Paddington Green Police Station

2 – 4 Harrow Road, London, W2 1XJ

Sustainability Statement

WSP

01/04/2021

Berkeley

Designed for life

Berkeley Homes (Central London) Ltd.

PADDINGTON GREEN POLICE STATION, WESTMINSTER

Sustainability Statement

Berkeley Homes (Central London) Ltd.

PADDINGTON GREEN POLICE STATION, WESTMINSTER

Sustainability Statement

PUBLIC

PROJECT NO. 70069424

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1. EXECUTIVE SUMMARY

This Sustainability Statement is submitted in support of a detailed planning application ('the Application') made on behalf of Berkeley Homes (Central London) Ltd (The Applicant') for Paddington Green Police Station (The Proposed Development) in Westminster City Council (WCC) London.

WSP has been commissioned by the Applicant to develop the Sustainability Statement for the Proposed Development, which will be submitted as part of the planning application.

This Sustainability Statement has been produced to demonstrate how the design and construction of the development addresses the various issues that contribute to a sustainable development by following the guidance documents identified below:

- National Planning Policy Framework (updated in 2019);
- New London Plan 2021;
- London Environment Strategy (2018);
- Mayor's Sustainable Design and Construction SPG (2014);
- Mayor's Climate Change Adaptation Strategy (2011);
- Westminster City Plan (November 2016); and
- Emerging New Westminster City Plan 2019 - 2040

The Site was found to respond to the issues raised in the policy documents in the following areas as shown in Table 1-1:

Table 1-1 Summary of Proposed Measures for the development

KEY SUSTAINABILITY AREA	PROPOSED MEASURES
Environmental Rating Methods	A BREEAM Pre-assessment has been carried out by an accredited BREEAM Assessor/ AP during RIBA Stage 2. As required by the local policy, all non-residential areas of the Proposed Development are expected to achieve as a minimum a BREEAM 'Excellent' rating. The attached BREEAM Pre-assessment shows how this target will be achieved. Moreover, the scheme is currently targeting 6 out of 9 BREEAM water category credit, it should be noted that an 'Excellent' level in Wat 01 criteria, which is equivalent to 2 Wat 01 credits was achieve and exceeded.
Energy & CO_2 Emissions	Overall, the Proposed Development is shown to achieve the following carbon reductions after following the Energy Hierarchy of LEAN, CLEAN, GREEN when compared to Part L 2013 using SAP 2012 carbon factors: • Residential Element – 35% • Non-Residential Element – 35% • Whole Proposed Development – 35% The figures above are the reduction in carbon emissions compared to each respective baseline. The residential element of the Proposed Development meets the GLA "Be Lean" target achieving a minimum 10% improvement on Part L 2013 from energy efficiency measures. The non-residential element of the Proposed Development exceeds the GLA "Be Lean" minimum target of 15% improvements over Building Regulation, achieving an overall reduction of 22% in carbon emissions from energy efficiency measures. Overall, the Proposed Development is shown to meet the carbon reduction target of 35% set by GLA achieving a 35% reduction in carbon emissions compared to the baseline utilising SAP 2012 carbon factors.
Climate Change Adaptation	The Proposed Development has ensured that it has reduced its external heat rejection to the atmosphere; has incorporated planting to combat the effects of climate change; and it has reduced its reliance on air conditioning systems to combat overheating by using solar control glazing, mechanical ventilation and reducing internal heat gains as far as feasible. Moreover, as the Proposed Development is located within Flood Zone 1 and less than 1 hectare, the FRA suggests there are no risk of flooding. Furthermore, compliant attenuation tanks has been provided within the development, which takes into account all event scenario including 40% climate change allowance, to help reduce the development discharge rate to greenfield runoff rate of 4.86l/s
Water Efficiency	The Proposed Development has ensured the site has maximised the opportunities for incorporation water saving measures which include the use of water saving fixtures and fittings, optimised water management through leak detection and reduced water flow rates. The consumption target of 'excellent' in Wat 01 has been targeted and most attainable water credits in the BREEAM assessment, for the type of the development, was targeted (6 out of 9 credits) for the non-residential areas. A daily water consumption of 105 l/person/day will be targeted for residential areas.

KEY SUSTAINABILITY AREA	PROPOSED MEASURES
Materials	The Proposed Development has ensured, as far as practicable that materials used on site will have a low embodied energy; some of the key elements of the building envelope will achieve a rating of A+ to D in the BRE's 'The Green Guide' to specification and all the timber used on site will be sustainably sourced from accredited FSC or PEFC sources. Additionally, in line with the GLA and RICS guidance, a Circular Economy Statement and Whole Life Carbon Analysis has been carried out to establish the waste and embodied carbon footprint and operational carbon of the development over a 60-year lifecycle and various design options to reduce carbon has been considered. Furthermore, the external materials will be specified to have low toxicity to humans and the environment, to be durable to cater for their level of use and exposure and the Proposed Development will maximise the use of prefabricated materials. A pre-demolition audit will be carried out prior to works commencing on site.
Waste Management	The Proposed Development has ensured that both the construction and the operational waste is effectively managed in accordance with national and local policy. Every effort has been taken to ensure most demolition waste is reused or recycled and 80% per volume non-hazardous waste will be diverted from landfill in line with the BREEAM Wst 01 credit. Circular Economy Statement has been produced in compliance with the planning requirements. Moreover, the Proposed Development will provide enough internal space and collection bins for the storage of recycled and compostable materials and waste in the development.
Pollution Management	The Proposed Development has ensured that the development will minimise and not increase sources of noise and vibration during the operational phase of the development. Dust and other air pollution will also be minimised during construction and operational use. Based on the air quality assessment carried out, the development is air quality neutral. Additionally, all external lighting will be designed in compliance with the ILE guidance note.
Ecology & Biodiversity	The Phase 1 habitat survey and bat surveys confirmed that the site is of nature conservation importance at up to the Site level. Opportunities for significant enhancement of the sites includes Biodiversity Net Gain score, through the provision of new landscape planting including trees and green infrastructure A site-specific plant palette has been developed, which responds to the needs of various character areas and scale of spaces around the Proposed Development, which includes a combination of native and adapted plants with high durability and low water demand and softening of the surrounding built form. Shade and feature trees will define the spaces and provide a ceiling, shelter and seasonal colour. The site is achieving an Urban Green Factor of 0.22

KEY SUSTAINABILITY AREA	PROPOSED MEASURES
Sustainable Transport & Access	The Proposed Development will provide compliant and appropriate cycle spaces, on-site changing facilities, including lockers and showers for non-residential areas. Moreover, the development will be car free and will only be providing 18 accessible car spaces of which 50% will have active EV charging points and 50% passive.

2. INTRODUCTION

2.1. DEVELOPMENT DESCRIPTION

WSP has been commissioned by Berkeley Homes (Central London) Ltd. to develop and prepare a Sustainability Statement for Paddington Green Police Station (The Proposed Development) in Westminster City Council (WCC) London.

The Applicant is submitting a full detailed planning application for the redevelopment of the former Paddington Green Police Station site to provide 3 buildings of between ground + 14 and ground + 31 storeys including commercial space (Class E use), 556 residential units (including 210 affordable housing homes), landscaping and associated car and cycle parking.

The client's ambition for the site is to deliver a high quality residential led mixed-use development that will complete the West End Gate masterplan. The scheme will complement and enhance the local environment including the Paddington Green and the wider Church Street area, improve the quality of life for local people and provide a sustainable development for new residents. The proposals will regenerate this part of the Edgware Road providing active frontages on Edgware Road and Harrow Road, in hand with an improved public realm and townscape.

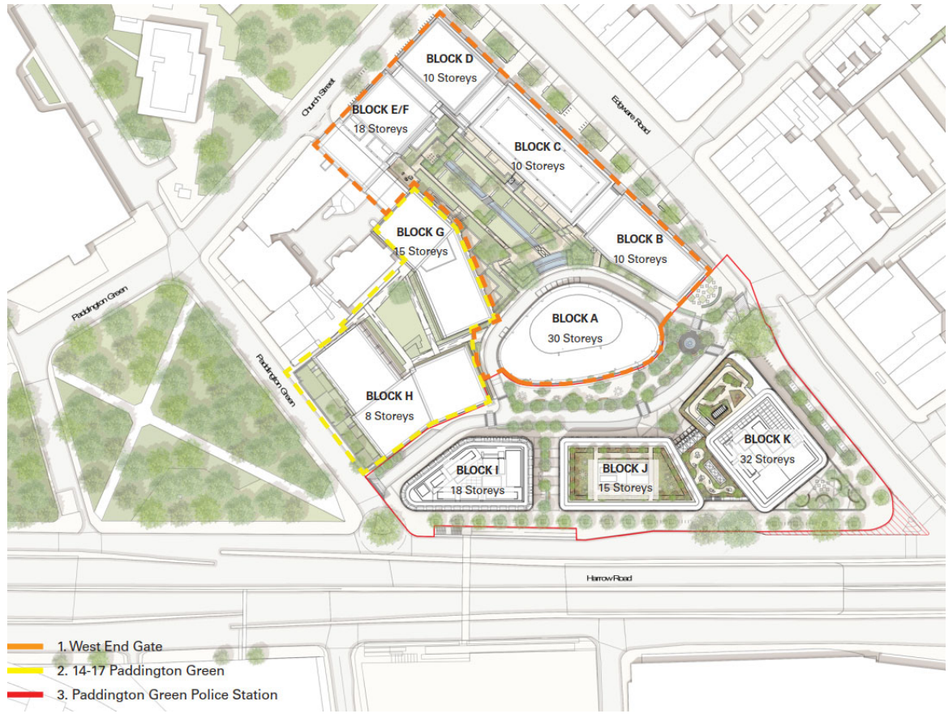


Figure 2-1 - Roof View showing the West End Gate Masterplan with the Proposed Development identified with the red line

3. POLICY CONTEXT

3.1. OVERVIEW

The Proposed Development is designed in line with current national, regional and local policy.

The City of Westminster's approach to sustainable development as detailed in the Local Plan is underpinned by policies from the National Planning Policy Framework (NPPF) and the New London Plan 2021.

3.2. NATIONAL POLICY

NATIONAL PLANNING POLICY FRAMEWORK (UPDATED IN 2019)

The National Planning Policy Framework (NPPF) was updated initially in July 2018 with minor amendment in February 2019, which replaces the 2012 NPPF. Plans and decisions should apply a presumption in favour of sustainable development.

The NPPF sets the planning context for sustainable design and construction. It is this that Local Planning Policies are based on and adapted to account for regionally specific requirements.

The NPPF identifies three dimensions to sustainable development - economic, social and environmental – which should be applied jointly and simultaneously:

- **Economic objective** – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;
- **Social objective** – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and
- **Environmental objective** – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

The NPPF promotes the pursuit of sustainable development by seeking positive improvements to the built and natural environment, and to people's quality of life. This will include:

- Delivering a sufficient supply of homes
- Building a strong, competitive economy
- Ensuring the vitality of town centres
- Promoting healthy and safe communities
- Promoting sustainable transport
- Supporting high quality communications
- Making effective use of land
- Achieving well-designed places
- Protecting green belt land
- Meeting the challenge of climate change, flooding and coastal change

- Conserving and enhancing the natural environment
- Facilitating the sustainable use of materials.

3.3. REGIONAL PLANNING POLICY

NEW LONDON PLAN 2021

The New London Plan was adopted in March 2021 and is the Spatial Development Strategy for Greater London. It sets out a plan for how London will be developed over the next 20-25 years.

An overview of the proposed policy is provided in Table 3-1:

Table 3-1 – Summary of key policies in the New London Plan

POLICY TITLE	SUMMARY OF POLICY
Policy SI1: Improving Air Quality	Development should not lead to further deterioration of existing poor air quality, create any new areas that exceed air quality limits and create unacceptable risk of high levels of exposure to poor air quality. Major development must be at least air quality neutral and should use design solutions to prevent or minimise increased exposure to existing air pollution and make provision to address local problems of air quality in preference to post-design or retrofitted mitigation measures. Major development must be submitted with an Air Quality Assessment. To reduce the impact on air quality during the construction and demolition phase development proposals must demonstrate how they plan to comply with the Non-Road Mobile Machinery Low Emission Zone and reduce emissions from the demolition and construction of buildings following best practice guidance
Policy SI2: Minimising Greenhouse Gas Emissions	Major development should be net zero-carbon. Reducing greenhouse gas emissions in operation and minimising both annual and peak energy demand in accordance with the energy hierarchy: Be Lean – Be Clean – Be Green – Be Seen. Major development proposal should include a detailed energy strategy to demonstrate how the zero-carbon target will be met and achieve a minimum on-site reduction of at least 35% beyond Building Regulations. Residential development should achieve 10% and non-residential should achieve 15% through energy efficiency measures. Where it is clearly demonstrated that the zero-carbon target cannot be fully achieved on-site, any shortfall should be provided, in agreement with the borough, either: 1) through a cash in lieu contribution to the borough's carbon offset fund, or 2) off-site provided that an alternative proposal is identified and delivery is certain. Major development should calculate and minimise carbon emissions from any other part of the development, including plant or equipment (Unregulated emissions). Development (referable to the Mayor) should calculate whole life-cycle carbon emissions through a nationally recognised Whole Life-Cycle Carbon Assessment and demonstrate actions taken to reduce life-cycle carbon emissions.
Policy SI3 Energy Infrastructure	Boroughs and developers should engage at an early stage with relevant energy companies and bodies to establish the future energy and infrastructure requirements arising from large-scale development proposals such as Opportunity Areas, Town Centres, other growth areas or clusters of significant new development.
Policy SI4 Managing Heat Risk	Development should minimise adverse impacts on the urban heat island through design, layout, orientation, materials and the incorporation of green infrastructure. Through an energy strategy, development should demonstrate how they will reduce internal overheating and reliance on air conditioning systems in accordance with the cooling hierarchy.
Policy SI5 Water Infrastructure	Residential developments should minimise the use of mains water and achieving mains water consumption of 105 litres or less per head per day. Commercial development should achieve at least the BREEAM excellent standard for the Wat 01 or equivalent *(12.5% improvement over defined baseline performance standard)* Development should seek to improve the water environment and ensure that adequate wastewater infrastructure capacity is provided.
Policy SI6 Digital Connectivity Infrastructure	Development should ensure that sufficient ducting space for full fibre connectivity infrastructure is provided to all end user within new developments, unless an affordable alternative 1GB/s capable connection is made available to all end users Development should meet expected demand for mobile connectivity generated by the development Support the effective use of rooftops and public realm (such as street furniture and bins) to accommodate well-designed and suitably located mobile digital infrastructure

POLICY TITLE	SUMMARY OF POLICY
Policy SI7 Reducing waste and supporting the circular economy	A) 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 ■ Encourage waste minimisation and waste prevention through the reuse of materials and using fewer resources in the production and distribution of products ■ ensure that there is zero biodegradable or recyclable waste to landfill by 2026. ■ meet or exceed the targets for each of the following waste and material streams: • a) construction and demolition – 95 per cent reuse/recycling/recovery • b) excavation – 95 per cent beneficial use127A ■ design developments with adequate, flexible, and easily accessible storage space and collection systems that support, as a minimum, the separate collection of dry recyclables (at least card, paper, mixed plastics, metals, glass) and food. Referable application should promote circular economy outcomes and aim to be net zero-waste. A Circular Economy Statement should be submitted.
SI12 Flood Risk Management	Development should ensure that flood risk is minimised and mitigated, and that residual risk is addressed. Development proposal adjacent to flood defences will be required to protect the integrity of flood defences and allow access for future maintenance and upgrading. Natural flood management methods should be employed in development proposals due to their multiple benefits including increasing flood storage and creating recreational areas and habitat.
SI13 Sustainable Drainage	Development should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible in line with the London drainage hierarchy. Development for impermeable paving should be refuse unless they can be shown to be unavoidable. Drainage should be designed and implemented in ways that promote multiples benefits including increased water use efficiency, improve water quality, and enhance biodiversity, urban greening, amenity and recreation.

3.4. REGIONAL POLICY – SUPPLEMENTARY PLANNING GUIDANCE

LONDON ENVIRONMENT STRATEGY (MAY 2018)

The Mayor's London Environment Strategy sets out an ambitious vision for improving London's environment for the benefit of all Londoners. The state of London's environment affects everyone who lives in and visits the city – it helps Londoners to stay healthy, allows businesses to thrive and keeps London functioning from day to day. This is the first strategy to bring together approaches to every aspect of London's environment, integrating the following areas:

- Air Quality
- Green infrastructure
- Climate Change mitigation and energy
- Waste
- Adapting to Climate Change
- Ambient Noise
- Low carbon circular economy

SUSTAINABLE DESIGN AND CONSTRUCTION (2014)

The Sustainable Design and Construction SPG was published in May 2006 to provide additional information to support the implementation of the London Plan policies. A revised version of the Sustainable Design and Construction Supplementary Planning Guidance was issued in April 2014.

The SPG explains the principles of sustainable design and construction and how they should be implemented in London. It provides guidance on how to achieve the objectives of the local plan effectively and supports developers and local planning authorities in achieving sustainable development.

MAYOR'S WATER STRATEGY (2011)

The Mayor's water strategy is the first water strategy for London and provides a complete picture of London's water needs. The strategy calls for organisations involved in the city's management to:

- Invest in a water management and sewerage infrastructure system that's fit for a world class city and will create jobs.
- Support and encourage Londoners to take practical actions to save water, save energy and save money off their utility bills.
- Realise the potential of London's sewerage as an energy resource to help reduce greenhouse gas emissions.

- Work in partnership with the Mayor, boroughs and communities to see and develop opportunities to manage flood risk through enhancing London's green spaces.

3.5. LOCAL POLICY – WESTMINISTER CITY PLAN

CITY OF WESTMINSTER PLANNING POLICY (NOVEMBER 2016)

Westminster's City Plan 2016 is the local plan for Westminster. It sets out the vision for the City of Westminster up to and beyond 2026/27 and puts in place a policy framework to deliver that vision. It balances the requirements and demands to deliver against economic, social and environmental objectives. In its section on SUSTAINABLE AND INCLUSIVE DESIGN it addresses in Policy S28:

- Development must incorporate exemplary standards of sustainable and inclusive urban design and architecture. In the correct context, imaginative modern architecture is encouraged provided that it respects Westminster's heritage and local distinctiveness and enriches its world-class city environment.
- Development will:
  - reduce energy use and emissions that contribute to climate change during the lifecycle of the development; and
  - ensure the reduction, reuse or recycling of resources and materials, including water, waste and aggregates.
- Development must provide for an extended lifetime of the building itself through excellence in design quality, high quality durable materials, efficient operation, and the provision of high-quality floor space that can adapt to changing circumstances over time.

Furthermore, the saved sections of the Unitary Development Plan (UDP) Chapter 9 relevant to sustainability are:

- ENV 4 Planting around and on buildings
- ENV 5 Air pollution
- ENV 6 Noise pollution
- ENV 7 Controlling noise from plant, machinery and internal activity
- ENV 10 Light pollution
- ENV 12 Waste and recycling storage
- ENV 13 Protecting amenities, daylight, sunlight and environmental quality
- ENV 16 Trees and shrub cover
- ENV 17 Nature conservation and biodiversity

EMERGINING CITY PLAN 2019 – 2040

The Examination in Public took place in late summer 2020, following which the City Council consulted on main modifications to the Plan in line with the Inspector's post-EIP comments. Following completion of the consultation exercise, Westminster have received the final Examiner's Report on 19th March 2021 which has found the Plan to be sound, meaning it now has weight in decision making. Westminster intend to adopt the new Plan at a full Council meeting, likely to be in April 2021.

Table 3-2 – Summary of key Draft New City of Westminster Plan 2019 - 2040

	SUMMARY OF POLICY
Policy 24: Sustainable Transport	The council will support a sustainable pattern of development which maximises trips made by sustainable modes, creates safer streets for all, reduces traffic, improves air quality and reflects the objectives in Westminster's Transport and Public Realm Programme and Local Implementation Plan 2019/20 to 2021/2022. New development and the connected transport modes should contribute towards maintaining and enhancing Westminster's places and streets as one of the most attractive and liveable areas in London. Development must: Positively contribute towards the improvement of its public transport nodes in terms of accessibility and legibility and the improvement and delivery of walking and cycling routes that serve a site in order to create an environment where people actively choose to walk and cycle as part of everyday life.; Support the reallocation of road and development space to promote walking, cycling and the use of public transport where appropriate. Positively contribute to the reduction of the dominance of private motor vehicles both in terms of traffic and congestion, whilst not worsening the excessive levels of on street parking and tackling poor air quality. Contribute to the London Plan's Healthy Streets approach to improve air quality, reduce congestion and make Westminster's diverse communities become greener, healthier and more attractive places in which to live, work or visit. Major development should provide or financially contribute towards creating well-connected, high-quality, convenient, safe infrastructure and routes where necessary to mitigate its impacts
Policy 25: Walking and Cycling	Development must promote sustainable transport by prioritising walking and cycling in the city. **CYCLING** Development should contribute to improvements to deliver a first-class public realm which supports cycling by improvements to legible signage, provision of access and facilities that do not conflict with the needs of pedestrians or compromise safety and addresses risks posed to cyclist from other transport modes. To promote cycling and ensure a safe and accessible environment for cyclists, major development must:

	SUMMARY OF POLICY
	Provide for and make contributions towards connected, high quality, convenient and safe cycle routes for all, in line with or exceeding London Cycle Design Standards Enable and contribute towards improvements to cycle access, including the delivery of current and planned cycle routes identified in the council's Local Implementation Plan and existing and potential Cycle Permeability Schemes Meet the cycle parking and cycle facilities standards in the London Plan. Where it is not possible to provide suitable short-stay cycle parking off the public highway an appropriate on-street location should be considered provided it does not conflict with improvements to and the quality of the public realm; Provide links to public transport nodes; Contribute towards improved wayfinding; and Promote and contribute towards the introduction and expansion of cycle hire facilities.
Policy 26: Public Transport and Infrastructure	Major development must: Facilitates access and improvements to the operation of all sustainable transport modes through improvements to the public realm; Support car clubs, cycle hire facilities and other sustainable of transport initiatives, such as electric vehicle charging infrastructure where they do not detrimentally impact upon public realm improvements and pocket parks; and Improve access to public transport facilities by promoting walking and cycling and through their design improve the legibility of transport nodes and interchanges.
Policy 27: Parking	The parking standards in the London Plan will apply to all developments. All new parking spaces should provide active provision for electric charging vehicles. Where on-site parking is delivered applicants will: Provide car club membership for all residents and provision of car club spaces; Ensure that all outdoor and open parking areas are designed to a standard which accommodates the need for safe pedestrian and vehicle movement and creates permeable links through the site; Prioritise the issue of parking spaces within development to families with young children; and Let, rather than sell, parking spaces to residents of new developments on a short-term basis, with spaces allocated to individual addresses or property numbers. The council will apply the maximum non-residential car parking standards set out in the London Plan. When considering parking impacts, the council will prioritise alternative kerbside uses (such as car club spaces, cycle parking and electric vehicle charge points) ahead of parking for private vehicles. For major developments contributions will also be required for on-street provision of electric vehicle and other low emission vehicle infrastructure. Where sites are redeveloped, existing parking provision must be reduced to meet the parking standards in the London Plan unless there is site specific justification to re-provide

	SUMMARY OF POLICY
	an element of the existing parking. On housing estate renewal schemes, parking provision may be retained or re-provided where it can be demonstrated that: Existing occupiers with established parking spaces or permits are to return to the site once the development is completed and that the retained or re-provided parking is for those residents only; and There is evidence of adequate capacity within the relevant controlled parking zone if the re-provided parking is to be on-street; and The retained or re-provided parking is delivered as part of an overall package of measures improving legibility, including walking and cycling routes, and making improvements to the public realm. Proposals for the redevelopment of existing car parks for alternative uses will be supported. The removal of boundary treatments and gardens to provide vehicle crossovers and on-site parking will be resisted (where permitted development rights do not exist). Proposals for, or including, new public car parks (and other motor vehicle public parking, including for coaches) will be assessed against the objective of reducing motorised travel.
Policy 32: Air Quality	The council is committed to improving air quality in the city and expects development to reduce exposure to poor air quality and maximise opportunities to improve it locally without detriment of air quality in other areas. AIR QUALITY NEUTRAL AND POSITIVE Major developments and any developments incorporating Combined Heat and Power (CHP) should be at least Air Quality Neutral. Major developments in Opportunity Areas and Housing Renewal Areas and those subject to an Environmental Impact Assessment must additionally demonstrate how local air quality can be improved across the proposed development as part of an air quality positive approach. AIR QUALITY ASSESSMENTS Air Quality Assessments will be required for: Major developments; Proposals that include potentially air pollution generating uses or combustion-based technologies; Proposals incorporating sensitive uses; and All residential developments within Air Quality Focus Areas.
Policy 33: Local Environmental Impacts	The council will make sure that quality of life and health and wellbeing of existing and future occupiers, and the natural environment are not adversely affected by harmful pollutants and other negative impacts on the local environment. LIGHT POLLUTION Developments must be designed to minimise the detrimental impact of glare and light spill on local amenity, biodiversity, highway and waterway users. NOISE AND VIBRATION

	SUMMARY OF POLICY
	Development should prevent adverse effects of noise and vibration and improve the noise environment in compliance with the council's Noise Thresholds, with particular attention to: Minimising noise impacts and preventing noise intrusion to residential developments and sensitive uses; Minimising noise from plant machinery and internal activities; Minimising noise from servicing and deliveries; Protecting the relative tranquillity in and around open spaces. ODOUR Development will effectively address the adverse impact of odour through the incorporation of appropriate mitigation measures using a precautionary approach. LAND CONTAMINATION Applicants are required to carry out contaminated land assessments and take appropriate remediation measures for development on or near a site which is potentially contaminated. CONSTRUCTION IMPACTS Developments are required to minimise demolition and construction impact by complying with Westminster's Code of Construction Practice (CoCP). Modern methods of demolition and construction that minimise negative local environmental impacts will be encouraged.
Policy 34: Green Infrastructure	The council will protect and enhance the city's green infrastructure to maximise its environmental, social and economic value. CITY GREENING Developments will, wherever possible, contribute to the greening of Westminster by incorporating trees, green walls, green roofs, rain gardens and other green features and spaces into the design of the scheme. OPEN SPACE All open spaces and their quality, heritage and ecological value, tranquillity and amenity will be protected. Major developments will be required to provide new or improved public open space and space for children's active play, particularly in areas of open space or play space deficiency. Development affecting the Royal Parks should enhance their quality and range of uses. BIODIVERSITY AND ACCESS TO NATURE Sites of Importance for Natural Conservation (SINCs), priority habitats and other ecological features outside of the SINCs network will be protected. Developments should achieve biodiversity net gain, wherever feasible and appropriate. Opportunities to enhance existing habitats and create new habitats for priority species should be maximised. Developments within areas of nature deficiency should include features to enhance biodiversity, particularly for priority species and habitats.

	SUMMARY OF POLICY
	TREES Trees of amenity, ecological and historic value and those which contribute to the character and appearance of the townscape will be protected. The planting of trees to optimise the city's canopy cover will be encouraged in new developments.
Policy 35: Flood Risk	All developments should be safe for their lifetime from the risk of flooding, complying with the council's Strategic Flood Risk Assessment (SFRA), Surface Water Management Plan (SWMP), Local Flood Risk Management Strategy (LFRMS) and the Mayor of London's Regional Flood Risk Appraisal (RFRA). A site-specific Flood Risk Assessment (FRA) must be submitted for: Developments of 1 hectare or greater; All developments in Flood Zones 2 and 3; and All developments within a Surface Water Flood Risk Hotspot. SUSTAINABLE DRAINAGE New development must incorporate Sustainable Drainage Systems (SuDS) to alleviate and manage surface water flood risk. Development should aim to achieve greenfield run-off rates and demonstrate how all opportunities to minimise site run-off have been taken.
Policy 36: Energy	The council will promote zero carbon development and expects all development to reduce on-site energy demand and maximise the use of low carbon energy sources to minimise the effects of climate change CARBON REDUCTION All development proposals should follow the principles of the Mayor of London's energy hierarchy. Major development should be net zero carbon and demonstrate through an energy strategy how this target can be achieved Where it is clearly demonstrated that it is not financially or technically viable to achieve zero-carbon on-site, any shortfall in carbon reduction targets should be addressed via off-site measures or through the provision of a carbon offset payment secured by legal agreement. HEAT NETWORKS Developments should be designed in accordance with the Mayor of London's heating hierarchy. Major developments must connect to existing or planned local heat networks, or establish a new network, wherever feasible OVERHEATING All developments should be designed and operated to minimise the risk of internal overheating. Major development proposals will include a cooling strategy in line with the Mayor of London's cooling hierarchy.
Policy 37: Waste Management	The council will promote the Circular Economy and contribute to the London Plan targets for recycling and for London's net self-sufficiency by 2026.

	SUMMARY OF POLICY
	All new developments (including extensions and change of use) must provide appropriate facilities for the storage of separate waste streams which are safe and convenient to access for deposit and collection, with sufficient capacity for current and projected future use. Developers are required to demonstrate through a Circular Economy Statement, Site Environment Management Plan and/or associated Site Waste Management Plan, the recycling, re-use, and responsible disposal of Construction, Demolition and Excavation waste in accordance with London Plan targets and the council's Code of Construction Practice.

3.1. BERKELEY HOMES SUSTAINABILITY STANDARD

GROUP SUSTAINABILITY STANDARD FOR DEVELOPMENTS – JANUARY 2021

Berkeley Group's Sustainability Standard sets the sustainability requirements for every new Berkeley Group development from the early design stage. A summary list of the requirements can be found in the table below.

KEY SUSTAINABILITY AREA	PROPOSED MEASURES	
Climate Action	SDR1.1	All sites to meet the minimum energy efficiency requirements which will be set out through the Group work on the Climate Change Goal and align to the Future Homes Standard. All sites should be aiming for a Dwellings Emission Rate (DER) of 7.0 kgCO2/m2/yr for the homes completed in 2030.
	SDR1.2	Incorporate 100% LED lighting in our developments, for internal and external lighting.
	SDR1.3	Ensure all domestic appliances achieve the Berkeley's minimum A to A++ energy efficiency ratings.
	SDR1.4	All homes should be fitted with a smart meter and energy display device
	SDR1.5	All developments should assess the overheating risk and incorporate measures to reduce this risk, as a minimum the Berkeley Group overheating risk assessment should be completed.
Nature & environmental net gain	SDR2.1	All developments to complete a net biodiversity gain assessment and achieve a minimum of a 10% gain on site.
	SDR2.2	All developments to include living roofs on all suitable roof space.
	SDR2.3	Design all new homes to achieve a water use of less than 105 litres per person per day (for internal use).
	SDR2.4	All developments to incorporate rainwater harvesting
Communities & sustainable living	SDR3.1	Complete a Social Value assessment for all developments.
	SDR3.2	Develop and implement a community plan on our large regeneration sites.
	SDR3.3	Design all homes to the Berkeley Group Healthy Homes framework to achieve at least a silver rating including meeting the Space Standards requirements.
	SDR3.4	All new sites (with the exception of internal works only within an existing development) should incorporate: o Electric Vehicle Charging o Cycle Storage
	SDR3.5	Ensure that all commercial space, student accommodation and senior living housing achieves BREEAM Very Good as a minimum.
	SDR3.6	Communicate information on specific sustainability features of our homes and developments and how to live a sustainable life throughout the customer journey.
Resources & material efficiciency	SDR4.1	Provide internal recycling facilities to all new homes where the combined capacity of internal recyclable waste facilities should be a minimum of: o 30 litres for homes with 1–2 bedrooms o 40 litres for homes with 3 or more bedrooms o Space for at least 5 litres of additional storage for food waste.
	SDR4.2	Ensure that all timber purchased by the Berkeley Group and by our contractors is FSC or PEFC certified, and has a Chain of Custody.

As stated earlier this report serves as the Sustainability Statement for the Proposed Development, with the relevant environmental, social and economic aspects covered in the following chapters. The following chapters of this report will outline the design initiatives and methods used to comply in first instance with the emerging New City of Westminster Local Plan 2019-2040, the New London Plan (March 2021), which hold significant weight and the Sustainable Design and Construction SPG (2014) as detailed in section 4 – 13 Requirements and Targets.

4. ENVIRONMENTAL RATING METHODS

4.1. REQUIREMENTS AND TARGETS

NEW LONDON PLAN (MARCH 2021)

- Achieve at least the BREEAM excellent standard for the Wat 01 – Water Category or equivalent

EMERGING CITY OF WESTMISTER PLAN 2019-2040

POLICY 38: DESIGN PRINCIPLES

- Applicants will demonstrate how sustainable design principles and measures have been incorporated into designs, utilising environmental performance standards as follows:
  - Non-domestic developments of 500 sqm of floor space or above will achieve at least BREEAM "Excellent" or equivalent standard.
  - Conversions and extensions of 500 sqm of residential floor space or above, or five or more dwellings will aim to achieve "Excellent" in BREEAM domestic refurbishment.

4.2. PRELIMINARY ASSESSMENT

NON-RESIDENTIAL

The BREEAM Pre-assessment report has been produced by the project's BREEAM Assessor / AP informed through consultation with the client and the design team members. This has ensured the appropriateness and achievability of the credit targeted to attain the desired rating. This section of the report presents the proposed strategy for the Proposed Development to achieve as a minimum an 'Excellent' rating according to the local policy.

This section of the report summarises the indicative performance of the Proposed Development against BREEAM New Construction 2018 for commercial use. The indicative target score for the Proposed Development at the current stage is **75.3%** equating to a BREEAM 'Excellent' rating.

The scheme is currently targeting 6 out of 9 BREEAM water category credit, it should be noted that an 'Excellent' level in Wat 01 criteria, which is equivalent to 2 Wat 01 credits was achieve and exceeded.

It is important to note that at this stage of design the pre-assessment is not fixed, and some credits may be replaced by others and additional credits may be targeted whilst the detailed design progresses.

4.3. SUMMARY

A BREEAM Pre-assessment has been carried out by an accredited BREEAM Assessor/ AP during RIBA Stage 2. As required by the local policy, all non-residential areas of the Proposed Development are expected to achieve as a minimum a BREEAM 'Excellent' rating. The BREEAM Pre-assessment shows how this target will be achieved. Moreover, the scheme is currently targeting 6 out of 9 BREEAM water category credit, it should be noted that an 'Excellent' level in Wat 01 criteria, which is equivalent to 2 Wat 01 credits was achieve and exceeded.

5. ENERGY & CO_2 EMISSIONS

5.1. REQUIREMENTS AND TARGETS

BUILDING REGULATIONS (PART L)

- All new buildings constructed in the UK must meet the minimum requirements of the UK Building Regulations. With regards to energy and carbon compliance, all buildings must meet the building regulations Part L 'Target Emission Rate' (TER) requirements for the Part L revision which is current at the time of initial construction works for each developmental phase. Part L 2013 has been used as the basis of the energy statement; however, the development will need to comply with the revision of Part L which is current at the start of construction.

NEW LONDON PLAN (MARCH 2021)

POLICY SI2 – MINIMISING GREENHOUSE GAS EMISSIONS

- Major development should be net zero-carbon. Reducing greenhouse gas emissions in operation and minimising both annual and peak energy demand in accordance with the energy hierarchy: Be Lean – Be Clean – Be Green – Be Seen.
- Major development proposal should include a detailed energy strategy to demonstrate how the zero-carbon target will be met and achieve a minimum on-site reduction of at least 35% beyond Building Regulations Part L 2013.
- Non-residential should achieve 15% through energy efficiency measures
- Major development should calculate and minimise carbon emissions from any other part of the development, including plant or equipment (unregulated emissions).
- Major non-referable development should calculate unregulated emissions and are encouraged to undertake whole life-cycle carbon assessments.

POLICY SI3 ENERGY INFRASTRUCTURE

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

EMERGING CITY OF WESTMISTER PLAN 2019-2040

POLICY 36 ENERGY

- The council will promote zero carbon development and expects all development to reduce on-site energy demand and maximise the use of low carbon energy sources to minimise the effects of climate change

CARBON REDUCTION

- All development proposals should follow the principles of the Mayor of London's energy hierarchy. Major development should be net zero carbon and demonstrate through an energy strategy how this target can be achieved
- Where it is clearly demonstrated that it is not financially or technically viable to achieve zero-carbon on-site, any shortfall in carbon reduction targets should be addressed via off-site measures or through the provision of a carbon offset payment secured by legal agreement.

HEAT NETWORKS

- Developments should be designed in accordance with the Mayor of London's heating hierarchy. Major developments must connect to existing or planned local heat networks, or establish a new network, wherever feasible

OVERHEATING

- All developments should be designed and operated to minimise the risk of internal overheating. Major development proposals will include a cooling strategy in line with the Mayor of London's cooling hierarchy.

5.2. DESIGN APPRAISAL

A separate Energy Statement has been prepared by WSP to accompany the Planning Submission and should be referred to for full details, a summary is provided below.

Emphasis has been placed on maximising energy demand reduction for the building as well as reducing carbon emissions based on the energy hierarchy of 'Be Lean – Be Clean – Be Green'.

An energy assessment has been carried out using detailed energy modelling of the whole building with performance compared to the notional building following the Part L2A (new construction) methodology. It can be expected that significantly greater reductions in carbon emissions would be achieved compared to the existing building rather than the new build equivalent.

The proposals for the scheme have been developed in accordance with the desire to achieve an energy efficient and sustainable development. The building will be designed to achieve optimum energy performance and will incorporate the following design features:

- A highly efficient building fabric;
- Efficient building services plant, including providing high efficiency air handling plant with heat recovery and low specific fan power;
- 100% low energy lighting and maximised use of LED and low energy fixtures;
- Main heating to the development will be provided through connection to the existing area-wide West End Gate network fed by 1no.CHP and 4no. highly efficient gas fired boilers.
- The West End Gate (WEG) energy centre serving the Proposed Development has been future proofed for future connection to the Church Street District Heating Network.
- Heat and cooling within the CAT A non-residential areas provided by all electric ASHPs, WSHPs.
- Roof mounted PV panels.

TOTAL CARBON EMISSIONS REDUCTION

Accredited thermal simulation software IES<VE>2021 and SAP Elmhurst software were used to determine the regulated carbon emissions for the development. The SAP 2012 carbon factors have been used for all further calculations using version 1.1 of the GLA Carbon Emission Reporting Spreadsheet.

Table 5-1 Carbon emissions after providing renewable energy – Residential – SAP 2012 CF

TOTAL	REGULATED EMISSIONS (TONNES)	UNREGULATED EMISSIONS (TONNES)	% REDUCTION IN REGULATED CARBON EMISSIONS
Baseline emissions (Tonnes CO_2)	543.9	739.1	0.0%
Emissions after energy demand reduction (Tonnes CO_2)*	488.6	739.1	10%
Emissions after energy efficient supply (Tonnes CO_2)*	355.9	739.1	35%
Emissions after renewable energy (Tonnes CO_2)	355.9	739.1	35%

**The energy efficiency savings have been calculated on the basis that the buildings are served by a central heating system served by gas fired boilers only, with a seasonal efficiency of 96%. Cooling system for Be Lean stage has been assumed as air cooled chillers with SEER of 3.5.*

Table 5-2 Carbon emissions after providing renewable energy – Non-Residential – SAP 2012 CF

TOTAL	REGULATED EMISSIONS (TONNES)	UNREGULATED EMISSIONS (TONNES)	% REDUCTION IN REGULATED CARBON EMISSIONS
Baseline emissions (Tonnes CO_2)	184.3	287.7	0.0%
Emissions after energy demand reduction (Tonnes CO_2)*	143.2	287.7	22%
Emissions after energy efficient supply (Tonnes CO_2)*	140.8	287.7	23%
Emissions after renewable energy (Tonnes CO_2)	120.1	287.7	35%

**The energy efficiency savings have been calculated on the basis that the buildings are served by a central heating system served by gas fired boilers only, with a seasonal efficiency of 96%. Cooling system for Be Lean stage has been assumed as air cooled chillers with SEER of 4.5.*

Table 5-3 Carbon emissions after providing renewable energy – Whole Development – SAP 2012 CF

TOTAL	REGULATED EMISSIONS (TONNES)	UNREGULATED EMISSIONS (TONNES)	% REDUCTION IN REGULATED CARBON EMISSIONS
Baseline emissions (Tonnes CO_2)	728.2	1017.8	0.0%
Emissions after energy demand reduction (Tonnes CO_2)*	631.8	1017.8	13%
Emissions after energy efficient supply (Tonnes CO_2)*	496.7	1017.8	32%
Emissions after renewable energy (Tonnes CO_2)	476.3	1017.8	35%

**The energy efficiency savings have been calculated on the basis that the buildings are served by a central heating system served by gas fired boilers only, with a seasonal efficiency of 96%. Cooling system for Be Lean stage has been assumed as air cooled chillers with SEER of 3.5 for the residential area and 4.5 for the non-residential.*

FABRIC ENERGY EFFICIENCY (FEE)

Accredited Design SAP 2012 software was used to determine the FEE standards for all apartments. An analysis has been undertaken on the all the new build residential buildings to establish the performance of the fabric in relation to the TFEE. Results for TFEE and the Dwelling FEE (DFEE) for all residential buildings are as follows:

Table 5-4 Fabric energy efficiency and carbon emissions results by residential buildings

RESIDENTIAL BUILDINGS	BUILDING I	BUILDING J	BUILDING K
Average TFEE (kWh/m²)	34.1	32.70	33.30
Average FEE (kWh/m²)	32.95	29.63	32.31
Improvement	3%	9%	3%

All residential areas achieve compliance with the TFEE standard. Detailed façade design and thermal bridging calculations will be performed during detailed design stage once junction details will be specified. The final strategy for compliance with TFEE will be defined as design develops. The project will ensure compliance with the TFEE is achieved.

OVERHEATING SUMMARY

Residential Overheating Analysis Conclusions

A range of overheating studies have been undertaken in line with guidance in industry documents such as CIBSE TM52, CIBSE TM59 and CIBSE Guide A, and a dynamic simulation model has been developed in order to test the influence of various parameters and ensure that overheating will not be an issue.

On the basis of the above, apartments are considered to comply with Policy 5.9 of the London Plan and Part L Criterion 3 of the Building Regulations and with CIBSE TM59 and TM52.

The strategy for minimising cooling demand in accordance with Policy 5.9 for the Proposed Development is as follows:

- Buildings orientation and massing have been optimised to reduce overheating. This study has considered its position on the application site relative to other buildings which will provide an element of shading but also to maximise daylight opportunities.
- Passive solar shading in the form of in-set balconies and fins are proposed to reduce the solar heat gains within all apartments.
- Internal layouts have also been refined to allow the daylighting requirements to be achieved and minimise the risk of overheating.
- 100% low energy lighting will be provided to reduce internal heat gains within the apartments.
- A highly efficient fabric and glazing is proposed incorporating glazing with low-e solar shield glass to protect the interior from solar gain.
- Within the apartments, where required, mechanical ventilation will be provided via MVHR to cover peaks.

The results of the assessments showed that all apartments are compliant with the TM52 and TM59 overheating criteria for the DSY1 weather scenario when free cooling via openable windows is provided.

A significant number of apartments do not achieve compliance with TM52 and TM59 criteria for the DSY2 and DSY3 weather file.

In line with the findings of the acoustic and air quality reports WSP has assessed the compliance with TM59 criteria in the event that overheating cannot be mitigated through natural ventilation via openable windows.

Ventilation and glazing specification sensitivity analysis has been conducted and it has been determined that boosted mechanical ventilation and improved control glazing specifications will not be sufficient to achieve compliance with TM59 criteria when free cooling from openable windows cannot be provided.

To reduce the peak temperatures to acceptable levels and provide comfort when future weather conditions are considered the following additional mitigating measures have been considered:

- Space cooling in the private apartments will be provided Air Cooled Chillers (ACC) located on the roof of Block I. Distributed chilled water (CHW) will serve cooling interface units (CIU) within each apartment which will then serve high-efficient FCU located in each apartment

- An in-line DX cooling module will be integrated into the MVHR to mitigate the risk of overheating in the summer months within the affordable apartments.

The assumptions used focus on the worst-case scenario when rooms are occupied all day to take into account vulnerable people, the risk reduces when apartments are occupied only in the evening. As per TM59 guidance, the aim of this test is to encourage good design that is comfortable within sensible limits, without being so stringent that it over-promotes the use of mechanical cooling. During design development the team will look at additional opportunities to reduce the risk of overheating even further in extreme hot weather and heat wave events.

Non-Residential Overheating Analysis Conclusions

Our analysis demonstrates that active cooling is necessary to be included within the proposal to comply with the requirements of TM52 and with maximum internal temperatures within the thermal comfort thresholds defined for the project.

The cooling capacities for the development are designed to accommodate increased temperatures associated with future climate change scenarios.

5.3. SUMMARY

In direct response to the information outlined within the 2020 Greater London Authority (GLA) Guidance on preparing Energy Assessments, the results outlined previously are summarised in the tables across, with the results presented against the overall carbon reduction target.

Overall, the Proposed Development is shown to achieve the following carbon reductions after following the Energy Hierarchy of LEAN, CLEAN, GREEN when compared to Part L 2013 using SAP 2012 carbon factors:

- Residential Element – 35%
- Non-Residential Element – 35%
- Whole Proposed Development – **35%**

The figures above are the reduction in carbon emissions compared to each respective baseline.

The residential element of the Proposed Development meets the GLA “Be Lean” target achieving a minimum 10% improvement on Part L 2013 from energy efficiency measures.

The non-residential element of the Proposed Development exceeds the GLA “Be Lean” minimum target of 15% improvements over Building Regulation, achieving an overall reduction of 22% in carbon emissions from energy efficiency measures.

Overall, the Proposed Development is shown to meet the carbon reduction target of 35% set by GLA achieving a 35% reduction in carbon emissions compared to the baseline utilising SAP 2012 carbon factors.

6. CLIMATE CHANGE ADAPTATION AND FLOOD RISK

6.1. REQUIREMENTS AND TARGETS

NEW LONDON PLAN (MARCH 2021)

POLICY SI4 MANAGING HEAT RISK

- Development should minimise adverse impacts on the urban heat island through design, layout, orientation, materials and the incorporation of green infrastructure.
- Through an energy strategy, development should demonstrate how they will reduce internal overheating and reliance on air conditioning systems in accordance with the cooling hierarchy.

SI12 FLOOD RISK MANAGEMENT

- Development should ensure that flood risk is minimised and mitigated, and that residual risk is addressed.
- Development proposal adjacent to flood defences will be required to protect the integrity of flood defences and allow access for future maintenance and upgrading.
- Natural flood management methods should be employed in development proposals due to their multiple benefits including increasing flood storage and creating recreational areas and habitat.

POLICY SI13 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 in line with the following drainage hierarchy.
- Drainage should be designed and implemented in ways that promote multiple benefits including increased water use efficiency, improve water quality, and enhance biodiversity, urban greening, amenity and recreation.
- Development proposals should aim to get as close to greenfield run-off rates as possible depending on site conditions. The well-established drainage hierarchy set out in this policy helps to reduce the rate and volume of surface water run-off. Rainwater should be managed as close to the top of the hierarchy as possible. There should be a preference for green over grey features, and drainage by gravity over pumped systems. A blue roof is an attenuation tank at roof or podium level; the combination of a blue and green roof is particularly beneficial as the attenuated water is used to irrigate the green roof.

POLICY GG6 INCREASING EFFICIENCY AND RESILIENCE

- Ensure buildings and infrastructure are designed to adapt to a changing climate, making efficient use of water, reducing impacts from natural hazards like flooding and heatwaves, while mitigating against and avoiding contributing to the urban heat island effect.

POLICY D4 HOUSING QUALITY AND STANDARDS

- The design of development should provide sufficient daylight and sunlight to new and surrounding housing that is appropriate for its context, whilst avoiding overheating, minimising overshadowing and maximising the usability of outside amenity space.

EMERGING CITY OF WESTMISTER PLAN 2019-2040

POLICY 35 – FLOOD RISK

- All developments should be safe for their lifetime from the risk of flooding, complying with the council's Strategic Flood Risk Assessment (SFRA), Surface Water Management Plan (SWMP), Local Flood Risk Management Strategy (LFRMS) and the Mayor of London's Regional Flood Risk Appraisal (RFRA).
- A site-specific Flood Risk Assessment (FRA) must be submitted for:
  - Developments of 1 hectare or greater;
  - All developments in Flood Zones 2 and 3; and

- All developments within a Surface Water Flood Risk Hotspot.

SUSTAINABLE DRAINAGE

- New development must incorporate Sustainable Drainage Systems (SuDS) to alleviate and manage surface water flood risk. Development should aim to achieve greenfield run-off rates and demonstrate how all opportunities to minimise site run-off have been taken.

6.2. DESIGN APPRAISAL

TACKLING INCREASED TEMPERATURE AND DROUGHT

URBAN HEAT ISLAND

The following proposed measures will help reduce external overheating and provide benefits in terms of balancing the microclimate:

- All air handling systems will be equipped with heat recovery systems to reduce as far as possible the amount of process heat expelled to the external environment.
- To contribute to the adaptation and reduction of the effects of climate change, the development will include appropriate landscaping layout and elements. The proposed trees and soft landscaping will provide protection from both heat and UV radiation by evapotranspiration and direct shading to both the building and outdoor spaces.
- Unused roof space for the PV will be utilized as biodiverse roofs/amenity space to attenuate water runoff and increase biodiversity which will provide some additional cooling and reduces surface heat absorption

OVERHEATING

A range of overheating studies have been undertaken in line with guidance in industry documents such as CIBSE TM52, CIBSE TM49 and CIBSE Guide A, and a dynamic simulation model has been developed in order to test the influence of various parameters and ensure that overheating will not be an issue. Please refer to Section 5.2 – Overheating Summary of this report for a summary and the Energy Strategy for the full assessment.

RESILIENT FOUNDATIONS

The foundations will be designed as per the Eurocode which covers “extreme” weather events.

FLOOD RISK

FLOOD RISK ASSESSMENT

A Flood Risk Assessment has been undertaken for the Proposed Development and its part of the ES report. For convenience a summary is provided below:

- The site is considered to be at low risk of flooding. As the site is less than 1 ha in area, no further assessment of flood risk is considered necessary and the proposed development is considered acceptable in flood risk terms.
- A surface water drainage strategy has been prepared for the proposed development informed by the constrained nature of the site. It is proposed to include green roofs, as the primary SuDS feature (on Blocks J and K as well as green areas on top of the podium slab). Further surface water attenuation would be in the form of two separate attenuation tank systems located on the basement B1 slab. Stored water from the two tanks would be pumped at restricted rates to ground level.
- The proposed drainage network has been designed to contain a 1 in 100 annual probability event including a potential 40 % increase in rainfall depths to allow for climate change in accordance with national policy. Therefore, the proposed development would not lead to any increase in downstream flood risk

SURFACE WATER FLOODING AND SUSTAINABLE DRAINAGE

An outline drainage strategy (ODS) has been carried out for the proposed development as part of the planning application. A summary of the findings and strategy is provided below:

Outline drainage strategy

The proposed development will restrict surface water flows to the greenfield runoff rate of **4.86 l/s**, for up to the 1:100 + 40% climate change allowance event. In order to achieve the required attenuation for this storm event, an attenuation storage of **601.1m³** will be provided within two separate tanks above the slab at basement B1 level. Stored water from the two tanks will then be pumped at restricted rates to ground level where it will then discharge via gravity to the TW combined sewer in Newcastle Place via two demarcation chambers.

Foul water flows from above ground floor of the development will be conveyed to the boundaries of the building, before connecting to demarcation manhole(s) via soil and vent pipes. At basement level, a foul network consisting of plant and car park gullies and pipework, will be pumped to ground level before connecting to demarcation manhole(s). The proposed peak foul flow discharge rate is **7.41 l/s**.

TW have been consulted as part of a pre-planning application, with regards to the capacity of the surface water network. In the latest correspondence to date, TW have advised that there is enough capacity within the combined sewer network in Newcastle Place to accommodate the proposed surface water flow rate of **4.86l/s**. TW have also confirmed that there is sufficient capacity within the network for the proposed foul rates.

Table 5 – Discharge/Attenuation Summary

Storm event	Estimated Existing Brownfield Flow Rate (l/s) using Wallingford Procedure	Micro-Drainage Flow Rate Output (l/s)	Reduction (%)	Max. Attenuation Volume (m3) Utilised)
1 in 2 Year	50.47	1.2	97	150.6

Storm event	Estimated Existing Brownfield Flow Rate (l/s) using Wallingford Procedure	Micro-Drainage Flow Rate Output (l/s)	Reduction (%)	Max. Attenuation Volume (m3) Utilised)
1in 30 Year	135.14	2.4	98	302.3
1 in 100 Year	179.45	3.5	98	429.3
1 in 100 Year + 40% CC	N/A	4.8	N/A	601.1

6.3. SUMMARY

The Proposed Development has ensured that it has reduced its external heat rejection to the atmosphere; has incorporated planting to combat the effects of climate change; and it has reduced its reliance on air conditioning systems to combat overheating by using solar control glazing, mechanical ventilation and reducing internal heat gains as far as feasible.

Moreover, as the Proposed Development is located within Flood Zone 1 and less than 1 hectare, the FRA suggests there are no risk of flooding. Furthermore, compliant attenuation tanks has been provided within the development, which takes into account all event scenario including 40% climate change allowance, to help reduce the development discharge rate to greenfield runoff rate of 4.86l/s.

7. WATER EFFICIENCY

7.1. REQUIREMENTS AND TARGETS

NEW LONDON PLAN (MARCH 2021)

POLICY SI5 WATER INFRASTRUCTURE

- Commercial development should achieve at least the BREEAM excellent standard for the Wat 01 or equivalent (12.5% improvement over defined baseline performance standard)
- Development should seek to improve the water environment and ensure that adequate wastewater infrastructure capacity is provided.
- Development proposals should: through the use of Planning Conditions minimise the use of mains water in line with the Optional Requirement of the Building Regulations (residential development), achieving mains water consumption of 105 litres or less per head per day (excluding allowance of up to five litres for external water consumption)
- incorporate measures such as smart metering, water saving and recycling measures, including retrofitting, to help to achieve lower water consumption rates and to maximise future proofing.

7.2. DESIGN APPRAISAL

The Proposed Development will be designed to minimise water use and impact on urban drainage. Water supplied to the Proposed Development will not give rise to significant adverse effects to the environment as control and leak detection will be installed where appropriate. The Proposed Development will be designed to minimise water use through:

WATER CONSERVATION AND REUSE

The development employs best practice design regarding water conservation and will have reduced mains water demand over typical building performance. Proposed water saving features includes:

- Water efficient sanitary fittings such as low flush WCs and low flow taps and showers with flow regulators will be installed in the dwellings. A daily water consumption of 105 l/person/day will be targeted for the dwellings to be achieved through the provision of low flow sanitary fixtures and fittings.
- In the non-residential areas, the sanitary fittings will be specified such that a reduction over a notional building consumption is at least 25%. and target 6 out of 9 water credits in the BREEAM assessment.

MANAGING WATER USE

To ensure ongoing sustainability performance during building operation, water use will be appropriately and effectively managed. Water meters will be installed, and it will encourage residents to monitor and reduce their water consumption. Additionally, in non-residential areas water meters will be linked to a central Building Management System which will enable monitoring and evaluation of water usage by the building management team.

LEAK DETECTION AND PREVENTION

Systems will be specified to detect a major water leak on the mains supply both within the building and between the building and the utilities water meter. Proximity controls will be installed in the office toilet blocks to ensure that water supply is turned off when toilets are not in use.

WATER USE DURING CONSTRUCTION

Water consumption targets will be set for the construction site and usage will be monitored.

WATER RECYCLING

An initial feasibility study was carried out and it was noted that due to the site constraints and limited space, a rainwater harvesting system (for rainwater reuse/recycling) is not current feasible. Attenuation tanks are been proposed as part of the SuDs measures. It is envisaged that some form of irrigation will be provided to the soft landscape areas.

7.3. SUMMARY

The Proposed Development has ensured the site has maximised the opportunities for incorporation water saving measures which include the use of water saving fixtures and fittings, optimised water management through leak detection and reduced water flow rates. The consumption target of ‘excellent’ in Wat 01 has been targeted and most attainable water credits in the BREEAM assessment, for the type of the development, was targeted (6 out of 9 credits) for the non-residential areas. A daily water consumption of 105 l/person/day will be targeted for residential areas.

8. MATERIALS

8.1. REQUIREMENTS AND TARGETS

NEW LONDON PLAN (MARCH 2021)

POLICY SI7 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

POLICY SI2 – MINIMISING GREENHOUSE GAS EMISSIONS

- Major non-referable development should calculate unregulated emissions and are encouraged to undertake whole life-cycle carbon assessments.

8.2. DESIGN APPRAISAL

The Proposed Development addressed the following aspects:

REUSE & RECYCLED CONTENT

It is anticipated that a Pre-Demolition Audit will be carried out prior to works commencing on site to establish types and quantities of expected demolition materials, pending the appointment of a Contractor. The Contractor will be encouraged to utilise demolition materials directly on site if and where feasible, e.g. the use of crushed bricks and concrete for blinding concrete and mass concrete fill. Any structural steel frame in the development will be specified to contain the maximum recycled content feasible. Where reuse onsite is not feasible, opportunities will be sought for reuse offsite where appropriate.

Moreover, a Circular Economy Statement has been produced as required by both the local plan and the GLA and the document will be used to inform the Design Team of any possibilities in reusing any material/element on site in order to reduce waste generated during the demolition process.

At least 20% of the materials used in the Proposed Development will be derived from recycled and reused content. This can be made up of demolition material from the site and/or specification of materials with recycled content. However, it is difficult to state exactly what percentage of reused materials will be utilised or what level of recycled content will be possible at this stage in the design. Nevertheless, we estimate the following recycled content percentages for the various building components, based on WRAP guidance as shown in Table 8-1:

Table 8-1 - Estimated recycled content in construction materials

ELEMENT	BUILD UP	ESTIMATE RECYCLED CONTENT (%)
Foundations	Concrete piles/raft, Rebar Steel,	Concrete is likely to contain 25-50% recycled content, as well as up to 20% recycled and/or secondary aggregates). Furthermore, the steel reinforcement, when sourced in the UK, will typically be made from nearly 100% steel scrap.
Structural Frame	In-situ concrete flat slab floor plates	The steel reinforcement, when sourced in the UK, will typically be made from nearly 100% steel scrap. Concrete is likely to contain 25-50% recycled content (assume up to 50% Ground-granulated blast-furnace slag (GGBS), as well as up to 20% recycled and/or secondary aggregates).

ELEMENT	BUILD UP	ESTIMATE RECYCLED CONTENT (%)
Façade	aluminium rainscreen panel clad with large glazed portions	The aluminium/steel fixing system will have a high recycled content of 50% or above (depending on country of origin and production processes). Glazing elements is likely to contain low recycled content (<10%). Mineral wool insulation to the curtain wall system is likely to contain at least 50% recycled material.
Floor / Ceiling finishes (offices)	Show room – assume carpet on raised access floor, on composite floor, and plasterboard suspended ceilings	Carpet will typically contain 25% recycled materials or more. OSB/plywood boards could have a high recycled content of 80% or more.
Floor Finishes – Back of House (BOH)	Mix of possible materials depending on areas (carpet, linoleum, vinyl, tiles)	Carpet will typically contain 25% recycled materials or more, linoleum has a typical recycled content of 24%, vinyl usually has a recycled content of 25% and tiles could have a recycled content of up to 40% (if resin bonded).

ENVIRONMENTAL IMPACT

Material efficiency is a priority for the Design Team and one of the key considerations during detailed design. Potential measures for reducing the material demand and for designing out waste will be explored by all key design team disciplines at each design stage.

The environmental impact of the proposed materials palette has regard for selecting components that score well under the BRE's 'The Green Guide to Specification'. Furthermore, the design team will review the wider environmental impact of the materials considered when choosing between different options. This will include reviewing Environmental Product Declarations.

Insulation materials to be used for the Proposed Development will be specified to have a low or zero Global Warming Potential (GWP) and low Ozone Depletion Potential (ODP).

WHOLE LIFE CARBON ASSESSMENT

In response to the GLA New London Plan SI2 'Minimising Greenhouse Gas Emissions', the Proposed Development has carried out a compliant Whole Life Carbon (WLC) assessment following the GLA Whole Life-Cycle Carbon Assessment guidance consultation draft document.

RESPONSIBLE SOURCING

The responsible sourcing of materials will be a key consideration in the selection of suppliers, and a sustainable procurement strategy will be produced for the development prior to construction. Materials from suppliers who participate in responsible sourcing schemes such as the BRE BES 6001:2008 Responsible Sourcing Standard will be prioritised.

All timber specified will be sourced from schemes supported by the Central Point of Expertise for Timber Procurement such as Forest Stewardship Council (FSC) and Programme for the Endorsement of Forest Certification (PEFC) accreditation – which ensures that the harvest of timber and non-timber products maintains the forest's ecology and its long-term viability.

Where viable the design team will specify materials that are grown or made locally. Likewise, the appointed contractor will be asked to prioritise local sourcing of materials.

Natural resource depletion will be minimised throughout the development, and materials such as peat and natural weathered limestone will not be used in the buildings or landscape features.

HEALTHY MATERIALS

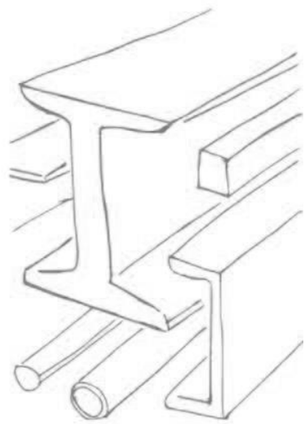
Internally, the design and specifications will ensure that environmentally sensitive (non-toxic) building materials are used throughout. Specifically, the design and specification of materials used internally will be based on the use of products that contain low levels of or no Volatile Organic Compounds (VOCs).

The selection criteria for external materials will include the specification of low toxicity to humans and the wider environment, especially those that deplete stratospheric ozone.

8.3. SUMMARY

The Proposed Development has ensured, as far as practicable that materials used on site will have a low embodied energy; some of the key elements of the building envelope will achieve a rating of A+ to D in the BRE's 'The Green Guide' to specification and all the timber used on site will be sustainably sourced from accredited FSC or PEFC sources. Additionally, in line with the GLA and RICS guidance, a Circular Economy Statement and Whole Life Carbon analysis has been carried out to establish the waste and embodied carbon footprint and operational carbon of the development over a 60-year lifecycle and various design options to reduce carbon has been considered. Furthermore, the external materials will be specified to have low toxicity to humans and the environment, to be durable to cater for their level of use and exposure and the Proposed Development will maximise the use of prefabricated materials.

A pre-demolition audit will be carried out prior to works commencing on site.



9. WASTE MANAGEMENT

9.1. REQUIREMENTS AND TARGETS

NEW LONDON PLAN (MARCH 2021)

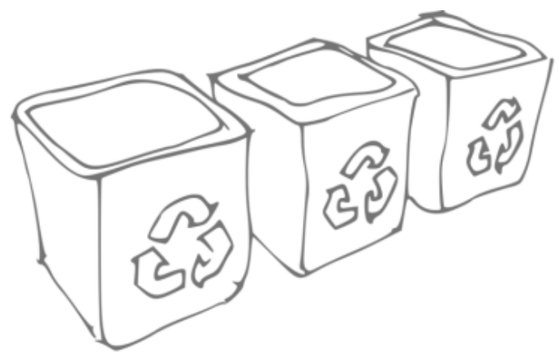
POLICY SI7 REDUCING WASTE AND SUPPORTING THE CIRCULAR ECONOMY

- 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
- Encourage waste minimisation and waste prevention through the reuse of materials and using fewer resources in the production and distribution of products
- Ensure that there is zero biodegradable or recyclable waste to landfill by 2026.
- Meet or exceed the targets for each of the following waste and material streams:
  a) construction and demolition – 95 per cent reuse/recycling/recovery
  b) excavation – 95 per cent beneficial use
- design developments with adequate, flexible, and easily accessible storage space and collection systems that support, as a minimum, the separate collection of dry recyclables (at least card, paper, mixed plastics, metals, glass) and food.
- Referable application should promote circular economy outcomes and aim to be net zero-waste. A Circular Economy Statement should be submitted.

EMERGING CITY OF WESTMISTER PLAN 2019-2040

POLICY 37: WASTE MANAGEMENT

- The council will promote the Circular Economy and contribute to the London Plan targets for recycling and for London's net self-sufficiency by 2026.
- All new developments (including extensions and change of use) must provide appropriate facilities for the storage of separate waste streams which are safe and convenient to access for deposit and collection, with sufficient capacity for current and projected future use.
- Developers are required to demonstrate through a Circular Economy Statement, Site Environment Management Plan and/or associated Site Waste Management Plan, the recycling, re-use, and responsible disposal of Construction, Demolition and Excavation waste in accordance with London Plan targets and the council's Code of Construction Practice.



9.2. DESIGN APPRAISAL

CONSTRUCTION WASTE

The Proposed Development will incorporate best practice waste reduction measures developed in line with the waste hierarchy to reduce, reuse, and recycle. These include:

- Exploring the potential for using prefabricated and standardised modulation components
- As stated in the Section 8.2 Materials, a pre-demolition audit will be produced to understand the potential for salvaging components and recycling of demolition waste

A Construction Environmental Management Plan (CEMP) or Site Environmental Management Plan, should be drafted and later completed by the appointed contractor, including the following:

- Setting of a target benchmark for Construction Site Waste Management (in line with BREEAM Wst 01)
- Procedures and commitments for minimising non-hazardous waste in line with the benchmark.
- Procedures for minimising hazardous waste
- Procedures for monitoring, measuring and reporting hazardous and non-hazardous site waste
- Procedures for sorting, reusing and recycling construction waste into defined waste groups.
- 80% per volume or 90% by tonnage non-hazardous construction waste generated by the development will be diverted from landfill and reused or recycled. (in line with BREEAM Wst 01)

OPERATIONAL WASTE

A Waste Management Strategy has been produced separately to support the planning application of the Proposed Development, please refer to the report for full information. A summary is provided below:

RESIDENTIAL WASTE

- Residential units will incorporate sufficient internal waste storage containers to promote the separation of recyclable materials at source.
- Three residential waste storage areas will be provided at basement level and will be located in close proximity to each of the blocks' service cores.
- Residents within Block K will be provided with a waste chute that serves each residential floor and discharges into a waste chute room at basement level.
- Residents within Blocks I and J will transport their own waste directly to the waste storage areas at basement level. Sufficient space within each of the waste storage areas has been provided to accommodate the required number of refuse, recyclables and food waste containers assuming a weekly waste collection frequency.
- Container numbers have been quantified using residential waste generation metrics source from the Guidance.
- On collection days, the on-site FM team will be responsible for transporting the bins from each waste storage areas to the waste presentation area at basement level. The on-site FM team will return the bins to the waste storage areas once emptied.

	Waste generation per week (L)	1100L Euro bin
Block J		
General Waste	7,140	6
Food Waste	2,380	2
Recycling	14,280	13
TOTAL		**22**
Block I		
General Waste	6,840	6
Food Waste	2,280	2
Recycling	13,680	12
TOTAL		**21**

Block K	Waste generation per week (L)	Compaction Ratio	1100L Eurobin (No.)
General Waste	16,350	2 to 1	7
Food Waste	5,450	-	5
Recycling	32,700	-	30
TOTAL			**42**

Figure 9-1 - Waste Calculations (Residential)

RESIDENTIAL AMENITY SPACE

- The proposed residential amenity space within the Proposed Development will be for the exclusive use of the residents and therefore it is assumed that it will be classified as mixed municipal waste, and that these areas will generate minimal waste levels.
- Any waste generated within the Proposed Developments residential amenity space will be stored in domestic type bins and will be removed by the on-site FM team during cleaning activities and will be placed in the Block K residential waste storage area for disposal.

OFFICE WASTE

- Three Office waste storage areas will be provided at basement level and will be located in close proximity to the office core. The office management team will transport their own waste directly to the waste storage areas at basement level.
- Sufficient space within each of the waste storage areas has been provided to accommodate the required number of refuse, recyclables and food waste containers assuming a weekly waste collection frequency.
- Container numbers have been quantified using residential waste generation metrics sourced from the Guidance.
- On collection days, the on-site FM team will be responsible for transporting the bins from each waste storage area to the waste presentation area at basement level. The on-site FM team will return the bins to the waste storage areas once emptied.

COMMERCIAL WASTE

- Each commercial tenant will be required to provide temporary waste storage areas within their demise which have sufficient capacity to separately store refuse and recyclables.
- The commercial tenants will be provided with a communal waste store located at ground floor level which will be used by all the tenants.
- On the agreed collection days, the commercial waste management contractor appointed by the on-site FM team will collect the commercial waste directly from the commercial waste store.

CIRCURLAR ECONOMY STATEMENT

A Circular Economy Statement has been produced as required by both the local plan and the GLA and the document will be used to inform the Design Team of any possibilities in reusing any material/element on site in order to reduce waste generated during the demolition process. Please refer to the document for detailed information.

9.3. SUMMARY

The Proposed Development has ensured that both the construction and the operational waste is effectively managed in accordance with national and local policy. Every effort has been taken to ensure most demolition waste is reused or recycled and 80% per volume non-hazardous waste will be diverted from landfill in line with the BREEAM Wst 01 credit.

Circular Economy Statement has been produced in compliance with the planning requirements.

Moreover, the Proposed Development will provide enough internal space and collection bins for the storage of recycled and compostable materials and waste in the development.

10. POLLUTION MANAGEMENT

10.1. REQUIREMENTS AND TARGETS

NEW LONDON PLAN (MARCH 2021)

POLICY SI1: IMPROVING AIR QUALITY

- Development should not lead to further deterioration of existing poor air quality, create any new areas that exceed air quality limits and create unacceptable risk of high levels of exposure to poor air quality.
- Major development must be at least air quality neutral and should use design solutions to prevent or minimise increased exposure to existing air pollution and make provision to address local problems of air quality in preference to post-design or retrofitted mitigation measures. Major development must be submitted with an Air Quality Assessment.
- To reduce the impact on air quality during the construction and demolition phase development proposals must demonstrate how they plan to comply with the Non-Road Mobile Machinery Low Emission Zone and reduce emissions from the demolition and construction of buildings following best practice guidance

POLICY D12 AGENT OF CHANGE

- The Agent of Change principle places the responsibility for mitigating impacts from existing noise and other nuisance-generating activities or uses on the proposed new noise-sensitive development.
- Development should be designed to ensure that established noise and other nuisance-generating uses remain viable and can continue or grow without unreasonable restrictions being placed on them.
- New noise and other nuisance-generating development proposed close to residential and other noise-sensitive uses should put in place measures to mitigate and manage any noise impacts for neighbouring residents and businesses.
- Development proposals should manage noise and other potential nuisances by:
  - ensuring good design mitigates and minimises existing and potential nuisances generated by existing uses and activities located in the area
  - exploring mitigation measures early in the design stage, with necessary and appropriate provisions including ongoing and future management of mitigation measures secured through planning obligations
  - separating new noise-sensitive development where possible from existing noise generating businesses and uses through distance, screening, internal layout, soundproofing, insulation and other acoustic design measures.

POLICY D13 NOISE

- In order to reduce, manage and mitigate noise to improve health and quality of life, residential and other non-aviation development proposals should manage noise by:
  - avoiding significant adverse noise impacts on health and quality of life
  - mitigating and minimising the existing and potential adverse impacts of noise on, from, within, as a result of, or in the vicinity of new development without placing unreasonable restrictions on existing noise-generating uses.
  - improving and enhancing the acoustic environment and promoting appropriate soundscapes
  - separating new noise-sensitive development from major noise sources.
  - where it is not possible to achieve separation of noise-sensitive development and noise sources without undue impact on other sustainable development objectives, then any potential adverse effects should be controlled and mitigated through applying good acoustic design principles.

EMERGING CITY OF WESTMISTER PLAN 2019-2040

POLICY 32: AIR QUALITY

- The council is committed to improving air quality in the city and expects development to reduce exposure to poor air quality and maximise opportunities to improve it locally without detriment of air quality in other areas.

AIR QUALITY NEUTRAL AND POSITIVE

- Major developments and any developments incorporating Combined Heat and Power (CHP) should be at least Air Quality Neutral.
- Major developments in Opportunity Areas and Housing Renewal Areas and those subject to an Environmental Impact Assessment must additionally demonstrate how local air quality can be improved across the proposed development as part of an air quality positive approach.

AIR QUALITY ASSESSMENTS

- Air Quality Assessments will be required for:
  - Major developments;
  - Proposals that include potentially air pollution generating uses or combustion-based technologies;
  - Proposals incorporating sensitive uses; and
  - All residential developments within Air Quality Focus Areas.

POLICY 33: LOCAL ENVIRONMENTAL IMPACTS

- The council will make sure that quality of life and health and wellbeing of existing and future occupiers, and the natural environment are not adversely affected by harmful pollutants and other negative impacts on the local environment.

LIGHT POLLUTION

- Developments must be designed to minimise the detrimental impact of glare and light spill on local amenity, biodiversity, highway and waterway users.

NOISE AND VIBRATION

- Development should prevent adverse effects of noise and vibration and improve the noise environment in compliance with the council's Noise Thresholds, with particular attention to:
  - Minimising noise impacts and preventing noise intrusion to residential developments and sensitive uses;
  - Minimising noise from plant machinery and internal activities;
  - Minimising noise from servicing and deliveries;
  - Protecting the relative tranquillity in and around open spaces.

ODOUR

- Development will effectively address the adverse impact of odour through the incorporation of appropriate mitigation measures using a precautionary approach.

LAND CONTAMINATION

- Applicants are required to carry out contaminated land assessments and take appropriate remediation measures for development on or near a site which is potentially contaminated.

CONSTRUCTION IMPACTS

- Developments are required to minimise demolition and construction impact by complying with Westminster's Code of Construction Practice (CoCP).
- Modern methods of demolition and construction that minimise negative local environmental impacts will be encouraged.

10.2. DESIGN APPRAISAL

LAND CONTAMINATION

A Preliminary Geo-Environmental Assessment was carried out for the Proposed Development to support the planning application, please refer to the document for detailed information.

AIR QUALITY

An Air Quality assessment has been carried out with the aim to minimise air pollution. Please refer to the report for full details, a summary of the findings is provided below:

CONSTRUCTION PHASE

- During the demolition and construction stage, there is the potential that emissions of dust arising from the site could result in a loss of amenity at nearby existing residential and commercial properties.
- Based on recognised assessment criteria, the demolition and construction works present a high risk of adverse dust impacts in the absence of appropriate mitigation. With the implementation of suitable mitigation measures, which have been set out within the ES, as well as the framework CLP which accompanies the planning application, it is anticipated that dust impacts would be appropriately mitigated resulting in, as a maximum, temporary, medium-term **Slight Adverse** effects which would be **Not Significant**.
- Predicted generation of HDV movements during the demolition and construction stage has been estimated to increase local flows by a maximum of five vehicles per day. Such an increase would have an insignificant impact on air quality. Construction traffic would also be controlled through the framework CLP. As such traffic emissions generated by the demolition and construction stage would have a temporary, medium-term **Negligible Adverse** effect on air quality which would be **Not Significant**.

OPERATIONAL PHASE

- The proposed development would be car-free, with the exception of minimal disabled parking provision. Together with servicing trips, the total vehicle trip generation for the site would be minimal and therefore the effects of the proposed development traffic emissions would be not significant. Overall, considering the air quality effects of the proposed development on existing off-site receptors would be permanent, long-term **Negligible Adverse** and **Not Significant**.
- Concentrations of NO_2, PM_{10} and $PM_{2.5}$ have been predicted at new sensitive receptor locations within the proposed development. At the new residential receptors introduced by the proposed development

air quality is predicted to meet all relevant air quality objectives and therefore the proposed development would not introduce new receptors into an area of poor air quality.

- Emerging policy and WCC air quality plan commitments has indicated that the World Health Organization guideline value for $PM_{2.5}$ will be brought into future regulations by 2030. The conservative future $PM_{2.5}$ concentrations with the development complete are predicted to be slightly above the WHO guideline at some receptors within the proposed development. To ensure appropriate mitigation is provided to those units where façade concentrations are predicted to exceed the guideline, it is recommended that prior to commencement of construction, an up-to-date assessment with the latest monitoring data and modelling tools is submitted to establish the baseline conditions at the time of construction and determine the need for mitigation in the form of $PM_{2.5}$ filtration. The updated assessment could be secured by means of an appropriately worded planning condition.

- Overall, it is considered that the completed proposed development would result in a permanent, long-term **Negligible Adverse** effect on air quality and identified receptors, and as such would be **Not Significant**

AIR QUALITY NEUTRAL

The air quality neutral assessment has shown that the proposed development would meet both the building and transport emissions benchmarks and can be considered Air Quality Neutral.

NOISE AND VIBRATION

A noise and vibration assessment have been carried out for Proposed Development submitted as part of the planning application, for full detail please refer to the document, a summary of the findings is provided below:

- Operational traffic has been considered as part of the scoping process and was 'scoped out'. Due to the small increase on a road network with pre-existing high levels of traffic, no significant change in noise level is predicted.

- Fixed plant noise and site suitability for residential use have been assessed.

- Operational plant rating limits have been set in accordance with BS414:2014+A1:2019 and WCC requirements. All fixed plant installations would be fitted with attenuation and acoustic screening, as required to meet the noise emissions limits. Mitigation would be developed during detailed design. On this basis, the effects would be **Negligible Adverse** i.e. not significant.

- Based upon measured noise levels and modelling of the cumulative traffic flow as appropriate the ambient noise levels on the proposed building facades have been predicted. Minimum sound insulation performance requirements have been provided for the façade to achieve internal noise levels as per BS8233:2014 and ProPG. This would be further developed during detailed design and secured by means of an appropriately worded planning condition. In respect of external noise levels, all residents would have access to residential amenity space below the required external amenity noise level criteria taking into account the urban context of the site. **On this basis the site would be suitable for residential development.**

- Cumulative demolition and construction noise from the proposed development and One & Six Merchant Square / Two Merchant Square are likely to increase the construction noise levels at NSRs. However, this increase is not sufficient to change the scale of effect above predicted for the proposed development alone.

- All other cumulative sources are considered to have negligible adverse effects i.e. no significant effect. This applies to:
  - Demolition and construction traffic;
  - Demolition and construction vibration;
  - Operational plant; and
  - Site suitability..

WATER POLLUTION

The proposed design minimises water pollution in the following ways:

- SUDS will be employed as part of the emerging drainage design to control surface water drainage from the site and to also form part of a surface water management train to improve water quality being discharged from the development.

LIGHT POLLUTION

Due cognisance has been given to the impact on light pollution. The development has considered limit to light pollution whilst providing a safe, well-lit spaces that tie in with the wider WEG masterplan. Moreover, the lighting scheme/intelligent building features for the Proposed Development will be designed so that it does not produce unacceptable levels of light pollution. The proposed design minimises light spillage to the night sky in the following ways:

- The external lighting design will follow the guidance in the Institution of Lighting Engineers (ILE) Guidance notes for the reduction of obtrusive light, 2005.

10.3. SUMMARY

The Proposed Development has ensured that the development will minimise and not increase sources of noise and vibration during the operational phase of the development. Dust and other air pollution will also be minimised during construction and operational use. Based on the air quality assessment carried out, the development is air quality neutral. Additionally, all external lighting will be designed in compliance with the ILE guidance note.

11. ECOLOGY AND BIODIVERSITY

11.1. REQUIREMENTS AND TARGETS

NEW LONDON PLAN (MARCH 2021)

POLICY G1 – GREEN INFRASTRUCTURE

- Development proposals should incorporate appropriate elements of green infrastructure that are integrated into London's wider green infrastructure network

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
- Boroughs should develop an Urban Greening Factor (UGF) to identify the appropriate amount of urban greening required in new developments.
  - In the interim, the Mayor recommends a target score of 0.4 for developments that are predominately residential, and a target score of 0.3 for predominately commercial development.

POLICY G6 - BIODIVERSITY AND ACCESS TO NATURE

- Development proposals should manage impacts on biodiversity and aim to secure net biodiversity gain. This should be informed by the best available ecological information and addressed from the start of the development process.

G7 - TREES AND WOODLAND

- London's urban forest and woodlands should be protected and maintained, and new trees and woodlands should be planted in appropriate locations in order to increase the extent of London's urban forest – the area of London under the canopy of trees.
- Development proposals should ensure that, wherever possible, existing trees of value are retained
  - The planting of additional trees should generally be included in new developments – particularly large-canopied species which provide a wider range of benefits because of the larger surface area of their canopy.

EMERGING CITY OF WESTMISTER PLAN 2019-2040

POLICY 34: GREEN INFRASTRUCTURE

- The council will protect and enhance the city's green infrastructure to maximise its environmental, social and economic value.

CITY GREENING

- Developments will, wherever possible, contribute to the greening of Westminster by incorporating trees, green walls, green roofs, rain gardens and other green features and spaces into the design of the scheme.

OPEN SPACE

- All open spaces and their quality, heritage and ecological value, tranquillity and amenity will be protected.
- Major developments will be required to provide new or improved public open space and space for children's active play, particularly in areas of open space or play space deficiency.
- Development affecting the Royal Parks should enhance their quality and range of uses.

BIODIVERSITY AND ACCESS TO NATURE

- Sites of Importance for Natural Conservation (SINCs), priority habitats and other ecological features outside of the SINCs network will be protected.
- Developments should achieve biodiversity net gain, wherever feasible and appropriate. Opportunities to enhance existing habitats and create new habitats for priority species should be maximised.

Developments within areas of nature deficiency should include features to enhance biodiversity, particularly for priority species and habitats.

TREES

- Trees of amenity, ecological and historic value and those which contribute to the character and appearance of the townscape will be protected.
- The planting of trees to optimise the city's canopy cover will be encouraged in new developments.

11.2. DESIGN APPRAISAL

BIODIVERSITY & ECOLOGY

An ecological desk study has been carried out as part of the ES which is issued along with the planning application, for full information please refer to that document. A short summary of its findings is included in this section:

- The Phase 1 habitat survey and bat surveys confirmed that the site is of nature conservation importance at up to the Site level. Opportunities for significant enhancement of the sites biodiversity are possible, through the provision of new landscape planting including trees and green infrastructure. By undertaking the work in accordance with the commitments and recommendations made, the proposed development is likely to be in conformity with relevant planning policy and legislation relating to ecology. Following the implementation of the mitigation and enhancements listed, negative impacts on biodiversity would be avoided, and in the long term the proposed development would provide numerous significant benefits to biodiversity.

BIODIVERSITY NET GAIN ASSESSMENT

A Biodiversity Net Gain Assessment has been carried out as part of the ES which is issued with the planning application, for full information please refer to that document. A short summary of its findings is included in this section:

- The Biodiversity Net Gain assessment shows that with the current proposed landscape design, it is possible for the proposed development to achieve a **6,157%** net gain for area-based habitats. Although new hedgerow planting is proposed (non-native ornamental hedgerow), this is of a distinctiveness and length which does not result in a net gain.
- This is a significant gain for the biodiversity of the site, and well above the 10% net gain required by planning policy, with opportunities to further increase the biodiversity of the site.

GREEN INFRASTRUCTURE

URBAN GREENING & TREES

A site-specific plant palette has been developed, which responds to the needs of various character areas and scale of spaces around the Proposed Development, which includes a combination of native and adapted plants with high durability and low water demand and softening of the surrounding built form. Shade and feature trees will define the spaces and provide a ceiling, shelter and seasonal colour.

Planting palettes will also comprise of plants of ecological value for wildlife, as well as structural plants, clipped hedges, shade loving plants and groundcover plants.

For full detailed information about the plant species and ecological value please refer to the Landscape Statement and Public Realm Strategy within the Design and Assess Statement.

URBAN GREEN FACTOR

The site is achieving an Urban Green Factor of 0.22 as seen from the below drawings and calculations.

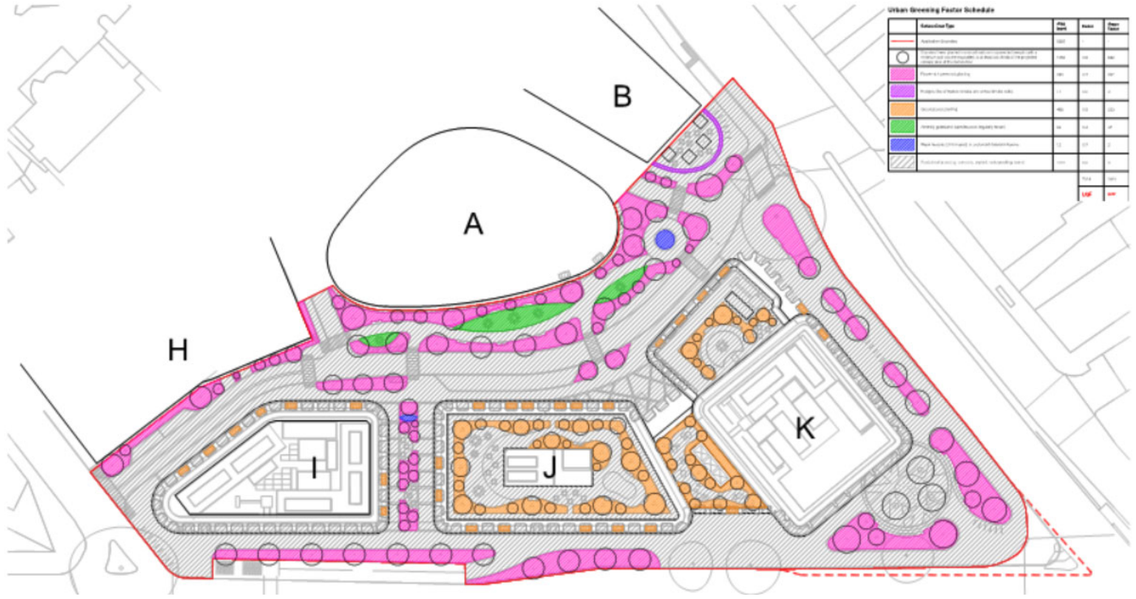


Figure 11-1 – Proposed Planting Strategy

Urban Greening Factor Schedule

	Surface Cover Type	Area (sqm)	Factor	Area x Factor
	Application Boundary	8285	-	-
	Standard trees planted in natural soils or in connected tree pits with a minimum soil volume equivalent to at least two thirds of the projected canopy area of the mature tree	1052	0.8	842
	Flower-rich perennial planting	996	0.7	697
	Hedges (line of mature shrubs one or two shrubs wide)	14	0.6	8
	Groundcover planting	466	0.5	233
	Amenity grassland (species poor, regularly mown)	93	0.4	37
	Water features (chlorinated) or unplanted detention basins.	12	0.2	2
	Sealed surfaces (e.g. concrete, asphalt, waterproofing, stone)	4711	0.0	0
			Total	1819
			UGF	0.22

Figure 11-2 - Urban Green Calculations

Summary

The Phase 1 habitat survey and bat surveys confirmed that the site is of nature conservation importance at up to the Site level. Opportunities for significant enhancement of the sites biodiversity are possible, through the provision of new landscape planting including trees and green infrastructure A site-specific plant palette has been developed, which responds to the needs of various character areas and scale of spaces around the Proposed Development, which includes a combination of native and adapted plants with high durability and low water demand and softening of the surrounding built form. Shade and feature trees will define the spaces and provide a ceiling, shelter and seasonal colour. The site is achieving an Urban Green Factor of 0.22

12. SUSTAINABLE TRANSPORT & ACCESS

12.1. REQUIREMENTS AND TARGETS

NEW LONDON PLAN (MARCH 2021)

POLICY T5 CYCLING

- all new development in the city must provide convenient and accessible cycle parking in line with minimum standards.
    - Regarding short-stay cycle parking, this must be convenient and readily accessible. It must have step-free access and be located within 15m of the main entrance wherever possible.

POLICY T6 CAR PARKING

- parking should be restricted in line with existing and future public transport accessibility and connectivity.
- Car-free development should be targeted in places that are well-connected.
- Appropriate provision should also be made for Blue Badge holders; available spaces for 3% of the total number of dwellings proposed from the outset, with future proofing for 10%.

THE MAYOR'S TRANSPORT STRATEGY (MARCH 2018):

The Mayors Transport Strategy (MTS) notes that transport has a role to play in delivering good growth that satisfies the following principles:

- Good access to public transport;
- High-density, mixed use developments;
- People choose to walk and cycle;
- Car-free and car-lite places;
- Inclusive, accessible design;
- Carbon-free travel; and
- Efficient freight.

The policies of the MTS seek to tackle the challenges through:

- "Making London a city where people choose to walk and cycle more often by improving street environments and promoting the benefits of active travel;
- Aiming for no one to be killed in or by a London bus by 2030, and for all deaths and serious injuries from road collisions to be eliminated from London's streets by 2041;
- Prioritising space efficient modes of transport to tackle congestion and improve the efficiency of streets for the movement of people and goods, with the aim of reducing overall traffic levels by 10-15% by 2041;
- Seeking to make London's transport network zero emission by 2050; and
- Using the Healthy Streets Approach to deliver coordinated improvements to public transport and streets to provide an attractive whole journey experience that will facilitate mode shift away from the car."

EMERGING CITY OF WESTMISTER PLAN 2019-2040

POLICY 24: SUSTAINABLE TRANSPORT

- The council will support a sustainable pattern of development which maximises trips made by sustainable modes, creates safer streets for all, reduces traffic, improves air quality and reflects the

objectives in Westminster's Transport and Public Realm Programme and Local Implementation Plan 2019/20 to 2021/2022.

- New development and the connected transport modes should contribute towards maintaining and enhancing Westminster's places and streets as one of the most attractive and liveable areas in London.
- Development must:
  - Positively contribute towards the improvement of its public transport nodes in terms of accessibility and legibility and the improvement and delivery of walking and cycling routes that serve a site in order to create an environment where people actively choose to walk and cycle as part of everyday life.;
  - Support the reallocation of road and development space to promote walking, cycling and the use of public transport where appropriate.
  - Positively contribute to the reduction of the dominance of private motor vehicles both in terms of traffic and congestion, whilst not worsening the excessive levels of on street parking and tackling poor air quality.
  - Contribute to the London Plan's Healthy Streets approach to improve air quality, reduce congestion and make Westminster's diverse communities become greener, healthier and more attractive places in which to live, work or visit.
- Major development should provide or financially contribute towards creating well-connected, high-quality, convenient, safe infrastructure and routes where necessary to mitigate its impacts

POLICY 25: WALKING AND CYCLING

- Development must promote sustainable transport by prioritising walking and cycling in the city.

CYCLING

- Development should contribute to improvements to deliver a first-class public realm which supports cycling by improvements to legible signage, provision of access and facilities that do not conflict with the needs of pedestrians or compromise safety and addresses risks posed to cyclist from other transport modes.
- To promote cycling and ensure a safe and accessible environment for cyclists, major development must:
  - Provide for and make contributions towards connected, high quality, convenient and safe cycle routes for all, in line with or exceeding London Cycle Design Standards
  - Enable and contribute towards improvements to cycle access, including the delivery of current and planned cycle routes identified in the council's Local Implementation Plan and existing and potential Cycle Permeability Schemes
  - Meet the cycle parking and cycle facilities standards in the London Plan. Where it is not possible to provide suitable short-stay cycle parking off the public highway an appropriate on-street location should be considered provided it does not conflict with improvements to and the quality of the public realm;
  - Provide links to public transport nodes;
  - Contribute towards improved wayfinding; and
  - Promote and contribute towards the introduction and expansion of cycle hire facilities

POLICY 26: PUBLIC TRANSPORT AND INFRASTRUCTURE

- Major development must:
  - Facilitates access and improvements to the operation of all sustainable transport modes through improvements to the public realm;
  - Support car clubs, cycle hire facilities and other sustainable of transport initiatives, such as electric vehicle charging infrastructure where they do not detrimentally impact upon public realm improvements and pocket parks; and
  - Improve access to public transport facilities by promoting walking and cycling and through their design improve the legibility of transport nodes and interchanges.

POLICY 27: PARKING

- The parking standards in the London Plan will apply to all developments.
- All new parking spaces should provide active provision for electric charging vehicles.
- Where on-site parking is delivered applicants will:
  - Provide car club membership for all residents and provision of car club spaces;
  - Ensure that all outdoor and open parking areas are designed to a standard which accommodates the need for safe pedestrian and vehicle movement and creates permeable links through the site;
  - Prioritise the issue of parking spaces within development to families with young children; and Let, rather than sell, parking spaces to residents of new developments on a short-term basis, with spaces allocated to individual addresses or property numbers.
- The council will apply the maximum non-residential car parking standards set out in the London Plan.
- When considering parking impacts, the council will prioritise alternative kerbside uses (such as car club spaces, cycle parking and electric vehicle charge points) ahead of parking for private vehicles.
- For major developments contributions will also be required for on-street provision of electric vehicle and other low emission vehicle infrastructure.
- Where sites are redeveloped, existing parking provision must be reduced to meet the parking standards in the London Plan unless there is site specific justification to re-provide an element of the existing parking. On housing estate renewal schemes, parking provision may be retained or re-provided where it can be demonstrated that:
  - Existing occupiers with established parking spaces or permits are to return to the site once the development is completed and that the retained or re-provided parking is for those residents only; and
  - There is evidence of adequate capacity within the relevant controlled parking zone if the re-provided parking is to be on-street; and

- The retained or re-provided parking is delivered as part of an overall package of measures improving legibility, including walking and cycling routes, and making improvements to the public realm.

- Proposals for the redevelopment of existing car parks for alternative uses will be supported. The removal of boundary treatments and gardens to provide vehicle crossovers and on-site parking will be resisted (where permitted development rights do not exist).

- Proposals for, or including, new public car parks (and other motor vehicle public parking, including for coaches) will be assessed against the objective of reducing motorised travel.

12.2. DESIGN APPRAISAL

A separate Transport Assessment has been prepared to accompany the planning submission and should be referred to in the first instance on information relating to transportation and accessibility, a summary is provided below:

CYCLE STORAGE & FACILITIES

Across the site there will be a total of 1,040 cycle parking spaces for the whole development, consisting of 960 long-stay internal spaces and 86 short-stay external spaces. This provides more than 1 cycle parking space per dwelling, beyond WCC cycle parking standards and in-line with London Plan standards. The long-stay parking is provided with a mix of Sheffield Stand and Cycle Stacker type spaces.

The long-stay internal spaces will be provided at basement level in a series of secure, communal storage rooms which will be provided for each block.

104 of the residential cycle spaces (10.8%) will not be able to be accommodated in PGPS – this shortfall of spaces will be put into the WEG scheme in a future amendment application.

CAR PARKING PROVISION

The scheme is car free with 18 accessible parking spaces provided at B1 basement level. (17 for residential and 1 for commercial uses). Of which 50% will have active EV charging points and 50% passive .

CAR CLUBS

Car Clubs make car ownership unnecessary and are a good way of reducing the number of cars on the development amongst residents and employers alike.

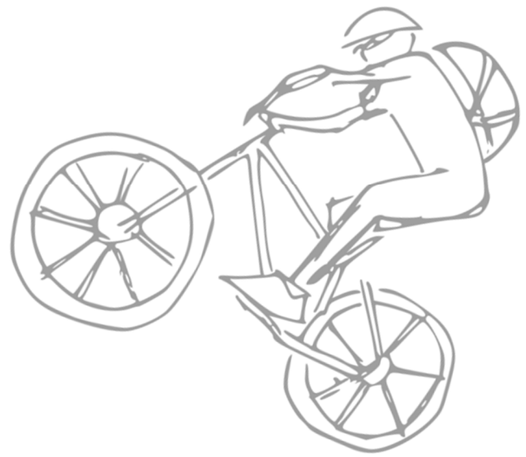
At the time of publishing, there is one car club operators providing service in the vicinity of the site; Zipcar. Zipcar offers three cars for hire on Harbet Road, Bell Street and Cuthbert Street, within a 300-metre walk from the site.

The provision of a car club at the site would therefore serve to benefit residents and employees of the site as well as the general public.

Discussions are ongoing with Zipcar who are an active car club operator within the CoW and across London. It is proposed that all residents will have a Zipcar account to use with the existing Zipcar's within the surrounding area, of which there are 7 within a 10-minute walk

12.3. SUMMARY

The Proposed Development will provide compliant and appropriate cycle spaces, on-site changing facilities, including lockers and showers for non-residential areas. Moreover, the development will be car free and will only be providing 18 accessible car spaces of which 50% will have active EV charging points and 50% passive .



13. CONCLUSION

Considering the principles of sustainability early in the design and planning process is a positive step to ensuring that the Proposed Development is sustainable in terms of construction, operation, the local community, the environment and its future occupation.

A review of national, regional and local planning policies was undertaken, with emphasis on the 2019 National Planning Policy Framework (NPPF), the New London Plan (March 2021), the Mayor's Sustainable Design and Construction SPG (2014) and the emerging City of Westminster's local planning policy 2019-2040.

The Proposed Development responds to the issues raised in the policy documents in the following areas:

- Environmental Rating Methods
- Energy and CO_2 Emissions
- Climate Change Adaptation
- Water Efficiency
- Materials
- Waste Management
- Pollution Management
- Ecology & Biodiversity
- Sustainable Transport & Access

The Proposed Development has endeavoured to ensure that social, economic and environmental issues are dealt with in an integrated and equal manner. The sustainability of the design, construction and proposed community structure of the development has been assessed as well as considering its contribution to sustainable development within the local area.

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