



expedition

part of the Useful Simple Trust

Seven Sisters / Eade Road

Sustainability Statement
14/12/2022

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About Us

Expedition is a consultancy specialising in transformative change for sustainable development. We help organisations develop their approach to the climate and biodiversity emergency, circular economy, social value and Sustainable Development Goals.

We identify opportunities for innovation, and develop tools and guidance to support implementation. We find added value in delivering sustainable development, by providing expert independent insight in an engaging and creative manner.

We are a B Corp™, Certified Social Enterprise and employee-owned organisation, part of the Useful Simple Trust.

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1 / *Executive Summary*

This Sustainability Statement supports the planning application for the proposed Seven Sisters / Eade Road development, in the London Borough of Haringey. It sets out the proposed strategy for reducing the energy use of the development as well as utilising low carbon and renewable energy sources. It also demonstrates how the development addresses all relevant national, regional and local energy policies. This energy statement and associated strategy has been prepared in accordance with the GLA's latest guidance on the preparation of energy statements.

The development comprises two living/working buildings:

- Block A to the east, with 8 storeys and two lower ground levels.
- Block B to the west, with 4 storeys.

The lower floor levels will be occupied by commercial and back of house areas, such as plant rooms, with warehouse living accommodation at upper levels. Across the site, hard and soft landscape improvement are proposed. In addition, the development includes 10 stacked shipping containers (two storeys) to provide workspace/ artist studios.

The proposed development site is within the Harringay Warehouse District which is covered by a dedicated Masterplan Framework Document. Embedded within this Framework are four principles for sustainable living: Energy and Carbon,

Materials and Circular Economy, Environmental Resilience and Wellbeing. These principles have been used to frame this Sustainability Statement and set the overall project aspirations for the development.

Across these four themes, this document sets out strategies for energy and carbon, transport, waste, construction, flood risk, water, biodiversity, changing climate, and pollution, in accordance with Haringey Council's Sustainable Design and Construction SPD.

Summary of Proposed Strategies

The development's approach to low carbon sustainable design and operation is summarised below:



Energy and Carbon: The buildings have been designed to reduce their energy demand and consumption. An ambient loop system will provide low carbon heat, and renewable energy will be maximised through the implementation of PV panels. The strategy enables the development to exceed the relevant GLA carbon reduction targets. Whole life carbon impacts have been assessed at Stage 2 and measures to optimise construction product consumption efficiency and the selection of products with a low environmental impact will ensure a reduction in embodied carbon, whilst sustainable travel is supported through design.



Environmental Resilience: New planting is introduced to reduce surface water runoff and help minimise the urban heat island effect, overheating risk within living spaces has been minimised through the provision of shading devices and high performance glazing specification. SuDS will be incorporated and include green and blue roofs, permeable paving and rain gardens to ensure run-off rates achieve greenfield levels as well as run-off water quality.



Materials and Circular Economy: By embracing circular economy principles, the development will minimise the use of virgin materials, specify the use of low carbon and renewable materials, as well as prioritise locally sourced options. Waste arisings reduction will also be targeted through construction and operation, with site waste management and operational waste management plans being provided to lead the strategy.



Health & Wellbeing: The development provides ample access to daylight and views out, promoting positive impacts on both mood and productivity. Air and noise pollution will be minimised during construction, and adequate indoor conditions will also be achieved in all habitable spaces.

2 / *Introduction*

2.1 Site Location

The Harringay Warehouse District sits between the New River to the south, Seven Sisters Road to the east and the Gospel Oak to Barking branch of the London Overground to the north.

The District has a PTAL ranging from 1 to 5 and is within walking distance of a number of rail and tube stations including Haringey Green Lanes, Stamford Hill and Seven Sisters Rail Stations and Seven Sisters and Manor House Tube Station and numerous Bus routes also run along Seven Sisters Road.

The application site comprises of the vacant infill site on the corner of Eade Road and Seven Sisters Road and 2-4 Tewkesbury Road, adjacent to the existing Cara House.

The surrounding area is made up of a mix of redundant former warehouse and industrial buildings, built at different times. The buildings have been re-purposed for warehouse living, with changes made to the façades over time, to suit the users needs.

The aspiration of the proposals is to maximise the potential of the Seven Sister's site as a key gateway site and deliver warehouse living as part of a new build scheme, along with retrofit and improvements to the existing buildings.



Figure 1: Proposed site location (highlighted in red)

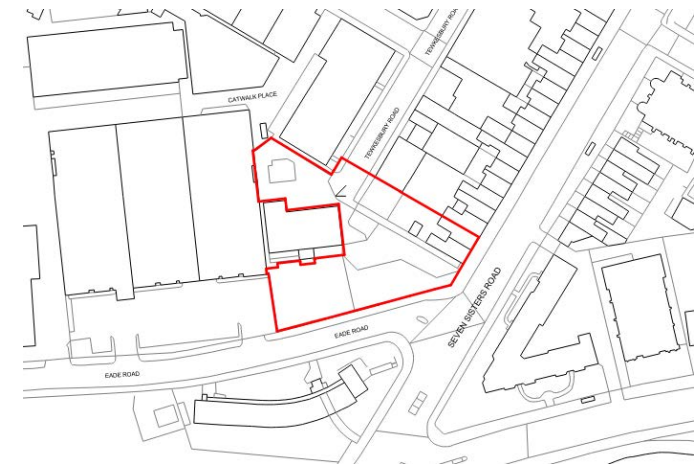


Figure 2: Proposed site boundary line

2.2 Scheme Details

The proposed development comprises the construction of two new buildings to provide new warehouse living accommodation (Sui Generis (warehouse living), ground floor café/ workspace (Use Class E) and associated waste collection and cycle parking. Erection of 10 stacked shipping containers (two storeys) to provide workspace/ artist studios (Use Class E), toilet facilities and associated waste collection and cycle parking. Landscape and public realm enhancements including the widening of and works to an existing alleyway that connects Seven Sisters and Tewkesbury Road, works to Tewkesbury Road, the creation of rain gardens, greening, seating, signage and artworks and all other associated infrastructure works, including the removal of an existing and the construction of a new substation to service the new development.

2.3 Applicant and Project Team

The planning application for the proposed development at Seven Sisters / Eade Road is being made by Provewell Limited (the Applicant), with the support of the following design and planning team:

- Architecture – Morris and Co Architects
- Landscape design – Campbell Cady
- Sustainability – Expedition
- Building services engineering – Ingenium Consulting Engineers
- Civil and structural engineering – London Structures Lab
- Planning – Jen Ross Consulting
- Transport – Velocity
- Project management – Dakota
- Cost consultant – Hennessy Godden

2.4 Sustainability Context

Haringey Climate Change Action Plan

In March 2019, Haringey Council declared a climate emergency and in March 2021 Haringey's Climate Change Action Plan was adopted and sets out the roadmap for how the borough will become net-zero carbon by 2041.

Masterplan Framework Document

The development is located within the Haringey Warehouse District which is covered by a dedicated Masterplan Framework Document. The Framework was prepared in response to the requirements of Policy DM39 of Haringey's Development Management DPD and provides area specific planning and urban design guidance. Embedded within the Framework are the following four principles for sustainable living that will support the regeneration of the Harringay Warehouse District:

- Energy and Carbon.
- Materials and Circular Economy.
- Environmental Resilience.
- Wellbeing.

3 / *Policy and Guidance* *Overview*

3.1 Policy and Guidance Overview

National Planning Policy Framework (NPPF), 2021

The framework was recently updated in July 2021 with a strong emphasis on delivering well designed places which are sustainable, inclusive and provide resilient homes for future generations. The recent framework draws attention to the importance of considering social, economic and environmental aspects of sustainability, referencing the UN Sustainable Design Goals as objectives for all developments.

The London Plan 2021

The London Plan is the overall strategic plan for London which sets out an integrated economic, environmental transport and social framework for the development of London.

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

The following sets out a summary of the key sustainability policies from the London Plan applicable to the site. It should be noted that whilst the proposed development is considered 'major', it is not a referable application.

Policy SI 1 Improving air quality

Development Plans, through relevant strategic, site-specific and area based policies, should seek opportunities to identify and deliver further improvements to air quality and should not reduce air quality benefits that result from the Mayor's or boroughs' activities to improve air quality.

To tackle poor air quality, protect health and meet legal obligations the following criteria should be addressed:

- Development proposals must be at least Air Quality Neutral

Policy SI 2 Minimising greenhouse gas emissions

The policy requires major developments to be zero carbon by following the energy hierarchy approach. A minimum on-site reduction of at least 35 per cent beyond Building Regulations is required for major development. Residential development should achieve 10 per cent, and non-residential development should achieve 15 per cent through energy efficiency measures. If the zero-carbon target cannot be fully achieved on-site, any shortfall should be provided, in agreement with the borough, either via cash in lieu contribution to the borough's carbon offset fund, or off-site provided that an alternative proposal is identified and delivery is certain.

Policy SI 3 Energy infrastructure

Energy masterplans should be developed for large-scale development. Development Plans should identify the need for, and suitable sites for, any necessary energy infrastructure requirements

including energy centres, energy storage and upgrades to existing infrastructure.

Major development proposals within Heat Network Priority Areas should have a communal low-temperature heating system the should be selected in accordance with the GLA's energy hierarchy.

Policy SI 4 Managing heat risk

Development proposals should minimise adverse impacts on the urban heat island through design, layout, orientation, materials and the incorporation of green infrastructure.

Major development proposals should demonstrate through an energy strategy how they will reduce the potential for internal overheating and reliance on air conditioning systems in accordance with the cooling hierarchy strategies mentioned in the policy.

Policy SI 5 Water infrastructure

Development proposals should minimise the use of mains water in line with the Optional Requirement of the Building Regulations(residential development), achieving mains water consumption of 105 litres or less per head per day (excluding allowance of up to five litres for external water consumption).The development should achieve at least the BREEAM excellent standard for the 'Wat 01' water category or equivalent (commercial development). Also, it should incorporate measures such as smart metering, water saving and recycling measures to achieve lower water consumption rates and to maximise future-proofing.

Policy SI 7 Reducing waste and supporting the circular economy

Resource conservation, waste reduction, increases in material re-use and recycling, and reductions in waste going for disposal will be achieved by the Mayor, waste planning authorities and industry working in collaboration to:

- promote a more circular economy that improves resource efficiency and innovation to keep products and materials at their highest use for as long as possible
- ensure that there is zero biodegradable or recyclable waste to landfill by 2026
- meet or exceed the municipal waste recycling target of 65 per cent by 2030
- construction and demolition – 95 per cent reuse/recycling/recovery
- excavation – 95 per cent beneficial use

Policy SI 12 Flood risk management

Development proposals should ensure that flood risk is minimised and mitigated, and that residual risk is addressed.

Policy G5 Urban greening

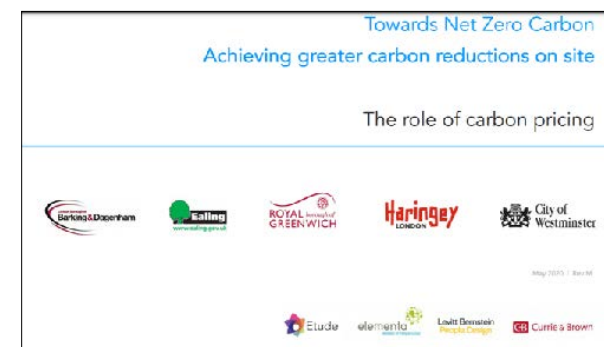
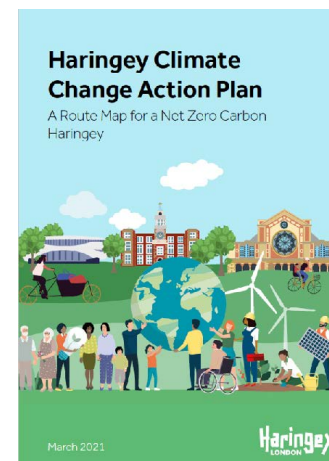
Major development proposals should contribute to the greening of London by including urban greening as a fundamental element of site and building design, and by incorporating measures such as high-quality landscaping (including trees), green roofs, green walls and nature-based sustainable drainage.

Development proposals should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible. There should also be a preference for green over grey features, in line with the drainage hierarchy.



Haringey Climate Change Action Plan

In March 2019, Haringey Council declared a climate emergency and in March 2021 Haringey's Climate Change Action Plan was adopted and sets out the roadmap for how the borough will become net-zero carbon by 2041.



Haringey Local Plan

The Haringey Local Plan is comprised of a series of policy and guidance documents which provide a framework of how development in the Borough should be designed to ensure that it is as sustainable as possible, and covers the following topics:

- Energy & Carbon standards and efficiency measures.
- Changing Climate mitigation and adaptation.
- Flood Risk areas and resistant design.
- Water management and conservation.
- Pollution air, noise, light, land.
- Waste minimisation and management.
- Construction material resource efficiency & modern methods.
- Biodiversity areas of protection and methods of improvement.
- Transport sustainable modes and accessibility.

The following have been reviewed as part of the sustainability assessment:

- Strategic Policies DPD
- Development Management DPD
- Sustainable Design and Construction SPG

The general principles of the sustainable design and construction SPD apply to all development proposals, including refurbishment or retrofit to

existing buildings.

Measures outlined in the SPD are applicable to most major and minor developments, noting the level of information required needs to be more detailed for major applications.

Relevant sustainability related policies applicable to the development extracted from the Strategic Policies and Development DPDs are detailed as follows.

Strategic Policies DPD

SP4: Working towards a Low Carbon Haringey

Reducing building energy usage and working toward a low-carbon borough will be one of the primary challenges facing Haringey. The following initiatives to lower carbon emissions from both new and existing structures will be supported by the Council.

In line with London Plan policy, the Council will encourage and mandate that all new projects use the following steps to minimise energy usage and carbon emissions throughout design, construction, and occupancy:

- All new non-residential development shall be built to at least BREEAM “very good” standard and should aim to achieve BREEAM “excellent” or the current nationally agreed standard. All new non-residential development shall be zero carbon

from 2019.

The Council promotes low- and zero-carbon energy generation through the following measures:

- Requiring all developments to assess, identify and implement, where viable, site-wide and area-wide decentralised energy facilities including the potential to link into a wider network.
- Establishing local networks of decentralised heat and energy facilities by requiring developers to prioritise connection to existing or planned networks where feasible.
- All new developments are required, where viable, to achieve a reduction in predicted carbon dioxide emissions of 20% from on site renewable energy regeneration, which can include connections to local sources of decentralised renewable energy.

SP5: Water Management and Flooding

The Council will require all development in Haringey to be water efficient during construction and operation and to reduce all forms of flood risk. All development shall:

- Improve the water environment, water quality and drainage systems;
- Take account of flood risk vulnerability classification as set out in paragraph 100 of the NPPF and will apply the NPPF Sequential Test and Exception Test;
- Implement measures to prevent (or mitigate as

last resort) local surface water and downstream flooding;

- Implement Sustainable Drainage Systems from strategic to individual site level to improve water attenuation, quality and amenity;
- Require higher resilience and levels of flood protection for critical infrastructure to ensure the protection of essential services such as water and power.

SP6: Waste and Recycling

The Council supports the objectives of sustainable waste management set out by the Government in PPS10. Planning for Sustainable Waste Management and the Mayor's London Plan. To achieve these, the Council shall:

- Seek to minimise waste creation, increase recycling rates in relation to commercial, industrial and municipal waste in order to achieve the Mayor's recycling targets.
- Address waste as a resource and look to disposal as the last option, in line with the Mayor's waste hierarchy.
- Require integrated, well-designed recycling facilities to be incorporated into all new developments.

Haringey will require Site Waste Management Plans for all major applications to identify volume and types of demolition and construction waste and to demonstrate how waste will be minimised and managed during construction and occupation.

SP7: Transport

In line with the London Plan, the Council will work with its partners to promote the following travel demand management schemes to tackle climate change, improve local place shaping and public realm, and environmental and transport quality and safety by:

- Minimising congestion and addressing the environmental impacts of travel.
- Promoting public transport, walking and cycling (including minimum cycle parking standards).
- Adopting maximum car parking standards and car free housing wherever feasible.

SP13: Open Space and Biodiversity

New development shall protect and improve Haringey's parks and open spaces. All new development shall:

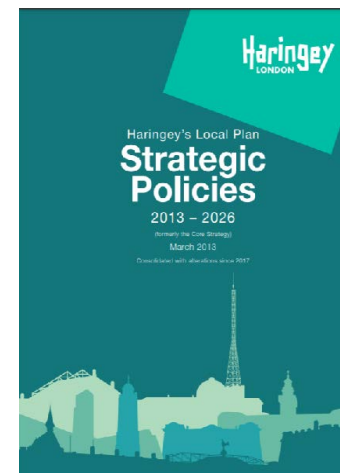
- Secure improvements, enhancement and management in both quality and access to existing green spaces;

All development shall protect and improve sites of biodiversity and nature conservation, including private gardens through its:

- Contribution to wildlife and ecological habitats and, where possible, include green and brown roofs, rainwater harvesting, green walls, bird and bat nesting/roosting opportunities.

– SP14: Health and Well-being

- Integrating housing types and tenures in developments, ensuring new housing is of a good standard, which are well designed, flexible and adaptable to residents' changing and specific needs, with consideration of the ageing population and meeting the demands for specialised care, and supported housing.
- Encouraging physical activity and good mental health by providing, protecting and enhancing good quality open spaces, outdoor sports, recreation facilities and children's play space.
- Encouraging physical activity by promoting walking and cycling.
- Providing jobs and opportunities.
- Lessening environmental impacts including air and noise pollution.



Development Management DPD

Policy DM21: Sustainable Design, Layout and Construction

A. All new development, including building and landscape works, will be expected to consider and implement sustainable design, layout and construction techniques. Proposals should:

a. Apply the energy hierarchy to minimise energy use in order to meet, and if possible exceed, minimum carbon dioxide reduction requirements;

b. Apply the cooling hierarchy to reduce the potential for overheating and limit reliance on mechanical air conditioning systems;

c. Maximise opportunities to enhance biodiversity on-site, including through appropriate landscaping, Sustainable Drainage Systems, living roofs and green walls

d. Wherever possible, use building materials with high environmental performance ratings; and

e. Seek opportunities for locally sourced labour.

B. The Council will support appropriate measures to sustainably retrofit existing homes and non-residential buildings.

C. Proposals that fail to demonstrate adequate consideration for sustainable design, layout and construction techniques will be resisted.

D. Consideration will be given to the use of carbon offset payments, to be secured by planning obligations, where it can be demonstrated that proposals are unable to meet carbon dioxide emission reduction targets on-site.

Policy DM22: Decentralised Energy

A. Subject to other policy requirements, proposals that contribute to the provision and use of Decentralised Energy network infrastructure will be supported.

Communal energy systems

B. All development that incorporates site-wide communal energy systems should examine opportunities for extending such systems, irrespective of whether it is connected to a DE network.

C. All development that incorporates site-wide communal energy systems should optimise opportunities for extending such systems beyond the site boundary to supply energy to neighbouring existing and planned future developments.

Existing and planned future DE networks

D. All development proposals should prioritise connection to existing or planned future DE networks.

DE network 'connection zones'

G. All major development located within 500 metres of a DE network 'connection zone' should be designed for connection to a DE network.

Policy DM23: Environmental Protection

Air Quality

A. All development proposals should consider air quality and be designed to:

a. Improve or mitigate the impact on air quality in the Borough; and

b. Improve or mitigate the impact on air quality for the occupiers of the building or users of the development.

B. Air quality assessments will be required for all major development and other development proposals, where appropriate.

C. Where necessary, adequate mitigation must be provided.

Noise and Vibration

D. The Council will seek to ensure that new noise sensitive development is located away from existing or planned sources of noise pollution. Proposals for potentially noisy development must suitably demonstrate that measures will be implemented to mitigate its impact.

E. A noise assessment will be required to be submitted if the proposed development is a noise sensitive development, or an activity with the potential to generate noise.

Light Pollution

F. Development proposals that include external lighting must mitigate potential adverse impacts from such lighting. Where appropriate, proposals will be required to submit details demonstrating that external lighting is:

- a. Appropriate for its purpose in its setting;
- b. Designed to minimise and provide protection from glare and light spillage, particularly to sensitive receptors such as residential properties and natural habitats, including watercourses; and
- c. Energy efficient.

Policy DM24: Managing and Reducing Flood Risk

A. The Council will ensure that all proposals for new development avoid and reduce the risk of flooding to future occupants and do not increase the risk of flooding.

C. All proposals for new development will be required to:

- a. Manage and reduce surface water run-off; and
- b. Manage water and waste water discharges.

Policy DM25: Sustainable Drainage Systems

A. All proposals for new development must seek to manage surface water as close to its source as possible in line with the London Plan drainage hierarchy.

B. The Council will require Sustainable Drainage Systems (SuDS) to be sensitively incorporated into new development by way of site layout and design, having regard to the following requirements:

a. All major development proposals will be required to reduce surface water flows to a greenfield run-off rate for a 1 in 100 year critical storm event;

C. Where Sustainable Drainage Systems are implemented they will be expected to:

- a. Meet the requirements set out in the Council's relevant local standards and guidance, or national standards where agreed;
- b. Incorporate measures identified in the Surface Water Management Plan;
- c. Be designed to maximise biodiversity and local amenity benefits, and where appropriate, ensure that SuDS techniques provide for clean and safe water at the surface;
- d. Improve water quality; and
- e. Function effectively over the lifespan of the development.

Policy DM31: Sustainable Transport

A. The Council will require that developments with high trip generating characteristics locate where public transport accessibility is high and car parking is minimised to mitigate generated car travel.

C. The Council will require the submission of a Travel Plan and a Transport Assessment/Statement in support of development proposals in accordance with the Transport for London thresholds.

Policy DM32: Parking

A. Development proposals will be assessed against the car parking and cycle parking standards set out in the London Plan.

C The Council will support proposals for new development with limited or no on-site parking where:

- a. There are alternative and accessible means of transport available;
- b. Public transport accessibility is at least 4 as defined in the Public Transport Accessibility Index;
- c. A Controlled Parking Zone (CPZ) exists or will be provided prior to the occupation of the development;
- d. Parking is provided for disabled people.

4 / *Approach to Sustainability*

Embedded within the Masterplan Framework Document for the Harringay Warehouse District are four principles for sustainable living. These principles have been used to set the overall project aspirations. They have guided the design and development process so far and will continue

to act as an overarching framework throughout the design, construction, and operation of the proposed development.

Across these four themes, this document sets out strategies for energy and carbon, transport, waste, construction, flood risk, water, biodiversity,

changing climate, and pollution, addressing the topics covered in Haringey Council's Sustainable Design & Construction SPD.

Principles for Sustainable Living	Energy and Carbon 	Materials & Circular Economy 	Environmental Resilience 	Well-being 
Masterplan Framework Objective:	Plot a pathway to net-zero carbon including energy in use, embodied carbon and lifestyle emissions.	Reuse existing buildings and materials. Design principles for future proofing and flexibility. Reduce upfront and lifecycle material impacts in accordance with GLA guidance.	Ensure long term resilience for the development in terms of utilities provision, flood risk, designing for sustainable urban water management and identifying ways to achieve significant net biodiversity gain.	Design for a comfortable microclimate. Target emerging policy on overheating, daylight and sunlight standards.
Project Objective:	Provide low carbon, affordable and reliable energy to occupants. Support sustainable transport and mobility.	Apply circular economy principles to minimise waste. Maximise responsibly, sustainably and locally sourced materials.	Reduce surface water run off. Provide a net gain in biodiversity.	Create a space that is beautiful and provides healthy and comfortable spaces to live and work in.
Building Strategy:	- Energy & carbon. - Transport.	- Waste. - Construction.	- Flood risk. - Water. - Biodiversity.	- Changing Climate. - Pollution

5 / *Energy and Carbon*

5.1 Energy

Context

With the construction and operation of buildings accounting for 39% of energy-related carbon dioxide (CO₂) emissions, the role of buildings in a net zero future is significant. It is recognised that new developments, such the proposed Seven Sisters / Eade Road, need to contribute to a greater net reduction in carbon emissions and sooner to support the UK's 2050 net zero target.

RIBA and LETI suggest that energy consumption for new housing is reduced to 35kWh/m²/yr by 2030 (excluding renewable energy contribution) to support lower operational energy.

The Committee on Climate Change recommends that new homes deliver ultra-high levels of energy

efficiency, with a space heating demand of 15-20 kWh/m²/yr by 2025 at the latest. They have also recommended that from 2025 at the latest, no new homes should be connected to the gas grid.

Following continued investment in renewable energy, the National Grid is decarbonising and this is having a significant impact on energy supply options (Figure 3). In particular, benefiting electrically led approaches such as heat pumps; while increasing the carbon emissions associated with technologies that offset the use of grid electricity such as combined heat and power (CHP) plant, which in the past had been a preferred option for reducing carbon emissions.

All of this means the way in which we generate and consume energy is undergoing a transformation

with a shift towards more decentralised energy networks through the use of smart and dynamic grids, local renewable energy generation and battery storage. These measures will also be used to help reduce peak demands and support the grid as we see it supply more of our energy needs.

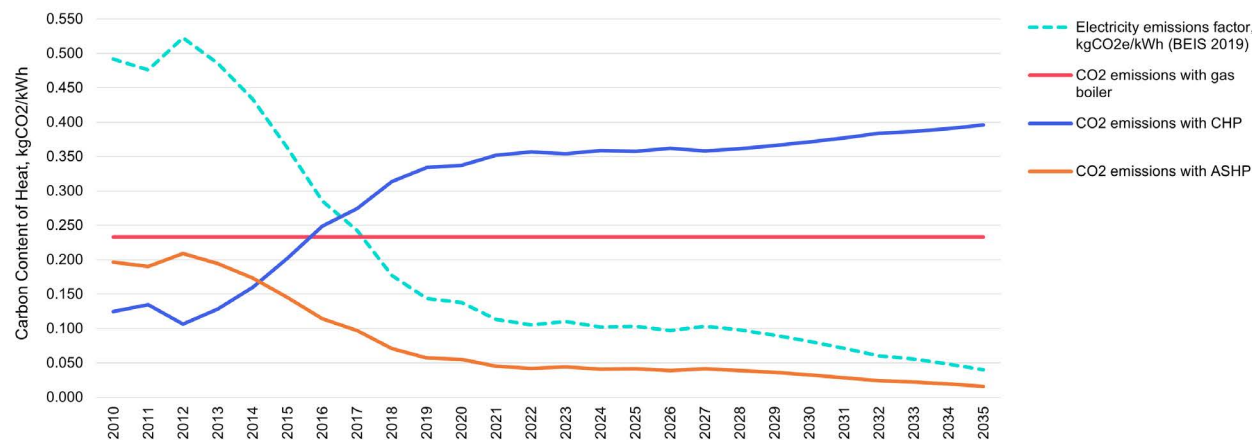


Figure 3: Impact of Grid Decarbonisation on Technology Choice

Energy Strategy

The energy strategy has been prepared in accordance with the principles of the energy hierarchy, which takes a tiered approach to reducing carbon emissions. The first step is to use less energy (be lean), next is to supply energy efficiently (be clean) and lastly to use renewable energy (be green).

It should be noted that the commercial areas at the ground floor will be delivered as 'shell and core', therefore only delivering fabric, substructure and superstructure of the building, without the provision of building services. The containers are proposed to be delivered 'as-is', to be fitted with services as required by future tenants.

The key principles regarding energy and carbon are as follows:

Be Lean - Use Less Energy

A fabric first approach is at the heart of the proposals and a range of passive design and energy efficiency measures will be used to reduce energy use. An efficient building fabric (Table 1) will be used, as well as high performance glazing, optimised to balance heat losses, heat gains and daylight.

Additionally, the development will benefit from Mechanical Ventilation with Heat Recovery (MVHR) with warm exhaust air preheating incoming air, further reducing space heating demand.

The development intends to incorporate low energy lighting fittings throughout. All light fittings will be specified as low energy lighting, and will accommodate LED luminaires only.

Energy sub-metering, including for heating, will be deployed as part of the strategy to enable tenants to reduce their operational energy use.

Table 1: Thermal Envelope U-values

Building Element	Notional building u-values	Proposed u-values
External walls	0.18 W/m ² K	0.15 W/m ² K
Ground and exposed floors	0.15 W/m ² K	0.10 W/m ² K
Roofs	0.15 W/m ² K	0.10 W/m ² K
Windows and glazed doors	1.4 W/m ² K	1.2 W/m ² K g-value 0.4 Vlt - 70%
Air tightness	3 m ³ /m ² .h @ 50Pa	3 m ³ /m ² .h @ 50Pa

Be Clean & Be Green - Supplying Energy Efficiently and Renewable Energy

An electric led approach is proposed through the use of air source heat pumps (ASHP) to deliver space heating to office areas. The network will comprise of roof mounted air source heat pumps providing water at ambient temperature to individual water source heat pumps located in each unit. These water source heat pumps will uplift the low grade heat from the network and provide space heating and domestic hot water to each unit. Heat pumps will also directly benefit from the lower carbon electricity from the electricity grid, following its decarbonisation.

In addition to ASHPs, proposals include photovoltaics (PV) panels to generate renewable electricity. PVs have an important role to play in the net zero operational balance and the design proposals maximise on site renewable.

Part L 2021 Energy assessment

A design stage energy assessment has been undertaken for both blocks A and B. Regulated carbon emissions have been calculated based on the Notional Calculation Methodology (NCM) using approved software IESVE. The current strategy delivers a significant improvement upon Building Regulations Part L2 2021, as detailed in the tables and image overleaf.

Table 2: Carbon Dioxide Emissions after each stage of the Energy Hierarchy

Regulated CO ₂ savings (tonnes CO ₂ /yr)		
	Regulated	Unregulated
Baseline: Part L 2021 of the Building Regulations Compliant Development	9.7	5.5
After energy demand reduction (be lean)	7.1	5.5
After heat network connection (be clean)	7.1	5.5
After renewable energy (be green)	4.6	5.5

Table 3: Regulated Carbon Dioxide savings from each stage of the Energy Hierarchy

Regulated CO ₂ savings (tonnes CO ₂ /yr)		
	Tonnes CO ₂ /yr	%
Be lean: savings from energy demand reduction	2.6	27%
Be clean: savings from heat network	0.0	0%
Be green: savings from renewable energy	2.5	26%
Total Cumulative Savings	5.1	53%
Annual savings from off-set payment	4.6	-
Cumulative savings for off-set payment	137	-
Cash in-lieu contribution (£)	13,052	-

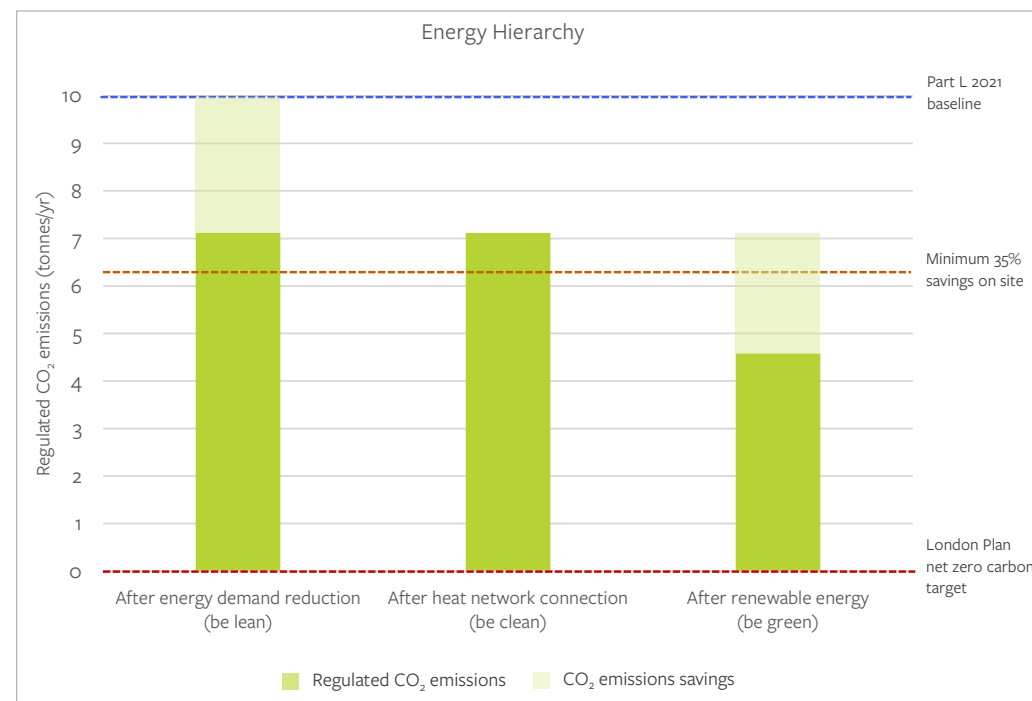


Figure 4: Anticipated savings from each step of the London Plan energy hierarchy

The GLA requires that all major developments achieve net zero-carbon by following the energy hierarchy (Policy SI 2). This means that regulated carbon emissions should be reduced so they are as close as possible to zero. Once on-site reductions have been maximised, the residual emissions should be offset via a cash in-lieu payment into the relevant borough's carbon offset fund. At the concept design stage this amounts to a total sum of £13,052, calculated based on a carbon price of £95 per tonne over 30 years.

5.2 Whole Life Carbon

Context

The proposed development at Seven Sisters / Eade Road must address and reduce multiple emissions sources to support UK climate change targets and respond to relevant planning policies. These include the upfront embodied carbon associated with construction and in-use carbon attributed to energy and other resources used during operation, as illustrated in Figure 5.

Whole life carbon strategy

In addition to regulated energy use, as measured by Building Regulations, the development will address and reduce multiple emissions sources. These include the upfront embodied carbon associated with construction and in-use carbon attributed to energy and other resources used during operation. To that effect, a whole life cycle carbon assessment during RIBA Stage 2 has been carried out to support lower carbon design decisions. The assessment has been undertaken in accordance with the RICS Professional Statement for WLC assessment.

As well as assessing operational carbon, the team has looked at the upfront carbon for the development. Although there are no specific planning deliverables that set out embodied carbon targets from Haringey Council, and a Whole Life Carbon statement is not required to be submitted, we are assessing the project to quantify the embodied carbon emissions associated with the development. As a hybrid living/working

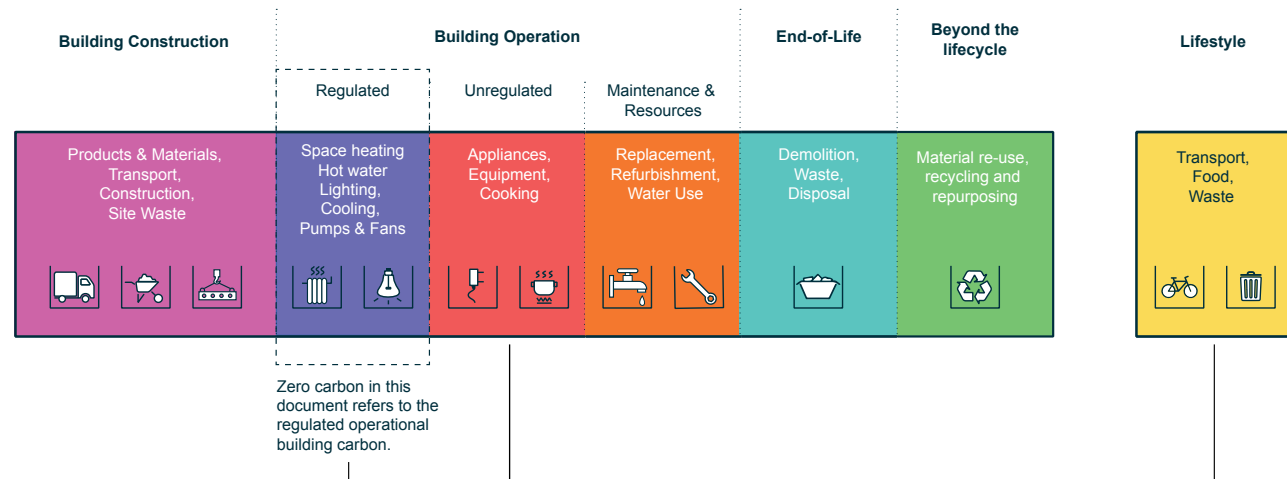


Figure 5: Whole Life Cycle Carbon Emissions (adopted from UKGBC breakdown of net zero carbon scopes)

development, there currently aren't established benchmarks for this bespoke type of building. Therefore, the GLA's residential benchmarks have been used as the closest building type to the development, as noted below:

- Residential benchmark: 1200kgCO₂e/m²
- Aspirational benchmark: 800kgCO₂e/m²

The focus of the study is on the assessment of the embodied carbon within the Whole Life Carbon framework and includes an assessment through modules A to C only, in accordance with BS EN 15978 and the GLA's guidance on WLC (March/2022).

Reasonable assumptions were made where

necessary information was not available with sufficient detail during early design. The model assumes the following material composition, which include recycled content in steel and recycled cement binders in concrete as detailed below:

- Reinforcement steel: 97% recycled content.
- Structural steel: 20% recycled content.
- Substructure cement: 60% recycled content.
- Superstructure cement: 50% recycled content.
- Insulation: use of rockwool where possible.

It should be noted that these materials specifications are indicative at this stage, and are subject to change during the detailed stages of the design.

In addition to the specification of low carbon materials, the Design Team has carried out an appraisal of key measures to reduce the embodied carbon of the buildings at Seven Sisters / Eade Road. The buildings will benefit from a concrete structural frame, chosen as it allows for a flexible plan, while remaining materially robust, in addition to inherent optimal fire and acoustic performance.

The WLC for the Proposed Development is 1,058kgCO₂e/m² GIA, excluding operational energy and water use (B6-B7) and benefits beyond the system boundary (D), as illustrated by the image and table in this page. This is below the GLA’s minimum benchmark for residential buildings, demonstrating the commitment to reduce upfront carbon emissions whilst delivering a robust building that will have a long life cycle.

Table 4: WLC results for the proposed development

WLC Stage	kgCO ₂ e/m ²
Biogenic carbon	-54
Product stage (A1-A5)	740
Use stage (B1-B5)	306
End of life (C1-C4)	66
Benefits and loads beyond the system boundary (D)	-224
WLC (excluding B6-B7, D)	1,058

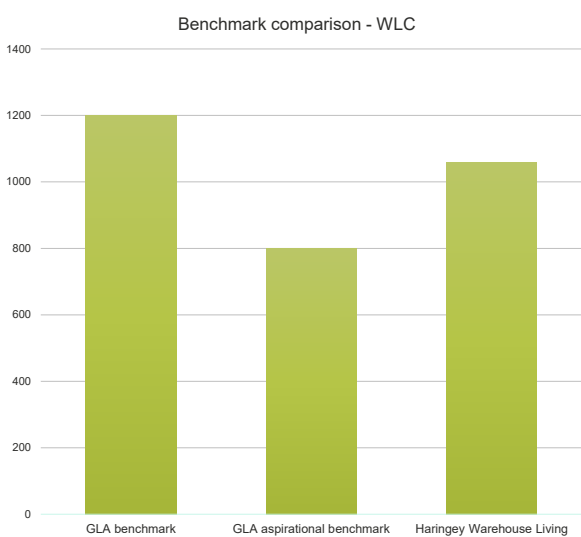


Figure 6: Graph showing comparison of GLA benchmarks and proposed development performance

5.3 Transport

Context

The transport sector is seeing a rapid shift to clean technology supported by government leadership and global investment. The UK has committed to end the sale of new conventional diesel and petrol cars and vans by 2040 and driving forward plans to reduce emissions, clean up our air, and deliver cleaner, greener transport across all modes.

New development will need to be equipped with the infrastructure to support the use of sustainable modes of transport, such as electric vehicles.

These will also support health and well-being of occupants, providing additional socio-economic benefits. Further, freeing up space typically reserved for parking will allow more space to be reclaimed for other uses.

Transport strategy

The proposed development is suitably located and designed to maximise the potential for sustainable travel and minimise impacts on the local transport networks through appropriate access, public realm, parking and servicing strategies. The following cycle storage provision will be delivered as part of the proposed development:

- Blocks A and B: 80 long stay spaces.
- Block A: 20 long stay spaces in units (within living rooms, under stairs), and ~~21 in double rooms.~~
- Visitors: ~~4~~ short stay spaces.
- Commercial: 23 short stay spaces across both levels.

The impact of the proposed development on the public transport will be minimal given the proximity of a range of public transport services including buses and three underground/rail stations. A Draft Residential Travel Plan, Draft Delivery and Servicing Plan and Outline Construction Logistics Plan have been prepared to encourage sustainable travel and ensure that the proposed development operates efficiently.

The existing car park containing 10 spaces will be removed providing a car-free development, with the exception of two Blue Badge parking spaces provided on-street.

In addition, the passageway from Seven Sisters Road to Tewkesbury Road will be widened and vastly improved.



Figure 7: Transport hierarchy

6 / *Materials and Circular Economy*

6.1 Materials

Context

In the UK, the construction sector is the biggest consumer of materials with up to 50% or 280 million tonnes of all material used resulting from construction-related activities. The Circular Economy is a model for retaining resources in use and at their highest value, thereby reducing pressures on finite materials.

By embracing a circular approach, new businesses can be created, material consumption can be reduced and the services that products provide, such as car sharing, are more affordable and accessible to the community. The Waste and Resources Action Programme (WRAP) estimates that circular activities could increase net job creation in the UK by 210,000 by 2030.

Furthermore, design should consider future reuse, based on the concept of Buildings as Materials Banks and specify bio-materials and low-carbon construction such as timber or reused materials.

As more emphasis is placed on whole-life carbon, the choice of construction materials is increasingly crucial in reducing embodied carbon. The embodied carbon is estimated to be between 30 and 40% of new buildings' whole life emissions. Of this, concrete and steel are typically the largest component of the embodied footprint.



Figure 8: Concept of the Circular Economy [Source: Ellen MacArthur Foundation]



Figure 9: Building in Layers [Source: Ellen MacArthur Foundation]

Circular Economy

Early engagement with the team has focussed on measures to embed circular economy principles within the development wherever possible and included:

- Design buildings for their whole life cycle so that they are adaptable to changing needs and fit for different uses.
- Design for easy replacement of shorter life products using the building in layers approach.
- Design for easy of deconstruction at the end of life of the buildings by prioritising reversible connections.
- Lean and optimised design to reduce material use.

Further details on the circular economy principles adopted for the proposed development can be found in the accompanying Circular Economy Statement being submitted in support of the application.

Sustainable Materials

We are focusing on:

- Using materials from reused, secondary or recycled sources. Our procurement targets include selecting materials with high recycled content beyond current industry standards.
- Prioritising responsible and sustainably sourced materials, for example: FSC certified timber, responsible steel, BES 6001, 'Specifying Sustainable Concrete'.
- Using bio-materials as well as regenerative materials and products.
- Aiming for concrete and steel that have a lower embodied carbon compared to the industry average.
- Use materials with an embodied energy rating between A+ and D.
- 50% of timber to be FSC.

Through design and specification the Design Team will continue to seek to minimise whole-life impacts of materials and will specify healthy, responsibly sourced materials.

A number of materials that can reduce the development's impact on natural resources are being explored, including:

- Expanding the use of natural insulation materials.
- Ultra low carbon cements.

- Reused second-hand steel elements.
- Consideration of lower global warming potential (GWP) carbon refrigerant for the heat pumps.

Further opportunities are also being investigated by the team and include:

- Low carbon concrete including up to 60% cement replacement (GGBS)
- High scrap content steel via Electric Arc Furnace (EAF) supply methods.
- Reinforcement bar with high scrap content.
- Consideration of Modern Methods of Construction
- Target 50% of materials locally sourced in order to minimise carbon emissions from transportation.

Using these sustainable materials will also play a crucial role in reducing embodied carbon.

Design for Longevity, Adaptability and Flexibility

We are focusing on ensuring materials and building elements are designed for disassembly and re-use wherever possible.

To reduce life cycle impacts and enable materials to be retained at their highest value, we are designing for:

- Longevity: Low maintenance through specification of durable materials.
- Modular: Allow for flexibility and future use through adaptable design. This will deliver buildings that are simpler to maintain and adapt and allows the components to be more readily reclaimed at end of life.
- Adaptability and flexibility: So that buildings can be used for different needs and ease of replacement of shorter life components, such as services.
- For disassembly and reuse at the end of life: Components that can be easily removed and reused.

6.2 Waste

Context

The construction sector is the biggest producer of waste in the UK with over 60% or 140 million tonnes of all waste generated resulting from construction-related activities. New developments must seek alternatives to waste from construction, operation and decommissioning going to landfill or incineration.

Numerous approaches can be taken to design out waste wherever possible, including using a building in layers approach. Buildings should be designed for their whole-life cycle so they are adaptable to changing needs. This means design for low maintenance, adaptability and disassembly and adopting lean and circular approaches. Opportunities also exist to reduce waste and material consumption by setting up a local off-site construction facility and skills academy to enable the manufacture of prefabricated components for modular construction.

Approaches to reducing operational waste are also required including using consolidated or reverse logistics to optimise deliveries and waste collection as well as working with waste providers to provide integrated services and enable greater material recovery. A transition from a linear to a circular approach to resource use and waste management is vital for global and local economies' resilience.

Waste Strategy

Design out Construction, Demolition and Excavation Waste

Strategies to reduce waste arisings from site processes include:

- Developing a Site Waste Management Plan (SWMP).
- Setting targets for construction waste efficiency and diversion of resources from landfill in line with BREEAM and London Plan requirements.
- Opportunities to reuse as much of the demolition and excavation arisings from site as engineered fill within the development.
- Where possible off-site construction and Modern Methods of Construction will be used to minimise waste and lorry movements.
- Using reverse logistics and take back schemes to reduce packaging and vehicle movements.

Operational Waste

The focus during the operation of the proposed development will include:

- Employing the waste hierarchy, as illustrated in Figure 12.
- Developing waste management operations to segregate waste streams.
- Providing reuse and recycling deposit facilities.

Each residential kitchen area will incorporate sufficient internal waste storage containers to promote the separation of recyclable materials at the source. Residents in each block will deposit their segregated waste into clearly labelled bins within residential waste stores at ground level.

For further information on the waste strategy, please refer to the accompanying Operational Site Waste Management Plan.



Figure 10: The waste hierarchy

7 / *Environmental Resilience*

Context

Green Infrastructure and Biodiversity

The site covers approximately 0.25ha in area and is a developed site, occupied by a car park and mechanic workshop. The site is bounded by Seven Sisters Road and Eade Road to the south, existing development to the west/north, and Tewkesbury Road and access stairs to the east.

The site has a challenging topography. The level change across the site is over seven metres. The slopes within pose challenges for accessibility, servicing, maintenance and refuse/recycling collections, and on top of which are trees and vegetation. Some of the site is banked away from Seven Sisters Road and there is an existing retaining wall in line with the front of Cara House.

The existing trees and vegetation are considered to be of poor quality, and the site is of low intrinsic ecological value.

The Haringey Warehouse District is situated within walking distance of several local green spaces including Finsbury Park, Woodberry Wetlands and the Reservoirs, Spring Park playground, the New River, and Tewkesbury Road Open Space. This network of green spaces are of different scales and type which can provide a variety of experiences for local residents. It also provides the district with the opportunity to enhance the local offerings.

The Seven Sisters site is uniquely positioned as a gateway into the rest of the district. It is within close proximity to the New River and to Tewkesbury Road Open Space. Given the site's position, it provides many opportunities to create green links between the local green spaces creating a network which can enhance biodiversity, deal with surface water runoff, provide amenity for local residents and generally improve the streetscape.

Water and Flooding

Located in Flood Zone 1, the site is at low risk of flooding. As the Lead Local Flood Authority (LLFA), Haringey are a statutory consultee on Sustainable Drainage Systems (SuDS) to the Local Planning Authority (LPA) on all new major developments within the Borough. The Council requires (SuDS) to be incorporated into new development by way of site layout and design, and all proposals are required to reduce surface water flows to a greenfield run-off rate for a 1 in 100 year critical storm event.

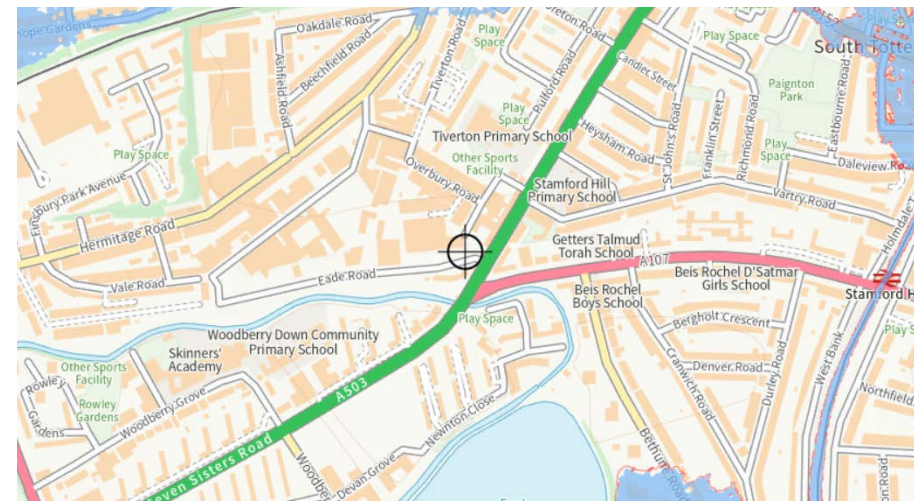


Figure 11: Flood risk map showing the proposed site location is at low risk of flooding

Biodiversity Strategy

Throughout the site and across the wider district we aim to set out a series of key goals that the public and amenity spaces aim to achieve to improve the biodiversity of the site.

The planting strategy seeks to deliver the highest levels of biodiversity, by reinforcing and enhancing the existing plant communities of the area, increasing the range of habitats and promoting the diversity of flora and fauna. A key principle for the planting strategy is the continuation/strengthening of existing habitats of the wider area of the site. This will be achieved by using native species valuable for wildlife and by providing seasonal variation in the planted areas to achieve ecological succession. Habitats being considered include woodland, grasslands, hedgerows and meadows, all of which provide opportunities for biodiversity and integrate well with an urban environment.

As the site currently has a very low ecological value, current proposals add significant ecological value through a diverse range of native and non-native planting which provides nectar for insects and habitats of value to local wildlife, including hedgehog passes under any fence lines and the creation of deadwood habitat for invertebrate species.

The landscape proposals achieve an Urban Greening Factor of 0.34 as calculated by Campbell Cadey, and significantly improves upon the existing site.

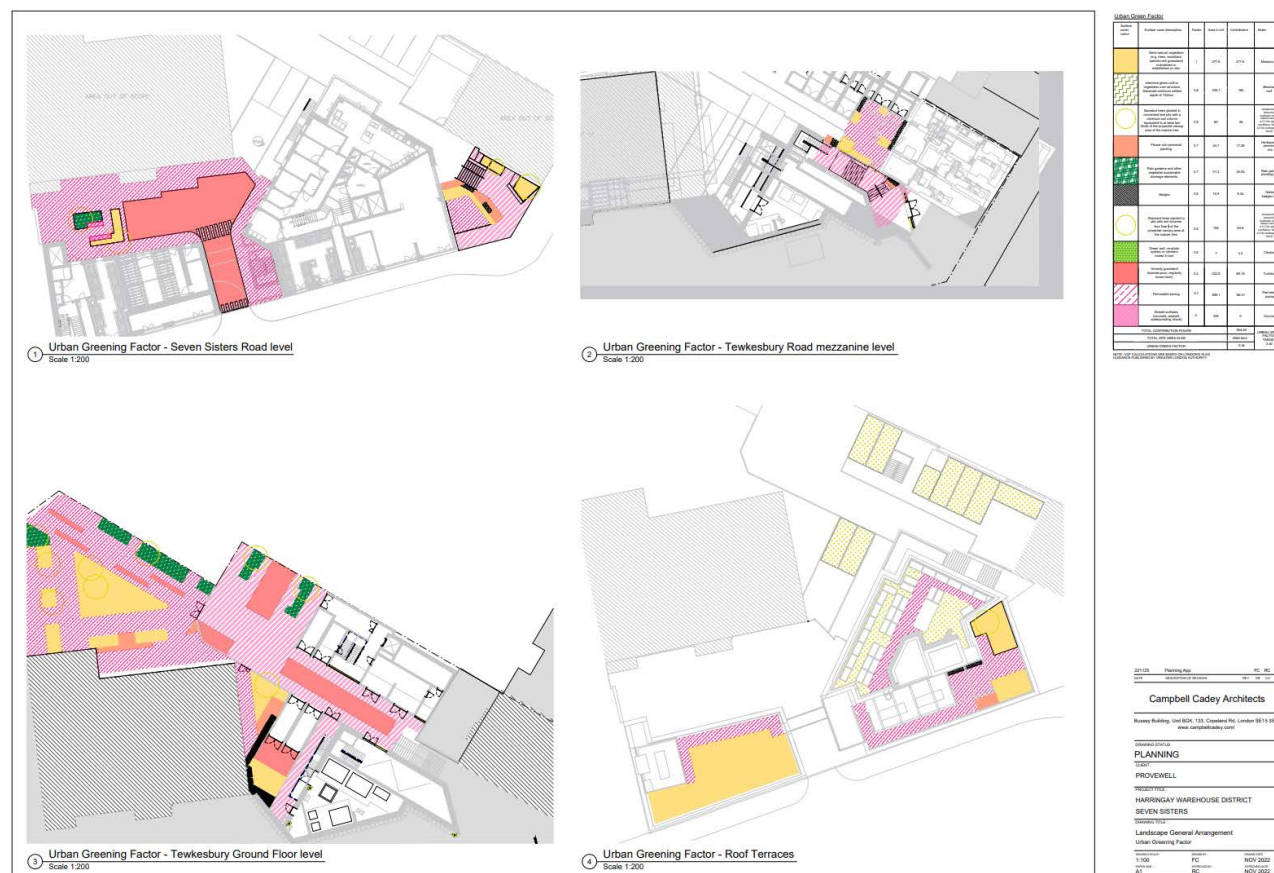


Figure 12: UGF calculation for the site

Water Strategy

Potable water demand will be minimised through best practice water-efficient sanitaryware, leak detection, metering and best practice irrigation of the landscape and communal green spaces. Drought resistant species will be prioritised and no significant permanent irrigation will be required for most planting.

Rain gardens are also being proposed to increase stormwater retention.

During construction measures will be taken to reduce water consumption on site, in accordance with best practice guidance from WRAP (The Waste and Resources Action Programme).

Flood Risk

The development site falls within Flood Zone 1 and is at low risk of flooding, with no mitigation required from a flood risk perspective. A Flood Risk Assessment has been undertaken by LSL in support of the planning application. All forms of flood risk to and from the proposed development have been considered and the risk found to be low to very low.

Surface Water Management

The surface water drainage system has been designed to collect surface water runoff within the site, mitigating any existing risk of surface water flooding. The discharge from the development will be restricted to 1.0l/s, a significant reduction from the existing discharge rates for the area. Attenuation storage is provided to accommodate all rainfall events up to and including the 1 in 100-year event plus 40% climate change allowance.

Sustainable Urban Drainage Systems (SuDS) will be incorporated and include green and blue roofs, permeable paving and rain gardens, which also offer the required levels of mitigation required for water quality.



Figure 13: Proposed SuDS strategy

Climate Resilience Strategy

The following strategies have been adopted in the proposals to ensure that the development at Seven Sisters/Eade Road is resilient to climate impacts.

The incorporation of trees and rich landscape will help cool the development, helping to mitigate against the impacts of a warming climate.

The development has been designed to intercept and manage all events up to the 1:100 year return period + 40% for climate change and ensure the development achieves greenfield run-off rates.

Passive design measures have been prioritised to reduce the risk of overheating. Detailed overheating calculations have been undertaken and include allowance for future climate scenarios.

These measures will also help to mitigate the risk of the urban heat island, along with the use of light-coloured construction materials, the absence of fossil fuel combustion on site and the landscape led design approach prioritising planting in external areas wherever possible.

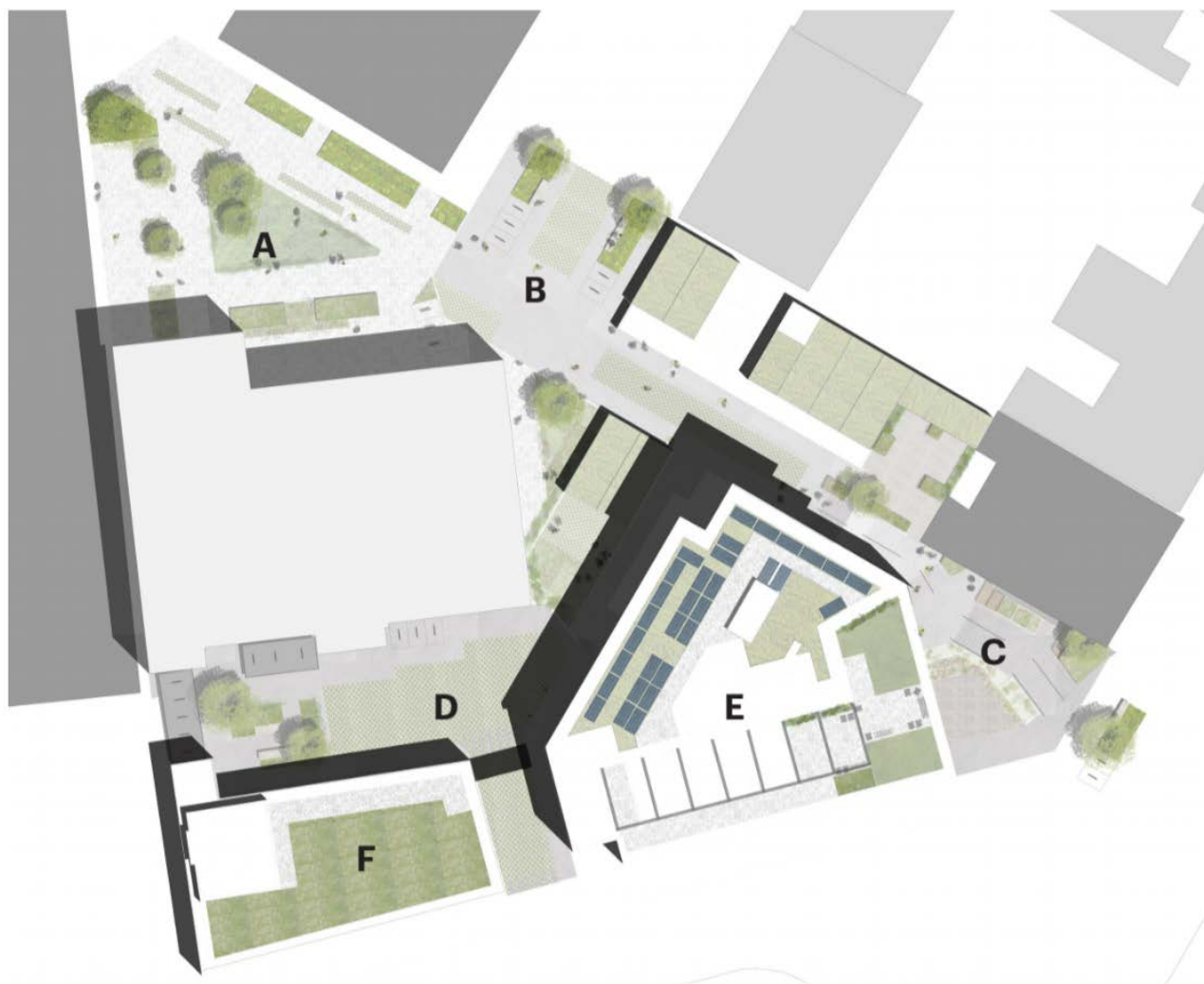


Figure 14: Application site landscape overview

8 / *Health and Wellbeing*

Context

The World Health Organization reports that many people in Europe spend over 90% of their time indoors. As the boundaries blur between work and leisure, there is growing interest in ‘healthy’ buildings.

Over the past decade, stakeholders from businesses to policymakers have started to recognise that the quality of our built environment, indoors and outdoors, impacts strongly how we feel, the way we behave, and even our susceptibility to health risks. The impact of the COVID-19 pandemic has heightened this awareness of the impact of the built environment on people’s mental and physical health.

Global recognition of the UN’s Sustainable Development Goals has led to the appreciation of a more holistic view of sustainability. Topics such as social equity and value, community resilience to the climate emergency and nature-based solutions are rising in the sustainability agenda, and are recognising a responsibility for all sectors to tackle the three pillars: the social, economic and the environmental elements of sustainability.

The World Green Building Council’s Health and Wellbeing Framework has been developed to offer a representative set of health and wellbeing principles for the built environment, as illustrated in Figure 17. The framework is structured across six core principles allowing them to be universally applicable to different development types and scopes.

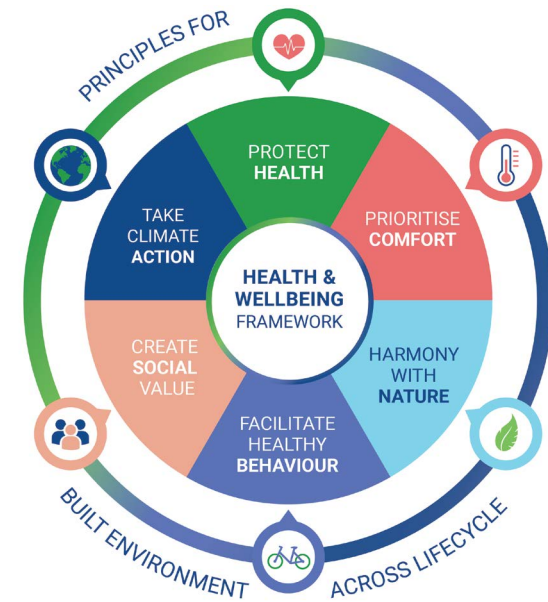


Figure 15: WGBBC’s Health and Wellbeing Framework

Daylight, sunlight and views out

The proposed development aims to provide access to daylight and views out to building users, to promote positive impacts on both mood and productivity through the provision of generous windows and balconies. Adequate solar and glare control will be provided to relevant areas through the provision of horizontal external shading and high performance glazing.

A detailed analysis of the internal daylight availability in habitable spaces has been carried out. A total of 92% of rooms meet the target daylight value, including all living rooms, and all rooms that contain a window that faces within 90° of due south meet the target annual sunlight value.

The overall proportion of rooms meeting the target daylight value represents a very well daylit scheme compared to other schemes of this scale. Every future resident will have access to a well daylit living room. In sunlight terms, all rooms that contain a south-facing window meet the target sunlight value. Given that north-facing windows have restricted access to sunlight in the northern hemisphere, these are also considered very good results given that more than half of the rooms meet their target.

Changing Climate

It is anticipated that climate change will lead to a greater incidence of extreme weather events, such as heavy rain, heatwave and longer periods of drought. The impact of this on the built environment will include:

- Growing risk of overheating and increased heat-related health conditions.
- Increased irrigation requirements for species of flora.
- Increased risk of flooding from surface water runoff following storm events.

Overheating and Urban Heat Island

Detailed overheating calculations have been carried out and include an allowance for future climate scenarios.

The assessment was undertaken for representative ‘worst case’ units in line with CIBSE TM59. Dynamic thermal modelling was conducted using three design weather years, also accounting for climate change scenarios.

Hourly simulations show that overheating criteria set out within CIBSE’s TM59 methodology will be met across the scheme through natural ventilation means, and overheating risk sufficiently mitigated.

The provision of horizontal shading devices in addition to operable windows means that indoor temperatures in occupied spaces largely track the outdoor air temperatures when windows are open, i.e; when the space is occupied between 9:00 and 22:00 and whenever air temperature exceeds 22°C. This confirms that the spaces make best use of the natural ventilation strategy for heat rejection. High external air temperatures associated with the design summer year weather file permits minimal increases in internal operative temperatures above the outside air conditions.

Health and quality of life

Warehouse Living is defined by the community who live and work within the District. The design has carefully considered the needs and voices of the wider Warehouse community, through continual community engagement at every design stage, aiming to develop spaces that are suited to the local community, fostering relationships and a sense of belonging.

The arrangement of the development will provide for generous and flexible Live + Workspace. The spaces have been designed to be adaptable and flexible, giving residents sense of ownership and creation of identity inside and outside.

Through the provision of an efficient building fabric, designed to reduce space heating demand, the development will aid in the reduction in fuel poverty, as well as providing affordable heat through the use of highly efficient heat pumps.

The development also encourages physical activity by providing active design features, supporting the use of stairs and through provision of cycling and walking routes.

Amenity Strategy

One of the main areas being improved throughout the site is the legibility. At the moment it is difficult to ascertain building uses or entrances. The different uses will be clearly defined and residents will have clearly defined, defensible space that is private to their communal dwelling.

Communal amenity space for the proposed new development is provided through the individual unit balconies and proposed roof terrace.

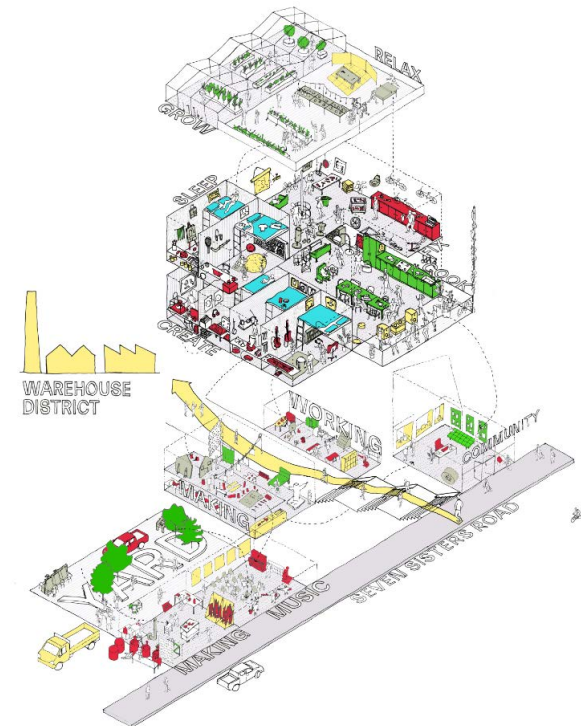


Figure 16: Warehouse District proposed mix of uses diagram

Pollution

Air quality

During construction

During the construction phase of the Proposed Development there is the potential for air quality impacts as a result of fugitive dust emissions from the site. Good practice dust control measures are implemented, the residual potential air quality impacts from dust generated by construction, earthworks and trackout activities is predicted to be not significant.

During operation

Dispersion modelling was undertaken to quantify annual mean NO₂, PM₁₀ and PM_{2.5} concentrations across the application site to assess suitability for proposed use. The modelling results indicated that annual mean NO₂, PM₁₀ and PM_{2.5} concentrations across the application site were below the relevant Air Quality Objectives. Based on the traffic data provided by the transport consultants for the development, Velocity, the Proposed Development's traffic flows are below the relevant EPUK and IAQM assessment thresholds therefore operational impacts could be screened out as not significant.

The air source heat pumps proposed support cleaner air by removing the need for combustion associated with gas boilers. The introduction of a green roof and extensive landscaping will also have a positive effect on air quality.

Based on the outcomes of the accompanying Air Quality Assessment, the proposed development is considered Air Quality Neutral.

Internal air quality

In order to minimise the effect on internal air quality, internal finishes material specifications will aim to select products that contain low Volatile Organic Compounds (VOCs). Typical VOC sources include paints, lacquers, some pressed timber products (including hardboards, particle boards, hardwood, plywood wall panelling), glues and adhesives, as well as foamed insulation.

Noise and Vibration

The buildings aims to achieve adequate indoor ambient noise levels and appropriate sound insulation levels as required for different zone functions, especially in bedrooms.

An environmental noise and vibration survey has been undertaken at the application site, allowing the assessment of daytime and night-time levels likely to be experienced by future residents.

Measured noise levels allowed a robust glazing specification to be proposed which would provide internal noise levels for all residential spaces to meet the design range described within BS8233. No further mitigation measures will be required in order to protect the proposed habitable spaces from external noise intrusion.

Measurement of road and underground from train activity indicates that vibration levels are below the threshold of human perception in accordance with BS6472: 2008. Re-radiated noise due to underground train pass-bys would be below the guidance criteria provided within 'Crossrail 2: A Technical Guide For Developers', ensuring that the effects of structureborne noise would not contribute to the overall noise levels experienced within the buildings.

9 / *Certification*

9.1 BREEAM

Policy SP4 of the Haringey Local Plan’s Strategic Policies DPD requires all non-residential development proposals to achieve a BREEAM rating of ‘Very Good’, and aim to achieve ‘Excellent’.

The Proposed Development will be assessed under the BREEAM New Construction (NC) 2018 scheme, targeting an ‘Very Good’ rating as a minimum, with an aspiration to achieve ‘Excellent’ with a current pre-assessment score of 72%.

Status of the proposed design at the time of planning application against the requirements of the targeted and potential credits is detailed in the pre-assessment scorecard attached in Appendix A.

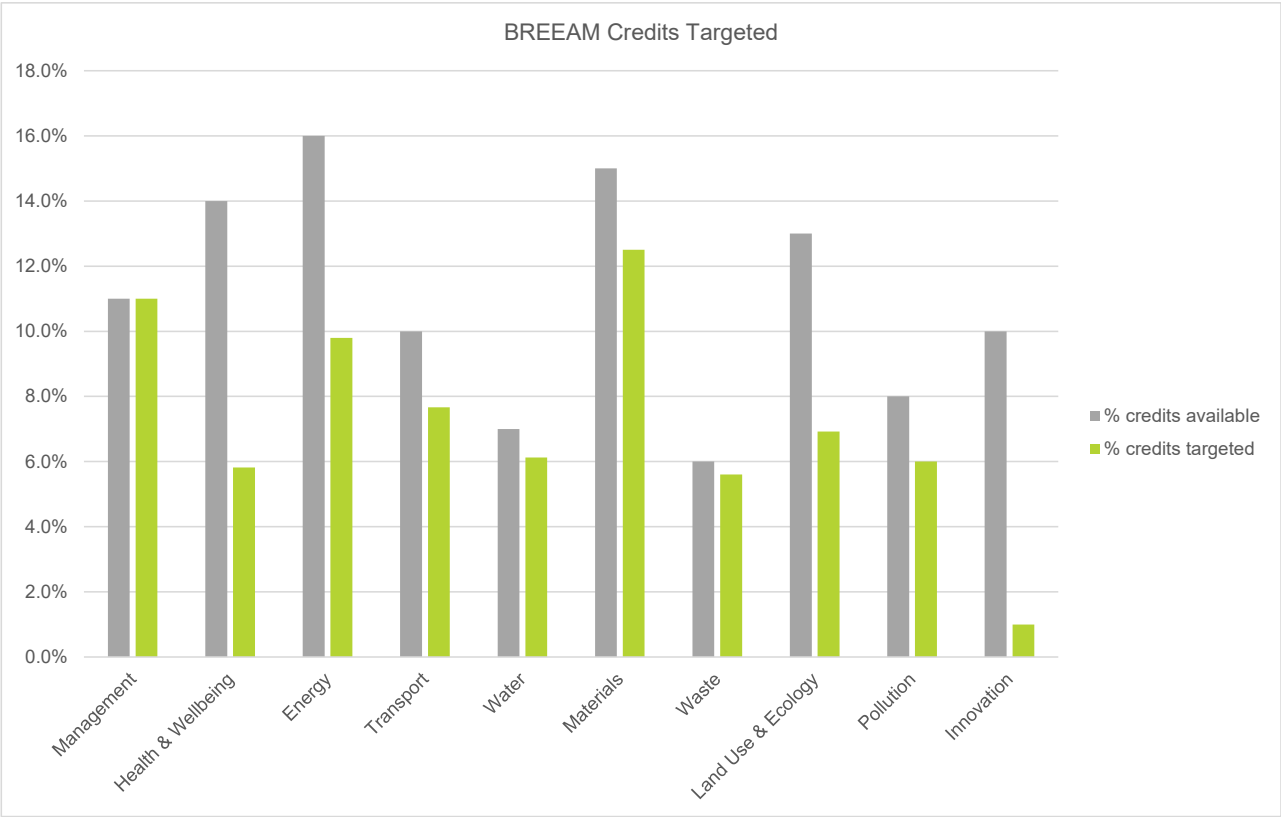


Figure 17: Breakdown of targeted credits by section

10 / *Conclusion*

The proposed development at Seven Sisters/Eade Road will deliver an important contribution to the local Warehouse District community, bringing spaces that contribute to a sense of community as well as providing space for economic prosperity in the area.

This Sustainability Statement demonstrates how the development and design proposals meet and exceed the requirements set out in the planning policies set out by Haringey Council and the Local Plan by embedding high levels of sustainability throughout the development.

The buildings have been designed around energy and carbon reduction, using a range of low carbon and renewable energy technologies.

Integral to the proposals is to deliver opportunities for community growth and have an overall positive impact of on the health and wellbeing of the local community and future residents.

The following paragraphs provide a summary of the key sustainability features included as part of the scheme.

Energy and Carbon: The buildings have been designed to reduce their energy demand and consumption. An ambient loop system will provide low carbon heat, and renewable energy will be maximised through the implementation of PV panels. The strategy enables the development to exceed the relevant GLA carbon reduction targets. Whole life carbon impacts have been assessed at Stage 2 and measures to optimise construction

product consumption efficiency and the selection of products with a low environmental impact will ensure a reduction in embodied carbon, whilst sustainable travel is supported through design.

Environmental Resilience: New planting is introduced to reduce surface water runoff and help minimise the urban heat island effect, overheating risk within living spaces has been minimised through the provision of shading devices and high performance glazing specification. SuDS will be incorporated and include green and blue roofs, permeable paving and rain gardens to ensure run-off rates achieve greenfield levels as well as run-off water quality.

Materials and Circular Economy: By embracing circular economy principles, the development will minimise the use of virgin materials, specify the use of low carbon and renewable materials, as well as prioritise locally sourced options. Waste arisings reduction will also be targeted through construction and operation, with site waste management and operational waste management plans being provided to lead the strategy.

Health & Wellbeing: The development provides ample access to daylight and views out, promoting positive impacts on both mood and productivity. Air and noise pollution will be minimised during construction, and adequate indoor conditions will also be achieved in all habitable spaces.

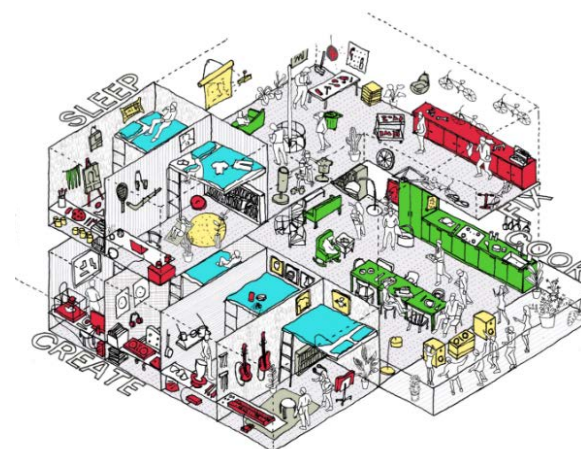


Figure 18: Conceptual visual of the development showing diversity of uses

The Client and Design Team will continue to explore opportunities for additional enhancement as design proposals are further developed, with sustainability maintaining a key role in the decision-making process.

11 / *Appendix A*

BREEAM Pre-assessment

BREEAM New Construction 2018 - Pre-assessment Summary

Scheme Shell and Core
Building type Student Accommodation



EXP-1499 Haringey Warehouse District

Date: 23/09/2022

Issue no.: 01

			Targeted			Targeted + Potential			Minimum requirement credit		
Rating			Excellent			Excellent			Not applicable to assessment		
Score			72.4%			74.1%					
Credit Reference		Aim	Credit			Credits	Notes	Responsible party	Timeframe		
			Credits Available	Targeted	Potential						
Energy											
Man 1	Project Brief and Design	To optimise final building design through recognising and encouraging an integrated design process and robust stakeholder engagement.	4	4	0	1 credit: <u>Prior to completion of RIBA Stage 2</u> - Identify stakeholder roles, responsibilities and contributions and prepare and undertake consultation. 1 credit: <u>Prior to completion of RIBA Stage 2</u> - Undertake consultation and demonstrate stakeholders' contributions. Prior to completion of RIBA Stage 4 - consultation feedback is given to all relevant parties. 1 credit: BREEAM AP <u>appointment no later than RIBA Stage 1</u> . BREEAM performance targets are formally agreed. 1 credit: Achieve 'project brief and design - BREEAM AP (Concept Design)' + monitor progress against the agreed BREEAM performance targets.	Assume all actions will be performed as part of the project brief, development and consultation.	PM	Stage 2		
Man 2	Lifecycle cost and service life planning	To promote the business case for sustainable buildings and to deliver whole life value by encouraging the use of life cycle costing to improve design, specification, through-life maintenance and operation.	4	4	0	2 credits: <u>At RIBA Stage 2</u> - An elemental life cycle cost (LCC) analysis by a competent person. 1 credit: <u>At RIBA Stage 4</u> - a component level LCC analysis. The results of the analysis and consideration of LCC have been implemented. 1 credit: Report the capital cost for the building in pounds per m².	An elemental life cycle approach should be carried out in line with new whole life cycle costing targets and therefore proposed that this is targeted. Capital costing to be reported in line with BRE requirements.	Cost consultant	Stage 2		
Man 3	Responsible Construction Practices	To recognise and encourage construction sites which are managed in an environmentally and socially considerate, responsible and accountable manner.	6	6	0	Prerequisite: All timber to be 'legally harvested and traded timber'. 1 credit: All parties who at any stage manage construction site operate a qualifying EMS and practice pollution prevention policies and procedures. 1 credit: Establish formally agreed performance targets and appoint a BREEAM AP to consult and monitor progress during construction. 1 credit: achieve 9 required responsible construction management items listed in the BREEAM manual. 2 credits: achieve 6 more listed items in addition to the 9 required items. Appoint an individual to monitor, record, report & target: - 1 credit: Energy and water consumption - 1 credit: Transport of construction materials & waste	These are contractor side credits, to be incorporated into a tender specification & contract documents. All credits should be carried out for a well managed site, so proposed these are all carried out.	Contractor	Stage 4		
Man 4	Commissioning and Handover	To encourage a properly planned handover and commissioning process that reflects the needs of the building occupants.	4	4	0	1 credit: Commissioning programme, roles and responsibilities 1 credit: In addition to achieving credit for 'commissioning - testing schedule and responsibilities', commissioning manager appointed during design stage to undertake design reviews, provide commissioning management and performance testing input. 1 credit: In addition to achieving credit for 'commissioning - testing schedule and responsibilities', conduct thermographic survey and/or airtightness test and inspection and rectify defects. 1 credit: Building User Guide and building occupiers/premises managers training schedule	These are contractor side credits, to be incorporated into a tender specification & contract documents. All credits should be carried out for a well managed site, so proposed these are all carried out.	Contractor	Stage 4		
Man 5	Aftercare	To ensure the building operates in accordance with the design intent and operational demands, through providing aftercare to the building owner and occupants during the first year of occupation.	0	0	0	1 credit: Aftercare Support to building occupants 1 credit: Commissioning - implementation over a minimum 12-month period 1 credit: Post Occupancy Evaluation					
Section Total			18	18	0						
Weighted Section Score				11.0%	0.0%						

Health & Wellbeing									
Hea 1	Visual Comfort	To encourage best practice in visual performance and comfort by ensuring daylighting, artificial lighting and occupant controls are considered.	4	1	0	2 credits: Achieve specified average DF or annual illuminance requirement in 80% of all relevant areas 1 credit: Achieve view out requirements 1 credit: Develop external lighting design based on BS5489-1:2013+ BS EN 12464-2:2014	Daylighting modelling to inform if credits can be achieved. Credits might also be achieved for views out. Credits for design lighting with adequate control and in line with best practice guidance.	Daylight consultant Ingenium	Stage 2
Hea 2	Indoor air quality	To encourage and support healthy internal environments with good indoor air quality.	1	1	0	Prerequisite: Develop and implement site specific IAQ plan as per Guidance Note GN06. 1 credit: Provide fresh air into the building in accordance with the criteria of the relevant standard for ventilation.	An Indoor Air Quality Plan to draw attention to air quality and purge of pollutants before handover and occupancy. Additional requirement to design building to improve quality of incoming air by controlling location and distance of inlet vents from exhaust vents and polluting sources.	Air quality consultant Ingenium	Stage 3
Hea 4	Thermal comfort	To ensure the building is capable of providing an appropriate level of thermal comfort.	2	2	0	1 credit: Thermal modelling as per CIBSE AM11, to demonstrate compliance with CIBSE Guide A or CIBSE TM59. 1 credit: Achieve 'Thermal comfort - Thermal modelling' and show pathway for thermal comfort compliance based on projected climate change environment. 1 credit: The thermal comfort strategy sets out zoning and level of occupant control for these zones	Dynamic thermal modelling in line with TM59 to ensure thermal comfort with consideration given to future proofing cooling for future weather files should be carried out to ensure comfortable internal environments. Therefore suggested that both should be targeted.	TBC	Stage 3
Hea 5	Acoustic Performance	To ensure the building is capable of providing an appropriate acoustic environment to provide comfort for building users.	1	1	0	4 credits: Achieve the internal indoor ambient noise level standards.	An acoustician be required to provide advice on internal acoustic measures in line with requirements outlines in building regulations and appropriate building standards.	Acoustician	Stage 2
Hea 6	Security	To encourage the planning and implementation of effective measures that provide an appropriate level of security to the building and site	1	1	0	1 credit: Security Needs Assessment by a suitably qualified security specialist latest <u>by RIBA Stage 2</u> .	A suitability qualified security consultant to provide an evidence based security needs assessment prior to concept design	Security Consultant	Stage 2
Hea 7	Safe & Healthy Surroundings	To encourage the provision of safe access around the site and outdoor space that enhances the wellbeing of building users	2	2	0	1 credit: Develop foot- and cycle-paths, drop off and parking areas to provide safe access to building users. 1 credit: Include outside space providing building users with an external amenity area.	Site/building needs to be safe for cyclists, pedestrian & delivery access. Outside open spaces to be required for building users.	Morris&Co Velocity	Stage 2
Section Total			11	8	0	+ 1 innovation credit			
Weighted Section Score				5.8%	0.0%				
Energy									
Ene 1	Reduction of CO ₂ Emissions	To minimise operational energy demand, primary energy consumption and CO ₂ emissions.	13	8	0	Up to 9 credits: Calculate an Energy Performance Ratio for New Constructions (EPRNC) using BREEAM's Ene 01 calculator for: 1 credit: EPRNC = 0.1 4 credits: EPRNC = 0.4 = Excellent: 6 credits: EPRNC = 0.6 = Outstanding: 9 credits: EPRNC = 0.90 AND zero net regulated CO ₂ emissions 4 credits: Organise a design workshop focusing on operational energy use and develop/report additional operational energy use assessment during design and post-construction stages.	Energy modelling to be carried out in accordance with SBEM building methodology with carbon reductions associated with chosen systems and fabric choice. A further 4 credits are targeted for prediction of operational energy use	Expedition	Stage 2
Ene 2	Energy Monitoring	To encourage the installation of energy sub-metering to facilitate the monitoring of operational energy consumption. To enable managers and consultants post-handover to compare actual performance with targets in order to inform ongoing management and help in reducing the performance gap.	1	1	0	1 credit: Energy metering systems for 90% of the estimated annual energy consumption of each fuel separated by end-use categories. 1 credit: Separate energy sub-metering for each separate tenanted unit or floor plate within the assessed development with an accessible EMS or meters with pulsed or other open protocol communication outputs.	Submetering required for 90% of energy/resource use. Proposed this should be carried out in line with smart and connected future as outlined in the London Plan.	Ingenium	Stage 3
Ene 3	External Lighting	To reduce energy consumption through the specification of energy efficient light fittings for external areas of the development.	1	1	0	1 credit: No external lighting, or energy-efficient external lighting with less than 70 luminaire lumens per circuit watt, automated daylight control and presence detection in areas with intermittent pedestrian traffic.	All external lighting should be designed to meet the best practice efficacy requirements.	Ingenium	Stage 3
Ene 4	Low zero carbon technologies	To encourage the adoption of design measures, which reduce building energy consumption and associated carbon emissions and minimise reliance on active building services systems.	3	2	0	1 credit: Achieve Hea 04 criterion 1, assess and adopt passive design solutions analysis <u>at RIBA Stage 2</u> and quantify reduced energy metrics. 1 credit: Achieve "Low carbon design - Free cooling" credit and assess/adopt free cooling strategies. 1 credit: Conduct feasibility study <u>at RIBA Stage 2</u> , adopt suitable technologies and quantify reduced CO2 emissions resulting from study.	Passive design and LZC analysis will be completed.	Expedition	Stage 2
Ene 6	Energy efficient transportation systems	To encourage the specification of energy efficient transportation systems within buildings.	2	2	0	1 credit: Analysis of transport demand, usage and energy use of lifts, escalators, etc. 1 credit: Achieve 'Energy efficient transportation systems - Energy consumption' and specify lifts (1 credit) meeting efficiency requirements.	Lifts to be specified to save energy by carrying out transport demand and apply efficiency measures.	TBC	Stage 3
Ene 8	Energy Efficient equipment	To encourage installation of energy efficient equipment to ensure optimum performance and energy savings in operation.	0	0	0	2 credits: Identify the building's unregulated energy consuming loads. Estimate their contribution to the total annual unregulated energy consumption of the building			
Section Total			20	14	0	+ 4 innovation credits			
Weighted Section Score				9.8%	0.0%				
Transport									
Tra 1	Public Transport Accessibility	To reward awareness of existing local transport and identify improvements to make it more sustainable.	2	2	0	2 credits: Develop a travel plan during feasibility and design stages based on site specific travel assessment to improve sustainable modes of transport and movement.	A Travel Plan in line with the BREEAM requirements to be undertaken.	Velocity	Stage 2
Tra 2	Proximity to amenities	To maximise the potential for local public, private and active transport through provision of sustainable transport measures appropriate to the site.	10	6	0	Prerequisite: Achieve Transport assessment and travel plan credit. Up to 10 credits: Adopt sustainable, private and active transport measures as listed in the credit guidance.	Local transport and travel assessment should be carried out. Development should be aiming for car free/active travel with amenities local.	Velocity	Stage 2
Section Total			12	8	0				
Weighted Section Score				7.7%	0.0%				

Water									
Wat 1	Water Consumption	To reduce the consumption of potable water for sanitary use in new buildings through the use of water efficient components and water recycling systems.	5	4	0	Up to 5 credits: Improvement over baseline case: 1 credit: 12.5%, 2 credits: 25%, 3 credits: 40%, 4 credits: 50%, 5 credits: 55%.	Credits scored in line with amount of reduction in water use, in line with Table 8.1. Use of grey and rainwater systems in line with relevant British standards to provide potable water reduction will also provide additional credits.	Morris and Co Ingenium	Stage 3
Wat 2	Water monitoring	To reduce the consumption of potable water in new buildings through the effective management and monitoring of water consumption.	1	1	0	Specify a water meter, with pulsed output, on the mains water supply to each building (including borehole or other source). Water-consuming plant or building areas, (with 10% or more of the total water demand) fitted with sub meters or water monitoring equipment.	Submeter at incoming mains water supply and to measure main water uses required. This should be carried out in line with smart metering and a connected future.	Ingenium	Stage 3
Wat 3	Major leak detection and prevention	To reduce the consumption of potable water in new buildings through minimising wastage due to water leaks.	1	1	0	1 credit: A compliant leak detection system is specified or installed on the building's water supply.	Install the necessary infrastructure (both in the public realm and also within the building) to allow a leak detection system to be installed to monitor water leaks	Ingenium	Stage 3
Wat 4	Water efficient equipment	To reduce water consumption for uses not assessed under Wat 01 by encouraging specification of water efficient equipment.	1	1	0	1 credit: Identify all unregulated water demands and mitigate/reduce the demand through good practice design or specification.	To mitigate or reduce water consumption of a building through good practice design and reduction of total water demand of the building. Water demands will need to be identified for uses other than domestic-scale, sanitary use components (e.g. Irrigation).	Ingenium Landscape consultant	Stage 3
Section Total			8	7	0				
Weighted Section Score				6.1%	0.0%				
Materials									
Mat 1	Environmental Impact from Construction Materials - LCA	To reduce the burden on the environment from construction products by recognising and encouraging measures to optimise construction product consumption efficiency and the selection of products with a low environmental impact (including embodied carbon), over the life cycle of the building.	7	5	0	Up to 4 credits: Conduct and submit superstructure LCA calculation and carry out an options appraisal of 2 to 4 significantly different superstructure design options <u>during Stage 2 and/or Stage 4</u> to identify opportunities reducing environmental impacts and justify decisions for adopted designs. 1 credit: Assess option appraisal criteria for superstructure <u>during Stage 2</u> and carry out building LCA options appraisal for a total of at least 6 significantly different substructure or hard landscaping design options (at least two of each category is required).	Carry out a building Life Cycle Analysis for 2-4 options during concept design. The LCA tool need to be recognised by BREEAM as an accredited tool. This assessment will give the embodied carbon within the proposed structure.	Expedition Morris and Co LSL	Stage 2 (To be submitted prior to planning)
Mat 2	Environmental Impact from Construction Materials - EPD	To encourage availability of robust and comparable data on the impacts of construction products through the provision of EPD.	1	1	0	1 credit: Achieve total EPD points score of at least 20 according to the methodology described in the credit by selecting materials with EPDs.	Specify all construction products with EPD that achieve a total EPD points score of at least 20	Contractor	Stage 3
Mat 3	Responsible sourcing of construction products	To facilitate the selection of products that involve lower levels of negative environmental, economic and social impact across their supply chain including extraction, processing and manufacture.	4	2	0	Pre-requisite: All timber used on the project is sourced in accordance with the UK Government's Timber Procurement Policy. 1 credit: Materials must be procured in accordance with a documented sustainable procurement plan put in place before Concept Design. Based on the achieved Responsible Sourcing of Materials (RSM) points: 1 credit: RSM point >= 10% (superstructure only) 2 credits: RSM point >= 20% (superstructure, internal finishes and substructure + hardscaping.) 3 credits: RSM point >= 30% (superstructure, internal finishes and substructure + hardscaping.)	These are contractor side credits to ensure materials have been sourced reliably and responsibly - these requirements can be incorporated into a tender specification	Contractor	Stage 3
Mat 5	Designing For Durability and Resilience	To reduce the need to repair and replace materials resulting from damage to exposed elements of the building and landscape.	1	1	0	1 credit: Protect vulnerable parts of the building from damage and exposed parts of the building from material degradation.	Protection measures to be incorporated into the buildings design and construction to reduce damage to the building's fabric or materials in case of accidental or malicious damage occurring.	Morris and Co	Stage 2
Mat 6	Material Efficiency	To avoid unnecessary materials use arising from over specification without compromising structural stability, durability or the service life of the building.	1	1	0	1 credit: Set targets, implement and record measures at each RIBA stage to optimise the use of materials in building design, procurement, construction, maintenance and end of life.	Set targets and report on opportunities and methods to optimise use of material at each of the following stages: preparation and brief, concept design, developed design, technical design and construction.	Morris and Co Design Team	Stage 2
Section Total			14	10	0				
Weighted Section Score				12.5%	0.0%				
Waste									
Wst 1	Construction Site Waste Management	To reduce construction waste by encouraging reuse, recovery and best practice waste management practices to minimise waste going to landfill.	5	4	0	1 credit: Complete a pre-demolition audit <u>during Stage 2</u> for opportunities to reuse and minimise waste, and reference it in the RMP. Up to 3 credits: RMP + the amount of non-hazardous on-site/off-site construction waste (m³/100m² or tonnes/100m²) generated: - 1 credit: 13.3 / 11.1, - 2 credits: 7.5 / 6.5, - 3 credits: 3.4 / 3.2. 1 credit: Divert from landfill (volume or tonnage) Demolition = 80%/90% Non-demolition = 70%/ 80%.	An audit to be carried out at concept design stage to understand demolition of any existing buildings or hard surfaces. A resource management plan and diversion of waste products from landfill to be carried out during construction and thus requirements included in contract documents.	LSL	Stage 2
Wst 2	Use of recycled and sustainably sourced aggregates	To encourage the use of more sustainably sourced aggregates, encourage reuse where appropriate and avoid waste and pollution arising from disposal of demolition and other forms of waste.	1	0	1	Prerequisite: Complete a pre-demolition audit. 1 credit: Identify all aggregate uses, types and quantities and regionally source sustainable aggregates to calculate Sustainable Aggregate Points.	Identify all aggregate uses and types on the project and determine the amount and distances travelled, the score should be below 6 points.	LSL	Stage 3
Wst 3	Operational Waste	To encourage the recycling of operational waste through the provision of dedicated storage facilities and space.	1	1	0	Clearly labelled, accessible, dedicated space for segregation and storage of operational recyclable waste and static waste compactor(s) or baler(s), composting (if applicable).	Dedicated space provided on site for segregation and storage of operational recyclable waste.	Morris and Co	Stage 3
Wst 5	Adaptation to climate change	To minimise the future need of carrying out works to adapt the building to take account of more extreme weather changes resulting from climate change and changing weather patterns.	1	1	0	1 credit: Climate change adaptation strategy appraisal including risk assessment for resiliency of structural, fabric, building services and renewables installations during <u>RIBA Stage 2</u> .	Carry out a systematic risk assessment to identify impact of expected extreme weather conditions arising from climate change over the lifecycle of the project. Assessment should include installation of building services, renewable systems, structural and fabric resilience.	Design Team	Stage 2
Wst 6	Designing for disassembly and adaptability	To avoid unnecessary materials use, cost and disruption arising from the need for future adaptation works as a result of changing functional demands and to maximise the ability to reclaim and reuse materials at final demolition in line with the principles of a circular economy.	2	2	0	1 credit: Conduct a study to explore the ease of disassembly and functional adaptation potential of different design scenarios <u>by RIBA Stage 2</u> and develop recommendations. 1 credit: Achieve 'Design for disassembly and adaptability - Recommendations,' update the study <u>during RIBA Stage 4</u> to include revised and adopted recommendations and produce a guide for tenants.	Building should be designed for efficient future disassembly and/or adaptation to changes in function of the building and evidenced by way of a study at Concept Design. At technical design, the recommendations set at concept design should be incorporated along with a disassembly guide.	LSL/Morris and Co Design Team	Stage 2
Section Total			10	8	1				
Weighted Section Score				5.6%	0.7%				

Land Use & Ecology									
LE1	Site selection	To encourage the use of previously occupied or contaminated land and avoid land which has not been previously disturbed.	2	1	0	1 credit: 75% footprint on previously developed land. 1 credit: Contaminated land investigation by a contaminated land specialist and remediation.	Where at least 75% of the development footprint is on previously developed land, and where the land is affected by contamination. Note: All ecology credits will likely be carried out for CfSH so should be maximised for BREEAM also.	Morris and Co	Stage 2
LE2	Ecological risks and opportunities	To determine the ecological baseline and zone of influence of the site and identify risks and opportunities for achieving optimum outcomes.	2	1	0	Prerequisite: Identify assessment methodology using GN34 and commit to monitor compliance against all relevant legislation relating to ecology. 1 credit: Establish ecological baseline and capacity and feasibility for enhancement of the ecological value for the project. 1 credit: Achieve Survey and evaluation requirements, and select optimal ecological outcome for the site after liaising with representative stakeholders and the project team.	Member of the Design Team to carry out a survey and evaluation of the site early enough to influence site preparation works, layout and strategic planning decisions. Liaise and collaborate with stakeholders to influence key planning decisions and optimise ecological outcomes for the site.	Design Team	Stage 2
LE3	Managing negative impacts on ecology	To avoid, or limit as far as possible, negative impacts on the ecology of the site and its zone of influence arising as a result of the project.	3	2	0	1 credit: Roles and responsibilities are clearly defined <u>during Stage 2</u> through liaison with representative stakeholders and works on site have been developed accordingly. 1 credit: Change in site ecological value is minimised to the extent possible. 2 credit: No overall loss of ecological value.	Planning to avoid and manage negative ecological impacts on-site carried out at concept design stage with additional credit for minimising the loss of ecological value and two credits for no overall loss.	Design Team	Stage 2
LE4	Ecological change and enhancement	To enhance the ecological value of the site and areas within its zone of influence in support of local, regional and national priorities.	4	1	0	Prerequisite: Achieve L03 for managing negative impacts on ecology and commit to monitor compliance against all relevant ecology legislations. Up to 3 credits: Credits are awarded based on change of ecological value.	Measures implemented to enhance ecological value on site or offsite within a zone of influence. The change in enhancement awarded based on the change in ecological value occurring as a result of the process and must be calculated in accordance with GN36	Design Team	Stage 2
LE5	Long term management and maintenance	To secure ongoing monitoring, management and maintenance of the site and, its habitats ecological features to ensure intended outcomes are realised for the long term.	2	1	0	Prerequisite: Monitor compliance with all relevant national and international standards related to ecology + LE 04 is achieved including role distribution and site preparation planning. <i>If a qualified ecologist has been appointed:</i> 1 credit: Put in place applicable review, monitoring, information sharing and maintenance measures to ensure long term success of ecological strategies. 1 credit: Landscape and ecology management plan in accordance with BS42020:2013 covering at least first five years after completion. <i>If no qualified ecologist appointed</i> , project can earn only 1 credit for meeting requirements of BOTH credits above.	Maintenance and ongoing monitoring of ecological outcomes during the project. As part of the tenant or building owner information supplied, include a section on ecology and biodiversity to inform the owner or occupant of local ecological features, value and biodiversity on or near the site.	Design Team	Stage 2
Section Total			13	6	0				
Weighted Section Score					6.9%	0.0%			
Pollution									
Pol 1	Impact of refrigerants	To reduce the level of greenhouse gas emissions arising from the leakage of refrigerants from building systems.	3	1	0	Pre-requisite: All systems comply with the requirements of BS EN 378:2016 (parts 2 and 3) and if applicable, IRARSCP. 2 credits: Refrigerants have Direct Effect Life Cycle CO2 equivalent. emissions (DELC CO2e) of ≤100 kgCO2e/kW cooling/heating capacity OR GWP ≤ 10. <i>OR</i> 1 credit: Refrigerants have Direct Effect Life Cycle CO2 equivalent emissions (DELC CO2e) of ≤1000 kgCO2e/kW cooling/heating capacity. 1 credit: Use hermetically sealed or environmentally benign refrigerants, OR install leak detection system & automatic response to reduce leak.	All systems must meet BS EN 378:2016 requirements and in addition meet the requirements for a global warming potential of less than 10. One credit available for DELC < 1000 kgCO2 eq/kW. In addition, leak detection credit also available for systems that qualify. All three credits available for no refrigerant use.	Ingenium	Stage 3
Pol 2	Local Air Quality	To contribute to a reduction in local air pollution through the use of low emission combustion appliances in the building.	2	2	0	Up to 2 credits based on project location, type of heating equipment and NO2, VOC and PM emission rates for combustion systems (if any).	These credits will be guided by the chosen heating and hot water system.	Ingenium	Stage 3
Pol 3	Floor and surface water management	To avoid, reduce and delay the discharge of rainfall to public sewers and watercourses, thereby minimising the risk and impact of localised flooding on-site and off-site, watercourse pollution and other environmental damage.	5	3	0	Prerequisite: An appropriate consultant must be appointed to carry out and demonstrate compliance. 2 credits: Site specific FRA confirming low risk zone. <i>OR</i> 1 credit: FRA confirms medium or high risk zone yet outside of functional floodplain. Increase the resilience and resistance to flooding by raising ground floor levels or reflecting measures in BS8533:2017. Pre-requisite: run-off design solutions must be bespoke and justified for the specific site. 1 credit: Peak rate of run-off is 30% less than the pre-developed site also accounting for climate change, with long term maintenance in place. 1 credit: Flooding will not occur if local drainage system fails AND SUD techniques are adopted to limit run-off volume to pre-developed levels. 1 credit: SUDs or source control systems with no discharge from site for rainfall up to 5mm and containment of pollution sources.	A flood risk assessment and dhe drainage strategy will be designed in accordance with all relevant EA standards.	LSL	Stage 2
Pol 4	Reduction of Night Time Light Pollution	To ensure that external lighting is concentrated in the appropriate areas and that upward lighting is minimised, thereby reducing unnecessary light pollution, energy consumption and nuisance to neighbouring properties.	1	1	0	1 credit: <i>EITHER</i> eliminate external lighting without adversely affecting safety and security, <i>OR</i> design external lighting in line with ILP Guidance Notes for the reduction of obtrusive light, 2011 and include required control measures for external lighting.	Provision of lighting which is automatically turned off between 11pm and 7am in line with ILE guidance.	Ingenium	Stage 3
Pol 5	Reduction of Noise Pollution	To reduce the likelihood of noise arising from fixed installations on the new development affecting nearby noise sensitive buildings.	1	1	0	1 credit: <i>EITHER</i> there are no noise-sensitive areas or buildings within 800m radius <i>OR</i> noise impact assessment in compliance with BS 4142:2014 by a suitably qualified acoustician, along with necessary remediations.	Acoustic consultant to carry out a noise impact assessment compliance with BS4142:2014 with noise levels to be 5dB lower than the background noise throughout day and night.	Acoustician	Stage 2
Section Total			12	8	0				
Weighted Section Score					6.0%	0.0%			

Innovation									
Mat 1	Environmental impact from construction produced – Building life cycle assessment (LCA)	To reduce the burden on the environment from construction products by recognising and encouraging measures to optimise construction product consumption efficiency and the selection of products with a low environmental impact (including embodied carbon), over the life cycle of the building.	3	1	1	1 credit: Conduct option appraisal during Stage 2 and conduct LCA options appraisal of at least 3 significantly different core building services design options.			Stage 2
						1 credit: Achieve relevant LCA and LCC credits and document comparisons in an options appraisal summary.			
						1 credit: Complete all criteria under Mat 01 and report details on an independent review of the LCA assessment by a qualified third party.			
Section Total			10	1	1				
Weighted Section Score				1.0%	1.0%				



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