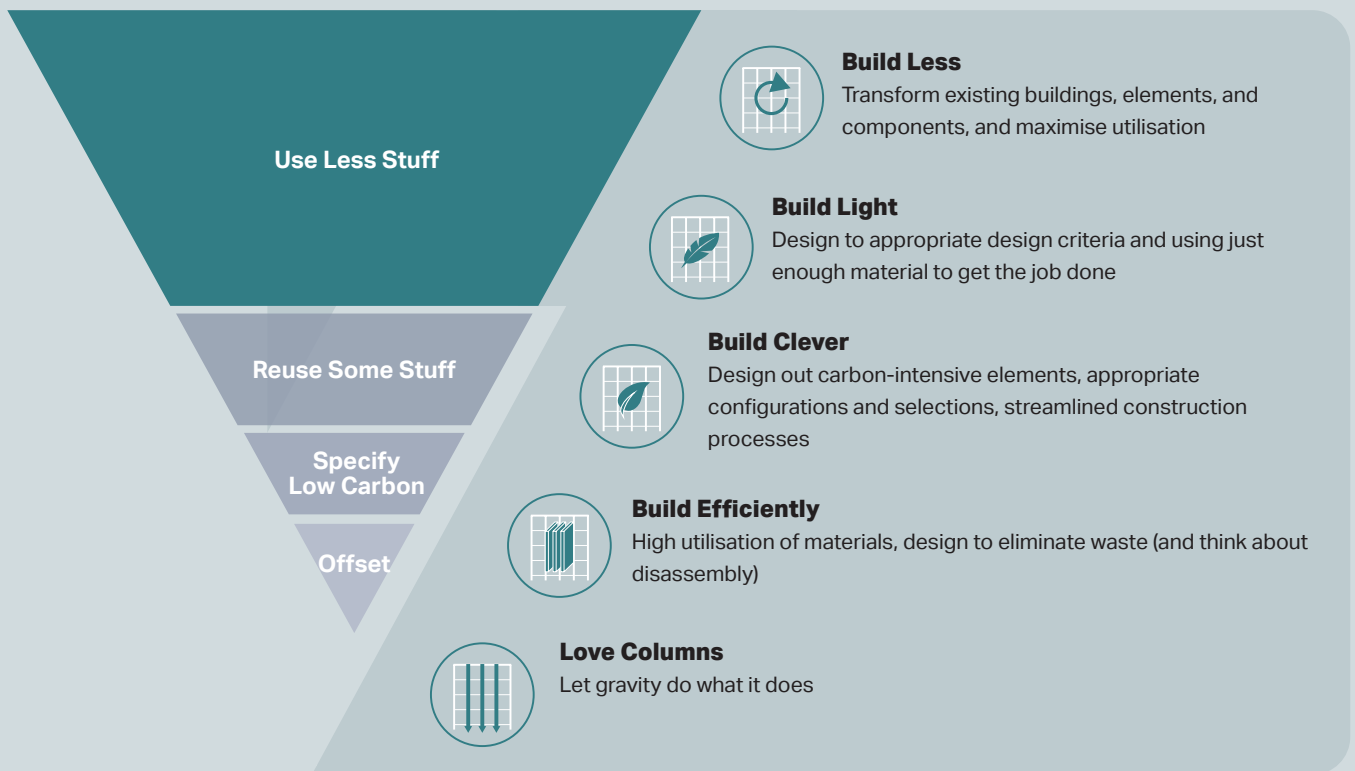


Figure 2.10 "Use less stuff" hierarchy has informed the approach to low carbon design, and an integrated approach to carbon and circularity

#### 2.4.4 Impact of Labs

As described in the *Design & Access Statement prepared by 3XN dated December 2023*, the proposed development includes lab-enabled workspaces. These spaces, from Levels 04-11 (noting the accelerator space also has lab provision Level 03), offer a specialised environment for science and research.

These levels feature a dual functionality, with dedicated labs on the northern portion of the floor plate, and write up space on the southern portion of the floor plate. This write up space is similar to typical office space. Refer to Figure 2.11.

The lab-enabled levels are designed for flexibility, accommodating one or two tenants, ensuring adaptability to the evolving needs of scientific research and collaborative exploration. These levels have a 6x9m column grid in the northern portion of the floorplate, which is designed to minimise vibrations in sensitive work environments. The grid opens up to 9x9 and 9x12m elsewhere on the floorplate, which is more typical of the office spaces.

The lab-enabled levels result in increased embodied and operational carbon by comparison to office use, due to the additional structure, MEP equipment, and energy demand for these spaces.

The following section outlines the drivers for this, and how this is anticipated to impact the embodied carbon and energy performance of the proposed development.

## Overview of Provision of Lab-enabled Spaces

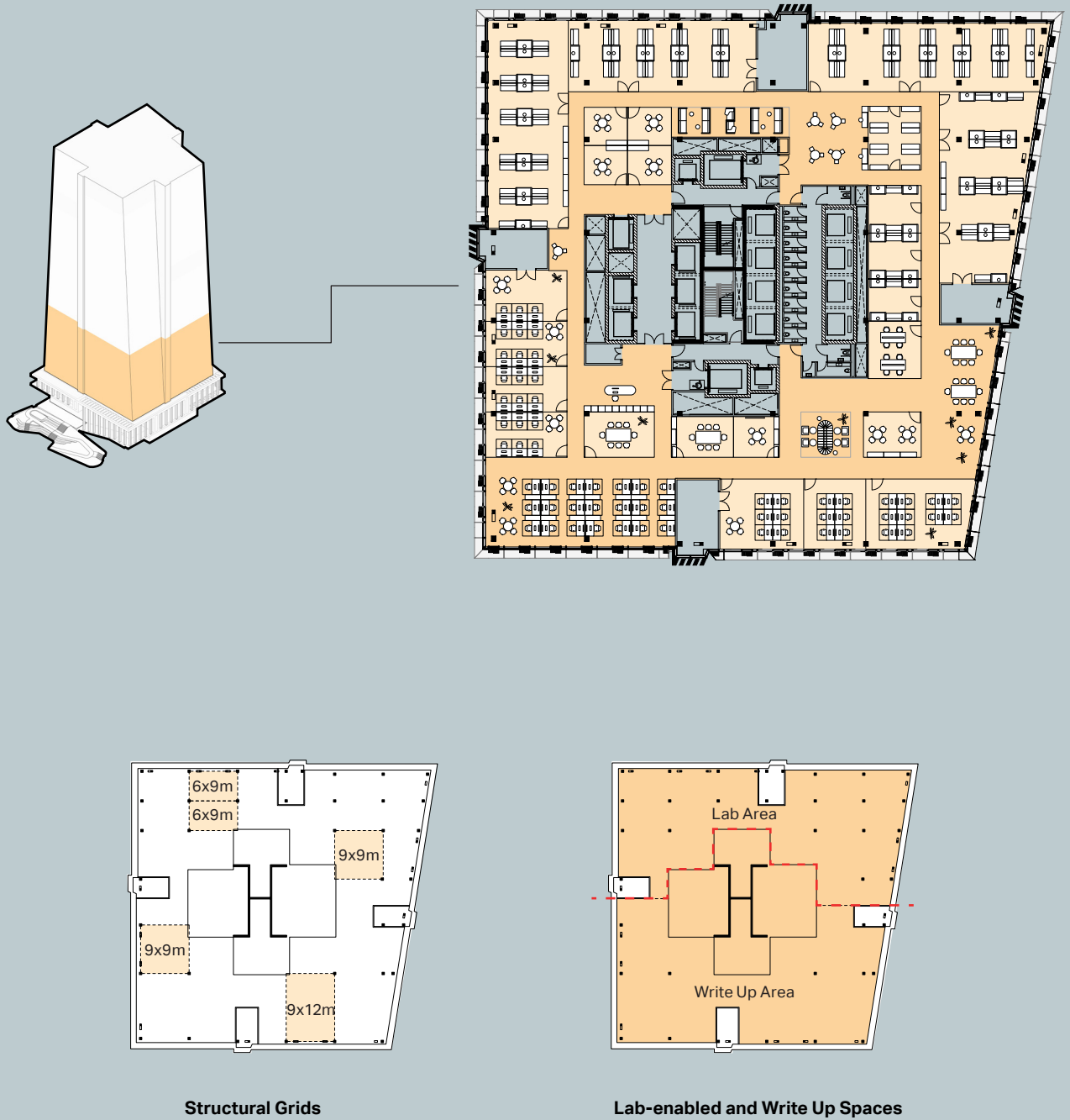


Figure 2.11 Indicative floor plan for lab-enabled levels (above) and structural grids and lab-enabled and write up split (below)

**Floor to floor heights**

The typical office levels in the proposed development have a floor to floor height of 3,800 mm. The lab-enabled levels have an increased floor to floor height of 4,080 mm. This is to accommodate the larger services zone required (locally to the lab-fitted areas, and located at high level) compared to the office levels. The increased floor to floor height results in a larger facade area requirement, with consequent impact on embodied and operational carbon.

A diagram showing the different floor to floor heights is shown in Figure 2.12.

## Comparison of Floor to Floor Heights for Offices and Lab-enabled Spaces

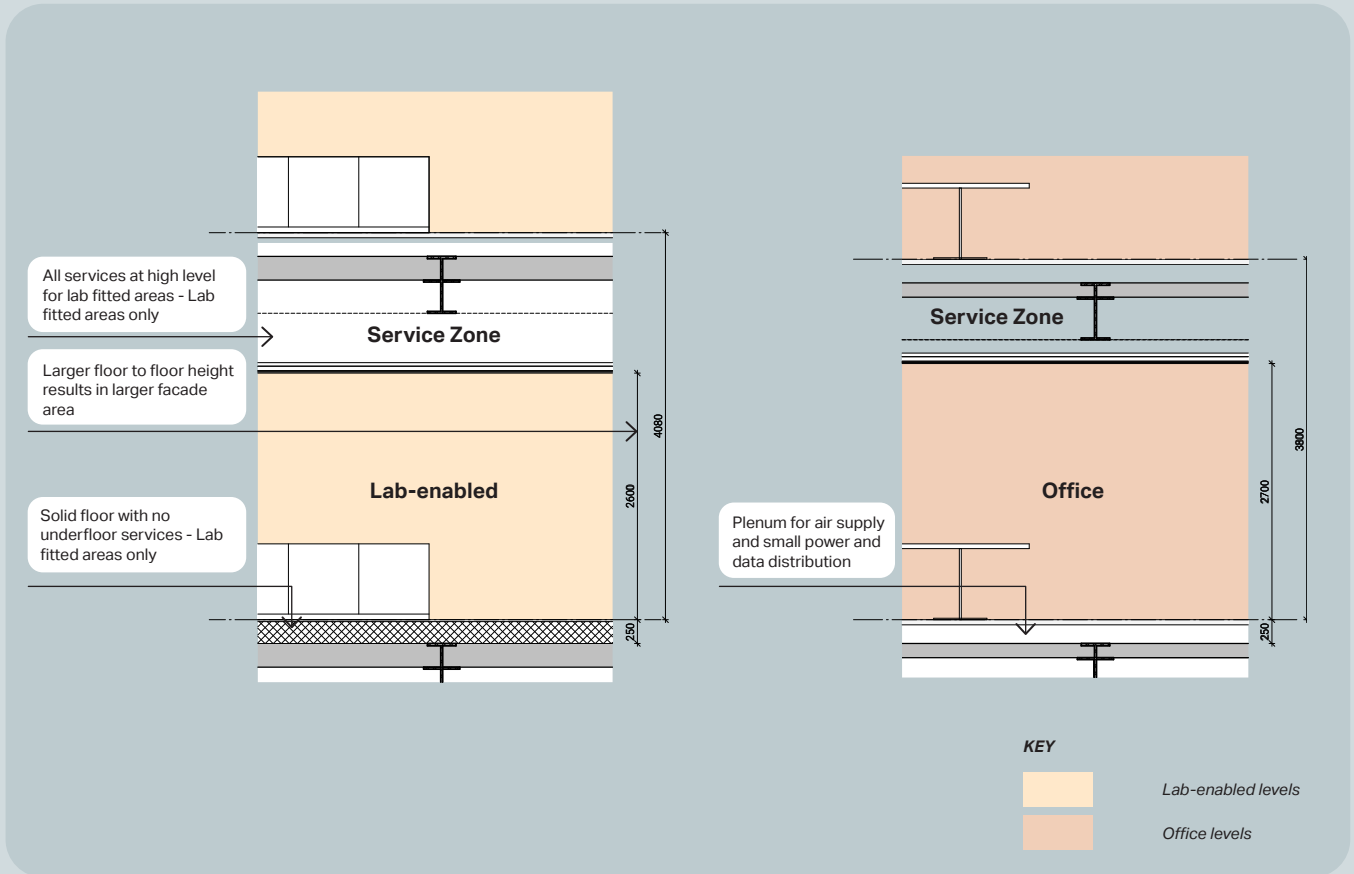


Figure 2.12 Indicative sections comparing floor to floor heights for lab-enabled and office levels



**Structural loading and vibration**

The layout of the lab-enabled levels are considered in separate areas. A zone north of the core is the "lab area" with distinct requirements compared to offices, and the remainder of the floorplate is considered "write up area" with requirements as per offices.

The structural loading requirements for the lab areas is larger than that for offices (67% increase in live load and partition loading allowance). This is summarised in Figure 2.13. Together with more onerous vibration requirements for the lab areas, this results in requiring a thicker slab and denser column grid.

To mitigate this impact, the lab-enabled floorplate is zoned, with enhanced lab load provision localised to the small areas as indicated in Figure 2.13.

STRUCTURAL DESIGN CRITERIA COMPARISON		
	Lab Area	Write Up / Office Areas
<b>Live loading (+ partitions)</b>	4kN/m <sup>2</sup> + 1kN/m <sup>2</sup>	2.5kN/m <sup>2</sup> + 0.5kN/m <sup>2</sup>
<b>Response factor</b>	<p>R &lt; 1 over technical lab areas.</p> <p><i>In order to minimise upfront material use, the proposed development is built to a higher vibration response than would be typical in a lab. Should a user require R &lt; 1, then the structure has been designed to accommodate "dynamic hangers" which couple the slab to the floor above.</i></p>	R < 6 to 8.

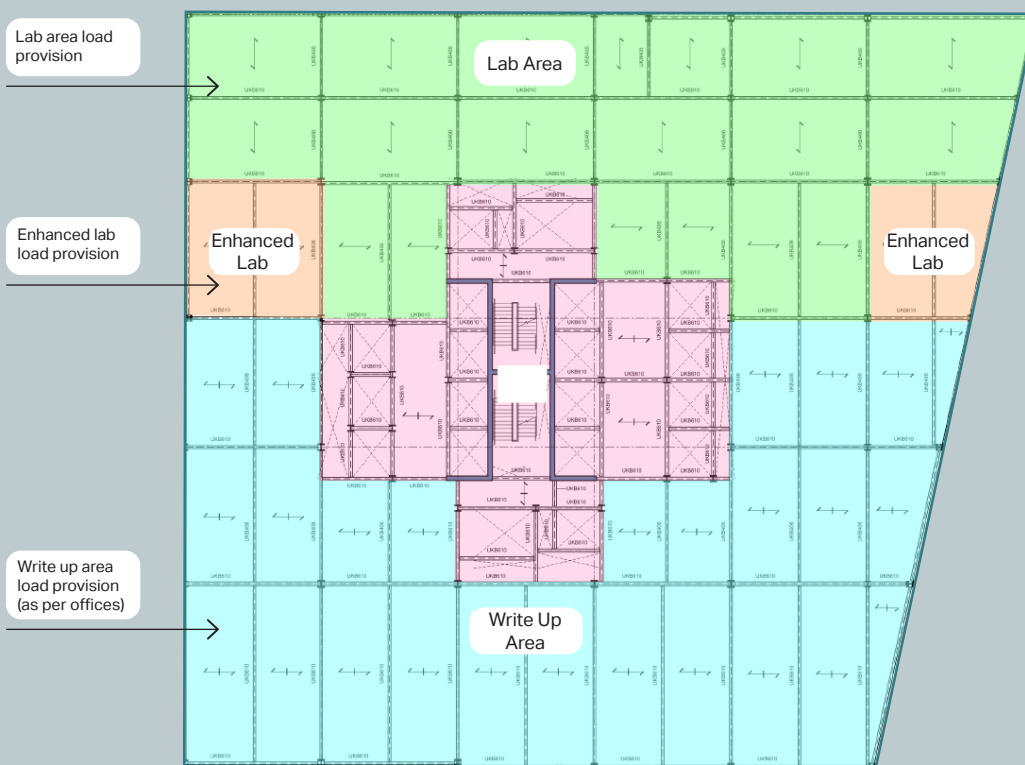


Figure 2.13 Indicative lab-enabled floorplate structural loading (above) and zoning diagram (below)

### Ventilation, cooling, and power

Lab-enabled spaces generally have higher operational energy demands for several operational reasons, these are outlined below.

The substantial equipment required within these areas necessitates supplementary cooling to handle the additional heat gains from equipment to maintain a comfortable internal environment. These also usually require fan coil units (FCUs) or similar to provide cooling, which leads to increased fan power.

Ventilation is provided via high level ductwork, as lab activities and tenants do not typically allow floor voids within the space. This not only increases embodied carbon for the additional ductwork and supports required, but also increases operational energy, owing to the increased fan power required to overcome the additional ductwork, and supply air into the space effectively. This is exacerbated by the higher levels of ventilation required to maintain air quality and ensure the safety of users, compared to a typical office space.

Fume cupboards are used to exhaust potentially harmful fumes and chemicals, necessitating a continuous supply of fresh air. To balance the increased levels of extract air from these units, additional ventilation air must be supplied and the energy required to heat, cool, filter, and supply this air also increases proportionally.

There is an increased power supply requirement between the lab areas and the write-up areas, as well as typical office areas. The lab-enabled levels are therefore significantly more energy intensive than the office levels. These allowances are summarised in Figure 2.14.

Unlike many office spaces that operate during regular business hours, laboratories often need to run experiments or maintain specific conditions for longer periods or even 24/7. These increased hours of operation also contribute to higher energy usage.

MEP DESIGN CRITERIA COMPARISON		
	Lab Area	Write Up / Office Areas
<b>Occupancy density</b> (m <sup>2</sup> /person)	1:12	1:8
<b>Small power allowance</b> (W/m <sup>2</sup> )	130	20
<b>Lighting power density</b> (W/m <sup>2</sup> )	10	6
<b>Ventilation rate</b>	6 air changes per hour	Min of 16l/s/person Max of 3l/s/m <sup>2</sup>
<b>Fume extraction</b>	Yes	No

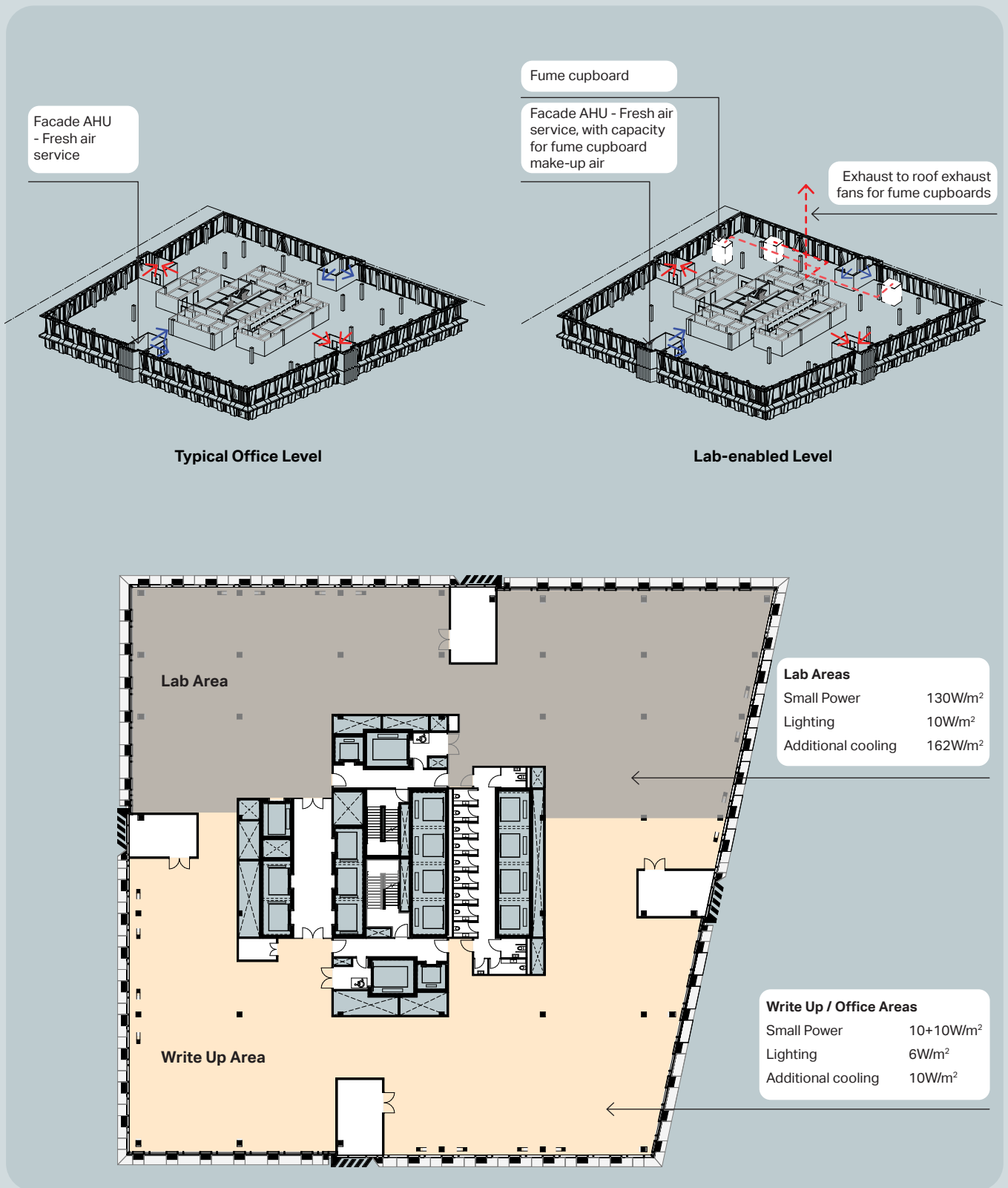


Figure 2.14 Indicative lab-enabled floorplate ventilation strategy (above) and power allowances (below)

### Impact on embodied carbon

The result of the more onerous structural and MEP requirements for the lab-enabled spaces is a consequent increase in embodied carbon. As a significant driver for the carbon increase is due to the extent of the MEP installation, it manifests both in upfront [A1-A5] carbon and operational [B1-B5] carbon emissions.

In the context of the proposed development, this increase is lessened over the full GIA, as the lab-enabled areas are limited to Levels 03-11, and particularly the area north of the core, as indicated in Figure 2.13. A breakdown of the areas is as follows:

- Commercial office (Class E(g)) 46,465 m<sup>2</sup>
- Lab-enabled workspace (Class E(g)) 21,603 m<sup>2</sup>
- Accelerator lab workspace (Class E(g)) 2,893 m<sup>2</sup>
- Lobby (Class E(g)) 3,830 m<sup>2</sup>
- Retail (Class E) 748 m<sup>2</sup>
- Retail/Community Space (Class E/F) 2,003 m<sup>2</sup>.

The lab-enabled spaces comprise less than 30% of the overall GIA (77,542 m<sup>2</sup>), and this amount is even less when considering the proportion of the lab-enabled floors which are to accommodate labs (as distinct from write up area) within the enhanced area north of the core. When considering the full GIA, the embodied carbon uplift due to the lab-enabled areas was estimated as follows:

- Upfront carbon [A1-A5]  
Approx. +6% uplift
- Whole life-cycle embodied carbon [A-C excl. B6&B7]  
Approx. +11% uplift.

These increases are not reflected in the GLA benchmarks for office buildings.

### Impact on energy use intensity

Like embodied carbon emissions, the nature of the lab-enabled use results in significantly higher energy demand than a typical office.

This increased energy use intensity (EUI) is not reflected in the energy targets for office buildings.

An estimate of the annual energy use (kWh/m<sup>2</sup>/year) was prepared using the CIBSE TM54 methodology, as per the London Plan "Be Seen" requirements. This covers both regulated and unregulated energy use. As a means of comparison, estimates were prepared considering the lab-enabled spaces fit out and operated as lab spaces (as per the proposed development), and also as office-only.

A summary of the energy performance is shown in Figure 2.15. The impact of the lab-enabled spaces is clear, resulting in a significant uplift in EUI compared to the office-only scenario. Like embodied carbon, the scale of this uplift is mitigated by the limited lab-enabled in the proposed development.

Full details on the operational energy modelling and assumptions are detailed in the *Energy Statement prepared by Arup dated December 2023*.

## Impact of Labs on Energy Use Intensity

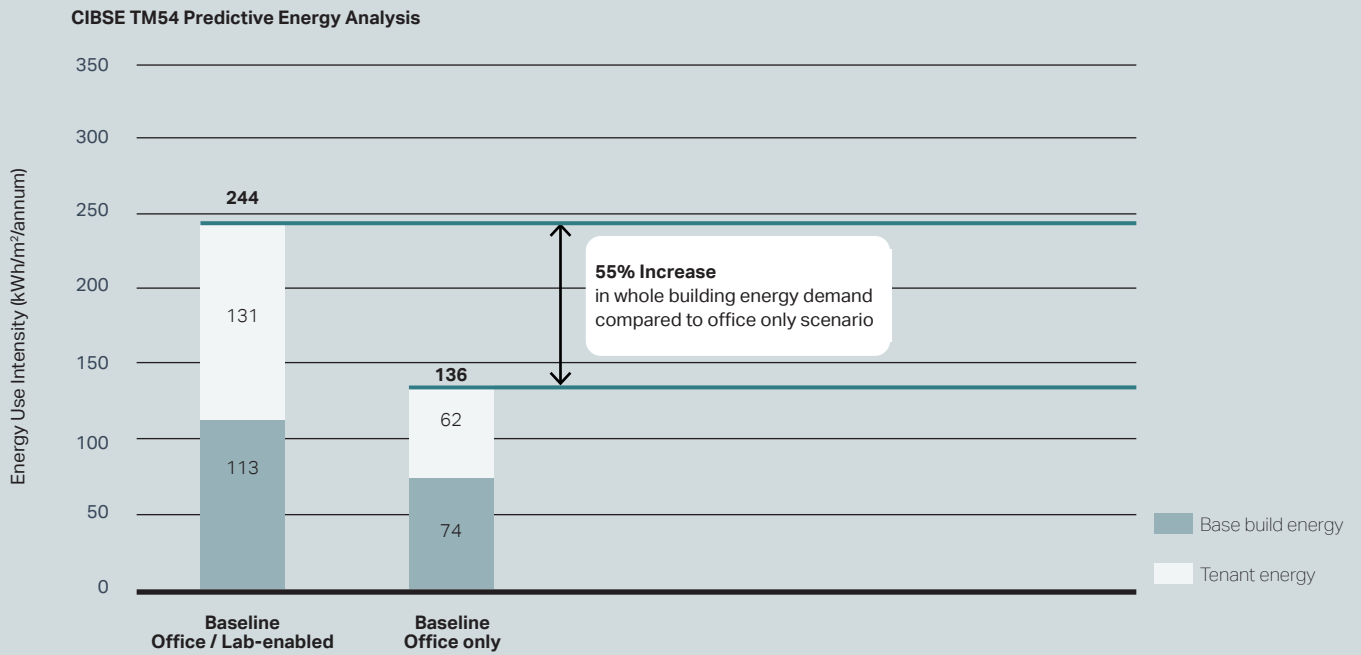


Figure 2.15 Impact of lab-enabled spaces on whole building energy demand



#### 2.4.5 Whole Life-cycle Carbon Assessment (WLCA)

A Whole Life-cycle Carbon Assessment (WLCA) has been conducted by Sweco as part of this planning application.

Interim WLCAs have been produced during RIBA Stage 2 with the aim of establishing the proposed development's baseline embodied carbon performance, as well as investigating design and specification alternatives to reducing the carbon intensity of the main contributing elements.

The assessment was carried out in accordance with British Standard BS EN 15978:2011 and following guidance from the RICS PS (September 2023) and the GLA Whole Life-cycle Carbon Assessment Guidance.

Reasonable assumptions were made and where information was not available or with sufficient detail, benchmarks were used.

The current analysis results in the following estimates:

- Upfront carbon [A1-A5]  
733 kgCO<sub>2</sub>e/m<sup>2</sup> GIA
- Whole life-cycle embodied carbon [A-C excl. B6&B7]  
1,262 kgCO<sub>2</sub>e/m<sup>2</sup> GIA
- Whole life-cycle carbon [A-C incl. B6&B7]  
2,894 kgCO<sub>2</sub>e/m<sup>2</sup> GIA.

All figures include emissions due to demolition in the totals, which is not included in the upfront totals in the GLA spreadsheet.

Figure 2.16 shows the upfront [A1-A5] and whole life-cycle [A-C excl. B6&B7] embodied carbon results broken down by building element.

The current upfront embodied carbon estimate is below the GLA upfront benchmark of 950 kgCO<sub>2</sub>e/m<sup>2</sup> GIA for offices, though above the GLA aspirational benchmark of 600 kgCO<sub>2</sub>e/m<sup>2</sup> GIA. This is understandable given that the benchmarks do not account for the tower typology or the lab-enabled areas in the proposed development. The aim will be to further reduce embodied carbon as the design develops, materials are specified, and procurement strategies are explored.

Key assumptions in the analysis include the following:

- Retention of the existing foundation, substructure, and central concrete core
- Material specification based on project proposed specification and market "typical" specification where these are not yet agreed
- Product-specific EPDs are not used at this stage to maintain flexible procurement routes, unless indicated otherwise
- Transport emissions are based on RICS PS default modes and distances, unless indicated otherwise
- Facade emissions calculated according to CWCT guidance
- Cost plan coverage is applied on quantified building elements to account for known unknowns
- Contingency is applied to accommodate design development and unknown unknowns
- Reference service period is 60 years.

## Upfront and Whole Life-cycle Embodied Carbon Results

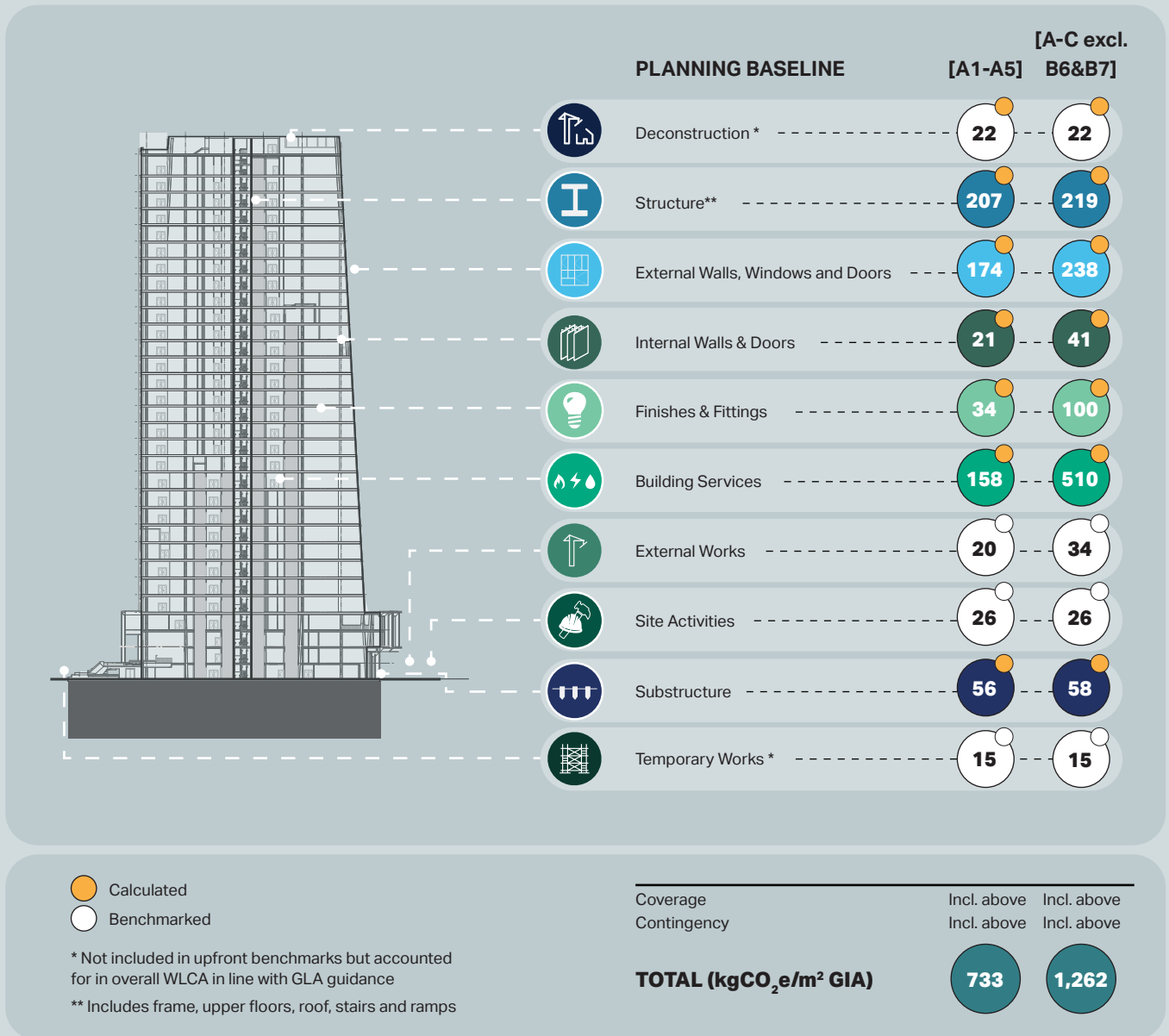


Figure 2.16 Preliminary upfront [A1-A5] and whole life-cycle [A-C excl. B6&B7] embodied carbon results broken down by building element

Several opportunities for further reducing embodied carbon have been identified for further exploration as the proposed design is developed. These opportunities are summarised in the waterfall chart in Figure 2.17, and the embodied carbon reductions are relative to the baseline performance in Figure 2.16.

The primary levers to reducing embodied carbon are the following:

- Optimisation of structural, facade, and MEP designs to reduce material intensity
- Improved concrete specification and higher quantities of cement replacements
- High recycled content aluminium and glass in facades
- Reduction of emissions associated with transport (e.g. electric vehicles, consolidation centres, local sourcing)
- Reduction of emissions associated with site operations (e.g. electric site plant, HVO fuel for site plant, REGO-backed renewable energy).

The following briefly describes the individual reduction opportunities. The embodied carbon saving estimates are shown for modules [A1-A5], and each of these opportunities needs to be considered for its cost, programme, risk, performance, and architectural implications:

- **Foundation optimisation**  
Use of piles and pile caps to reduce material quantities, in lieu of a piled raft as per the baseline design
- **High cement replacement (in-situ concrete)**  
Use of elevated cement replacements (GGBS or similar) in in-situ concrete mixes
- **Steel design optimisation**  
Optimise structural design to reduce steel tonnage in primary frame
- **Optimised column grids**  
Investigation of smaller structural grids in lieu of 9x12m as per the baseline design
- **Sacrifice demountable floorplate**  
Reduction of additional steelwork required to enable demountable floorplates
- **Residual moment connection**  
Incorporating residual moment connections would result in a reduction in steel tonnage
- **Floor to ceiling heights**  
Putting services below the beams results in reduced penetrations through structural beams, and possibly reduced steel tonnage

- **Column design**  
Use of concrete filled tube (CFT) columns in lieu of S460 steel as per the baseline design
- **Steel specification**  
Use of high recycled content steel specification for the truss and bolt-on podium structure
- **Plasterboard specification**  
Use of low carbon plasterboard
- **Reuse of existing building concrete in proposed development**  
Cutting out concrete elements from the existing building, and reusing them in the proposed development in a structural application to displace new concrete required
- **High cement replacement (precast concrete)**  
Use of elevated cement replacements (GGBS or similar) in precast concrete mixes
- **High recycled content aluminium in facades**  
Use of aluminium extrusion billets with high recycled content for fabricated facade mullions and transoms
- **Low carbon glass specification**  
Use of low carbon glass in facade design with higher proportions of recycled content
- **Raised access floor specification**  
Specification of low carbon raised access flooring products
- **Electrified construction site**  
Maximised use of electric plant on site (excepting concrete pumps), with an option to use a renewable electricity tariff to further reduce carbon emissions.

For more details on the assessment assumptions and reduction opportunities, refer to the WLCA Method Statement in Appendix C. The detailed WLCA is included as part of this planning application, and appended in Appendix D.

## Indicative Upfront Carbon Reduction Opportunities

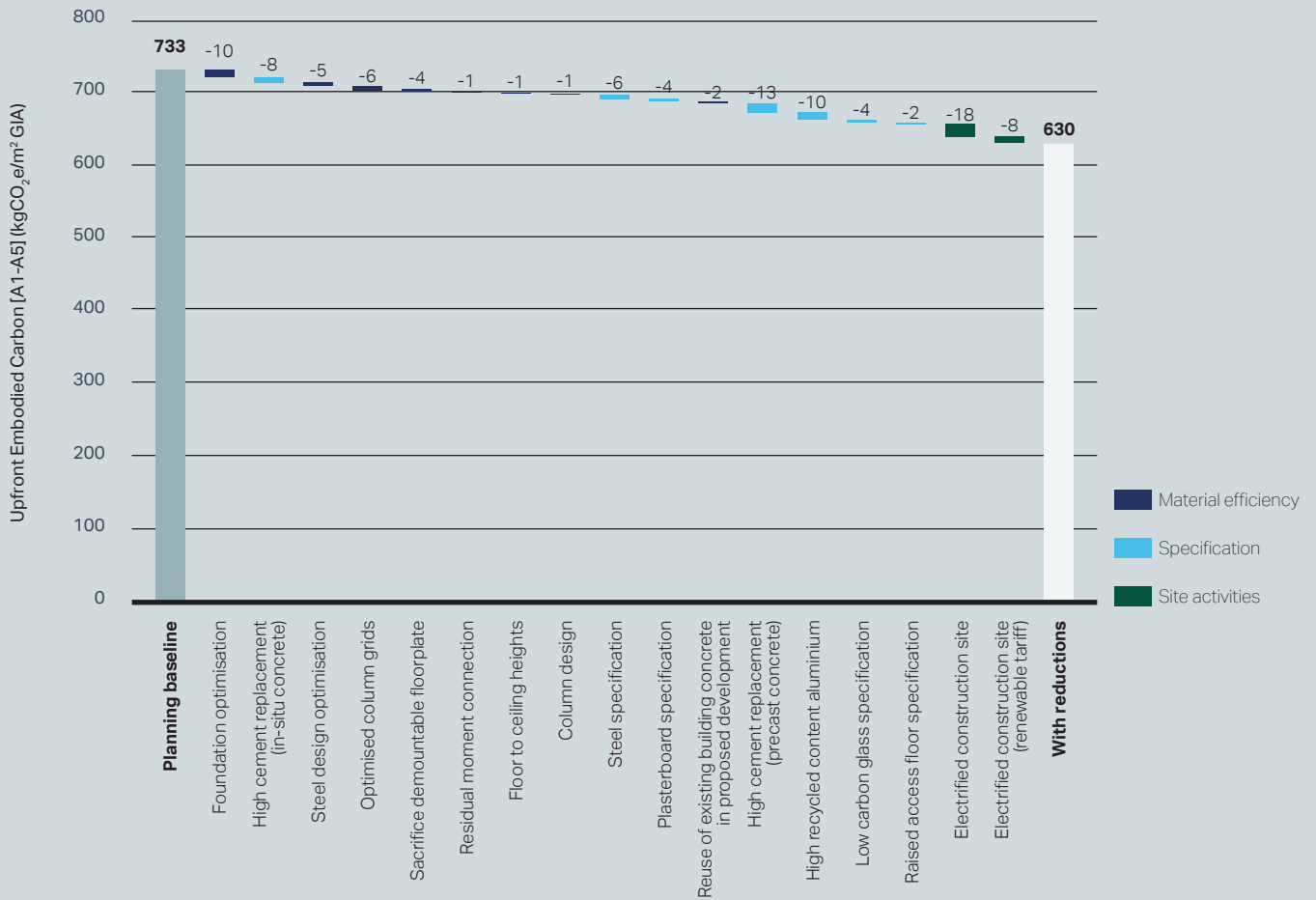


Figure 2.17 Waterfall chart showing impact of indicative carbon reduction opportunities on upfront embodied carbon [A1-A5]

## 2.5 Energy

### 2.5.1 General

The proposed development has an ambitious energy demand and carbon emissions reduction strategy. This Section summarises the energy strategy which is described in full in the Energy Statement prepared by Arup as part of this planning application (refer to the *Energy Statement prepared by Arup dated December 2023*).

### 2.5.2 Targets

The planning policy targets are represented as reductions relative to Part L:

- 15% reduction below Part L 2021 due to energy efficiency measures alone ("Be Lean")
- Overall 35% reduction below Part L 2021.

### 2.5.3 The Energy Hierarchy

To minimise energy demand and carbon emissions, the proposed development follows the energy hierarchy included in GLA's technical guidance on preparing energy assessments. This prioritises passive energy efficiency and demand reduction measures in combination with energy efficient active design systems served by clean and/or low carbon technologies.

In order of priority, the steps are:

1. **Be Lean** - reduce energy demand through passive and active design measures.
2. **Be Clean** - exploit local energy resources (such as secondary heat) and supply energy efficiently and cleanly by connecting to district heating networks.
3. **Be Green** - maximise energy generation from on-site low or zero carbon technologies.
4. **Be Seen** - monitor, verify and report on energy performance.

### 2.5.4 Energy Strategy and Performance

To meet the policy requirements of London Plan Policy SI 2 and Camden Local Plan Policy CC1, the proposed development adopts the following measures at each stage of the energy hierarchy.

The passive and active strategies employed to reduce energy demand are summarised in Figure 2.18.

#### Be Lean

The proposed energy strategy is all-electric and no on-site combustion will be allowed in order to protect local air quality and to align with net zero carbon building requirements. The proposed development may include a life-safety generator, however backup plant installed for emergency and life-safety power supply is excluded from the consideration of air quality neutral.

The proposed energy strategy will result in a 10% reduction in energy demand at the "Be Lean" stage through implementing the following measures:

- Optimised glazing percentages to maximise daylight penetration but minimising overheating.
- g-value limits specified for glazing elements aims to limit excessive solar gain on to the floor plate (max. 35W/m<sup>2</sup>).
- Facade elements that project horizontally and vertically adjacent to glazing are optimised to provide solar shading during peak scenarios but also allows for beneficial solar gain during winter months.
- An underfloor ventilation system avoids the need for active cooling for large periods of the year through free cooling provided by largely untempered fresh air supplied by the on-floor AHUs, with cooling done by the high efficiency heat exchanger. The underfloor system also avoids the need for additional high-level mechanical services, significantly reducing embodied carbon.
- A high-performance curtain wall facade has been specified to reduce space heating demand in winter and minimise the risk of summertime overheating.

# Energy Strategies - Active & Passive Design

## Active Design

### All-electric systems

Simultaneous Air Source Heat Pumps are used to produce chilled water for cooling, with waste heat used for heating where required and for domestic hot water pre-heat.



### Minimising energy, maximising flexibility

On-floor AHUs minimising embodied carbon and operational energy through the ability to turn down and shut-off unoccupied floors.



### Limiting internal gains

All-air space conditioning used with internal gains limited as far as possible, including reducing small power. Maximising free cooling.



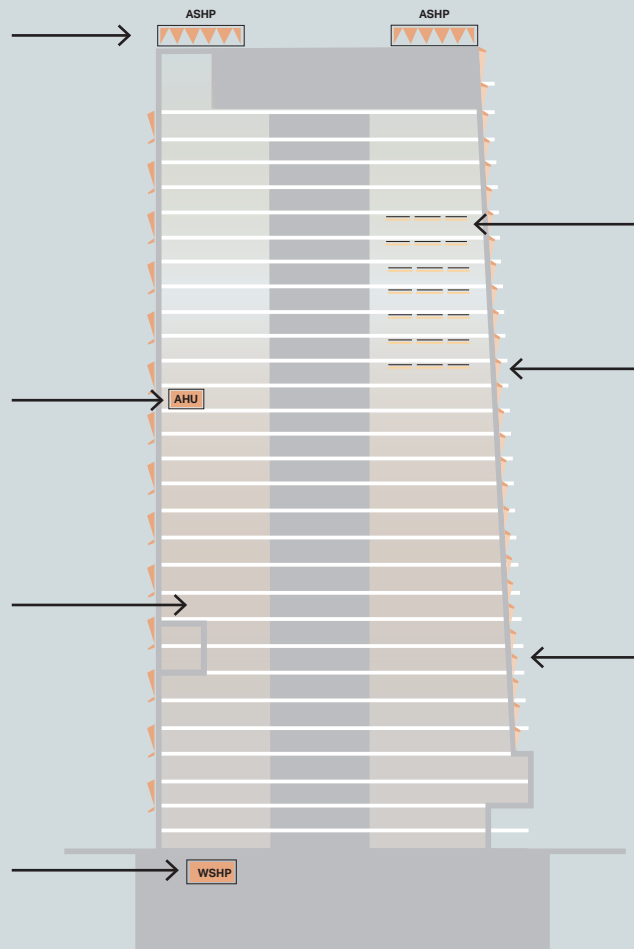
### Waste heat to hot water

Water-source Heat Pump, drawing heat from ASHPs, providing domestic hot water generation for showers.



### All-electric building

An essential component in realising a net zero carbon building. The UK grid will continue to decarbonise over time. An all-electric building is therefore imperative.



## Passive Design

### Maximise daylight

Glazing areas which maximise daylight and desirable views from office floors while limiting solar gains.



### Low-energy lighting

Energy-efficient lighting proposed throughout.



### Natural ventilation

A mixed-mode ventilation strategy which would provide high levels of occupant satisfaction while taking advantage of free cooling when external temperatures allow.



### Passive solar protection

Limiting solar gains into floorplate through solar shading and g-value glazing, targeting perimeter SHG of 35 W/m<sup>2</sup>.



### Fabric losses

Limiting conduction losses through optimised U-value building elements.



Figure 2.18 Passive and active design strategies employed in the proposed development to reduce energy demand



### **Be Clean**

No reduction is estimated at the “Be Clean” stage as proposed development is not intending to connect into any district heating or cooling networks as there are no existing local networks, though the proposed development will be enabled for future connection to said networks.

### **Be Green**

A further 4% reduction in energy demand is estimated at the “Be Green” stage by incorporating:

- Heating and cooling will be provided to the development by central heating and cooling plant consisting of air source heat pumps (ASHPs) and air-cooled to maximise the ability to share heat between spaces within the building.
- Simultaneous heating and cooling heat pumps can utilise free cooling to maximise efficiency through mid-seasons.
- The installation of photovoltaic (PV) panels is included within the scheme to contribute to the reduction of the on-site carbon emissions. Approximately 100 m<sup>2</sup> is planned to be included spread across appropriate areas at Level 31 roof level.

### **Be Seen**

The energy demand for the proposed development has been estimated using the CIBSE TM54 analysis process to accompany the Building Regulations Part L methodology. The CIBSE TM54 methodology provides an assessment of both regulated and unregulated energy consumption.

Current whole building energy demand based on a baseline CIBSE TM54 assessment (including office and lab use) is anticipated to achieve 244 kWh/m<sup>2</sup> (comprising base build 113 kWh/m<sup>2</sup> + tenant 131 kWh/m<sup>2</sup>).

As a means of understanding the impact of the lab areas, estimates were prepared an office-only development. The whole building energy demand based on a baseline assessment (office-only) is anticipated to achieve 136 kWh/m<sup>2</sup> (comprising base build 74 kWh/m<sup>2</sup> + tenant 62 kWh/m<sup>2</sup>).

The full CIBSE TM54 report and the assumptions are contained within the *Energy Statement prepared by Arup dated December 2023*.

### **Overall**

The overall reduction in regulated carbon dioxide emissions is estimated to be 14% below the GLA baseline following Part L 2021 of the Building Regulations.

The results at each stage of the energy hierarchy are shown in Figure 2.19 following Part L 2021 and the GLA’s June 2022 Energy Assessment Guidance.

#### **2.5.5 Carbon Emissions Offset**

As required by the London Plan, any shortfall against the net zero carbon requirements of the London Plan, must be offset through a cash-in-lieu contribution, or off-site emissions reduction provided that an alternative proposal is identified and delivery is certain.

The results shown in Figure 2.20 are used to calculate the carbon shortfall, which is in turn multiplied by the lifetime of the development’s services (assumed 30 years as per GLA guidance) to give the cumulative carbon shortfall.

This cumulative carbon shortfall is multiplied by the carbon dioxide offset price (£95/tonne) to determine the required cash-in-lieu contribution.

The net zero carbon cash in lieu contribution is estimated to be £795,581. This calculation is shown in Figure 2.20.

## Non-domestic Part L 2021 Carbon Emissions

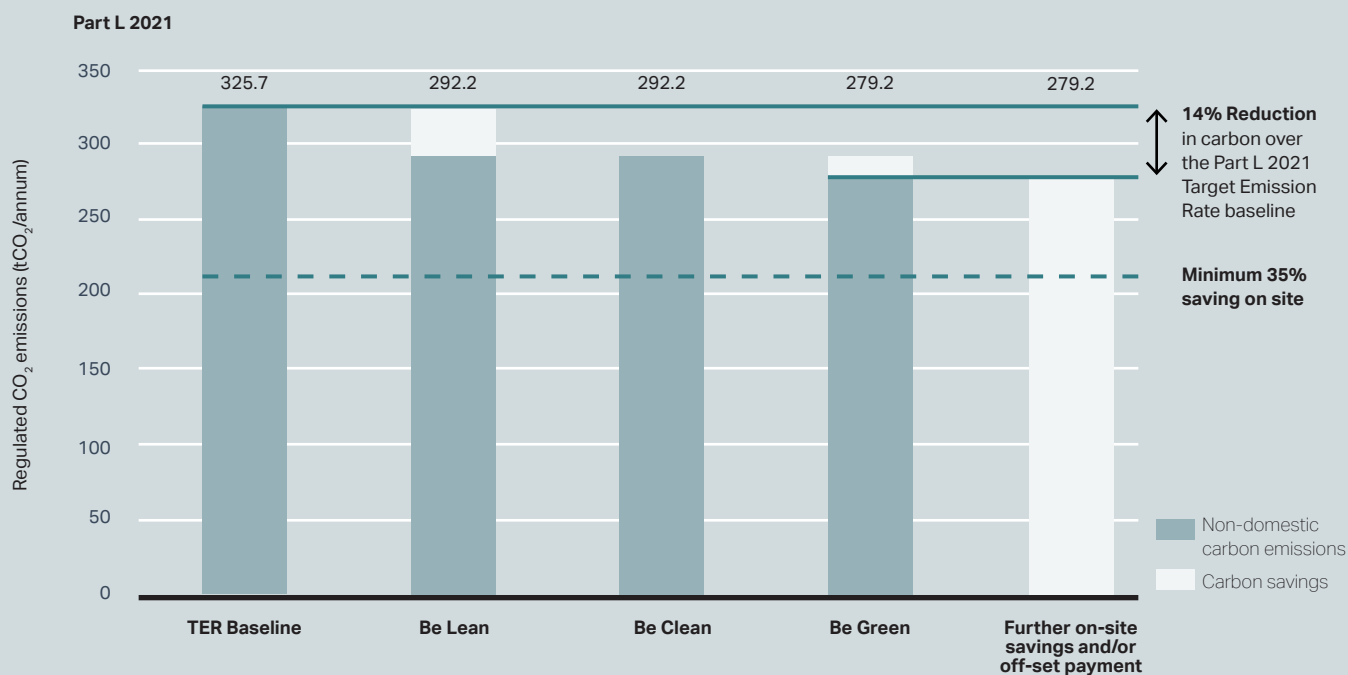


Figure 2.19 Regulated CO<sub>2</sub> emissions savings from each stage of the Energy Hierarchy: non-domestic (Part L 2021)

## Regulated CO<sub>2</sub> Savings and Cash-in-lieu Payment for the Proposed Development

	Total Regulated Emissions (Tonnes CO <sub>2</sub> /year)	CO <sub>2</sub> Savings (Tonnes CO <sub>2</sub> /year)	Percentage Savings (%)
Baseline: Part L 2021	325.7		
Be Lean: Savings from Energy Demand Reduction	292.2	33.5	10%
Be Clean: Savings from Heat Network	292.2	0.0	0%
Be Green: Savings from Renewable Energy	279.2	13.0	4%
Cumulative On-site Savings		46.5	14%
Annual Savings from Off-set Payment		298.5	-
Cumulative Savings for Off-set Payment (tCO <sub>2</sub> )		8,375	
Cash in-lieu Contribution (£)		£795,581	

Figure 2.20 Total regulated carbon emissions results for the proposed development

## 2.6 Water Use and Sustainable Drainage

### 2.6.1 Potable water use reduction

The proposed development will minimise the consumption of potable water in sanitary applications and landscape irrigation. The strategies are summarised in Figure 2.21.

Water-efficient fixtures and fittings, such as dual flush WCs and low flow wash hand basins and kitchen taps, will be installed in the proposed WCs, shower rooms, etc. The following flow rates are proposed at this stage, in line with the requirements to achieve BREEAM "Outstanding":

- WCs: Dual flush with 3.75l/flush (effective flush volume)
- Urinals: Not provided
- WHB taps: Automatic shut-off taps with 5l/min
- Showers: 6l/min
- Kitchen taps: 6l/min (kitchenettes)
- Dishwasher: 12litres/cycle (domestic sized).

Greywater and rainwater harvesting systems are proposed as a further means of reclaiming non-potable water and reducing potable water demand. Greywater will be collected from showers in the basement, and used for WC flushing on the lower 13 storeys. Rainwater will be harvested from the roof and other external areas, and stored in the basement tanks for WC flushing. As a further potable water use reduction strategy, rainwater will be harvested and passively stored in oversized pipework for WC flushing for the upper 5 storeys, as part of a FlowStow system. In all scenarios, if there is no supply of harvested greywater or rainwater, the system will switch to mains cold water supply.

Water use for irrigation will also be minimised. An efficient irrigation system will be adopted to deliver water only where and when it is needed.

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 proposed on the mains water supplies to the proposed development. This strategy ensures water consumption can be monitored and managed, therefore encouraging reductions.

A leak detection system capable of detecting leaks on the mains water supply within and to the building is proposed to reduce the impact of major water leaks that may otherwise go undetected.

Flow control devices will be fitted to minimise water leaks and wastage from sanitary fittings.

### 2.6.2 Sustainable stormwater drainage

The Environment Agency's Indicative Floodplain Map shows that the site lies in Zone 1 – land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding, and therefore is at negligible risk of fluvial or tidal flooding. However, under the requirements of the NPPF a detailed Flood Risk Assessment is still required as the site is within a Critical Drainage Area (CDA) as highlighted within the London Borough of Camden (LBC) Strategic Flood Risk Assessment (SFRA).

Accordingly, a Flood Risk Assessment has been conducted by Arup, showing a low risk of flooding for all flood sources assessed. Refer to the *Flood Risk Assessment prepared by Arup dated December 2023*.

A Sustainable Drainage System (SuDS) strategy has been prepared by Arup in accordance with the drainage hierarchy from London Plan Policy SI 13 and Camden Local Plan Policy CC3.

The proposed discharge rate will be limited to 3.0l/s following discussions with Thames Water. The SuDS comprises the following strategies to reduce the discharge rate from the existing 38.3l/s (based on the 1-in-100 year event):

- Blue roofs
- Rain water harvesting
- Bio-retention features in the public realm
- Subsurface stormwater storage (450 m<sup>3</sup> attenuation located in the basement).

The proposed peak runoff rate has been reduced 3.0l/s, which represents a 96% reduction on the 1-in-100 year return period storm event compared to a pre-developed site.

An allowance of 40% has been made for climate change in all calculations in line with the Environment Agency's guidance.

The Flood Risk Assessment and Drainage Report are included as part of the full planning application. Refer to the *Flood Risk Assessment prepared by Arup dated December 2023* and the *Drainage and SuDS Strategy prepared by Arup dated December 2023* respectively.

## Water Use Reduction Strategies

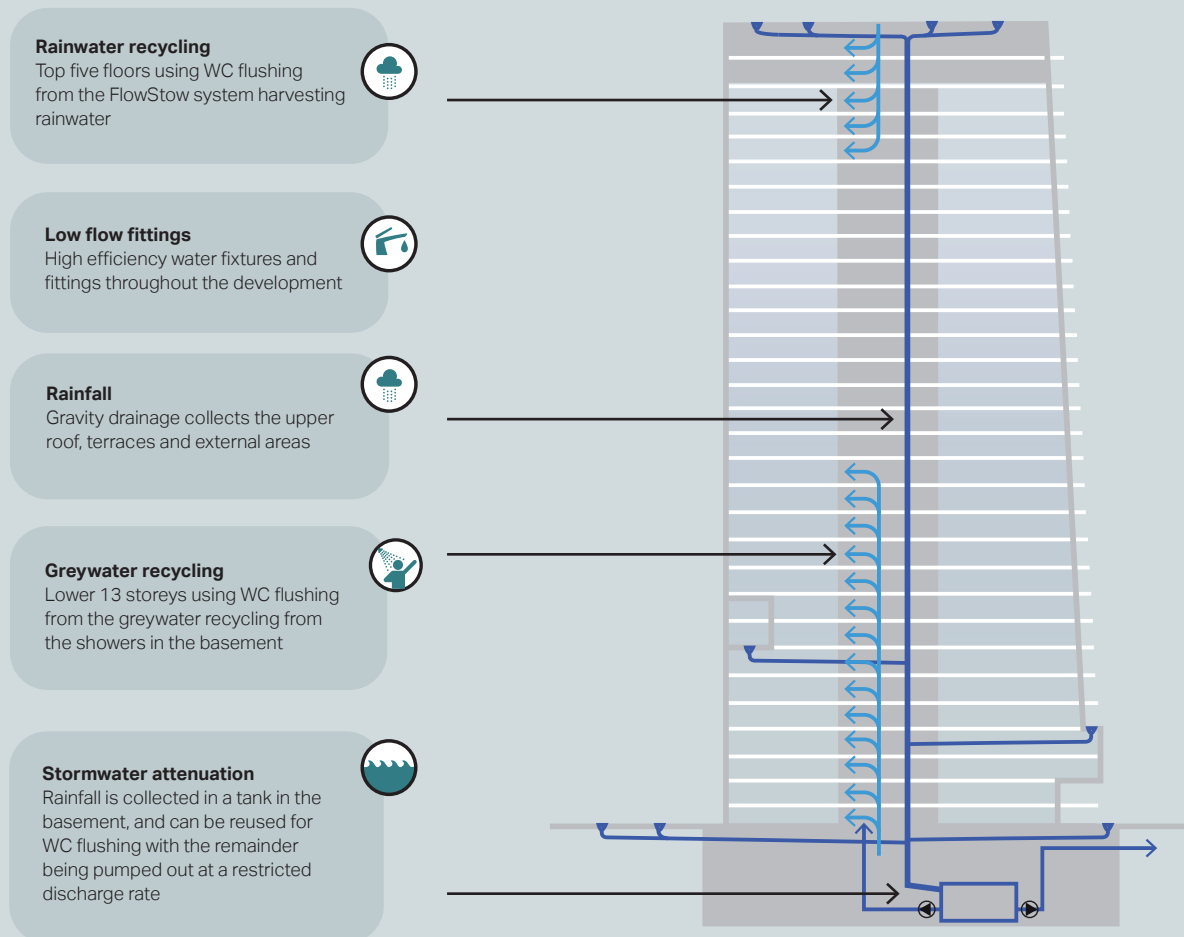


Figure 2.21 Water use demand reduction strategies employed in the proposed development

## 2.7 Health and Wellbeing

### 2.7.1 Daylight, views, and access to nature

The proposed development has the health and wellbeing of building users at its core.

The building envelope has been designed using a “fabric-first” approach, to ensure good access to daylight and maximise the unique 360° views out. This is balanced with controlling solar heat gains and its associated energy demand, through optimised glazing ratios, external shading, and highly-selective solar control glazing.

Direct and indirect access to nature and greening is provided throughout the proposed development. The public realm provides access to the outdoors, and is complemented by planting to significantly improve local greening and biodiversity.

Within the tower, greening is provided at the terrace edges and in front of any double-height amenity cuts, providing more localised contact with nature for occupiers on those floors.

### 2.7.2 The indoor environment

The indoor environment will be of the highest quality. The mechanical ventilation systems are designed to provide 100% filtered fresh air at rates well above statutory requirements. This results in improved indoor air quality and the provides an opportunity for low-energy cooling.

Additionally, the facade design will incorporate openable panels for natural ventilation at appropriate times, providing occupants with improved control over the indoor environment, and a direct connection with outdoors.

To ensure a thermally comfortable environment, an overheating assessment has been conducted by Arup. The assessment has been undertaken according to CIBSE TM52, and in line with GLA and BREEAM requirements. The results of the assessment showed that all areas analysed exhibited less than 3% of the proposed development's occupied hours are above an operative temperature of 26°C, and therefore the proposed development is not considered to be at risk of overheating.

To test the strategy's readiness for future climate change, the assessment was also conducted using future weather data (DSY2 and DSY3). Again, the proposed development was not considered to be at risk of overheating.

The results of the overheating assessment are detailed in the Energy Statement that forms part of this planning application, refer to the *Energy Statement prepared by Arup dated December 2023*.

Material specifications will explicitly avoid products that contain Volatile Organic Compounds (VOCs) wherever possible, to minimise the effect on internal air quality. Typical VOC sources include paints, lacquers, some pressed timber products (including some hardboard, particle boards, hardwood plywood wall panelling), glues and adhesives, furniture made from pressed wood products and foamed insulation.

The proposed development will be designed to achieve exemplary indoor ambient noise levels and appropriate sound insulation levels.

### 2.7.3 Certification

The proposed development's commitment to health and wellbeing is underpinned by its targeting features to enable a WELL “Gold” certification with aspiration for “Platinum”.

For more detail on the WELL pre-assessment, refer to Section 2.2.

## Elements Affecting Health and Wellbeing

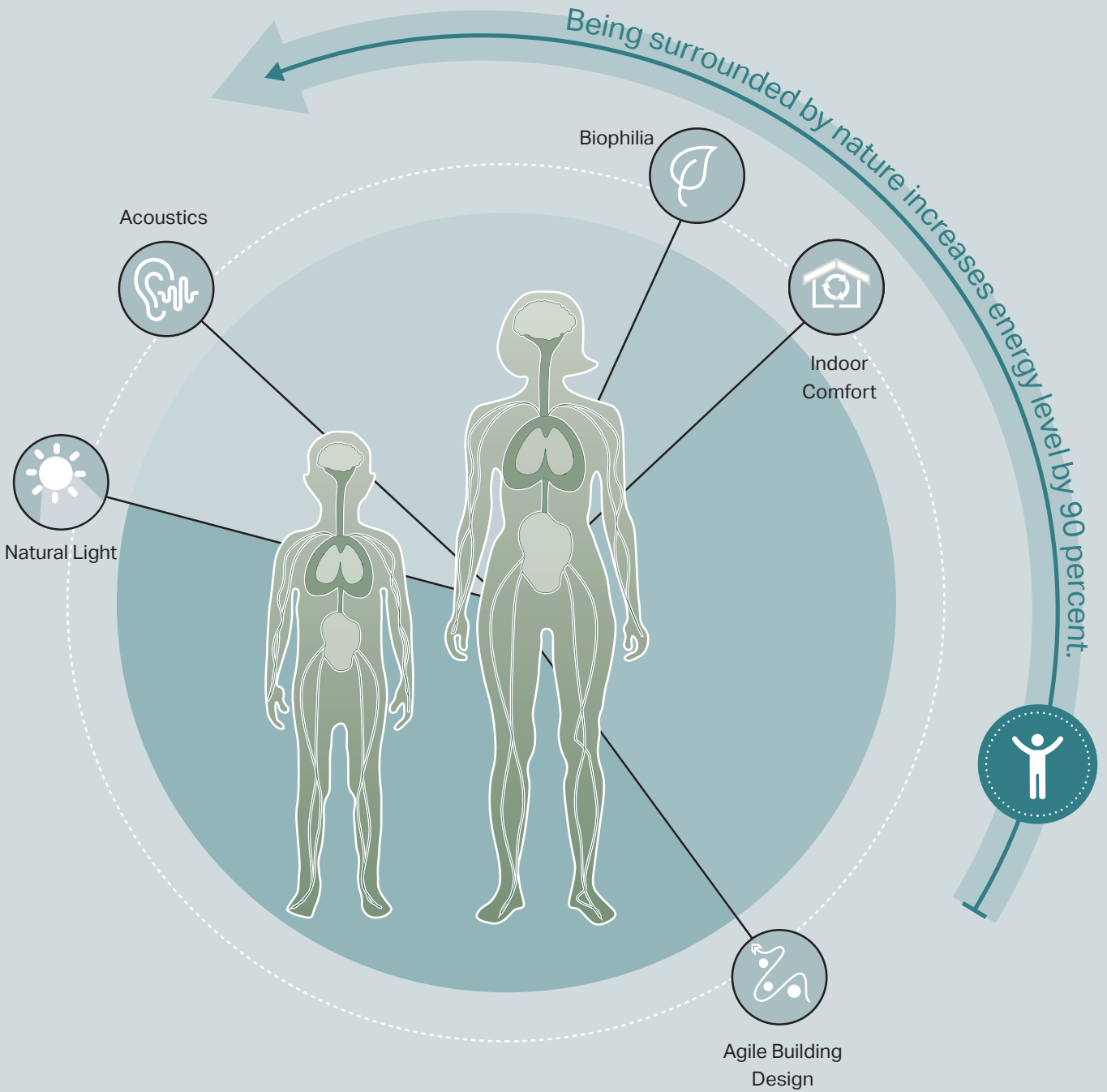


Figure 2.22 Healthy Environment Strategies employed in the proposed development



## 2.8 Ecology and Land Use

### 2.8.1 General

The proposed development's footprint is on an area of land which has previously been developed, and includes the existing tower and public realm.

There are opportunities to improve the ecology, biodiversity, and local greening of the development site, and the proposed development aims to enhance this.

### 2.8.2 Targets

The proposed development is targeting at least the following:

- Urban Greening Factor (UGF) 0.3
- Biodiversity Net Gain (BNG) 10%
- Greenfield runoff rates.

### 2.8.3 Local greening

The proposed development improves on the local greening with several interventions in the public realm and at various locations on the tower. The following are proposed, refer to *Public Realm and Landscape Design Statement prepared by DSDHA dated December 2023*:

- Semi natural wetland to the north-west of the public realm in front of 10 Brock Street
- A series of planters with semi-natural vegetation throughout the public realm, including the open stairs, up the ramp to Level 02, and terrace at podium level
- Standard trees in connected pits throughout the public realm
- Intensive green roof on terraces above level 03
- Extensive green roof on rooftop with varied soil depths
- A blue roof will be installed beneath all planting elements and on the roof top where planting cannot be accommodated.

Together these green interventions will increase the quality and quantity of urban greening, resulting in a UGF of 0.386. This is shown in Figure 2.23.

### 2.8.4 Mitigating urban heat islands

In urban areas, intensifying climate change will result in increased rainfall intensity and risk of flash flooding in a largely impermeable environment, while increasing temperatures will exaggerate the urban heat island effect.

Not only will these proposals improve UGF and biodiversity, but they are also adept at enhancing the climate resilience of the built environment, mitigating risks such as flooding and overheating, while providing a wider range of co-benefits.

### 2.8.5 Sustainable drainage

These green interventions form part of the Sustainable Urban Drainage Systems (SuDS) employed to reduce and mitigate the impacts of flood events. The proposed development is targeting 3.0l/s runoff rate through such measures, in combination with stormwater attenuation in the basement. Refer to Section 2.6.2.

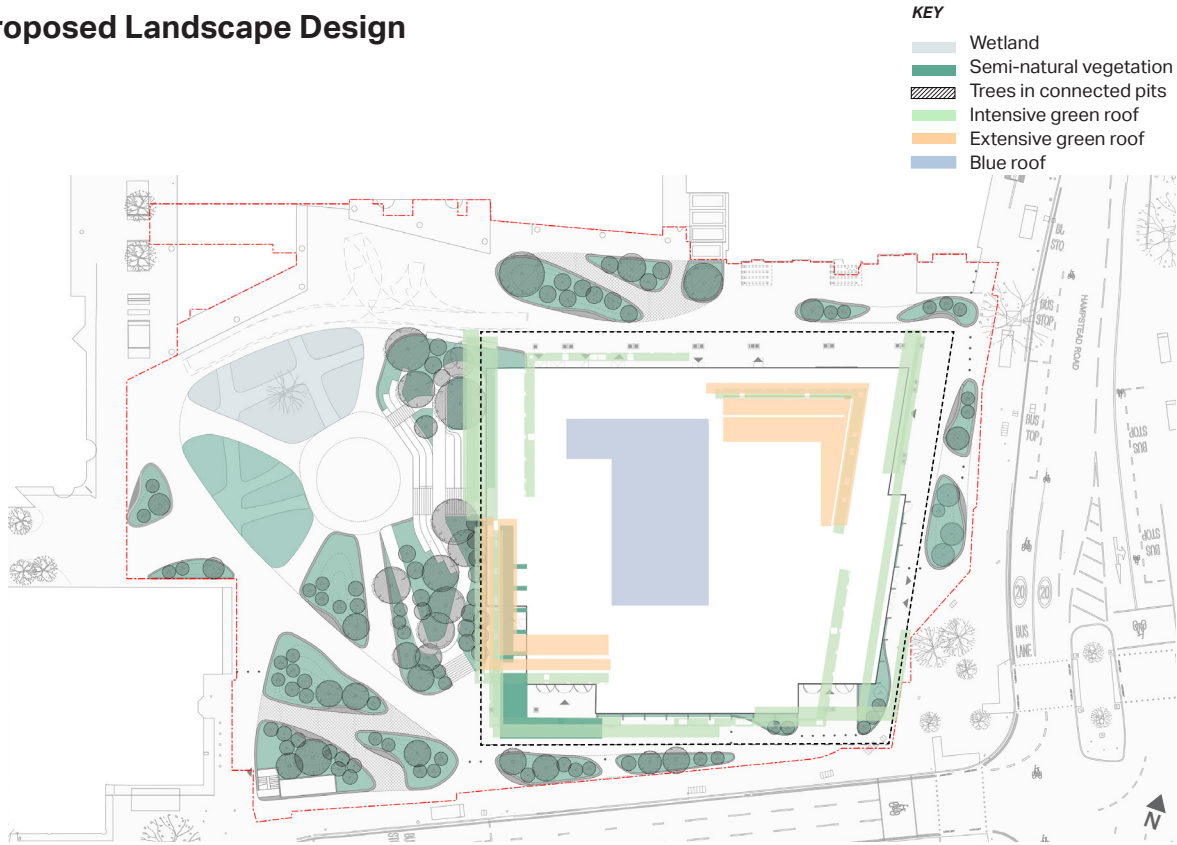
### 2.8.6 Biodiversity net gain

A Preliminary Ecological Appraisal and a Biodiversity Net Gain Assessment have been conducted by Greengage, refer to *Biodiversity Net Gain Assessment prepared by Greengage dated December 2023*.

The assessment shows that the proposed development is predicted to provide a net gain of 0.66 HU (26.90%) associated with area-based habitats compared with the pre-development value. This will be achieved through the following measures:

- A pond (non-priority habitat) will be created and planted with wetland plants
- Individual trees will be planted throughout the site
- A biodiverse roof will be created on the rooftop (Level 31). It will be planted with a variety of native species and species listed on the RHS Plants for Pollinators list
- Intensive green roof will be created in perimeter planters on the tower. They will be planted with a large variety of native and non-native heathland/upland species.

## Proposed Landscape Design



## Urban Greening Factor

Surface Cover Type	Factor	Area (m <sup>2</sup> )	Contribution
Semi natural vegetation	1.0	1,384	1,384
Wetland or open water	1.0	249	249
Intensive green roof	0.8	667	533.6
Standard trees in connective tree pits	0.8	776	620
Extensive green roof	0.7	348	244
Permeable paving	0.1	381	38.1
<b>Urban greening factor</b>			<b>0.386</b>
<b>Tolerance for detailed design</b>			<b>0.348</b>

Figure 2.23 Landscape design for the proposed development and UGF calculation. Drawings and calculations from Public Realm and Landscape Design Statement prepared by DSDHA dated December 2023

## 2.9 Sustainable Transport

The proposed development is in close proximity to an excellent public transport network. London Underground, Overground, National Rail, and buses are all available within 2 km walking distance of the site, which will help to reduce transport-related emissions and traffic congestion.

The Site has a PTAL rating of 6b, indicating "excellent" transport connectivity. The Site is mainly served by Warren Street Underground Station (south), Euston Square Underground Station (east) and Great Portland Street Underground Station (west). There are also several bus routes that serve the site along Euston Road (south) and Hampstead Road (east).

A site-specific Transport Assessment has been prepared by Velocity Transport Planning in accordance with TfL's Healthy Streets Approach, and forms part of this planning application. Refer to *Transport Assessment prepared by Velocity Transport Planning dated December 2023*. In addition, an Outline Travel Plan has been prepared which looks to introduce and promote sustainable travel measures throughout the development's life. Refer to *Outline Travel Plan prepared by Velocity Transport Planning dated December 2023*.

The Healthy Streets Travel Assessment has been developed to accommodate a range of travel options for building users, encouraging reduced reliance on the forms of travel that have an injurious environmental impact. The provision of cycle parking, and the restricted car parking at the site will further discourage the use of private vehicles travelling to / from the site, and will promote travel by non-car modes, especially walking and cycling.

The proposed development will be car-free except two blue-badge parking spaces.

A variety of cycle parking will be provided to encourage active and sustainable travel. 861 long-stay cycle parking spaces will be provided in the secure basement. This will be complete with end of trip facilities including changing rooms, lockers, showers, WCs, maintenance facilities, and water dispensers.

90 short-stay spaces will be located in the public realm, making the total cycle parking provision for the proposed development 951 spaces, in line with London Plan minimum cycle parking standards.





Figure 2.24 Render of the cycle facilities entrance in the proposed development



## 2.10 Local Impacts

### 2.10.1 Local air pollution

The energy strategy for the proposed development comprises all-electric heating and cooling, eliminating on-site combustion of fossil fuel, and therefore has no adverse impact on local air pollution. The proposed development may include a life-safety generator, however backup plant installed for emergency and life-safety power supply is excluded from the consideration for building emissions. The proposed development is considered better than air quality neutral in terms of building emissions.

The proposed development will be car-free except two blue-badge parking spaces. As per the GLA's Air Quality Neutral Guidance, the proposed development is considered air quality neutral with regards to transport emissions.

Considering both building and transport emissions, accordingly the proposed development is considered air quality neutral. More detail is contained within the *Environmental Statement prepared by Trium dated December 2023*.

The proposed air source heat pumps (ASHPs) and chillers will use refrigerants with low global warming potential (GWP), where commercially available and technically feasible based on other performance requirements.

Insulating materials are recommended to use substances that have global warming potential (GWP) of less than 5. This will contribute to reducing blowing agent emissions associated with the manufacture, installation, use and disposal of foamed thermal and acoustic insulating materials.

### 2.10.2 Local light pollution

Night-time light pollution will be minimised by carefully selecting equipment with appropriate optics and baffles and positioned to ensure that light pollution is kept to a minimum as not to disturb residents in the neighbouring properties.

All external lighting, including that in the public realm, will be specified to BREEAM Ene 03 requirements. It will endeavour to meet best practice efficacy with automatic lighting control to prevent operation during daylight hours. For areas

of intermittent pedestrian traffic, presence detection will be considered where appropriate.

Night-time light pollution will be minimised through the appropriate location and selection of external luminaires and light controls.

### 2.10.3 Local noise pollution

Noise from the proposed development affecting nearby noise-sensitive buildings will be reduced by adopting noise attenuation measures, where required.

A Noise Impact Assessment was conducted by Hann Tucker Associates. The assessment establishes baseline noise conditions by means of a detailed noise survey. These findings are used to assess the suitability of the site for commercial use, and to set noise emission limits from the development to minimise the possibility of noise nuisance to neighbours. The Noise Impact Assessment is included as part of the planning application. Refer to *Noise Impact Assessment Report prepared by Hann Tucker Associates dated December 2023*.

### 2.10.4 Construction impacts

A Construction Management Plan has been developed by Velocity Transport Planning to help manage noise, dust, and pollution impacts during construction.

The CMP is included as part of the planning application. Refer to *Construction Management Plan prepared by Velocity Transport Planning dated December 2023*.

## 2.11 Management

Sustainable management practices relating to design, construction, commissioning, and handover will be sought in order to ensure robust sustainability objectives are set and then followed from design through to operation.

The proposed development has engaged in a thorough co-design and consultation process, integrating the community and other relevant stakeholders in the design process. This included sessions on inclusivity in the public realm, interior spaces and programming, and exterior spaces and programming, as well as events focused on environmental sustainability, and a youth engagement workstream. The process is documented in the Statement of Community Involvement (SCI) that forms part of the planning application. Refer to *Statement of Community Involvement and Social Impact prepared by London Communications Agency dated December 2023*.

Building services commissioning will be carried out in a coordinated and comprehensive manner with regard to the scope of services being specified/installed, ensuring optimised performance under actual occupancy and usage conditions. The proposed development is targeting a NABERS rating which will require at least a year's worth of building monitoring and tuning, to deliver the targeted rating.

A Building Users' Guide (BUG) will be provided to the relevant Facilities Management (FM) teams to enable them to understand and operate their premises efficiently and make the best use of local facilities. This non-technical users' guide will cover information on the operation and environmental performance of the building, and provide information relating to the site and its surroundings.

The construction site will be managed in an environmentally sound manner in terms of resource use (including construction materials and waste), energy and water consumption, and air and water pollution. The site will be managed adhering to the Considerate Constructors Scheme, and the project will endeavour to achieve a high score of 40/45 or higher.

Management of noise, dust, and pollution impacts during construction is addressed in the Construction Management Plan. Refer to *Construction Management Plan prepared by Velocity Transport Planning dated December 2023*.



3

Euston Tower

# Summary and Conclusions

## 3.1 Conclusion

This Sustainability Statement demonstrates British Land's commitment to delivering a world leading science, technology and innovation building and public realm for Camden and the Knowledge Quarter that inspires, connects, and creates opportunities for local people and businesses.

Sustainability is a cornerstone of this vision. As outlined in this statement, the proposed development adopts a sustainable approach across all areas of design, construction, and operation. This will ensure that it delivers world leading sustainability performance that is fit for now and the future.

Wherever technically, practically, and economically feasible, the proposed development meets and exceeds the sustainability requirements of planning policy and the Building Regulations.

The proposed development includes a range of sustainable strategies and approaches, as detailed in this statement and its supporting documents, including:

- **High quality certification**
  - Targeting BREEAM "Outstanding" NC 2018 for offices with research and development areas, and BREEAM "Excellent" NC 2018 retail areas
  - WELL-ready with sufficient features to enable WELL "Gold" certification with aspiration for "Platinum"
  - Aspiring to at least NABERS 5\* in operation.
- **Net zero carbon in construction and operation**
  - Embodied carbon design optimisation and carbon-considered procurement
  - Upfront embodied carbon currently estimated as 733 kgCO<sub>2</sub>e/m<sup>2</sup> GIA (including demolition), outperforming the GLA benchmark for offices
  - Whole life-cycle embodied carbon currently estimated as 1,262 kgCO<sub>2</sub>e/m<sup>2</sup> GIA [A-C excl. B6&B7], outperforming the GLA benchmark for offices
  - Residual embodied carbon emissions will be offset through payment into British Land's transition fund
  - Residual regulated operational carbon emissions offset through payment into the Camden Climate Fund.
- **Fabric first and low energy**
  - Limiting internal heat gains by challenging design criteria to reduce space cooling demand and maximise free cooling potential
  - Facade designed to significantly limit solar heat gain (LETI-compatible 35 W/m<sup>2</sup>) with rationalised glazing ratios, external shading, and solar control glass
  - Integration of operable vents as a means of passive ventilation and cooling
  - Regulated operational carbon emissions are reduced by 10% due to energy efficiency measures alone compared to the GLA's Part L 2021 baseline ("Be Lean")
  - An all-electric heating and cooling energy strategy is proposed to benefit from future electrical grid decarbonisation, using air source heat pumps (ASHPs) and chillers for all heating and cooling
  - Through the use of ASHPs and rooftop photovoltaic (PV) panels, the regulated operational carbon emissions are reduced by 14% overall, compared to the GLA's Part L 2021 baseline ("Be Green")
  - Whole building energy demand estimated using a CIBSE TM54 approach as 244 kWh/m<sup>2</sup> for office and lab-enabled split ("Be Seen")
  - Base build energy demand will be provided by 100% Renewable Energy Guarantee of Origin backed (REGO) electricity, in line with British Land's net zero pathway<sup>1</sup>.
- **Circular economy pioneer and waste minimisation**
  - Carbon and waste has been minimised by retaining 31% of the existing structure, following a detailed feasibility study (pre-redevelopment audit), which has been independently reviewed by a third-party assessor, and their report has been issued to Camden
  - A pioneering strategy for material recovery and detailed assessment of opportunities for deconstruction waste reuse/upcycling/recycling submitted as Appendix B to the Circular Economy Statement
  - Prototyping innovative approaches for structural reuse of concrete and recycling of building glass at scale, with ambition to publish the findings following testing that is underway

<sup>1</sup> In addition to, and distinct from, the Mayor of London's net zero operational carbon requirement

- Designing a structure that is long-lasting and adaptable, with elements designed to be disassembled and recovered for reuse
  - Considering the different building elements in layers to enable maintenance and replacement that minimises destructive impacts on other building elements (especially structure)
  - Designing a modular facade with the intention of utilising off-site manufacturing to reduce waste
  - Using reused and/or high recycled content materials where possible, targeting 25% recycled content by value
  - Improving end of life reusability by committing to capture useful data for key building elements in material passports
  - Meeting or exceeding the GLA diversion from landfill targets:
    - Zero biodegradable waste to landfill
    - 98% of demolition waste to be diverted from landfill
    - 96% of construction waste to be diverted from landfill
    - 95% of excavation waste to beneficial use
  - Contributing to achieving the GLA's target of 65% municipal waste recycling by 2030, and the London Environmental Strategy target of 75% business waste recycling by 2030.
  - **Climate resilience, greening, and biodiversity**
    - Use of green/blue roofs, in addition to vegetated areas and bio-retention features in the landscaping, as part of a Sustainable Drainage System (SuDS) that manages surface water runoff and filters rainwater
    - Surface water runoff rates of 3.0 l/s, and a 96% reduction in surface water discharge compared to the pre-development condition (1-in-100 year)
    - Mitigation of urban heat island effect through green roofs and biodiverse planting, achieving:
      - Urban Greening Factor (UGF) 0.386
      - Biodiversity Net Gain (BNG) 26.90%
    - Improved wind conditions compared to the existing situation, achieved through the building and landscaping design.
  - **Water conservation**
    - Non-potable water use reduction through use of rainwater and greywater harvesting for WC flushing
    - Innovative StoFlow system designed to passively store rainwater for WC flushing
    - Targeting a minimum 40% potable water reduction compared to BREEAM NC 2018 baseline, exceeding the London Plan requirement of BREEAM "Excellent" standards for Wat 01 water category.
  - **Air quality impacts**
    - Air quality neutral achieved through an all-electric infrastructure with no on site combustion for heating and cooling, and car-free development except for accessible bays (space provision only for back-up tenant generator)
  - **Active travel and car-free**
    - A car-free development except two blue-badge parking spaces
    - Provision of end of trip facilities complete with 951 cycle parking spaces (long-stay spaces located in a secure basement), in line with London Plan minimum cycle parking standards
    - To further promote the cycle mode share, end of trip facilities includes changing rooms, lockers, showers, WCs, maintenance facilities, and water dispensers
  - **Sustainable management**
    - A thorough co-design and consultation process, integrating the community and other relevant stakeholders in the design process
    - Commitment to managing the construction site in an environmentally sound manner, adhering to the Considerate Constructors Scheme, and considering its impacts during construction in a Construction Management Plan.
- To ensure successful implementation, the key initiatives and commitments detailed in this statement, and its supporting documents, will be implemented, monitored, and/or reviewed as the design develops, and subsequently during the operational phase of the proposed development.

A

Euston Tower

# Appendices



# Appendices

## List of Appendices

- A BREEAM Pre-assessment
- B WELL Pre-assessment
- C WLCA Method Statement
- D GLA WLCA Template



# **BREEAM New Construction 2018 (Non-Domestic)**

Design & Procurement Assessment  
**Euston Tower - Office**

65206043  
05/10/2022  
Revision1





# BREEAM NC 2018 Credit Review

05/10/2022

Rev.1

Project Name **Euston Tower - Office**  
 Building Type **Office**  
 Project Type **Shell and Core**

Targeted BREEAM rating % **85.99** **Outstanding**  
 Potential BREEAM rating % **93.56** **Outstanding**  
 Achieved scoring % **0.00** **Unclassified**



Credit Ref.	Credit Title	Credit Name	Credits Available	Credits Targeted	Potential Additional	Credits Achieved	Mandatory Elements	Responsibilities	Deadline / RIBA Stage	Status	Comments / Actions	
<b>MANAGEMENT</b>			<b>0.61%</b>									
Man 01	Project brief and design	Project Delivery Planning	1	1		0		Client*PM*	2		Design team meetings, scope of work & formal agreements on performance targets with project team members (pre-requisite)	
		Stakeholder Consultation (Interested Parties)	1	1		0		Client*PM*	2		All relevant third parties (planning consultation with local authority, local residents and any input from end user) been consulted.	
		<b>Have project team, including the client, formally agree strategic performance targets?</b>						Yes	Client*Design Team*			<b>Pre-requisite requirement for AP credits (Concept &amp; Developed Design)</b>
		BREEAM AP (Concept Design)	1	1		0		BREEAM AP*	2		BREEAM AP is appointed prior to RIBA Stage 2 and BREEAM target formally agreed with design team.	
		BREEAM AP (Developed Design)	1	1		0		BREEAM AP*	3		BREEAM AP is appointed and monitor progress against target throughout the project up to PC Stage.	
Man 02	Life cycle cost and service life planning	Elemental LCC	2	2		0		LCC Specialist*	2		An Elemental LCC analysis is required to be carried out at RIBA Stage 2 for 20, 30, 50 or 60 years LCC analysis	
		Component Level LCC options appraisal	1	1		0		LCC Specialist*	4		A Component LCC analysis at RIBA Stage 4 including Envelope, e.g. cladding, window, roof. Services, Finishes, e.g. floors or ceilings. External spaces, e.g. landscaping.	
		Capital Cost Reporting	1	1		0		Client*QS*	4		Report a capital cost in £/m2 for BRE purpose only.	
Man 03	Responsible construction practices	<b>Legal and sustainable timber</b>						Yes	Contractor*			<b>This is a minimum requirement for achieving any BREEAM rating.</b>
		Environmental Management	1	1		0		Contractor*	4		Contractor operates EMS: certificate of ISO 14001 /EMAS and implement best practice pollution prevention policies and procedures on site in accordance with Working at construction and demolition sites: PPG6, Pollution Prevention Guidelines.	
		<b>Have the client &amp; the contractor formally agreed performance targets?</b>						Yes	Client*Contractor*			<b>Pre-requisite requirement for AP credits (Site)</b>
		BREEAM AP (Site)	1	1		0		Contractor*	4		A Site Sustainability Manager / BREEAM AP should be appointed to monitor targets during the RIBA Stages 5 & 6.	
		Responsible Construction Management (Minimum Standard: 1 credit for Excellent, 2 for Outstanding)	2	2		0	Yes	Contractor*	4		<b>Minimum Standard: E-1; O-2.</b> The principal contractor evaluates the risks (on site and off site), plans and implements actions to minimise the identified risks i.e. Considerate Constructors Scheme, Fleet Operator Recognition Scheme.	
		Monitoring of Construction Site Impacts - Utility Consumption	1	1		0		Contractor*	4		Site-based energy and water usage to be monitored. Display figures on site.	
Man 04	Commissioning & Handover	Commissioning - Testing Schedule & Responsibilities (Minimum Standard: 1 credit for Very Good / Excellent / Outstanding)	1	1		0	Yes	Contractor*Specialist*	4		<b>Minimum Standard: VG/E/O - 1.</b> Third party commissioning manager to be appointed. Testing schedule and responsibilities to be provided.	
		Commissioning - design and preparation	1	1		0		Contractor*Specialist*	4		Appointment of an appropriate project team member, provided they are not involved in the general installation works provide commissioning management.	
		Testing & Inspecting Building Fabric	1	1		0		Contractor*Specialist*	4		Thermographic survey as well as an airtightness test and inspection required.	
		<b>Building User Guide</b>						Yes	Client*Contractor*			<b>Minimum Standard: VG/E/O - 1.</b> A technical and non-technical building user guides to be developed.
		Handover	1	1		0		Contractor*	4		Building User Guides as above and a non-technical training schedule for the building occupiers. A technical training schedule for the premises facilities managers.	
Man	<b>TOTAL:</b>		<b>18</b>	<b>18</b>	<b>0</b>	<b>0</b>						
	<b>% of total score:</b>		<b>11.00%</b>	<b>11.00%</b>	<b>0.00%</b>	<b>0.00%</b>						

Credit Ref.	Credit Title	Credit Name	Credits Available	Credits Targeted	Potential Additional	Credits Achieved	Mandatory Elements	Responsibilities	Deadline / RIBA Stage	Status	Comments / Actions
<b>HEALTH &amp; WELLBEING</b>			<b>0.73%</b>								
Hea 01	Visual comfort	Daylighting	2	0		0		Architect*Specialist*	3		Daylighting study to be carried out and achieve average daylight factor of 2% over 80% (100% room dependant) of the floor plate and a uniformity ratio of at least 0.3.
		View Out	1	1				Architect*	3		95% of the floor area in 95% of spaces for each relevant building area is within 8 m of an external wall. The window or opening must be ≥ 20% of the surrounding wall area. Or compliance is sought via BS 8206: part 2.
		Internal & External Lighting Levels, Zoning & Controls	1	1				M&E Consultant*	4		Internal lighting in all relevant areas of the building is designed to provide illuminance (lux) levels and colouring rendering index in accordance with the SLL Code for Lighting 2012 and areas with PC CIBSE LG7. Internal lighting is zoned to allow for occupant control.
Hea 02	Indoor air quality	<b>Indoor Air Quality Plan</b>					Yes	Specialist*			<b>Prerequisite requirement when VOC credits are pursued. IAQ Plan to be developed.</b>
		Ventilation	1	1			0		M&E Consultant*	4	
Hea 03	Safe Containment in Laboratories										
Hea 04	Thermal comfort	Thermal modelling	1	1		0		Energy Consultant*	3		Carry out dynamic thermal modelling using CIBSE AM11 compliant software.
		Design for future thermal comfort	1	1		0		Energy Consultant*	3		The building shall be designed to be adaptable for a projected climate change scenario. PMV and PPD to be reported.
Hea 05	Acoustic performance	Acoustic performance	1	1		0		Acoustician*	3		Appointment of suitably qualified acoustician to undertake calculation & testing requirements. The contractor to confirm that they will remediate any non-conformation.
Hea 06	Security	Security of Site & Building	1	1		0		Security Specialist*	2		A suitably qualified security specialist (SQSS) is required to conduct an evidence-based Security Needs Assessment at RIBA Stage 2.
Hea 07	Safe and healthy surroundings	Safe Access	1	1		0		Architect*	4		Dedicated and safe cycle paths are provided from the site entrance to any cycle storage, and connect to off-site cycle paths where applicable. Suitable lighting also required.
		Outside Space	1	1		0		Architect*	4		There is an outside space providing building users with an external amenity area.
<b>Hea</b>		<b>TOTAL:</b>	<b>11</b>	<b>9</b>	<b>0</b>	<b>0</b>					
		<b>% of total score:</b>	<b>8.00%</b>	<b>6.55%</b>	<b>0.00%</b>	<b>0.00%</b>					



Credit Ref.	Credit Title	Credit Name	Credits Available	Credits Targeted	Potential Additional	Credits Achieved	Mandatory Elements	Responsibilities	Deadline / RIBA Stage	Status	Comments / Actions
<b>ENERGY</b>		0.67%									
Ene 01	Reduction of Energy Use & Carbon Emissions	Energy Performance Commissioning - implementation <b>(Minimum Standard: 4 credits for Excellent / 6 credits for Outstanding)</b>	9	6		0	Yes	Energy Consultant*	4		<b>Minimum Standard: E-4; O-6</b> Credits achieved through IES Modelling Tool and reduction in regulated CO <sub>2</sub> emissions.
		Prediction of operational energy consumption <b>(Minimum Standard: 4 credits for Outstanding)</b>	4	4		0	Yes	Energy Consultant*	4		<b>Minimum Standard: O-4</b> Undertake additional energy modelling during the design and post-construction stage to generate predicted operational energy consumption figures.
Ene 02	Energy Monitoring	Sub-Metering of End-use Categories	1	1		0	Yes	M&E Consultant*Contractor*	4		<b>Minimum Standard: VG/E/O-1.</b> Energy metering systems of at least 90% of the estimated annual energy consumption of each fuel is assigned to the end-use categories.
		Sub-Metering of High Energy Load & Tenancy Areas	1	1		0		M&E Consultant*Contractor*	4		<b>Sub-metering on a floor by floor basis and tenancy areas.</b>
Ene 03	External Lighting	External Lighting	1	1		0		M&E Consultant*Specialist*	4		Average initial luminous efficacy of not less than 70 luminaire lumens per circuit Watt. Automatic control to prevent operation during daylight hours and presence detection in areas of intermittent pedestrian traffic.
Ene 04	Low Carbon Design	Passive Design Analysis	1	1		0		Energy Consultant*	2		Thermal modelling to be achieved first. Implement passive design measures to reduce the total heating, cooling, mechanical ventilation, lighting loads and energy consumption in line with the passive design analysis findings.
		Free Cooling	1	0		0		M&E Consultant*	4		For naturally ventilated buildings only.
		Low Zero Carbon Feasibility Study	1	1		0		Energy Consultant*	2		LZC Study to establish the most appropriate low or zero carbon energy sources and report the reduction on regulated CO <sub>2</sub> emissions.
Ene 06	Energy Efficient Transportation Systems	Energy Consumption	1	1		0		Lift Specialist*	4		Lift analysis to determine transportation demand and usage patterns in compliance with BS EN ISO 25745 Part 2 and 3.
		Lifts	1	1		0		Lift Specialist*	4		Energy-efficient features offering the greatest potential energy savings will be part of the system i.e. a standby condition for off-peak periods.
<b>Ene</b>		<b>TOTAL:</b>	<b>21</b>	<b>17</b>	<b>0</b>	<b>0</b>					
		<b>% of total score:</b>	<b>14.00%</b>	<b>11.33%</b>	<b>0.00%</b>	<b>0.00%</b>					

Credit Ref.	Credit Title	Credit Name	Credits Available	Credits Targeted	Potential Additional	Credits Achieved	Mandatory Elements	Responsibilities	Deadline / RIBA Stage	Status	Comments / Actions
<b>TRANSPORT</b>			0.96%								
Tra 01	Transport assessment and travel plan	Transport assessment and travel plan (The existing AI needs to be calculated and be in the Travel Assessment)	2	2		0	AI < 25	Transport Consultant*	2		Travel Plan to be commissioned for the development clearly considering the impact onto the surrounding infrastructure etc. due to the site specific travel survey / assessment having been developed. To assess availability of transport links, frequency and amenities in proximity to the site.
Tra 02	Sustainable transport measures	<b>Prerequisite: Achieve criteria 3-5 in the Tra 01</b>					Yes	Transport Consultant*			<b>Prerequisite for achieving Tra 02 credits.</b>
		1. The existing AI calculated in Tra 01 (The existing AI ≥ 8 for all other building types; AI ≥ 4 for prison/MOD sites, rural location sensitive buildings)					1	Transport Consultant*			To identify the sustainable transport measures, according to the Accessible Index (AI) of the site and the active measures implemented.
		2. Demonstrate an increase over the existing Accessibility Index.					Transport Measures?	Transport Consultant*			
		3. Provide a public transport information system in a publicly accessible area, to allow building users access to up-to-date information on the available public transport and transport infrastructure.					Transport Measures?	Transport Consultant*Client*			
		4. Provide electric recharging stations of a minimum of 3kw for at least 10% of the total car parking capacity for the development.					Transport Measures?	Transport Consultant*Client*			
		5. Set up a car sharing group or facility to facilitate and encourage building users to car share. Raise awareness of the sharing scheme.					Transport Measures?	Transport Consultant*Client*			
		6. During preparation of the brief, the design team consults with the local authority (LA) on the state of the local cycling network and public accessible pedestrian routes, to focus on whichever the LA deems most relevant to the project, and how to improve it.	10	10		0	11-12	Transport Consultant*Client*	1		
		7. Install compliant cycle storage spaces to meet the minimum levels set out in Table 7.5					13	Transport Consultant *Client*Architect*			
		8. Provide at least two compliant cyclists' facilities for the building users, (including pupils where appropriate to the building type) – Showers; – Changing facilities; – Lockers; – Drying spaces.					14-15	Transport Consultant *Client*Architect*			
		9. At least three existing accessible amenities are present, see Table 7.6.					16	Transport Consultant*Client*			
		10. Enhanced amenities					Transport Measures?	Transport Consultant*Client*			
11. Implement one site-specific improvement measure, not covered by the options already listed in this issue, in line with the recommendations of the travel plan.					Transport Measures?	Transport Consultant*Client*	4				
<b>Tra</b>			<b>TOTAL:</b>	<b>12</b>	<b>12</b>	<b>0</b>	<b>0</b>				
			<b>% of total score:</b>	<b>11.50%</b>	<b>11.50%</b>	<b>0.00%</b>	<b>0.00%</b>				
<b>WATER</b>			0.78%								
Wat 01	Water Consumption	Water Consumption	5	3	1	0	Yes	M&E Consultant* Architect*Contractor*	4		<b>Minimum Standard: VG/E-1; O-2</b> Water fittings to have restricted flow rates to achieve targeted credits. Greywater or rainwater system can contribute to these credits.
Wat 02	Water Monitoring	Water Monitoring	1	1		0	Yes	M&E Consultant*	4		<b>Minimum Standard: G/VG/E/O- Criterion 1 only - water meter on mains.</b> Any water-consuming plant or building areas consuming 10% or more of the building's total water demand. Water flow meters pulsed & BMS connected.
Wat 03	Water Leak Detection	Leak Detection System	1	1		0		M&E Consultant*	4		To detect any major leaks within the buildings a leak detection via BMS with audible alarm.
		Flow Control Devices	1	1		0		M&E Consultant*	4		Sanitary supply shut-off valves specified to each toilet area.
Wat 04	Water Efficient Equipment	Water Efficient Equipment	1	1		0		M&E Consultant*	4		Mitigate 'unregulated water usage' .
<b>Wat</b>			<b>TOTAL:</b>	<b>9</b>	<b>7</b>	<b>1</b>	<b>0</b>				
			<b>% of total score:</b>	<b>7.00%</b>	<b>5.44%</b>	<b>0.78%</b>	<b>0.00%</b>				

Credit Ref.	Credit Title	Credit Name	Credits Available	Credits Targeted	Potential Additional	Credits Achieved	Mandatory Elements	Responsibilities	Deadline / RIBA Stage	Status	Comments / Actions
<b>MATERIALS</b>			1.25%								
Mat 01	Environmental impacts from construction products - Building life cycle assessment (LCA)	Superstructure (all building types)	6	4		0	Yes	LCA Specialist*	2		To carry out building Life Cycle Assessment (LCA) <u>before planning submission</u> . Demonstrate how the LCA options appraisal has affected the design.
		Superstructure - Technical Design					LCA Specialist*	4			
		Substructure and hard landscaping options appraisal during Concept Design	1	1		0		LCA Specialist*	2		The LCA options appraisal summary document includes substructure and hard landscaping.
Mat 02	Environmental impacts from construction products - Environmental Product Declarations (EPD)	Specification of products with a recognised environmental product declaration (EPD)	1	0		0		Landscape Architect* LCA Specialist*	4		To specify products with recognised EPD, then use Mat 01/02 submission tool.
Mat 03	Responsible Sourcing of construction products	<b>Pre-requisite: Legal and sustainable timber</b>					Yes	Client*Contractor*	4		<b>Minimum Standard: Responsible sourcing of timber.</b>
		Enabling Sustainable Procurement	1	1		0		Client*	2		Sustainable Procurement Plan to be in place before RIBA Stage 2.
		Measuring Responsible Sourcing	3	1	1	0		Architect*Contractor*	4		Material specified from manufacturers who can provide EMS Certification (ISO 14001 etc.)
Mat 05	Designing for Durability & Resilience	Designing for Durability & Resilience	1	1		0		Architect*	4		Protecting vulnerable parts of the building from damage and exposed parts of the building from material degradation.
Mat 06	Material Efficiency	Preparation and Brief	1	1		0	Yes/No?	Design Team*	1		Set targets, opportunities and methods for optimise the use of materials (i.e. pre-fabrication, WRAP compliance etc.). Pre-fabrication & WRAP compliance to be shown in minutes of meetings and/or drawings mark-ups.
		Concept Design					Yes/No?		2		
		Developed Design					Yes/No?		3		
		Technical Design					Yes/No?		4		
		Construction					Yes/No?		5		
Mat		<b>TOTAL:</b>	<b>14</b>	<b>9</b>	<b>1</b>	<b>0</b>					
Mat		<b>% of total score:</b>	<b>17.50%</b>	<b>11.25%</b>	<b>1.25%</b>	<b>0.00%</b>					
<b>WASTE</b>			0.64%								
Wst 01	Construction Waste Management	Pre-demolition audit	1	1		0		Demolition Contractor*	2		<b>Minimum Standard: O-1</b> Pre-demolition audit must be carried out at RIBA Stage 2 and included in Resource Management Plan (RMP).
		Construction Resource Efficiency	3	2	1	0	Yes	Contractor*	4		RMP to be prepared covering the targets of non-hazardous waste arising from site construction. Contractor to limit waste to less than 6.5tonnes per 100m2 gross internal area.
		Diversion of Resources from Landfill	1	1		0		Contractor*	4		Contractor to limit waste to landfill. 90% (tonnes) of demolition and 80% non-demolition waste to be diverted from landfill.
Wst 02	Recycled Aggregates	Project Sustainable Aggregate Points	1	0		0		Structural Engineer*	4		If demolition occurs check pre-demolition audit. Aggregate types, quantities and uses to be identified and achieve 3.5-6 sustainable aggregate points.
Wst 03	Operational Waste	Operational Waste	1	1		0	Yes	Architect*Client*	4		<b>Minimum Standard: E/O-1</b> Based on NIA 1000 sqm - 2 sqm space for recycling bins is required. Additional sqm when catering is provided. Minimum of 30 litres of 3 internal bins (no individual container smaller than 7litres) to be provided for multi-residential buildings.
Wst 04	Speculative Finishes (Offices only)	Speculative Floor and Ceiling Finishes	1	1		0		Architect*	4		To install floor and ceiling finishes selected by the known occupant or if occupant not known in show area only.
Wst 05	Adaptation to Climate Change	Resilience of structure, fabric, building services and renewables installation	1	1		0		Design Team*Specialist*	2		Conduct a climate change adaptation strategy of new & existing fabric and it's durability to deal with extremes in weather condition. Develop recommendations/ solutions at RIBA Stage 2. Provide an update at RIBA Stage 4.
Wst 06	Design for disassembly and adaptability	Design for disassembly and functional adaptability - recommendations	1	1		0		Design Team*	2		Conduct study by the end of RIBA Stage 2 and develop recommendations prior to RIBA Stage 2. (i.e. alternative building uses, functions, major plant replacement, ventilation strategy to adapt to future building occupant needs, adaptability to changes of in-use etc.
		Disassembly and functional adaptability – implementation	1	1		0		Design Team*	4		Provide an update during RIBA Stage 4, how the recommendations have been implemented - horizontally or vertically expandability, refurbishment potential, local plant and service distribution routes etc.
Wst		<b>TOTAL:</b>	<b>11</b>	<b>9</b>	<b>1</b>	<b>0</b>					
Wst		<b>% of total score:</b>	<b>7.00%</b>	<b>5.73%</b>	<b>0.64%</b>	<b>0.00%</b>					

Credit Ref.	Credit Title	Credit Name	Credits Available	Credits Targeted	Potential Additional	Credits Achieved	Mandatory Elements	Responsibilities	Deadline / RIBA Stage	Status	Comments / Actions	
<b>LAND USE &amp; ECOLOGY</b>			<b>1.15%</b>									
LE 01	Site Selection	Previously Occupied Land	1	1		0		Architect*	4		75% of new development footprint is built on the previously occupied land.	
		Contaminated Land	1	0		0		Specialist*	4		Specialist's land contamination report and summary details of the implementation plan of the remediation strategy to be developed.	
LE 02	Comprehensive Route Ecological risks and opportunities	Prerequisite - Statutory obligations						Yes	Client*Contractor*			<b>Prerequisite:</b> The client or contractor confirms compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site.
		Survey and evaluation	1	1		0		Ecologist*	1		Route 2 - Suitably qualified ecologist (SQE) appointed to carry out survey and evaluation of the site	
		Determining ecological outcomes of the site	1	1		0		Ecologist*	2		Route 1 & 2 - Determining ecological outcomes, recommendations and data collected from the survey and evaluation are shared with appropriate team members to influence decisions made for activities during site preparation, design and construction works.	
LE 03	Managing impacts on ecology	Prerequisite - Ecological risks and measures on-site						Yes	Client*Contractor*			<b>Prerequisite: LE 02 has been achieved.</b>
		Planning and measures on-site	1	1		0		Ecologist*	2		Route 1 & 2 - Roles and responsibilities to be assigned. Plan and implement site preparation and construction work early; collaborate and implement solutions and measures with stakeholders.	
		Managing negative impacts	2	1	1	0		Ecologist*	4		Route 1 - Negative impacts from site preparation and construction works have been managed according to the hierarchy and no net impact has resulted (1 credit) Route 2 - SQE to provide recommendation on avoidance of negative impact of the site preparation and construction works according to the hierarchy and no net impact has resulted (1 or 2 credits)	
LE 04	Ecological change and enhancement	Prerequisite - Managing negative impacts on ecology						Yes	Client*Contractor*			<b>LE 03 has been achieved. Prerequisite:</b> Roles and responsibilities to be assigned. Site preparation and construction works have been planned. The client or contractor confirms compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site.
		Ecological enhancement	1	1		0		Ecologist*	4		Route 2 - Project team liaise with stakeholders and implement solutions on site or off site within the zone of influence.	
		Change and enhancement of ecology (Route 2)	3	3		0		Ecologist*	4		Route 1 - Ecological measures that enhance the site ecological value to be implemented (1 credit) Route 2 - SQE to provide calculations of the change in ecological value (up to 3 credits)	
LE 05	Long Term ecology management and maintenance	Prerequisite - Statutory obligations, planning and site implementation						Yes	Client*Contractor*	4		<b>Where presumed, LE 04 has been achieved. Prerequisite:</b> The client or contractor confirms compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site. Route 1 - LE 03 'Managing negative impacts' has been achieved. Route 2 - LE 03 'Managing negative impacts' and at least one credit under LE 04 have been achieved.
		Management and maintenance throughout the project	1	1		0		Ecologist*	4		Route 2 - Project team liaise with stakeholders to monitor and review implementation effectiveness and maintenance solutions.	
		Landscape and ecology management plan	1	1		0		Landscape Architect*Ecologist*	4		Route 2 - Landscape and ecology management plan, or similar, is developed in accordance with BS 42020:2013 covering as a minimum the first five years after project completion.	
LE	<b>TOTAL:</b>		<b>13</b>	<b>11</b>	<b>1</b>	<b>0</b>						
	% of total score:		<b>15.00%</b>	<b>12.69%</b>	<b>1.15%</b>	<b>0.00%</b>						

Credit Ref.	Credit Title	Credit Name	Credits Available	Credits Targeted	Potential Additional	Credits Achieved	Mandatory Elements	Responsibilities	Deadline / RIBA Stage	Status	Comments / Actions
<b>POLLUTION</b>			<b>0.75%</b>								
Pol 01	Impact of Refrigerants	<b>Pre-Requisite: systems with electric compressors</b>					Yes	M&E Consultant*	4		<b>Prerequisite:</b> All systems with electric compressors comply with the requirements of BS EN 378:2016 (parts 2 and 3). Refrigeration systems containing ammonia comply with the Institute of Refrigeration Ammonia Refrigeration Systems code of practice.
		Impact of Refrigerants	2	1	1	0		M&E Consultant*	4		1 credit - Refrigerant's Direct Effect Life Cycle CO <sub>2</sub> equivalent emissions (DELCO <sub>2</sub> e) of ≤ 1000 kgCO <sub>2</sub> e/kW cooling/heating capacity. 2 credits - ≤ 100 kgCO <sub>2</sub> e/kW
		Leak Detection	1	1		0		M&E Consultant*	4		All systems are hermetically sealed or only use environmentally benign refrigerants or a permanent automated refrigerant leak detection system is required.
Pol 02	Local air quality	<b>Pre-Requisite:</b>					Yes/No?	M&E Consultant*	4		<b>Is the project required to connect to a District Heating system, that is outside the control of the design team?</b>
		Local air quality	2	2		0		M&E Consultant*	4		Emissions from all installed combustion plant that provide space heating and domestic hot water do not exceed the levels as set in BREEAM manual i.e. gas boilers NOx = 24mg/kWh.
Pol 03	Flood and surface water management	Flood Resilience	2	2		0		Flood Risk Consultant*	4		Site specific Flood Risk Assessment prepared by specialist to confirm that if the site is a low, medium or high probability of flooding.
		Surface Water Run Off	2	2		0		Flood Risk Consultant*	4		<b>Prerequisite - Surface water run-off design solutions must be bespoke.</b> Specialist hydrologist to provide calculation and confirm the proposed attenuation measures, i.e. SUDs.
		Minimising Watercourse Pollution	1	0		0		Flood Risk Consultant*	4		Appropriate consultant to confirm there is no discharge from the developed site for rainfall up to 5 mm and the pollution prevention systems are in line with the SUDs requirements.
Pol 04	Reduction of Night Time Light Pollution	Reduction of Night Time Light Pollution	1	1		0		M&E Consultant*	4		External lighting design is in line with ILP guidance of obtrusive light and can be automatically switched off. Illuminated advertisements are designed in compliance with ILP PLG05 The Brightness of Illuminated Advertisements.
Pol 05	Reduction of Noise Pollution	Reduction of Noise Pollution	1	1		0		Acoustician*	4		A BS 4142:2014 compliant noise impact assessment to be carried out by Acoustician.
<b>Pol</b>			<b>TOTAL:</b>	<b>12</b>	<b>10</b>	<b>1</b>	<b>0</b>				
			<b>% of total score:</b>	<b>9.00%</b>	<b>7.50%</b>	<b>0.75%</b>	<b>0.00%</b>				
<b>INNOVATION</b>			<b>1.00%</b>								
Inn 01	Man 03	Responsible construction practices	1	1		0		Contractor*			
Inn 05	Ene 01	Exemplary level criteria	5	2		0		Energy Consultant*			
Inn 07	Mat 01	Environmental impacts from construction products - Building life cycle assessment (LCA)	3	0	1	0		LCA Specialist*			
Inn 11	Wst 05	Responding to Climate Change	1	0	1	0		BREEAM Assessor*			
Inn 12	LE 02	Ecological value of site and protection of ecological features	1	0		0		Ecologist*Contractor*			Not Targeted.
Inn 13	LE 04	Ecological change and enhancement	1	0	1	0		Ecologist*			Not Targeted.
<b>Inn</b>			<b>TOTAL:</b>	<b>10</b>	<b>3</b>	<b>3</b>	<b>0</b>				
			<b>% of total score:</b>	<b>10.00%</b>	<b>3.00%</b>	<b>3.00%</b>	<b>0.00%</b>				

# **BREEAM New Construction 2018 (Non-Domestic)**

Design & Procurement Assessment  
**Euston Tower - Retail**

65206043  
05/10/2022  
Revision1





Issue	Date	Reason for Issue	Prepared		Checked		Approved	
1	05-Oct-22	Pre-assessment	RC	05-Oct-22	MP	05-Oct-22	KA	05-Oct-22

**BREEAM New Construction 2018 (Non-Domestic) - Design & Procurement Assessment**  
65206043  
05/10/2022  
Revision1

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# BREEAM NC 2018 Credit Review

05/10/2022

Rev.1

Project Name **Euston Tower - Retail**  
 Building Type **Retail**  
 Project Type **Shell Only**

Targeted BREEAM rating % **76.92** **Excellent**  
 Potential BREEAM rating % **84.82** **Excellent**  
 Achieved scoring % **0.00** **Unclassified**



Credit Ref.	Credit Title	Credit Name	Credits Available	Credits Targeted	Potential Additional	Credits Achieved	Mandatory Elements	Responsibilities	Deadline / RIBA Stage	Status	Comments / Actions	
<b>MANAGEMENT</b>			<b>0.80%</b>									
Man 01	Project brief and design	Project Delivery Planning	1	1		0		Client*PM*	2		Design team meetings, scope of work & formal agreements on performance targets with project team members (pre-requisite)	
		Stakeholder Consultation (Interested Parties)	1	1		0		Client*PM*	2		All relevant third parties (planning consultation with local authority, local residents and any input from end user) been consulted.	
		<b>Have project team, including the client, formally agree strategic performance targets?</b>						Yes	Client*Design Team*			<b>Pre-requisite requirement for AP credits (Concept &amp; Developed Design)</b>
		BREEAM AP (Concept Design)	1	1		0		BREEAM AP*	2		BREEAM AP is appointed prior to RIBA Stage 2 and BREEAM target formally agreed with design team.	
		BREEAM AP (Developed Design)	1	1		0		BREEAM AP*	3		BREEAM AP is appointed and monitor progress against target throughout the project up to PC Stage.	
Man 02	Life cycle cost and service life planning	Elemental LCC	2	2		0		LCC Specialist*	2		An Elemental LCC analysis is required to be carried out at RIBA Stage 2 for 20, 30, 50 or 60 years LCC analysis	
		Component Level LCC options appraisal	1	1		0		LCC Specialist*	4		A Component LCC analysis at RIBA Stage 4 including Envelope, e.g. cladding, window, roof. Services, Finishes, e.g. floors or ceilings. External spaces, e.g. landscaping.	
		Capital Cost Reporting	1	1		0		Client*QS*	4		Report a capital cost in £/m2 for BRE purpose only.	
Man 03	Responsible construction practices	<b>Legal and sustainable timber</b>						Yes	Contractor*			<b>This is a minimum requirement for achieving any BREEAM rating.</b>
		Environmental Management	1	1		0		Contractor*	4		Contractor operates EMS: certificate of ISO 14001 /EMAS and implement best practice pollution prevention policies and procedures on site in accordance with Working at construction and demolition sites: PPG6, Pollution Prevention Guidelines.	
		<b>Have the client &amp; the contractor formally agreed performance targets?</b>						Yes	Client*Contractor*			<b>Pre-requisite requirement for AP credits (Site)</b>
		BREEAM AP (Site)	1	1		0		Contractor*	4		A Site Sustainability Manager / BREEAM AP should be appointed to monitor targets during the RIBA Stages 5 & 6.	
		Responsible Construction Management (Minimum Standard: 1 credit for Excellent, 2 for Outstanding)	2	2		0	Yes	Contractor*	4		<b>Minimum Standard: E-1; O-2.</b> The principal contractor evaluates the risks (on site and off site), plans and implements actions to minimise the identified risks i.e. Considerate Constructors Scheme, Fleet Operator Recognition Scheme.	
		Monitoring of Construction Site Impacts - Utility Consumption	1	1		0		Contractor*	4		Site-based energy and water usage to be monitored. Display figures on site.	
Man 04	Commissioning & Handover	Testing & Inspecting Building Fabric	1	0	1	0		Contractor*Specialist*	4		Thermographic survey as well as an airtightness test and inspection required.	
		<b>Building User Guide</b>						Yes	Client*Contractor*			<b>Minimum Standard: VG/E/O - 1.</b> A technical and non-technical building user guides to be developed.
	<b>Man</b>	<b>TOTAL:</b>	<b>15</b>	<b>14</b>	<b>1</b>	<b>0</b>						
		<b>% of total score:</b>	<b>12.00%</b>	<b>11.20%</b>	<b>0.80%</b>	<b>0.00%</b>						

Credit Ref.	Credit Title	Credit Name	Credits Available	Credits Targeted	Potential Additional	Credits Achieved	Mandatory Elements	Responsibilities	Deadline / RIBA Stage	Status	Comments / Actions
<b>HEALTH &amp; WELLBEING</b>			<b>0.88%</b>								
Hea 01	Visual comfort	Daylighting	2	0		0		Architect*Specialist*	3		Daylighting study to be carried out and achieve average daylight factor of 2% over 80% (100% room dependant) of the floor plate and a uniformity ratio of at least 0.3.
		View Out	1	0	1			Architect*	3		95% of the floor area in 95% of spaces for each relevant building area is within 8 m of an external wall. The window or opening must be ≥ 20% of the surrounding wall area. Or compliance is sought via BS 8206: part 2.
		Internal & External Lighting Levels, Zoning & Controls	1	1				M&E Consultant*	4		Internal lighting in all relevant areas of the building is designed to provide illuminance (lux) levels and colouring rendering index in accordance with the SLL Code for Lighting 2012 and areas with PC CIBSE LG7. Internal lighting is zoned to allow for occupant control.
Hea 05	Acoustic performance	Acoustic performance	1	1		0		Acoustician*	3		Appointment of suitably qualified acoustician to undertake calculation & testing requirements. The contractor to confirm that they will remediate any non-conformation.
Hea 06	Security	Security of Site & Building	1	1		0		Security Specialist*	2		A suitably qualified security specialist (SQSS) is required to conduct an evidence-based Security Needs Assessment at RIBA Stage 2.
Hea 07	Safe and healthy surroundings	Safe Access	1	1		0		Architect*	4		Dedicated and safe cycle paths are provided from the site entrance to any cycle storage, and connect to off-site cycle paths where applicable. Suitable lighting also required.
		Outside Space	1	1		0		Architect*	4		There is an outside space providing building users with an external amenity area.
Hea		<b>TOTAL:</b>	<b>8</b>	<b>5</b>	<b>1</b>	<b>0</b>					
Hea		<b>% of total score:</b>	<b>7.00%</b>	<b>4.38%</b>	<b>0.88%</b>	<b>0.00%</b>					

Credit Ref.	Credit Title	Credit Name	Credits Available	Credits Targeted	Potential Additional	Credits Achieved	Mandatory Elements	Responsibilities	Deadline / RIBA Stage	Status	Comments / Actions
<b>ENERGY</b>		<b>0.73%</b>									
Ene 01	Reduction of Energy Use & Carbon Emissions	Energy Performance Commissioning - implementation (Minimum Standard: 4 credits for Excellent / 6 credits for Outstanding)	9	2	2	0	Yes	Energy Consultant*	4		Minimum Standard: E-4; O-6 Credits achieved through IES Modelling Tool and reduction in regulated CO <sub>2</sub> emissions.
Ene 03	External Lighting	External Lighting	1	1		0		M&E Consultant*Specialist*	4		Average initial luminous efficacy of not less than 70 luminaire lumens per circuit Watt. Automatic control to prevent operation during daylight hours and presence detection in areas of intermittent pedestrian traffic.
Ene 04	Low Carbon Design	Passive Design Analysis	1	1		0		Energy Consultant*	2		Thermal modelling to be achieved first. Implement passive design measures to reduce the total heating, cooling, mechanical ventilation, lighting loads and energy consumption in line with the passive design analysis findings.
		Low Zero Carbon Feasibility Study	1	1		0		Energy Consultant*	2		LZC Study to establish the most appropriate low or zero carbon energy sources and report the reduction on regulated CO <sub>2</sub> emissions.
<b>Ene</b>		<b>TOTAL:</b>	<b>13</b>	<b>5</b>	<b>2</b>	<b>0</b>					
		<b>% of total score:</b>	<b>9.50%</b>	<b>3.65%</b>	<b>1.46%</b>	<b>0.00%</b>					

Credit Ref.	Credit Title	Credit Name	Credits Available	Credits Targeted	Potential Additional	Credits Achieved	Mandatory Elements	Responsibilities	Deadline / RIBA Stage	Status	Comments / Actions
<b>TRANSPORT</b>			1.21%								
Tra 01	Transport assessment and travel plan	Transport assessment and travel plan (The existing AI needs to be calculated and be in the Travel Assessment)	2	2		0	AI < 25	Transport Consultant*	2		Travel Plan to be commissioned for the development clearly considering the impact onto the surrounding infrastructure etc. due to the site specific travel survey / assessment having been developed. To assess availability of transport links, frequency and amenities in proximity to the site.
Tra 02	Sustainable transport measures	<b>Prerequisite: Achieve criteria 3-5 in the Tra 01</b>					Yes	Transport Consultant*			<b>Prerequisite for achieving Tra 02 credits.</b>
		1. The existing AI calculated in Tra 01 (The existing AI ≥ 8 for all other building types; AI ≥ 4 for prison/MOD sites, rural location sensitive buildings)					1	Transport Consultant*			To identify the sustainable transport measures, according to the Accessible Index (AI) of the site and the active measures implemented.
		2. Demonstrate an increase over the existing Accessibility Index.					Transport Measures?	Transport Consultant*			
		3. Provide a public transport information system in a publicly accessible area, to allow building users access to up-to-date information on the available public transport and transport infrastructure.					Transport Measures?	Transport Consultant*Client*			
		4. Provide electric recharging stations of a minimum of 3kw for at least 10% of the total car parking capacity for the development.					Transport Measures?	Transport Consultant*Client*			
		5. Set up a car sharing group or facility to facilitate and encourage building users to car share. Raise awareness of the sharing scheme.					Transport Measures?	Transport Consultant*Client*			
		6. During preparation of the brief, the design team consults with the local authority (LA) on the state of the local cycling network and public accessible pedestrian routes, to focus on whichever the LA deems most relevant to the project, and how to improve it.	10	10		0	11-12	Transport Consultant*Client*	1		
		7. Install compliant cycle storage spaces to meet the minimum levels set out in Table 7.5					13	Transport Consultant *Client*Architect*			
		8. Provide at least two compliant cyclists' facilities for the building users, (including pupils where appropriate to the building type) – Showers; – Changing facilities; – Lockers; – Drying spaces.					14-15	Transport Consultant *Client*Architect*			
		9. At least three existing accessible amenities are present, see Table 7.6.					16	Transport Consultant*Client*			
		10. Enhanced amenities					Transport Measures?	Transport Consultant*Client*			
11. Implement one site-specific improvement measure, not covered by the options already listed in this issue, in line with the recommendations of the travel plan.					Transport Measures?	Transport Consultant*Client*	4				
<b>Tra</b>			<b>TOTAL:</b>	<b>12</b>	<b>12</b>	<b>0</b>	<b>0</b>				
			<b>% of total score:</b>	<b>14.50%</b>	<b>14.50%</b>	<b>0.00%</b>	<b>0.00%</b>				
<b>WATER</b>			0.67%								
Wat 02	Water Monitoring	Water Monitoring	1	1		0	Yes	M&E Consultant*	4		<b>Minimum Standard: G/VG/E/O- Criterion 1 only - water meter on mains.</b> Any water-consuming plant or building areas consuming 10% or more of the building's total water demand. Water flow meters pulsed & BMS connected.
Wat 03	Water Leak Detection	Leak Detection System	1	1		0		M&E Consultant*	4		To detect any major leaks within the buildings a leak detection via BMS with audible alarm.
Wat 04	Water Efficient Equipment	Water Efficient Equipment	1	1		0		M&E Consultant*	4		Mitigate 'unregulated water usage' .
<b>Wat</b>			<b>TOTAL:</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>0</b>				
			<b>% of total score:</b>	<b>2.00%</b>	<b>2.00%</b>	<b>0.00%</b>	<b>0.00%</b>				

Credit Ref.	Credit Title	Credit Name	Credits Available	Credits Targeted	Potential Additional	Credits Achieved	Mandatory Elements	Responsibilities	Deadline / RIBA Stage	Status	Comments / Actions
<b>MATERIALS</b>			<b>1.57%</b>								
Mat 01	Environmental impacts from construction products - Building life cycle assessment (LCA)	Superstructure (all building types)	6	4		0	Yes	LCA Specialist*	2		To carry out building Life Cycle Assessment (LCA) <u>before planning submission</u> . Demonstrate how the LCA options appraisal has affected the design.
		Superstructure - Technical Design					LCA Specialist*	4			
		Substructure and hard landscaping options appraisal during Concept Design	1	1		0		LCA Specialist*	2		The LCA options appraisal summary document includes substructure and hard landscaping.
Mat 02	Environmental impacts from construction products - Environmental Product Declarations (EPD)	Specification of products with a recognised environmental product declaration (EPD)	1	0		0		Landscape Architect* LCA Specialist*	4		To specify products with recognised EPD, then use Mat 01/02 submission tool.
Mat 03	Responsible Sourcing of construction products	<b>Pre-requisite: Legal and sustainable timber</b>					Yes	Client*Contractor*	4		<b>Minimum Standard: Responsible sourcing of timber.</b>
		Enabling Sustainable Procurement	1	1		0		Client*	2		Sustainable Procurement Plan to be in place before RIBA Stage 2.
		Measuring Responsible Sourcing	3	0	1	0		Architect*Contractor*	4		Material specified from manufacturers who can provide EMS Certification (ISO 14001 etc.)
Mat 05	Designing for Durability & Resilience	Designing for Durability & Resilience	1	1		0		Architect*	4		Protecting vulnerable parts of the building from damage and exposed parts of the building from material degradation.
Mat 06	Material Efficiency	Preparation and Brief	1	1		0	Yes/No?	Design Team*	1		Set targets, opportunities and methods for optimise the use of materials (i.e. pre-fabrication, WRAP compliance etc.). Pre-fabrication & WRAP compliance to be shown in minutes of meetings and/or drawings mark-ups.
		Concept Design					Yes/No?		2		
		Developed Design					Yes/No?		3		
		Technical Design					Yes/No?		4		
		Construction					Yes/No?		5		Commitment letter
<b>Mat</b>		<b>TOTAL:</b>	<b>14</b>	<b>8</b>	<b>1</b>	<b>0</b>					
		<b>% of total score:</b>	<b>22.00%</b>	<b>12.57%</b>	<b>1.57%</b>	<b>0.00%</b>					
<b>WASTE</b>			<b>0.73%</b>								
Wst 01	Construction Waste Management	Pre-demolition audit	1	1		0		Demolition Contractor*	2		<b>Minimum Standard: O-1</b> Pre-demolition audit must be carried out at RIBA Stage 2 and included in Resource Management Plan (RMP).
		Construction Resource Efficiency	3	2	1	0	Yes	Contractor*	4		RMP to be prepared covering the targets of non-hazardous waste arising from site construction. Contractor to limit waste to less than 6.5tonnes per 100m2 gross internal area.
		Diversion of Resources from Landfill	1	1		0		Contractor*	4		Contractor to limit waste to landfill. 90% (tonnes) of demolition and 80% non-demolition waste to be diverted from landfill.
Wst 02	Recycled Aggregates	Project Sustainable Aggregate Points	1	0		0		Structural Engineer*	4		If demolition occurs check pre-demolition audit. Aggregate types, quantities and uses to be identified and achieve 3.5-6 sustainable aggregate points.
Wst 03	Operational Waste	Operational Waste	1	1		0	Yes	Architect*Client*	4		<b>Minimum Standard: E/O-1</b> Based on NIA 1000 sqm - 2 sqm space for recycling bins is required. Additional sqm when catering is provided. Minimum of 30 litres of 3 internal bins (no individual container smaller than 7litres) to be provided for multi-residential buildings.
Wst 04	Speculative Finishes (Offices only)	Speculative Floor and Ceiling Finishes	1	1		0		Architect*	4		To install floor and ceiling finishes selected by the known occupant or if occupant not known in show area only.
Wst 05	Adaptation to Climate Change	Resilience of structure, fabric, building services and renewables installation	1	1		0		Design Team*Specialist*	2		Conduct a climate change adaptation strategy of new & existing fabric and it's durability to deal with extremes in weather condition. Develop recommendations/ solutions at RIBA Stage 2. Provide an update at RIBA Stage 4.
Wst 06	Design for disassembly and adaptability	Design for disassembly and functional adaptability - recommendations	1	1		0		Design Team*	2		Conduct study by the end of RIBA Stage 2 and develop recommendations prior to RIBA Stage 2. (i.e. alternative building uses, functions, major plant replacement, ventilation strategy to adapt to future building occupant needs, adaptability to changes of in-use etc.
		Disassembly and functional adaptability – implementation	1	1		0		Design Team*	4		Provide an update during RIBA Stage 4, how the recommendations have been implemented - horizontally or vertically expandability, refurbishment potential, local plant and service distribution routes etc.
<b>Wst</b>		<b>TOTAL:</b>	<b>11</b>	<b>9</b>	<b>1</b>	<b>0</b>					
		<b>% of total score:</b>	<b>8.00%</b>	<b>6.55%</b>	<b>0.73%</b>	<b>0.00%</b>					



Credit Ref.	Credit Title	Credit Name	Credits Available	Credits Targeted	Potential Additional	Credits Achieved	Mandatory Elements	Responsibilities	Deadline / RIBA Stage	Status	Comments / Actions	
<b>LAND USE &amp; ECOLOGY</b>			<b>1.46%</b>									
LE 01	Site Selection	Previously Occupied Land	1	1		0		Architect*	4		75% of new development footprint is built on the previously occupied land.	
		Contaminated Land	1	0		0		Specialist*	4		Specialist's land contamination report and summary details of the implementation plan of the remediation strategy to be developed.	
LE 02	Comprehensive Route Ecological risks and opportunities	Prerequisite - Statutory obligations						Yes	Client*Contractor*			<b>Prerequisite:</b> The client or contractor confirms compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site.
		Survey and evaluation	1	1		0		Ecologist*	1		Route 2 - Suitably qualified ecologist (SQE) appointed to carry out survey and evaluation of the site	
		Determining ecological outcomes of the site	1	1		0		Ecologist*	2		Route 1 & 2 - Determining ecological outcomes, recommendations and data collected from the survey and evaluation are shared with appropriate team members to influence decisions made for activities during site preparation, design and construction works.	
LE 03	Managing impacts on ecology	Prerequisite - Ecological risks and measures on-site						Yes	Client*Contractor*			<b>Prerequisite: LE 02 has been achieved.</b>
		Planning and measures on-site	1	1		0		Ecologist*	2		Route 1 & 2 - Roles and responsibilities to be assigned. Plan and implement site preparation and construction work early; collaborate and implement solutions and measures with stakeholders.	
		Managing negative impacts	2	1	1	0		Ecologist*	4		Route 1 - Negative impacts from site preparation and construction works have been managed according to the hierarchy and no net impact has resulted (1 credit) Route 2 - SQE to provide recommendation on avoidance of negative impact of the site preparation and construction works according to the hierarchy and no net impact has resulted (1 or 2 credits)	
LE 04	Ecological change and enhancement	Prerequisite - Managing negative impacts on ecology						Yes	Client*Contractor*			<b>LE 03 has been achieved. Prerequisite:</b> Roles and responsibilities to be assigned. Site preparation and construction works have been planned. The client or contractor confirms compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site.
		Ecological enhancement	1	1		0		Ecologist*	4		Route 2 - Project team liaise with stakeholders and implement solutions on site or off site within the zone of influence.	
		Change and enhancement of ecology (Route 2)	3	3		0		Ecologist*	4		Route 1 - Ecological measures that enhance the site ecological value to be implemented (1 credit) Route 2 - SQE to provide calculations of the change in ecological value (up to 3 credits)	
LE 05	Long Term ecology management and maintenance	Prerequisite - Statutory obligations, planning and site implementation						Yes	Client*Contractor*	4		<b>Where presumed, LE 04 has been achieved. Prerequisite:</b> The client or contractor confirms compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site. Route 1 - LE 03 'Managing negative impacts' has been achieved. Route 2 - LE 03 'Managing negative impacts' and at least one credit under LE 04 have been achieved.
		Management and maintenance throughout the project	1	1		0		Ecologist*	4		Route 2 - Project team liaise with stakeholders to monitor and review implementation effectiveness and maintenance solutions.	
		Landscape and ecology management plan	1	1		0		Landscape Architect*Ecologist*	4		Route 2 - Landscape and ecology management plan, or similar, is developed in accordance with BS 42020:2013 covering as a minimum the first five years after project completion.	
LE	<b>TOTAL:</b>		<b>13</b>	<b>11</b>	<b>1</b>	<b>0</b>						
	% of total score:		<b>19.00%</b>	<b>16.08%</b>	<b>1.46%</b>	<b>0.00%</b>						

Credit Ref.	Credit Title	Credit Name	Credits Available	Credits Targeted	Potential Additional	Credits Achieved	Mandatory Elements	Responsibilities	Deadline / RIBA Stage	Status	Comments / Actions
<b>POLLUTION</b>			1.00%								
Pol 03	Flood and surface water management	Flood Resilience	2	2		0		Flood Risk Consultant*	4		Site specific Flood Risk Assessment prepared by specialist to confirm that if the site is a low, medium or high probability of flooding.
		Surface Water Run Off	2	2		0		Flood Risk Consultant*	4		<b>Prerequisite - Surface water run-off design solutions must be bespoke.</b> Specialist hydrologist to provide calculation and confirm the proposed attenuation measures, i.e. SUDs.
		Minimising Watercourse Pollution	1	0		0		Flood Risk Consultant*	4		Appropriate consultant to confirm there is no discharge from the developed site for rainfall up to 5 mm and the pollution prevention systems are in line with the SUDs requirements.
Pol 04	Reduction of Night Time Light Pollution	Reduction of Night Time Light Pollution	1	1		0		M&E Consultant*	4		External lighting design is in line with ILP guidance of obtrusive light and can be automatically switched off. Illuminated advertisements are designed in compliance with ILP PLG05 The Brightness of Illuminated Advertisements.
		<b>TOTAL:</b>	<b>6</b>	<b>5</b>	<b>0</b>	<b>0</b>					
		<b>% of total score:</b>	<b>6.00%</b>	<b>5.00%</b>	<b>0.00%</b>	<b>0.00%</b>					
<b>INNOVATION</b>			1.00%								
Inn 01	Man 03	Responsible construction practices	1	1		0		Contractor*			
Inn 13	LE 04	Ecological change and enhancement	1	0	1	0		Ecologist*			Not Targeted.
<b>Inn</b>			<b>TOTAL:</b>	<b>10</b>	<b>1</b>	<b>1</b>	<b>0</b>				
<b>Inn</b>			<b>% of total score:</b>	<b>10.00%</b>	<b>1.00%</b>	<b>1.00%</b>	<b>0.00%</b>				



# WELL v2 Core Certification Q4 2022 - Scorecard

## **EUSTON TOWER**

65204023  
20/10/2023  
Revision7



Issue	Date	Reason for Issue	Prepared		Checked		Approved	
1	24-Nov-22	Preassessment	DB	06-Nov-22	DB	07-Nov-22	DB	08-Nov-22
2	13-Jan-23	Preassessment Workshop	DB	13-Jan-23	DB	13-Jan-23	DB	13-Jan-23
3	13-Mar-23	Route to Platinum (8.5 uplift)	DB	13-Mar-23	DB	13-Mar-23	DB	13-Mar-23
4	28-Jun-23	Sound Concept review-Hann	DB	28-Jun-23	DB	28-Jun-23	DB	28-Jun-23
5	10-Jul-23	Architect Workshop	KT	30-Jun-23	DB	10-Jul-23	DB	10-Jul-23
6	07-Sep-23	Evidence Trackers update	KT	07-Sep-23	DB	07-Sep-23	DB	07-Sep-23
7	20-Oct-23	Update	DB	20-Oct-23	DB	20-Oct-23	DB	20-Oct-23

**EUSTON TOWER - WELL v2 Core Certification Q4 2022 - Scorecard**

65204023  
20/10/2023  
Revision7

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# EUSTON TOWER



WELL v2 Core Certification Q4 2022 - GOLD  
 Revision7  
 20/10/2023

Score  
 Targeted 65.5  
 Potential 56.5

Rating  
 GOLD (60 - 79 Points)  
 PLATINUM (80 - 100 Points)

Targeted
Potential to achieve Platinum
Not targeted
Evidence

Feature	Part	Scope	Points Available	Targeted	Potential to Achieve Platinum	Mandatory	Evidence	Responsibility	Comments
AIR P A01. Air Quality	A01.1	Meet Thresholds for Particulate Matter	Non-Leased Spaces			Yes	Performance Test	ALL	Air quality tests will be carried out by the WELL Performance testing Agent (independent from the project team) in the common areas of the building (entrance lobby, staircases, etc.). Air flush is highly advised prior to the air quality tests if undergoing certification. <b>PLATINUM Target: PM2.5: 15 µg/m3 / PM10: 50 µg/m3 or lower.</b> <b>GOLD Target: PM2.5: 25 µg/m3 / PM10: 50 µg/m3 or lower.</b> <b>PM2.5: 14 -16 ug/m3</b> <b>PM10: 25 -28 ug/m3</b> <b>Website: <a href="https://www.londonair.org.uk/london/asp/annualmaps.asp?species=O3&amp;LayerStrength=95&amp;lat=51.5008010864&amp;lon=-0.12463200923&amp;zoom=19">https://www.londonair.org.uk/london/asp/annualmaps.asp?species=O3&amp;LayerStrength=95&amp;lat=51.5008010864&amp;lon=-0.12463200923&amp;zoom=19</a></b>
	A01.2	Meet Thresholds for Organic Gases	Non-Leased Spaces			Yes	Performance Test	ALL	<b>Benzene : 10 µg/m³ or lower.</b> <b>Formaldehyde : 50 µg/m³ or lower.</b> <b>Toluene : 300 µg/m³ or lower.</b>
	A01.3	Meet Thresholds for Inorganic Gases	Non-Leased Spaces			Yes	Performance Test	ALL	<b>Carbon monoxide: 10 mg/m³ or lower.</b> <b>Ozone: 100 µg/m³ or lower.</b> <b>O3: 32 -34 ug/m3</b>
	A01.4	Meet Radon Threshold	Non-Leased Spaces			Yes	LOA M&E	M&E	<b>Option 2: Mechanical Ventilation - All regularly occupied spaces at or below grade meet Feature A03, Part 1,</b> <b>Radon is less than 1% in the area as per <a href="https://www.ukradon.org/information/ukmaps">https://www.ukradon.org/information/ukmaps</a></b>
	A01.5	Monitor Air Parameters	Non-Leased Spaces			Yes	On-going Data Report	FM CLNT	Air pollutant concentrations in non-leased spaces must be monitored/tested at least once a year and results sent to IWBI (certification body). <b>**Annual Air Quality Testing via WELL Performance testing organisation QR</b> <b>** Indoor Air Quality Monitors can be installed as per feature A08</b>
P A02. Smoke-Free Environment	A02.1	Prohibit Indoor Smoking	Whole Building			Yes	Policy/Operations Schedule	FM	<b>Smoking and use of e-cigarettes should be banned inside the building. Confirm via Operations Schedule or Policy Document.</b>
	A02.2	Prohibit Outdoor Smoking	Whole Building			Yes	On-site Photographs LOA Owner	CLNT ARCH	Smoking to be banned within 7.5 m of all entrances, openable windows, building air intakes and outdoors (including the roof terraces). Signage to communicate vaping and cigarette smoking ban . ( If the project has no outdoor spaces, you can demonstrate compliance by providing a Letter of Assurance that states the project has no outdoor spaces.) <b>**No Smoking/No Vaping Signs.</b>
P A03. Ventilation Design	A03.1	Ensure Adequate Ventilation	Whole Building			Yes	LOA M&E	M&E	<b>M&amp;E confirmed compliance with CIBSE guide A:2007 for mechanical ventilation</b>
P A04. Construction Pollution Management	A04.1	Mitigate Construction Pollution	Extent of Developer Buildout			Yes	LOA Contractor	CNTR	Ducts to be cleaned post construction If ventilation system operating, MERV 8 filters to be used and filters to be replaced. Moisture and dust management in place. (carpets, insulation etc to be stored separately, Sealed doorways etc, matt, dust guards)
O A05. Enhanced Air Quality	A05.1 / 2 Points	Meet Enhanced Thresholds for Particulate Matter	Whole Building	2	2	T	Performance Test	ALL	<b>Organic and inorganic gases such as Benzene Caprolactam Formaldehyde Carbon Monoxide, Nitrogen Dioxide etc to be tested by the Performance testing agent.</b>
	A05.2 / 1 Points	Meet Enhanced Thresholds for Organic Gases	Whole Building	1	INN	T	Performance Test	ALL	<b>Specification of low VOC, E1 class materials.</b>
	A05.3 / 1 Points	Meet Enhanced Thresholds for Inorganic Gases	Whole Building	1	INN	T	Performance Test	ALL	<b>Carbon monoxide: 7 mg/m³ or lower.</b> <b>Nitrogen dioxide: 40 µg/m³ or lower.</b> <b>NO2: 43 -46ug/m3</b> <b>NOTE: Risk to lost this point, NOx quite high in the area as per 2016 data (PreCovid).</b>
O A06. Enhanced Ventilation	A06.1 / 3 Points	Increase Outdoor Air Supply	Whole Building	2	2	T	LOA M&E	M&E	<b>13.01.2023 - M&amp;E to confirm ventilation rate in all occupiable spaces XX l/s/per/person.</b> <b>Ventilation strategy under review.</b>
O A07. Operable Windows	A07.1 / 2 Points	Provide Operable Windows	Whole Building	2	2	T/N/T?	On-site Photographs LOA Architect	ARCH	<b>10.07.2023 - To be confirmed at a later stage</b>
	A07.2 / 2 Points	Manage Window Use	Whole Building	2	2	T/N/T?	Professional Narrative On-site Photographs LOA Engineer	M&E	
O A08. Air Quality Monitoring & Awareness	A08.1 / 0.5 Points	Install Indoor Air Monitors	Non-Leased Spaces	0.5	INN	T	On-site Photographs LOA M&E On-going Data Report	M&E	<b>10.07.2023 - To be discussed with QS and Arup.</b> <b>Air quality monitors to be installed only in the non leased spaces regularly occupied spaces. Any RESET B certified air quality monitors will comply.</b> <b>**Air Quality Monitors to be confirmed by the client.</b>
	A08.2 / 1 Points	Promote Air Quality Awareness	Non-Leased Spaces	1	INN	T	On-site Photographs, LOA Client	CLNT	<b>Dependent on meeting A08.Part 1.</b> <b>*Signs directing occupants to the phone app where air quality data can be accessed at a density of at least one sign per 325m2 of regularly occupied space (tenant accessible areas)</b>
O A09. Pollution Infiltration Management	A09.1 / 2 Points	Design Healthy Entryways	Whole Building	2	2	T/N/T?	Photographs, LOA Architect Policy/Operations Schedule	FM ARCH	<b>10.07.2023 - To be reviewed later.</b> For all regularly used entrances that have pedestrian traffic to the building surroundings (not including balconies or terraces).The building includes an entryway system composed of grilles, grates, slots or rollout mats or removable carpet tiles that are at least the width of the entrance and 3m long in the primary direction of travel (sum of indoor and outdoor length). <b>ONE</b> of the below is in place to slow the movement of air from outdoors to indoors: <b>a. Building entry vestibule with two typically closed doorways. OR</b>
	A09.2 / 2 Points	Perform Envelope Commissioning	Whole Building	2	2	T	Technical Document	CNTR	<b>Equivalent to Man04 Commissioning and Handover and Hea 02 IAQ</b> <b>Air Leakage testing to be undertaken post completion.</b>
O A10. Combustion Minimization	A10.1 / 2 Points	Manage Combustion	Whole Building	2	2	T	Photographs LOA Client LOA M&E	CLNT ARCH	<b>Low emission combustion sources. Generators to meet requirement if used for more than 200 hrs per year.</b> <b>No Idling Signage at pick up and drop off points.</b>
O A11. Source Separation	A11.1 / 0.5 Points	Manage Pollution and Exhaust	Non-Leased Spaces	0.5	INN	T	Technical Document	M&E	<b>M&amp;E to confirm all bathrooms, toilets, cleaner cupboards to be negatively pressurised and exhaust fans to be installed.</b> <b>Or ARCH to confirm self closing doors and exhaust fans.</b>
O A12. Air Filtration	A12.1 / 2 Points	Implement Particle Filtration	Whole Building	2	2	T	Photographs LOA M&E On-going Maintenance report	FM	<b>FM: Filters to be maintained as per manufacturer recommendations and records submitted on WELL digital platform.</b>
								M&E	<b>M&amp;E to confirm media filter specification</b>
O A13.	A13.1 / 2 Points		Whole Building	2	2	T	Photographs LOA M&E	FM	<b>M&amp;E to confirm 100% outdoor air (local recirculation in fan coil units acceptable)</b> <b>FM: Filters to be maintained as per manufacturer recommendations and records submitted on WELL digi platform.</b>

Feature		Part	Scope	Points Available	Targeted	Potential to Achieve Platinum	Mandatory	Evidence	Responsibility	Comments	
Enhanced Supply Air		Improve Supply Air	Whole Building					On-going Maintenance report	M&E		
				Total Available Points	Total Targeted	Total Potential					
				25	12	6					
W A T E R	P	W01. Water Quality Indicators	W01.1 Verify Water Quality Indicators	Whole Building	Mandatory		Yes	Performance Test	M&E	Water delivered to the project and intended for HUMAN CONTACT (e.g.: Drinking, cooking, dishwashing, handwashing, showering or bathing to meet the thresholds for Turbidity and Coliform) <b>Water quality to be tested as soon as there is a connection on site.</b>	
	P	W02. Drinking Water Quality	W02.1 Meet Chemical Thresholds	Whole Building	Mandatory		Yes	Performance Test	ARCH	Water quality to be tested once there is a connection onsite. All drinking water dispensers (in non leased spaces) to meet the parameters for Chlorine, TTHM and Haloacetic Acids. <b>Water quality to be tested as soon as there is a connection on site.</b> <b>10.07.2023 - ONE water dispenser to be provided should be accessible to all occupants (including tenants)</b>	
			W02.2 Meet Thresholds for Organics and Pesticides	Whole Building			Yes	Technical Document	M&E	As above	
	P	W03. Basic Water Management	W03.1 Monitor Chemical and Biological Water Quality	Non-Leased Spaces	Mandatory			Yes	On-going Data Report	FM	The following water parameters are sampled at intervals of no less than once per year: Turbidity / pH/ Residual (free) chlorine/ Total coliforms, only if residual chlorine is below detection limits. Any other water parameter found at 80% or above its threshold listed in W02 Part 1, as stated in the Final WELL Report or in subsequent annual sampling. Testing occurs only at the locations where parameters were found to be at 80% or above its threshold and testing takes place at least annually until the sample is below 80% of the threshold. The number and location of sampling points for on-going monitoring complies with the requirements outlined in the Performance Verification Guidebook. <b>**Water Quality to be tested once a year and results submitted annually through the WELL digital platform.</b>
			W03.2 Implement Legionella Management Plan	Whole Building			Yes	Technical Document	FM	Requirements close to standard practice. <b>To be confirmed by Sweco M&amp;E.</b>	
	O	W04. Enhanced Water Quality	W04.1 / 2 Points Meet Thresholds for Drinking Water Taste	Whole Building	2	2		T	Performance Test	M&E / CNTR	<b>Water quality to be tested as soon as there is a connection on site.</b>
	O	W05. Drinking Water Quality Management	W05.1 / 2 Points Assess and Maintain Drinking Water Quality	Whole Building	2	2		T	Technical Document On-going Data Report	CNTR	<b>Pre-test of water quality one month before PV.</b> Sampling occurs at the following locations (with filters or other water treatment devices removed, if present): The water dispenser that is closest to the pipe that delivers water into the project. For projects with more than two floors, a drinking water dispenser on the highest floor and the drinking water dispenser located farthest from the location in requirement b(1) above to which the project has access. For projects of 12 or more floors, one additional drinking water dispenser for every 10 floors. AND Water is tested quarterly in drinking water dispensers and meets the following thresholds. If any sample exceeds these thresholds, remediation and re-testing occur within a month:
			W05.2 / 1 Point Promote Drinking Water Transparency	Non-Leased Spaces	1	INN		T	Policy/Operations Schedule	FM	The following information is prominently displayed near sources of drinking water (or on a website available to occupants): Water quality results from the most recent sampling, including date of testing and compliance with WELL thresholds. If filters or other treatment units are in use, information about the treatment technologies and most recent date of device maintenance and/or filter cartridge replacement.
	O	W06. Drinking Water Promotion	W06.1 / 1 Point Ensure Drinking Water Access	Whole Building	1	1		T	Technical Document Policy/Operations Schedule	ARCH / M&E	<b>M&amp;E to review and confirm</b> <b>1: Dispenser availability:</b> <b>One water supply and drainage point that can be connected to a drinking water dispenser within each 930 m² of leased space.</b>
	O	W07. Moisture Management	W07.1 / 2 Points Design Envelope for Moisture Protection	Whole Building	2	2		T	Professional Narrative	ARCH / M&E	<b>Sweco WELL AP to provide template to collate evidence.</b>
W07.2 / 2 Points Design Interiors for Moisture Management			Whole Building	2	2		T	Professional Narrative On-site Photographs LOA M&E	ARCH / M&E	<b>Sweco WELL AP to provide template to collate evidence.</b> <b>Architect to address:</b> a. Protection of moisture-sensitive building materials and selection of moisture-resistant materials or finishes in surfaces likely to be exposed to liquid water (e.g., finished floors) or that may absorb moisture such as interior sheathing in basements, areas at or below grade, bathrooms, janitorial rooms or kitchens. b. Condensation on cold surfaces such as basements, slab-on-grade floors, the inside of exterior walls and glazing.	
W07.3 / 2 Points Implement Mold and Moisture Management Plan			Whole Building	2	2		T	Policy /Operations Schedule On-going Maintenance Report	FM	<b>Operational Moisture Management for building operations:</b> Schedule of periodic inspections	
O	W08. Hygiene Support WELL H&S Rating Feature	W08.2 / 1 Point Enhance Bathroom Accommodations	Extent of Developer Buildout	1			TINT?	On-site Photographs LOA Architect	ARCH	<b>10.07.2023 - To be reviewed by ARUP SMART BUILDINGS</b> All bathrooms meet the following: a. Toilets are equipped with hands-free flushing. b. Contactless soap dispensers and hand drying. c. Users can exit the bathroom hands-free (handsfree door pull using feet) d. Faucets meet the following: i. Sensor-activated. ii. Equipped with a programmable line-purge system. iii. If mixing is used, hot- and cold-water lines are mixed at the point of use.	
		W08.3 / 1 Point Support Effective Handwashing	Extent of Developer Buildout	1			TINT?	On-site Photographs LOA Architect	ARCH	<b>10.07.2023 - Architects to review and confirm</b> <b>*One of the WELL H&amp;S rating features.</b> All sinks where handwashing is expected (e.g., kitchens, bathrooms, break rooms and wellness rooms), meet the following requirements: a. The faucet design prevents the water column from flowing directly into the drain or a <b>sink drain stopper is installed.</b> b. Water does not splash outside the sink when the faucet is fully open. c. Newly installed sinks meet the following design parameters: 1. The sink basin is at <b>least 23cm in width and length.</b> 2. The <b>water column</b> from the sink to the basin is at least <b>20 cm</b> in length (measured along flow of water, even if at an angle). 3. The water column is at least <b>7.5cm away from any edge of the sink.</b> <b>NOTE: Sinks designed to meet local accessibility laws and/or codes may be designed with smaller dimensions than the specifications of Part 3.</b>	
		W08.4.1/1 Point Provide Handwashing Supplies and Signage	Extent of Developer Buildout	1	1		T	Policy /Operations Schedule	FM	<b>10.07.2023 - Confirmed achievable</b> a. <b>Fragrance-free liquid hand soap dispensed</b> through one of the following: 1. Sealed dispensers equipped with disposable soap cartridges. 2. <b>Dispensers with detachable and closed containers for soap refill. Soap containers must be washed and disinfected when emptied, before refilling.</b> b. <b>One of the following methods for hand drying:</b> 1. <b>Paper towels. (Size of the bins to be discussed with the architects)</b> 2. Hand dryers equipped with a HEPA filter. Filter replacement and equipment maintenance are carried out per manufacturer's instructions. ( not recommended due to energy uplift) 3. Fabric hand towel rolls with dispensers, with rolls replaced before reaching their end of service. c. <b>Signage displaying steps for proper hand washing.</b>	
				Total Available Points	Total Targeted	Total Potential					
				18	12	2					
				<b>WATER 12 Point can reached</b>							
N O U R I S H M E	P	N01. Fruits and Vegetables	N01.1 Provide Fruits and Vegetables	Non-Leased Spaces	Mandatory			Yes	LOA Client	CLNT	Option 1 applicable to the café.
			N01.2 Promote Fruit and Vegetable Visibility	Non-Leased Spaces					On-site Photographs, LOA Client	CLNT	
	P	N02. Nutritional Transparency	N02.1 Provide Nutritional Information	Non-Leased Spaces	Mandatory				On-site Photographs LOA Client	CLNT	Option 1 applicable to the café.
			N02.2 Address Food Allergens	Non-Leased Spaces				Yes	Policy/Operations Schedule	CLNT	Not applicable
			N02.3 Label Sugar Content	Non-Leased Spaces					On-site Photographs LOA Client	CLNT	Not applicable

		Feature	Part	Scope	Points Available	Targeted	Potential to Achieve Platinum	Mandatory	Evidence	Responsibility	Comments	
N T	O	N07. Nutrition Education	N07.1 / 1 Points Provide Nutrition Education	Whole Building	1		1	T/NT?	Policy/Operations Schedule	FM	*Quarterly cooking demos OR Nutrition/dietary education workshops	
	O	N08. Mindful Eating	N08.1 / 1 Points Support Mindful Eating	Non-Leased Spaces	1	1		T	Technical Document Policy/Operations Schedule	FM ARCH	10.07.2023 - Designated eating space. * Designated eating space for at least 25% of regular building occupants (FM staff) that has tables and chairs, should be protected from environment or should be in a climate controlled space.	
	O	N10. Food Preparation	N10.1 / 0.5 Points Provide Meal Support	Non-Leased Spaces	0.5	0.5		T	On-site Photographs LOA Client	ARCH / CLNT	10.07.2023 - Part of the designated eating space **Applies to communal spaces only (i.e. kitchenette with fridge, microwave, etc, for employees working at the reception and facility management teams)	
	O	N12. Food Production	N12.1 / 1 Points Provide Gardening Space	Non-Leased Spaces	1		1	T/NT?	Technical Document	ARCH	13.03.2023 - Gardening space to be reviewed and confirmed. Permanent and accessible space for food production within 800 m of the project boundary. To be provided for FM team members only. If the area of the gardening space is 70m2 or more then the additional point will be awarded. **Gardening space and gardening support (plants, soil, water, tools)	
	O	N13. Local Food Environment	N13.1 / 2 Points Ensure Food Access	Whole Building	2	2		T	Technical Document	SWECO	Supermarket or store with a fresh fruit and vegetable section at 200m walking distance from the project boundary. Sainsbury's Local, 21 Hampstead Rd, London NW1 3JA at 16m from the project boundary	
					Total Available Points	Total Targeted	Total Potential					
					14.5	3.5	2					
L I G H T	P	L01. Light Exposure and Education	L01.1 Provide Indoor Light	Whole Building	Mandatory			Yes	Technical Document	ARCH	Architects to confirm. Option 2: At least 30% of the regularly occupied area is within a 6 m horizontal distance of envelope glazing in each floor 10.07.2023 - Option1 daylight simulation under review with lighting consultants.	
	P	L02. Visual Lighting Design	L02.1 Provide Visual Acuity	Non-Leased Spaces	Mandatory	1		Yes	Technical Document Performance Test	M&E	M&E confirmed the specifications will comply with EN 12464- 2021 Requirements to be addressed in the specifications. 1 Core Point to meet requirements in the whole building.	
	O	L04. Electric Light Glare Control	L04.1 / 1 Points Manage Glare from Electric Lighting	Non-Leased Spaces	1		1	T/NT?	Technical Document	M&E	M&E to review and discuss with Lighting Manufacturers. The following requirement is met in all regularly occupied spaces:	
	O	L05. Daylight Design Strategies	L05.1 / 3 Points Implement Daylight Plan	Whole Building	3	2	1	T	Technical Document	ARCH	10.07.2023 - Calculation to be undertaken to confirm any one of the below 3 Points - Envelope glazing is no less than 25% of the regularly occupied floor area or individual unit. Visible light transmittance (VLT) of windows is greater than 40%. 2 Points - Envelope glazing is no less than 15% of the regularly occupied floor area or individual unit. Visible light transmittance (VLT) of windows is greater than 40%.	
	O	L06. Daylight Simulation	L06.1 / 3 Points Conduct Daylight Simulation	Whole Building	3		3	T/NT?	Technical Document	ARCH / M&E	The entire floorplate, except circulation areas in non-leased spaces, is to be considered regularly occupied.	
	O	L07. Visual Balance	L07.1 / 0.5 Points Balance Visual Lighting	Non-Leased Spaces	0.5	0.5		T	Professional Narrative	M&E	Horizontal and vertical luminance contrast ratios for an ambient light system is no more than 10 between adjacent independently controlled zones. Illuminance uniformity ratio of at least 0.4 or 1:2.5 (minimum light level: average light level) is achieved on any horizontal task plane within a space. Automatic changes in lighting characteristics, such as light levels, changes in color and distribution take place over a period of at least 10 minutes. The Correlated Color Temperature (CCT) in each room for similar fixtures is consistent (±200 K) at any point of time.	
	O	L08. Electric Light Quality	L08.1 / 0.5 Points Enhance Color Rendering Quality	Non-Leased Spaces	0.5		0.5	T/NT?	Technical Document	M&E	M&E currently reviewing it in terms of cost effectiveness	
			L08.2 / 1 Points Manage Flicker	Non-Leased Spaces	1	1		T	Technical Document	M&E CNTR	M&E to confirm with Manufacturer LED lights compliant with IEEE or NEMA standards.	
	O	L09. Occupant Lighting Control	L09.1 / 1 Points Enhance Occupant Controllability	Non-Leased Spaces	1		1	T/NT?	Technical Document	M&E	M&E to review and confirm if requirements can be met.	
		L09.2 / 0.5 Points Provide Supplemental Lighting	Non-Leased Spaces	0.5	0.5		T	Performance Test Policy/Operations Schedule	FM M&E	Occupants are provided supplemental lighting, the light fixtures provided increase the light level on the task surface to at least twice the recommended light levels based on the reference used to meet Feature L02: Visual Lighting Design, Part 1. *Task lights to be provided for the reception desk, FM office and additional task light to be made available on request within eight weeks.		
					Total Available Points	Total Targeted	Total Potential					
					17.5	6	6.5					
M O V E M E N T	P	V01. Active Buildings and Communities	V01.1 Design Active Buildings and Communities	Whole Building	Mandatory			Yes		CLNT	Feature 04 Facilities for Active Occupants and Feature V05: Site Planning and Selection targeted.	
	P	V02. Ergonomic Workstation Design	V02.1 Support Visual Ergonomics	Non-Leased Spaces	Mandatory				Yes	Photographs LOA Client	CLNT	**Monitors with flexible height and angle adjustment or Monitor stands
			V02.2 Provide Height-Adjustable Work Surfaces	Non-Leased Spaces					Yes	On-site Photographs LOA Client	CLNT	25% of the workstation in non leased spaces to meet the requirement. **Manual or Electric height adjustable workstation or Supplemental solutions, such as stand, that can be raised or lowered.
			V02.3 Provide Chair Adjustability	Non-Leased Spaces					Yes	On-site Photographs LOA Client	CLNT	**Adjustable ergonomically designed chair at reception and Facility Management office.
			V02.4 Provide Support at Standing Workstations	Non-Leased Spaces					Yes	On-site Photographs LOA Client	CLNT	Option 1 Support for Standing Workers - Any desks for security staff who are required to stand for more than 50% or more of their working hours, A footrest or Footrail under the desk, recessed toe space at least 4inches in depth and height. Option 2 No standing workers - There are no workstations in which users are regularly required to stand for 50% or more of their working hours. **Foot rest or footrail under the desk
			V02.5 Provide Workstation Orientation	Non-Leased Spaces					Yes	Policy/Operations Schedule	FM	**Ergonomic education via video, smart phone app or in person training: FM organisation to address.
	O	V03. Circulation Network	V03.1 / 2 Points Design Aesthetic Staircases	Whole Building	2	2		T	Technical Document	M&E ARCH	10.07.2023 - Strategy to be confirmed ONE staircase, connecting all floors to have any two of the following, Music/Artwork/ Light levels 215lux/ Natural design elements, plants water features.	
O	V04. Facilities for Active Occupants	V04.1 / 3 Points Provide Cycling Infrastructure	Whole Building	3	2		T	Technical Document LOA Architect	FM CNTR ARCH	Assuming occupants for Gross Floor Area(GEA) of m2 1. Cycling Network: Project located right by Cycle Super Highway 7. 2. Cycling Infrastructure: 193 Long term parking spaces to be provided. 13Short term spaces (1:7 approx, can be changed to suit project) Bicycling Maintenance tools to be provided.		



		Feature	Part	Scope	Points Available	Targeted	Potential to Achieve Platinum	Mandatory	Evidence	Responsibility	Comments		
				V04.2 / 2 Points Provide Showers, Lockers and Changing Facilities	Whole Building	2	2		T	Technical Document	ARCH	15 showers and 75 Lockers to be provided. Showers and lockers to be co-located.	
	O	V05. Site Planning and Selection		V05.1 / 3 Points Select Sites with Pedestrian-friendly Streets	Whole Building	3	3		T	Technical Document	SWECO	Walk Score of 99 <a href="https://www.walkscore.com/score/e1-7pf">https://www.walkscore.com/score/e1-7pf</a> Fully glazed façade	
				V05.2 / 3 Points Select Sites with Access to Mass Transit	Whole Building	3	3		T	Technical Document	SWECO	PTAL Score of 5 and above. Will be achieved as PTAL Score is 6b.	
	O	V06. Physical Activity Opportunities		V06.1 / 1 Point Offer Physical Activity Opportunities	Building Management Staff	1		1	T/NT?	Policy/Operations Schedule	FM	Physical activity programs to be offered to regular occupants.	
	O	V08. Physical Activity Spaces and Equipment		V08.2 / 2 Points Provide Outdoor Physical Activity Space	Whole Building	2	INN		T	Technical Document	SWECO	Targeted as INNOVATION POINT Option 1: The project provides regular occupants access to a physical activity within a 400 m walk distance of the project boundary at no cost. The Regent's Park, London at 400m walking distance from project boundary	
						Total Available Points	Total Targeted	Total Potential					
						25.5	12	1					
T H E R M A L  C O M F O R T	P	T01. Thermal Performance		T01.1 Provide Acceptable Thermal Environment	Whole Building				Yes	Technical Document Performance Test LOA M&E	M&E	(Option 1) Range of PMV of +/- 0.5 for at least 90% occupied hours and at least in 90% of regularly occupied spaces.	
				T01.2 Monitor Thermal Parameters	Non-Leased Spaces				Yes	On-going Data Report	FM	Indoor thermal parameters to be measured twice a year or via T06. Thermal monitors	
	O	T04. Individual Thermal Control		T04.1 / 0.5 Points Provide Personal Cooling Options	Non-Leased Spaces	0.5	0.5		T	On-site Photographs LOA M&E	FM	**Desk fan or ceiling fan that doesn't increase air speed for other occupants or chairs with mechanical cooling system .	
					T04.2 / 0.5 Points Provide Personal Heating Options	Non-Leased Spaces	0.5	0.5		T	On-site Photographs LOA Client	FM	**Adjustable thermostat, Electric parabolic space heater, Heated chair or footwarmers.
	O	T06. Thermal Comfort Monitoring		T06.1 / 0.5 Points Monitor Thermal Environment	Non-Leased Spaces	0.5	0.5		T	On-site Photographs LOA M&E On-going Report	M&E	**Additional monitors and displays would be required (at least 1 per core per floor)	
	O	T09. β Outdoor Thermal Comfort		T09.2 / 2 Points Avoid Excessive Wind	Whole Building	2		2	T/NT?	Technical Document	M&E	A computational fluid dynamic model of the building and any adjacent buildings that takes into account at least one day per season (i.e., per quarter) demonstrates the following: Winds are not expected to exceed 5 m/s for more than 5% of hours in the year in seating areas or 10% of hours on paths and parking lots. Winds are not expected to exceed 15 m/s on paths, parking lots or seating areas for more than 0.05% of hours in the year.	
						Total Available Points	Total Targeted	Total Potential					
						21	1.5	2					
S O U N D	P	S01. Sound Mapping		S01.1 Label Acoustic Zones	Whole Building				Yes	Technical Document	ARCH / ACOUT	To be met in the whole building based on any knowledge of anticipated use. An annotated document available to all occupants showing labeled zones throughout the project: Loud, Quiet, Mixed and circulation. Mitigation for loud zones that border quiet zones. 28.06.2023 - Architect to provide speculative floor plans to the Acoustician.	
				S01.2 Provide Acoustic Design Plan					Yes	Professional Narrative			
	O	S02. Maximum Noise Levels		S02.1 / 1.5 Points Limit Background Noise Levels	Non-Leased Spaces	1.5	1.5		T	Technical Document	ACOUT	28.06.2023 - Confirmed achievable by Hann Tucker. To be included within the first draft report.	
	O	S06. Minimum Background Sound		S06.1 / 2 Points Provide Minimum Background Sound	Whole Building	2		2	T/NT?	Technical Document	ACOUT	28.06.2023 - Sweco WELL AP to query if requirements can be achieved via ventilation design.	
						Total Available Points	Total Targeted	Total Potential					
						16.5	1.5	2					
M A T E R I A L S	P	X01. Material Restrictions		X01.1 Restrict Asbestos	Extent of Developer Buildout				Yes	Technical Document LOA Contractor	CNTR	No use of products containing asbestos	
				X01.2 Restrict Mercury	Extent of Developer Buildout				Yes	Technical Document LOA Architect LOA M&E	M&E	M&E to confirm: Limiting mercury content in illuminated signs, thermostats, switches, etc. Mercury free technology	
				X01.3 Restrict Lead	Extent of Developer Buildout				Yes	Technical Document LOA Architect	CNTR M&E ARCH	M&E to confirm: Restriction on lead in plumbing systems. Products to meet EU Council Directive 98/83/EC as verified by the KIWA mark Architects to confirm: Restrictions on lead in paint.	
	P	X02. Interior Hazardous Materials Management		X02.1 Manage Asbestos Hazards	Extent of Developer Buildout				Yes	LOA Client	CLNT	Option 2: New spaces - Project was built after the enactment of an asbestos ban in construction products.	
					X02.2 Manage Lead Hazards	Extent of Developer Buildout				Yes	LOA Client	CLNT	Option 2: New spaces - Project was built after the enactment of lead paint ban. Lead Paint banned in 1992.
					X02.3 Manage Polychlorinated Biphenyl (PCB) Hazards	Extent of Developer Buildout				Yes	LOA Client	CLNT	Option 2: No PCB remediation - Project is in a building constructed or last renovated after the institution of any applicable laws banning or restricting PCBs. PCBs Banned in 1981 and existing equipment containing in excess of 5 litres of PCBs were stopped in dec 2000.
	P	X03. CCA and Lead Management		X03.1 Manage Exterior CCA Hazards	Extent of Developer Buildout				Yes	LOA Client	CLNT	Option 2: CCA assessment not required - Meet one of the following. a. All existing wood structures that lie outside the building envelope but within the project boundary where human presence is expected (e.g., wooden decks, fences near walkways, playgrounds and outdoor furniture) were installed after the enactment of laws banning chromated copper arsenate (CCA). b. The project does not have wood structures that lie outside the building envelope but within the project boundary. c. The project does not have spaces outside the building envelope but within the project boundary.	
				X03.2 Manage Lead Hazards	Extent of Developer Buildout				Yes	Professional Narrative LOA Client	CLNT	Option 2: Lead assessment not applicable a. Project does not have existing post-construction outdoor bare soil (e.g., not covered by grass, vegetation or mulch). b. Project does not have artificial turf. c. Project does not have loose-fill rubber from recycled tires. d. Paint applied to existing playground equipment was installed and painted after the enactment of banning laws, or no playground equipment is present.	
				X05.1 / 1 Points	Extent of Developer	1	1		T	Technical Document LOA Architect	ARCH	Architects to review and confirm if achievable	

Feature		Part	Scope	Points Available	Targeted	Potential to Achieve Platinum	Mandatory	Evidence	Responsibility	Comments	
O	X05. Enhanced Material Restrictions	Select Compliant Interior Furnishings	Buildout					Technical Document LOA Contractor	CNTR		
		X05.2 / 1 Points Select Compliant Architectural and Interior Products	Extent of Developer Buildout	1	1		T	Technical Document LOA Contractor	ARCH / CNTR	Architects to review and confirm if achievable	
O	X06. VOC Restrictions	X06.1 / 2 Points Limit VOCs from Wet-Applied Products	Extent of Developer Buildout	2	2		T	LOA Contractor	CNTR	Architects to review and confirm if achievable	
		X06.2 / 2 Points Restrict VOC Emissions from Furniture, Architectural and Interior Products	Extent of Developer Buildout	2	2		T	LOA Contractor	ARCH	Interior Wet applied paints, coatings, adhesives, sealants and finished poured floorings used inside the building envelope meet EU Ecolabel for indoor and outdoor paints and varnishes and 75% of products are tested by a third party lab to meet testing methods and thresholds established by EU LCI VOC Thresholds following EN16516-1:2018 testing methods.	
O	X09. Waste Management	X09.1 / 2 Points Implement a Waste Management Plan	Whole Building	2	2		T	Policy/Operations Schedule	CLNT	To be reviewed by waste consultants. Waste management plan. For batteries pesticides, lamps that may contain mercury	
O	X10. Pest Management and Pesticide Use	X10.1 / 2 Points Manage Pests	Whole Building	2		2	T/N/T?	Policy/Operations Schedule	FM	Pest management plan for pest control based on integrated pest management (IPM) principles is implemented for all indoor and outdoor spaces.	
O	X11. Cleaning Products and Protocols *WELL H&S Rating Feature	X11.1 / 0.5 Points Improve Cleaning Practices *WELL H&S Rating Feature	Non-Leased Spaces	0.5		0.5	T/N/T?	Policy/Operations Schedule	FM	Cleaning protocol to be followed by FM team. FM Organisation to review and confirm	
		X11.2 / 0.5 Points Select Preferred Cleaning Products *WELL H&S Rating Feature	Non-Leased Spaces	0.5		0.5	T/N/T?	Policy/Operations Schedule	FM	Low Hazard or Ecolabel or Third party certification recognised by the local government where the project is located. Safety datasheet disclosed ingredients as per EU regulations 2015/230 (CLP) FM Organisation to review and confirm	
O	X12. $\beta$ Contact Reduction *WELL H&S Rating Feature	X12.1 / 1 Point Reduce Respiratory Particle Exposure	Non-Leased Spaces	1		1	T/N/T?	Professional Narrative	FM	One of the features in the WELL Health and Safety rating. FM Organisation to review and confirm	
		X12.2 / 1 Point Address Surface Hand Touch	Non-Leased Spaces	1		1	T/N/T?	Policy/Operations Schedule	FM	To be reviewed if it can be achieved.	
				Total Available Points	Total Targeted	Total Potential					
				20	8	5					
MIND	P	M01. Mental Health Promotion	M01.1 Promote Mental Health and Well-being	Direct Staff	Mandatory		Yes	Policy/Operations Schedule	FM	**FM Staff to be provided Education or awareness on mental health and well being quarterly in person or online. Email with helpful material sleep habits etc. and Healthy working house policy outlining max hours in 24 hour and 7 day period.	
	P	M02. Nature and Place	M02.1 Provide Connection to Nature	Non-Leased Spaces	Mandatory		Yes	Professional Narrative	ARCH	Integrate natural materials, patterns shapes colours images or sounds, along with any one of the following: Plants Water, Nature Views. In Non leased spaces.	
			M02.1 / 1 Points Provide Connection to Place	Non-Leased Spaces			Yes	Professional Narrative	ARCH	Provide a narrative that explains how the design elements address celebration of culture, place, integration of art and human delight.	
	O	M03. Mental Health Services	M03.1 / 0.5 Points Offer Mental Health Screening	Direct Staff	0.5	0.5		T	Policy/Operations Schedule	FM	Offered by NHS compliant with WELL requirements.
			M03.2 / 0.5 Points Offer Mental Health Services	Direct Staff	0.5	0.5		T	Policy/Operations Schedule	FM	Offered by NHS compliant with WELL requirements Look up the nearest GP .
			M03.3 / 0.5 Points Offer Workplace Support	Direct Staff	0.5		0.5	T/N/T?	Policy/Operations Schedule	FM	FM Org to review the requirements and confirm Support employees with sick leaves for mental health needs, short or long term leaves, interpersonal support, works sch adjustments, adjustment of physical environment etc.
			M03.4 / 0.5 Points $\beta$ Support Mental Health Recovery WELL H&S Rating	Direct Staff	0.5		0.5	T/N/T?	Policy/Operations Schedule	FM	FM Org to review the requirements and confirm
	O	M04. Mental Health Education	M04.1 / 1 Points Offer Mental Health Education	Direct Staff	0.5		0.5	T/N/T?	Policy/Operations Schedule	FM	FM Org to review the requirements and confirm
			M04.2 / 1 Points Offer Mental Health Education for Managers	Direct Staff	0.5		0.5	T/N/T?	Policy/Operations Schedule	FM	FM Org to review the requirements and confirm
	O	M05. Stress Management	M05.1 / 1 Points Develop Stress Management Plan	Direct Staff	1		1	T/N/T?	Professional Narrative	FM	FM Org to review the requirements and confirm
			M06. Restorative Opportunities	M06.1 / 0.5 Points Support Healthy Working Hours	Direct Staff	0.5		0.5	T/N/T?	Policy/Operations Schedule	FM
O	M07. Restorative Spaces	M07.1 / 2 Points Provide Restorative Space	Whole Building	2		2	T/N/T?	Technical Document	ARCH	10.07.023 - To be reviewed and confirmed if achievable 3784 Occupants Hence 385m2 . MAX space of 186m2 to be provided. a. Is designated for relaxation and restoration. Space may be multi-purpose but is not to be used for work. b. Totals at least 7 m <sup>2</sup> plus 0.1 m <sup>2</sup> per regular occupant, up to a maximum of 186 m <sup>2</sup> . c. Provides a restorative environment that considers at least five of the following: Lighting (e.g., dimmable light levels for indoor spaces). Sound (e.g., water feature, natural sounds, sound masking). Thermal comfort (e.g., sun-exposed and shaded areas for outdoor spaces). Seating arrangements that accommodate a range of user preferences and activities (e.g., movable lightweight chairs, cushions, mats). Nature incorporation. Calming colors, textures and forms. Visual privacy. Includes signage, education materials or other resources explaining the purpose and intended use of the space	
O	M08. Restorative Programming	M08.1 / 0.5 Points Provide Restorative Programming	Direct Staff	0.5		0.5	T/N/T?	Policy/Operations Schedule	FM	FM Org to review the requirements and confirm Free or subsidized by 50% mindfulness programming such as guided meditation, yoga etc offered live in person or virtually once a week in a quiet zone. Digital Mindfulness offerings (Mindfulness apps such as calm, headspace etc)	
O	M09. Enhanced Access to Nature	M09.2 / 2 Points Provide Nature Access Outdoors	Whole Building	2		1	T/N/T?	Technical Document	ARCH	10.07.023 - To be reviewed and confirmed by Landscape. 1: Outdoor nature: Nearby nature access facilitated by the conditions below: 1. At least one green space or blue space is within a 200 m walk distance from the project boundary and available to all regular occupants during open hours of the space(s). 2. Total combined green space must be at least 0.5 hectare 2: Outdoor nature access: The following requirement is met: a. Occupants are encouraged to access outdoor nature (e.g., presence of signage or maps to outdoor nature, availability of breaks during the workday to go visit outdoor nature).	
O	M11. Substance Use Services	M11.1 / 0.5 Points Offer Substance Use Education	Direct Staff	0.5		0.5	T/N/T?	Policy/Operations Schedule	FM	FM Org to review the requirements and confirm	
		M11.2 / 0.5 Points Provide Substance Use and Addiction Services	Direct Staff	0.5		0.5	T/N/T?	Policy/Operations Schedule	FM	FM Org to review the requirements and confirm	

COMMUNITY	Feature	Part	Scope	Points Available	Targeted	Potential to Achieve Platinum	Mandatory	Evidence	Responsibility	Comments	
				Total Available Points	Total Targeted	Total Potential					
				13.5	1	8					
P	C01. Health and Wellness Promotion	C01.1 Provide WELL Feature Guide	Whole Building	Mandatory			Yes	Policy/Operations Schedule	CLNT / SWECO	Digital or physical guide describing all the WELL features achieved on the project prominently displays or widely made available to all the occupants. Quarterly communications, part of onboarding package.	
P	C02. Integrative Design	C02.1 Facilitate Stakeholder Charrette	Whole Building	Mandatory			Yes	Professional Narrative	ALL	Early consideration of all WELL features, environmental and sustainability goals. Mins of the meeting to be shared with WELL AP.	
		C02.2 Promote Health-Oriented Mission	Whole Building				Yes	Policy/Operations Schedule	CLNT	Outline objectives for health promotion, incorporate relevant project goals or strategies, incorporates the ten WELL concepts. Health oriented mission is made available to all occupants and is detailed in the WELL guide CO1.1.	
P	C03. Emergency Preparedness *WELL H&S Rating	C03.1 Develop Emergency Preparedness Plan	Direct Staff	Mandatory			Yes	Policy/Operations Schedule	CLNT	Develop a emergency preparedness plan * <b>Emergency preparedness plan.</b>	
P	C04. Occupant Survey	C04.1 Select Project Survey	Direct Staff	Mandatory			Yes	Professional Narrative LOA Client	FM	<b>Option 1:</b> Third party survey to be adopted such as BUS wellbeing survey, SHE OR <b>Option 2:</b> Create a custom survey OR <b>Option 3:</b> If there are fewer than 10 eligible employees in the project, a letter of assurance to be signed to confirm the same.	
		C04.2 Administer Survey and Report Results	Direct Staff	Mandatory			Yes	Technical Document On-going Data Report	FM	Survey to be administered to all direct staff, maintaining privacy, and analysis to be undertaken by qualified survey professional. Results of the survey to be reported annually through the WELL platform.	
O	C06. Health Services and Benefits	C06.1 / 1 Point Promote Health Benefits	Direct Staff	0.5	0.5		T	Policy/Operations Schedule	FM	A health benefits plan is available to all eligible employees and their designated dependents (e.g., spouse, domestic partner, child, parent, parent-in-law, grandparent, grandchild, sibling) at no cost or subsidized <b>Can be achieved via NHS</b> - Confidential benefits consultations are available with clearly identified and qualified support staff (e.g., benefits counselor, human resources representative).	
		C06.2 / 0.5 Points Offer On-Demand Health Services	Direct Staff	0.5	0.5		T	Technical Document Policy/Operations Schedule	FM	<b>FM Org to review the requirements and confirm</b> <b>Access to in person health services are provided alternatively, access to a health app.</b>	
		C06.3 / 0.5 Points Offer Sick Leave	Direct Staff	0.5		0.5	T/NT?	Policy/Operations Schedule	FM	<b>FM Org to review the requirements and confirm</b>	
		C06.4 / 0.5 Points Support Community Immunity	Direct Staff	0.5		0.5	T/NT?	Policy/Operations Schedule	FM	<b>FM Org to review the requirements and confirm</b>	
O	C07. Enhanced Health and Wellness Promotion	C07.1 / 0.5 Points Promote Culture of Health	Direct Staff	0.5		0.5	T/NT?	Policy/Operations Schedule	FM	<b>FM Org to review the requirements and confirm</b>	
		C07.2 / 0.5 Points Establish Health Promotion Leader	Direct Staff	0.5		0.5	T/NT?	Policy/Operations Schedule	FM	<b>FM Org to review the requirements and confirm</b>	
O	C08. New Parent Support	C08.1 / 1.5 Points Offer New Parent Leave	Direct Staff	1.5		1.5	T/NT?	Policy/Operations Schedule	FM	<b>FM Org to review the requirements and confirm</b>	
O	C09. New Mother Support	C09.1 / 0.5 Points Offer Workplace Breastfeeding Support	Direct Staff	0.5		0.5	T/NT?	Policy/Operations Schedule	FM	<b>FM Org to review the requirements and confirm</b>	
		C09.2 / 1 Points Design Lactation Room	Direct Staff	1		1	T/NT?	Technical Document	ARCH	<b>FM Org to review the requirements and confirm</b>	
O	C10. Family Support	C10.1 / 0.5 Points Offer Childcare Support	Direct Staff	0.5		0.5	T/NT?	Policy/Operations Schedule	FM	<b>FM Org to review the requirements and confirm</b>	
		C10.2 / 0.5 Points Offer Family Leave	Direct Staff	0.5		0.5	T/NT?	Policy/Operations Schedule	FM	<b>FM Org to review the requirements and confirm</b>	
		C10.3 / 0.5 Points Offer Bereavement Support	Direct Staff	0.5		0.5	T/NT?	Policy/Operations Schedule	FM	<b>FM Org to review the requirements and confirm</b>	
O	C11. Civic Engagement	C11.1 / 0.5 Points Promote Community Engagement	Direct Staff	0.5		0.5	T/NT?	Policy/Operations Schedule	FM	<b>FM Org to review the requirements and confirm</b>	
		C11.2 / 1 Points Provide Community Space	Whole Building	1		1	T/NT?	Technical Document Professional Narrative	FM ARCH	<b>Option 2: Access to one or more indoor or outdoor spaces within the project boundary is provided to the public, such as local community groups, student clubs or non-profit organizations, at no cost that meets the following requirements:</b> a. Has the capacity to hold to least 10 people. b. Is available for meetings and events on a weekly basis at minimum.	
O	C13. Accessibility and Universal Design	C13.1 / 3 Points Integrate Universal Design	Whole Building	3		3	T/NT?	Professional Narrative	ARCH	<b>10.07.2023 - Requirements to be reviewed by Architect</b> Best practices in Universal design are considered. To include any one strategy from the following categories: Physical Access. Developmental and intellectual health, wayfinding, operations, technology and safety, information of emergency procedures available to all occupants/visitor on entering building(via app). Emergency Training and personnel: Security or crisis response team. Annual CPR/First aid course. Training to promote individual and family emergency preparedness available to all occupants.	
O	C14. Emergency Resources *WELL H&S Rating	C14.1 / 2 Points Promote Emergency Resources	Whole Building	2		2	T/NT?	Professional Narrative Policy /Operations Schedule	ARCH FM	<b>10.07.2023 - Client to review and confirm</b> Any three emergency response support services are in place, such Notification system with auditory or visual indicators, One first aid kit per floor,	
O	C15. Emergency Resilience and Recovery *WELL H&S Rating	C15.1 / 1 Points Promote Business Continuity	Non-Leased Spaces	1		1	T/NT?	Policy/Operations Schedule	CLNT	<b>FM Org to review the requirements and confirm</b>	
		C15.2 / 1 Points Support Emergency Resilience	Non-Leased Spaces	1		1	T/NT?	Policy/Operations Schedule	FM	<b>FM Organisation to review and confirm</b> Designated outdoor or indoor space is made available to emergency responders, relief organizations or other equivalent institutions at no cost for alternative use in case of emergency (e.g., shelter during a natural disaster, treatment area during a pandemic).	
		C15.3 / 1 Points Facilitate Healthy Re-entry	Whole Building	1		1	T/NT?	Professional Narrative	FM	<b>FM Organisation to review and confirm</b> Projects establish a plan for re-entry into the project after an emergency event	
		C15.4 / 1 Points Establish Health Entry Requirements	Whole Building	1		1	T/NT?	Professional Narrative	FM		
				Total Available Points	Total Targeted	Total Potential					
				30	1	17					
INNOVATIONS	O	I01. Innovate WELL	I01.1 / 10 Points Propose Innovations	Whole Building	10	7		T	Technical Document	ALL	Innovative design solutions or target optimizations beyond shell and core scope. 1. A05.2 / Meet Enhanced Thresholds for Organic Gases 2. A05.3 / Meet Enhanced Thresholds for Inorganic Gases 3. A08.1 / Install Indoor Air Monitors 4. A08.2/ Air quality awareness 5. A11.1 / Manage Pollution and Exhaust 6. W05.2 / Promote Drinking Water Transparency 7. V08.2 / Provide Outdoor Physical Activity Space
	O	I02. WELL Accredited Professional	I02.1 / 1 Points Achieve WELL AP	Whole Building	1	1		T	Technical Document	CLNT	<b>WELL AP Diaa Bahopia Appointed.</b>

										Comments
Feature	Part	Scope	Points Available	Targeted	Potential to Achieve Platinum	Mandatory	Evidence	Responsibility		
O	I05. Green Building Rating Systems	I05.1 / 5 Points Achieve Sustainable Building Certification	Whole Building	5		5	T/NT?	Technical Document	CLNT	5 points will be awarded if the project achieves BREEAM certification (PC certificate)
				Total Available Points	Total Targeted	Total Potential				
				18	8	5				

# WLCA – Method Statement

10<sup>th</sup> November 2023

RIBA 2

## Euston Tower

RIBA Stage 2 Whole Life Carbon assessment note.

This is a RIBA 2 Whole Life Carbon Assessment (WLCA) method statement for the Euston Tower development. This statement is constructed to accord with the methodological requirements of the RICS Professional Statement Whole life carbon analysis for the built environment (2017) publication.

## EN 15978 Module Coverage

As per the requirements of the RICS PS 1<sup>st</sup> Edition Table 2, a WLCA must cover core modules of EN 15978:2011, typically representing where the majority of WLC impacts fall. As an absolute minimum, a Sweco WLCA assessment will cover these modules in full. Sweco look to include all possible EN 15978:2011 modules, subject to the limitations of the One Click LCA tool, the RIBA stage/timing of the assessment and the availability of data/scenario information from the industry at the time of writing. The below demonstrates which modules have been included in this study.

	<b>A1-A3</b>	<b>A4</b>	<b>A5</b>			
<b>Product &amp; Construction Process Stage</b>	✓	✓	✓			
	<b>B1</b>	<b>B2-B3</b>	<b>B4</b>	<b>B5</b>	<b>B6</b>	<b>B7</b>
<b>Use Stage</b>	✓	✓	✓	n/a	✓	✓
	<b>C1</b>	<b>C2</b>	<b>C3</b>	<b>C4</b>		
<b>End of Life Stage</b>	✓	✓	✓	✓		
	<b>D</b>					
<b>Beyond the Project Life Cycle</b> (reported separately)	✓					

## Reference Study Period

The RICS Professional Statement has set requirements for the reference study period (RSP) which must be used for the WLC assessment process. For domestic and non-domestic projects, the RSP is **60 years**. The RSPs are fixed to provide a level of comparability between WLC results for different projects, and to enable better future interrogation and interpretation of results.

## Building Elements Coverage

The table presented below shows the percentage of costs covered by the G&T cost plan for each elemental category. In cases where the coverage is less than 100%, an adjustment factor was applied to provide an allowance for the carbon impacts of the missing elements or components as per the RICS WLCA PS 1<sup>st</sup> Edition recommendation. For instance, if the coverage is 95%, then the adjustment factor for carbon of those elements quantified in that category would be 1.05.



For certain building element categories, based on the current stage in design and availability of information, benchmarked carbon values were used on a per m<sup>2</sup> basis. These categories are indicated below.

It is worth noting that in the latest version of the Cost Plan issued to Sweco, costs were redacted, therefore the same cost plan coverage factors were used as per the interim Stage 2 WCLA, which was itself based on an earlier version of the cost plan with costs presented. However, Sweco have determined that the same overall coverage of elements in this iteration is equivalent to the interim Stage 2 assessment so maintaining these coverage factors is deemed appropriate.

**Table 1.0:** Building elements coverage for ET at RIBA 2.

	Building parts/ Element groups	Building Elements	Coverage (%)
0	Facilitating works	0.1 Temporary/Enabling works/ Preliminaries	Benchmarked Value
		0.2 Specialist groundworks	N/A
1	Substructure	1.1 Substructure	95%
2	Superstructure	2.1 Frame 2.2 Upper floors incl. balconies 2.3 Roof 2.4 Stairs and ramps	99%
	Superstructure	2.5 External Walls 2.6 Windows and External Doors	100% (Contingency factors added separately as part of CWCT process)
	Superstructure	2.7 Internal Walls and Partitions 2.8 Internal Doors	100%
3	Finishes	3.1 Wall finishes 3.2 Floor finishes 3.3 Ceiling finishes	97%
4	Fittings, furnishings, and equipment (FF&E)	Building-related Non-building-related	59%
5	Building services / MEP	5.1 - 5.14 Building-related services	44%
		Non-building-related	N/A
6	Prefabricated Buildings and Building Units	6.1 Prefabricated Buildings and Building Units	N/A
7	Work to Existing Building	7.1 Minor Demolition and Alteration Works	Benchmarked Value



	Building parts/ Element groups	Building Elements	Coverage (%)
8	External works	8.1 Site preparation works 8.2 Roads, Paths, Paving and Surfacing 8.3 Soft landscaping, Planting, and Irrigation Systems 8.4 Fencing, Railings and Walls 8.5 External fixtures 8.6 External drainage 8.7 External Services 8.8 Minor Building Works and Ancillary Buildings	Benchmarked Value

## Measurement Source References

**Table 2.0:** Key material quantities data sources (non-exhaustive).

Data Source	Data Source Type	Comments
<b>Euston Tower - Cost Plan (17.10.23)</b>	Cost Plan	Source for majority of quantities.
<b>ET - WLCA Structural Quantities Review – Rev F (GT AMENDS REVA) – Received 09.11.23</b>	Material Quantity Schedule	Further refinement of structural material quantities provided by G&T and Arup.
<b>1312_Sustainability_Mtg_230531_RevA</b>	PDF Presentation	Provided the baseline carbon factors (A1-A3) for concrete.
<b>Euston Tower Interim Stage 2 Area Schedule (20.10.23)</b>	Area Schedule	Latest area schedule provided by G&T.
<b>ARUP Structures correspondence</b>	Emails	A number of further clarifications and quantity provision on a more granular level than in cost plan – see below.
<b>CWCT Façade Calculations</b>	Excel data sheet	CWCT compliance calculations for façades provided by 3XN.
<b>Initial MEP Equipment Schedule</b>	Excel data sheet.	Arup MEP provided a provisional/high level equipment schedule that formed the basis of their initial Stage 2 Design. (Sanitaryware, lifts, trench heaters and floor diffusers updated as per latest cost plan).
<b>ARUP Energy Statement - EST-ARP-XX-XX-RP-M-00002</b>	Energy Report	TM54 calculation used for B6 module.
<b>Refrigerant Schedule</b>	Excel data sheet.	Arup MEP filled in refrigerant schedule based on initial Stage 2 Design.

## Product and Construction Process Stage

At Stage 2, there was insufficient design information in certain categories to derive reliable quantities from the cost plan of material specifications from other reference material. In these cases, an overall carbon rate per m<sup>2</sup> GIA, that was established earlier in the design, was applied as a placeholder allowance. This is relevant to the following elemental categories:

- Demolition impacts of existing building: **20 kgCO<sub>2</sub>e/m<sup>2</sup> GIA.**
- Temporary works (which included Works to Existing Building): **15 kgCO<sub>2</sub>e/m<sup>2</sup>GIA.**
- External works: **20 kgCO<sub>2</sub>e/m<sup>2</sup> GIA.**
- Site activities: **26 kgCO<sub>2</sub>e/m<sup>2</sup> GIA.**

## Carbon factors used (A1-A3)

### Structural Components

The baseline carbon factors for structural materials were confirmed to Sweco as follows:

- **Structural steel:** Bracing, façade, columns and floors – **0.33 kgCO<sub>2</sub>e/kg** – as per Acellor Mittal's XCarb Steel.
- **Structural steel:** Connections only – **2.45 kgCO<sub>2</sub>e/kg** – Basic Oxygen Furnace UK typical.
- **Structural steel:** Basement truss and bolt on podium structure – **1.74 kgCO<sub>2</sub>e/kg** – blended rate of EAF to BOF.
- **Structural steel:** 10% of 7,818 tonnes assumed reused steel (782 tonnes) with CF of **0.0466 kgCO<sub>2</sub>e/kg**, based on EMR EPD.
- **Steel reinforcement:** 0.3 kgCO<sub>2</sub>e/kg – Acellor Mittal's XCarb Rebar product.
- **Piles, continuous piled wall concrete carbon factor:** RC 32/40 50% GGBS - 0.0888 kgCO<sub>2</sub>e/kg.
- **Raft slab, Liner wall, satellite retaining wall, basement slabs concrete carbon factor:** RC 32/40 25% GGBS – 0.12 kgCO<sub>2</sub>e/kg.
- **Precast slabs concrete carbon factor:** RC 32/40 25% GGBS – 0.12 kgCO<sub>2</sub>e/kg.
- Arup structures provided structural steel intumescent paint rate of **80,000 m<sup>2</sup> at 1mm** thick in mid stage 2, updated proportionally with new steel tonnage (**84,310 m<sup>2</sup> at 1mm** thick).
- Arup structures confirmed **grouting** between slabs at **8 kg/m<sup>2</sup>.**
- **Basement slab waterproofing:** Sweco material library default input polyethene membrane.
- **Basement slab:** Sweco material library default input **300mm EPS.**
- **Precast stair reinforcement** rate assumed at **130 kg/m<sup>3</sup>.**

## Facades

- **BMU** – only ‘number of’ highlighted in Cost Plan – generic Sweco input used for this with material weights.
- **Internal lining of external wall** assumed as 2 x 15mm plasterboard with steel studwork at 1.3kg/m<sup>2</sup>.

**CWCT calculations** provided by 3XN. Some key notes and assumptions from these calculations:

- The carbon performance of the **Podium Façade** was based on the averaged performance of the other façade types.
- A **5% material scale up** factor was applied to all material components, then a separate **façade scale up factor of 5%** was also applied.
- The facades were assumed to be assembled **offsite in European factory**.
- **The aluminium extrusions** were based on the **Hydro Reduxa EPD** value for billet only at **4 kgCO<sub>2</sub>e/kg** plus a placeholder allowance for extruding (**0.5 kgCO<sub>2</sub>e/kg**), pre anodization (**2.24 kgCO<sub>2</sub>e/kg**) and PPC coating (**0.13 kgCO<sub>2</sub>e/kg**).
- An allowance of **263 kgCO<sub>2</sub>e/m<sup>2</sup> FSA (A1-A5)** was assumed for the **soffits** with the area for this element being taken from the Cost Plan.

The performance of the other façade types, including all contingencies (i.e., material and overall façade scale up) for modules A1-A5:

- **Typical Bay:** 461 kgCO<sub>2</sub>e/m<sup>2</sup> FSA
- **Amenity Façade:** 527 kgCO<sub>2</sub>e/m<sup>2</sup> FSA
- **Wedges:** 530 kgCO<sub>2</sub>e/m<sup>2</sup> FSA
- **Podium Façade:** 506 kgCO<sub>2</sub>e/m<sup>2</sup> FSA (averaged value from other types)

## Internal Walls, Finishes & Fittings

- Sweco material library defaults for **drylining build-ups** in model i.e., **plasterboard, acoustic insulation and metal studwork**.
- Sweco material library defaults for **bike racks and lockers**. Number of units taken from Cost Plan.
- **Internal doors:** allowance in cost plan on a cost per m<sup>2</sup> GIA basis rather than the number of doors itemised. Therefore, Sweco looked at the number of internal doors per m<sup>2</sup> GIA on other office developments and used this as a means to estimate the number of doors in Euston Tower.
- **Reused RAF for S&C areas** (excluding the WC's) – input based on RMF e-coated (0.71 kgCO<sub>2</sub>e/m<sup>2</sup>) with pedestals assumed 4kg/m<sup>2</sup> of material.
- **RAF for WC's and office CAT A** - input based on Kingspan RMG 600 (40.56 kgCO<sub>2</sub>e/m<sup>2</sup>) in first instance (worst case) with pedestals assumed 4kg/m<sup>2</sup> of material.
- **Screed** – 50mm thick assumed to all basement area (provided by G&T in a call with Sweco on 02/11).

Where not directly provided in architectural responses following assumptions made to finishes:

- **Void formers** at 100mm.
- **Ceramic floor tiles** at 10mm thick and associated adhesive at 10mm thick.
- **0.4mm epoxy resin** finish to **plant and bike store areas**.
- **Natural stone** 10mm thick and associated adhesive at 10mm thick for enhanced finishes to **lifts**.

### Building Services

Main plant items as per the basis of design in ARUP indicative MEP schedule.

- **Distribution MEP materials** in base build areas based on per m<sup>2</sup> inputs i.e. pipework, ductwork and containment.
- **280 m<sup>2</sup> of PV** assumed based on Arup MEP response (noted as still to be formally confirmed).

**CAT A fit out** assumptions:

- **Lab enabled:** Cost Plan confirmed that floors 3-11 are being designed as lab enabled, and two of these floors will be fitted out. Area from cost plan.
- CAT A office areas: **floor area** from latest cost plan (**4 floors**).
- CAT A for office and Lab **specific equipment** based on **per m<sup>2</sup> inputs** for areas above e.g., **ductwork, cabling, lighting, sprinklers, containment**.
- **No localised building services** materials assumed in Office or lab enabled tenant areas that are to be fitted to **shell and core** specification.

### Assumptions for Transportation Distances (A4)

For the vast majority of modelling inputs, the transport distances have been based on the RICS WLCA PS defaults. A summary of these assumptions are provided in the table below.

**Table 3.0:** RICS WLCA PS (2017) Default transport distances.

Assumed Transport Distance (km)	Product group/material in project WLC analysis
<b>50 (local)</b>	Concrete, screed, aggregates
<b>300 (UK)</b>	Formwork, steel deck, timber terrace decking, pavers, balustrades & handrails, stone pavers, resin-bonded gravel, internal timber doors, blockwork, cement mortar, plasterboard, acrylic paint, carpet, vinyl flooring, RAF, suspended metal ceiling, baffle ceiling, ceramic tiles, concrete sealant, terrazzo.
<b>1500 (EU)</b>	Insulation, bitumen membranes, pedestals, sanitaryware, steel studwork, pipe/duct insulation, lighting, waterproofing membranes for structure, rebar, riser doors, revolving door sets, aluminium/glass internal doors, stair core doors, glazed internal screens, cycle racks & lockers, ductwork & pipework, all other building services items not assumed in UK (300km) list above.

An exception to this is the precast concrete elements, where two transport distances have been applied (300 km x2 concrete and 1500 km + 300 km for rebar). These additional distances provide an allowance for to account for upstream transportation movements prior to leaving the factory to site i.e., it avoids the underestimation of transport impacts where A2 impacts are lacking from the EPD used.

In a similar vein, any building services product or system that has been built up by Sweco from individual materials, and not taken directly from a product EPD, two transport distances have again been provided to make an allowance for movements of raw materials/products to the factory, and then from factory to site (1500 km x 2).

As noted in previous sections, some elemental categories at this stage have been based on benchmarked A1-A5 carbon intensity values. Therefore, the transport impacts are included within this benchmarked figure. However, as the majority of the data that underpins the intensity allocations came from internal portfolios (particularly from Sweco), based on design information from other projects, it is reasonable to state that all values for transport are in accordance with the design values set out within the RICS PS WLCA (2017) methodology.

## Predicted Construction Site Energy Use and Waste (A5)

This section can be separated into two parts: construction site emissions (A5s) and construction site waste (A5w). The methodology for each is set out below.

The emission rate of 26 kgCO<sub>2</sub>e/m<sup>2</sup> GIA for A5s it was suggested by Sweco based on a target rate for a 100% new build and the modification was made based on the difference in construction program length between the Hybrid C option being proposed for planning and a hypothetical new build. It's important to note that this emission rate only takes into account site emissions and doesn't include waste.

The A5w data uses default WRAP waste values as applied within software such as One Click and is included within reported A1-A5 values. Again, for those elements based on benchmarked values the same default rates are included in the A1-A5 value in the sense that the same methodology was used in the projects that provided these benchmarked values.

## Use Stage

### Assumption for Refrigerants (B1)

The refrigerant information was provided by ARUP, while the annual and end-of-life leakage rates have been taken from the CIBSE TM65 Table 4.13 values for the relevant systems, as set out below.

**Table 4.0:** Systems & refrigerants used in WLCA Stage 2 baseline.

System	Refrigerant Type	GWP (kgCO <sub>2</sub> e/kg)	Service Life (yrs.)	Total Charge (kg)	Annual Leakage Rate (%)	EoL Leakage Rate (%)
ASHP	R513A	656.45	15	1955	2	1
Chillers	R513A	656.45	15	2250	2	1
DX Units	R-32	675	15	315	6	3

## Assumptions for Maintenance and Repair (B2 & B3)

Modules B2 and B3 includes the embodied carbon associated with maintenance and repairs over the duration of the building's RSP. Greater London Authority (GLA) updated "London Plan Guidance – Whole Life-Carbon Assessments" publication, released in March 2022 provides some guidance on assumptions for Modules B2 and B3 when they are unknown at an early stage within section 2.5.15, and to encourage some assessment of the impact of these modules provides the following guidance:

*"...for module B2 emissions, a total figure of 10 kgCO<sub>2</sub>e/m<sup>2</sup> gross internal area (GIA) may be used to cover all building element categories, or 1 per cent of modules A1-A5, whichever is greater. For module B3 emissions, these may be estimated as 25 per cent of module B2, as per the RICS PS (item 3.5.3.3)."*

These additions are not added between all buildings parts as some will require either minor maintenance and repairs only during its life span, or no maintenance/repairs at all. The following categories are used for the additions as stated in RICS PS section 3.5.3.2; roof, façade and external doors, finishes, and services.

## Assumptions for Lifecycles of materials (B4)

The assumptions for life cycle replacement of materials have been made in accordance with RICS PS, except for building services, which adheres to CIBSE Guide M, and for the facade, which follows the CWCT methodology.

## Assumption for Operational Energy and Water (B6 & B7)

The predicted energy consumption for Euston Tower was provided by ARUP, as part of their energy statement draft issued on the 20<sup>th</sup> of October 2023.

**Table 5.0:** Predicted Energy Consumption for ET.

Baseline Office/Lab	Predicted Energy Consumption (MWh/year)		
	Base Build	Tenant	Total
	7139.67	8313.96	15453.63

For the baseline water consumption calculation, Sweco have used the Better Building Partnership's 2020 Real Estate Energy Benchmarking (REEB) publication, released in August 2021. The 'Typical Practice' water use intensity (WUI) for offices of 636 (litres/m<sup>2</sup> NLA/year) was used, in the absence of more specific data. The emissions factors associated with water use and treatment are derived from Thames Water, and the consequent emissions factors, published in 2022/2023, are 0.0402 kgCO<sub>2</sub>e/m<sup>3</sup> for water supply, and 0.1822 kgCO<sub>2</sub>e/m<sup>3</sup> for water treatment (assuming 90% of potable water ends up going to sewer).

## End of Life Stage

### Assumption for End of Life (C1-C4)

The end-of-life waste streams, and their associated C1-C4 impact, is based on the pre-set typical practice UK scenarios for each material type.

## Results

The A1-A3 section summarises the key assumptions made within each building element category. However, prior to presenting the results it is worth reiterating the specific carbon reducing intervention measures that are included in these results. These were outlined as reduction measures in the interim Stage 2 WLCA, and subsequently they have been committed to by the client for inclusion in the Baseline position. These specific intervention measures are listed as follows:

- 10% of the rolled sections (782 tonnes) are targeted as being used by reused steel. Sweco have applied a placeholder input for the small carbon allowance for these reused steel as per the EMR EPD with a carbon factor of **0.0466 kgCO<sub>2</sub>e/kg**.
- Then the remaining rolled steel sections (7,037 tonnes) comprising: bracing, façade support, columns, and floors – have been modelled as per Acellor Mittal's (AM) XCarb steel product (0.33 kgCO<sub>2</sub>e/kg).
- AM XCarb rebar has also been included for steel reinforcement within the associate concrete elements within the substructure and superstructure.
- The base build raised access flooring (RAF) (24,526 m<sup>2</sup>), which excludes WC areas, is based on the RMF Eco range tiles.
- Concrete elements are based on the GGBS proportions, and associated carbon factors, as confirmed to Sweco and set out in the A1-A3 inputs section earlier in this note.

Table 6.0 below shows the performance, provided at three levels – whole life carbon (A-C including B6 & B7), life cycle embodied carbon (A-C excluding B6 & B7) and upfront embodied carbon (A1-A5).

**Table 6.0:** Summary of Baseline RIBA Stage 2 WLC performance of ET at the three levels of detail, with all values as intensity (kgCO<sub>2</sub>e/m<sup>2</sup> GIA) according to GLA.

EN 15978:2011 Modules	Whole Building (inc. contingencies) kgCO <sub>2</sub> e/m <sup>2</sup> GIA
Whole Life Carbon (A-C inc. B6 & B7) <b>Including sequestration</b>	<b>2,894</b>
Life Cycle Embodied (A-C ex. B6 & B7) <b>Including sequestration</b>	<b>1,262</b>
Upfront Carbon (A1-A5)	<b>711</b>



## Contingencies

As this assessment is still at an early design stage, suitable contingencies have been allowed for in the results. However, is more than one type of contingency applied, and some are only applicable to specific elements. For transparency, Table 7.0 below sets out the results across the various building elements, in intensity terms, and segregates the various contingencies applied. All of these contingencies then culminate in the total A1-A5 figures.

The façade scale-up factors are in line with CWCT guidance. The cost coverage factors reflect the coverage of building elements, as stated at the start of this note. Additionally, a 15% contingency is applied to account for early-stage design, in line with RICS WLCA PS 2<sup>nd</sup> edition. This last contingency applies to all elements except for façades, external works, site activities, temporary works and demolition. However, a 10% contingency is applied to demolition as a thorough Pre-Refurbishment/Demolition Audit has been carried out during the initial stages of the feasibility study by Reusefully. However, a reduced contingency of 10% is deemed appropriate for demolition impacts as a thorough Pre-Refurbishment/Demolition Audit has been carried out during the initial design stages.

**Table 7.0:** A1-A5 results intensity (kgCO<sub>2</sub>e/m<sup>2</sup> GIA) segregated out to highlight the various contingencies including in the reporting.

Building Element	Stage 2 - A1-A5 (kgCO <sub>2</sub> e/m <sup>2</sup> )					
	Results Intensity	Façade Scale up Factors (CWCT)		Cost Plan Coverage Factors	15% Contingency *	Total Intensity with Contingencies
Demolition	20			0	2	<b>22</b>
Substructure	46			2	7	<b>56</b>
Superstructure	178			2	27	<b>207</b>
External walls, windows and doors	159	8	7	0	0.7	<b>174</b>
Internal Walls & Doors	19			0	3	<b>21</b>
Finishes	24			1	4	<b>29</b>
Fittings	3			1	0	<b>5</b>
Building Services	88			49	21	<b>158</b>
External Works	20			0	0	<b>20</b>
Site Activities	26			0	0	<b>26</b>
Temporary Works	15			0	0	<b>15</b>
<b>Total</b>	<b>599</b>	<b>8</b>	<b>7</b>	<b>55</b>	<b>65</b>	<b>733</b>

\*excludes: demolition, CWCT façade, external works, site activities and temporary works.

## Reduction Opportunities

Options have been presented in the waterfall below. They cover modules A1-A5 only at this stage, given the current industry focus on upfront embodied carbon. All reductions are in intensity (kgCO<sub>2</sub>e/m<sup>2</sup> GIA) and are measured against the base specification material.

The table below provides an estimated quantification of these further reductions in A1-A5 intensity terms. They are also illustrated in the subsequent waterfall chart. It should be noted that in a number of cases these reductions reported are cumulative i.e., the quantified reduction cannot be taken separately from the other associated reductions before it.

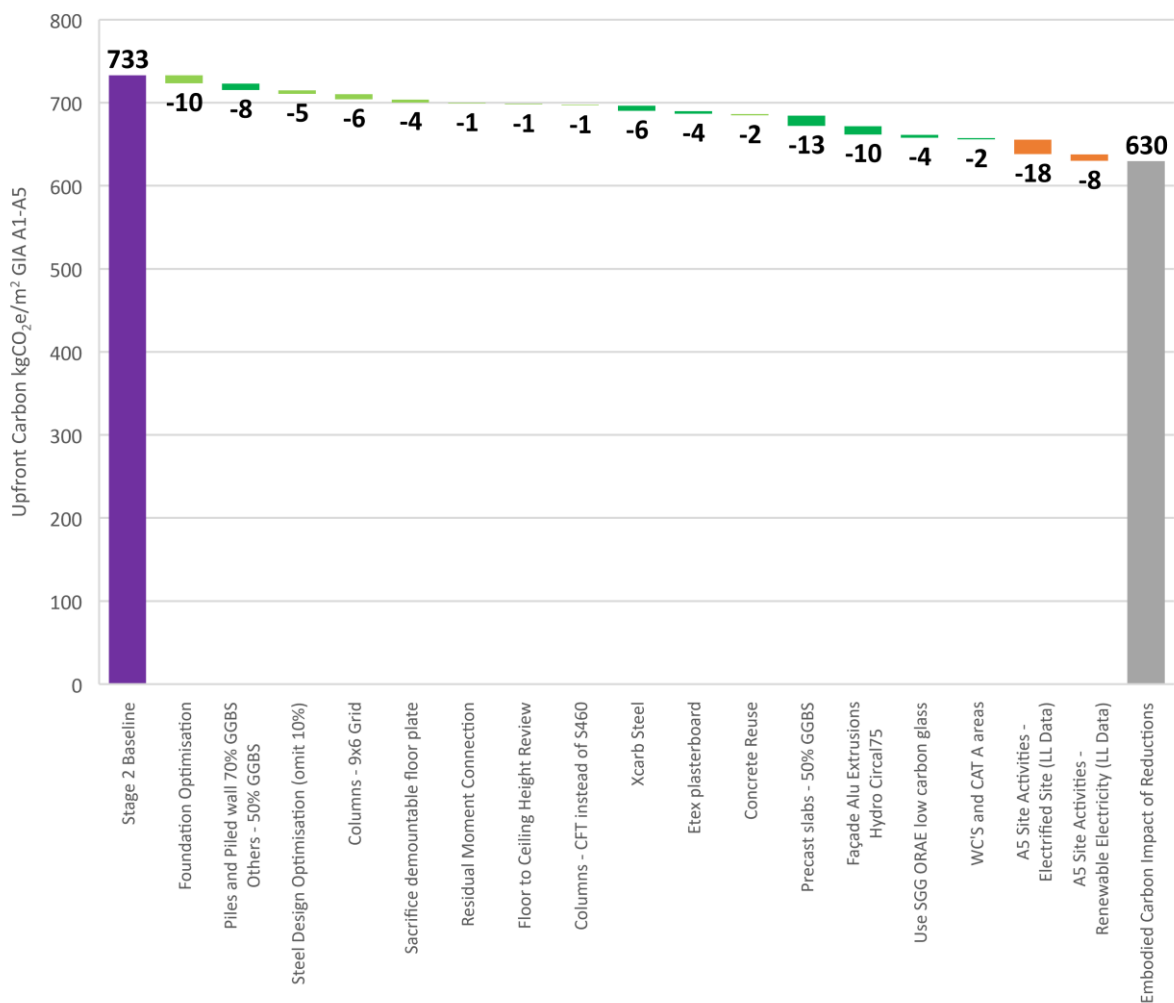
	Material use efficiencies.
	Material specification.
	Site activities.

**Table 8.0:** Cumulative reduction opportunities for upfront carbon with estimated reduction quantities provided in A1-A5 intensity.

Item	Reduction Measure (Description)	Intensity Reduction kgCO <sub>2</sub> e A1-A5
1	Foundation Optimization - Pile Caps + Piles instead of Raft + Piles	-10.0
2	High recycle content for substructures elements - in-situ concrete - Piles 70% GGBS (137.3 kgCO <sub>2</sub> e/m <sup>3</sup> A1-A5). Other elements - 50% GGBS (206 kgCO <sub>2</sub> e/m <sup>3</sup> ).	-8.0
3	Steel Design Optimisation (omit 10%) from the new tonnage excluding connections, podium, truss and reused steel	-4.6
4	Optimize Column Grid - Reduce to a 9x6 Grid instead of 9x12	-6.4
5	Sacrifice demountable floor plate	-3.8
6	Residual Moment Connection - Residual Moment Connections would allow to reduce steel weights	-1.3
7	Review of the Floor to Ceiling Height - Cable Trays under the beam implies no rectangular openings into beams	-1.3
8	Columns - CFT columns instead of S460	-1.3
9	Xcarb Steel for Truss and bolt on podium structure	-6.2
10	Etex plasterboard (ceilings + walls)	-3.7
11	Reuse of existing building concrete (ribbed slabs)	-2.0
12	High recycle content - precast concrete -50% GGBS	-12.7
13	Extrusions made with high recycled content (Hydro Circa175 billet)	-10.2
14	Use SGG ORAE low carbon glass	-4.0
15	RAF - RMG600+ at WC'S and CAT A areas	-1.9

Item	Reduction Measure (Description)	Intensity Reduction kgCO <sub>2</sub> e A1-A5
16	Lendlease Data - electrified site apart from HVO concrete pumps	-17.9
17	Lendlease Data - electrified site apart from HVO concrete pumps - electricity on renewable tariff	-8.1

- **Items 1,3,4,5,6,7 and 8** – provided by ARUP.
- **Items 13 and 14** – provided by 3XN.
- **Items 16 and 17** – provided by Lendlease.
- Other items calculated by Sweco.

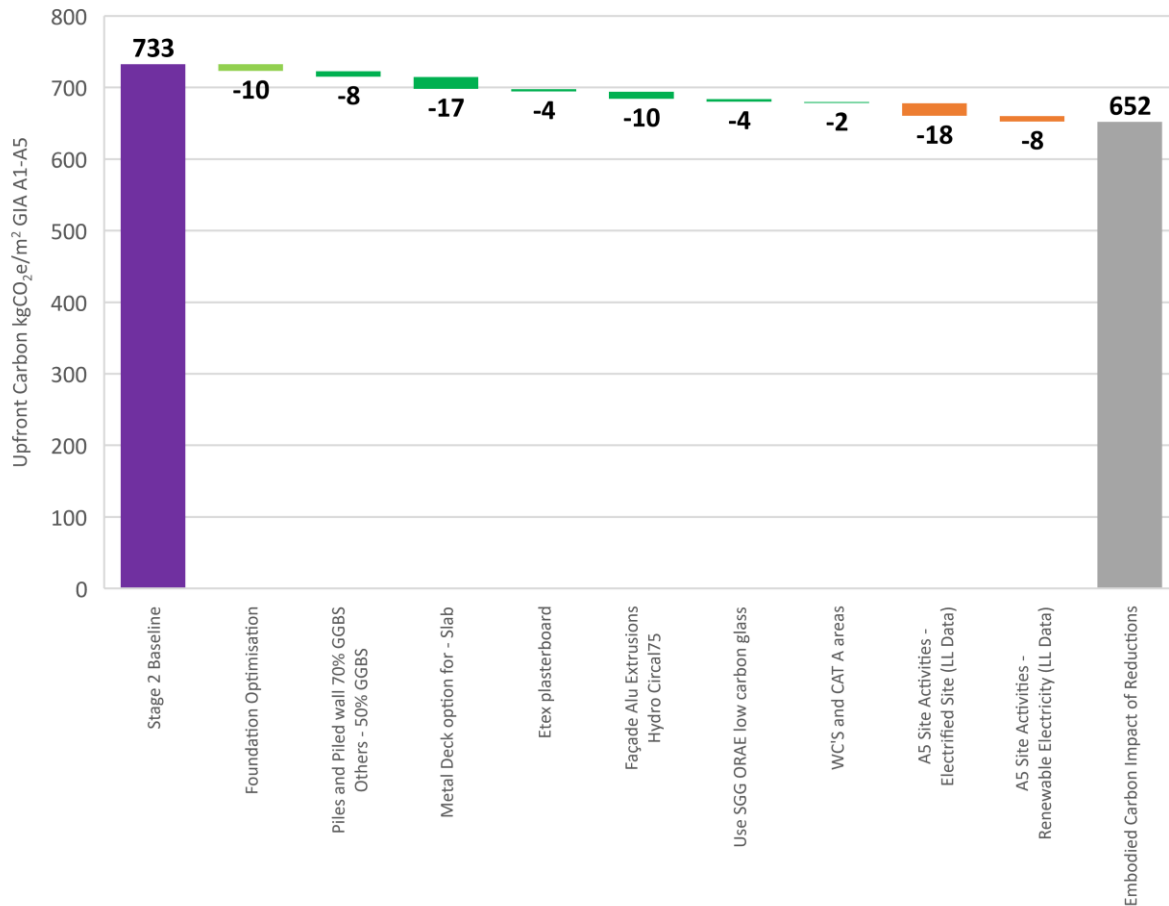


**Figure 1.0:** Cumulative waterfall chart with further reduction opportunities for upfront carbon with estimated reduction quantities provided in A1-A5 intensity.

All of the reduction opportunities above are based on information available at this stage in the design. However, it is worth noting that they will need to be re validated with updated information as the design progresses and more detail is known for certain elements i.e., there is no guarantee that these quantified reductions will remain static throughout the design stages. They should instead be seen as

indicative opportunities to be reviewed and revisited as the project moves through the design stages and a greater granularity in detail is available.

ARUP identified a separate reduction opportunity associated with an alternative metal decking upper floor system. A high-level reduction of -17 kgCO<sub>2</sub>e A1-A5 was estimated for this intervention measure. As in reality this reduction measure would have several knock-on implications to other reductions listed in the figures above, it cannot be included in the same cumulative waterfall/table. However, to illustrate its potential as an alternative route to reducing the impact for ET the waterfall chart below includes the metal decking strategy with other measures not anticipated to be influenced by this measure.



**Figure 2.0:** Alternative cumulative waterfall chart with metal decking solution to upper floors with other reduction opportunities for upfront carbon with estimated reduction quantities provided in A1-A5 intensity.

It is worth highlighting current industry shifts in relation to the use of GGBS as a means to reduce carbon emissions in concrete. Firstly, Sweco has been made aware of forthcoming increase to the carbon content of GGBS in 2024. Based on a reallocation of its status as a coproduct, rather than a biproduct, in the steel manufacturing process.

Secondly there is a general understanding that, as a constrained or limited resource, the over specification of GGBS in one project may limit its availability in others. Hence a question is raised over its effectiveness to reduce greenhouse gas (GHG) emissions at a global scale. This is all to say that the reductions above, which are based on GGBS percentages currently, may be better understood in terms of their respective carbon factors rather than stated GGBS percentages. That way emerging cement

replacement technologies i.e., alternatives to GGBS, can be considered in the context of delivering the same carbon factor.

Sweco would like to emphasise that caution should also be exercised when considering the reduction in A5 site activities. In the recently released RICS WLCA PS 2<sup>nd</sup> edition, specific reference is made to the fact that green or renewable tariffs must not be taken into account when reporting the carbon impact of grid electricity consumed. Following this guidance, the -8 kgCO<sub>2</sub>e/m<sup>2</sup> GIA reduction above would not be accepted.





Euston  
Tower

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