

Aylesbury Estate Regeneration
Phase 2B
Planning Application

Sustainability Statement

May 2022



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AER-MXF-XX-XX-RP-Y-23010
Aylesbury Estate Regeneration,
Phase 2B

Sustainability Statement

Planning Issue

May 2022

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1.0 EXECUTIVE SUMMARY

This Sustainability Statement summarises the key measures proposed to meet the London Plan’s carbon reduction targets and the sustainability strategy in support of the planning application for Aylesbury Estate in the London Borough of Southwark. The Phase 2B proposals follow the principles as published in the Extant Outline Planning Permission. Phase 2B is the next phase of development on the Aylesbury Estate, following on from the First Development Site (Ph1BC) and Plot 18 (Ph2A).

The Proposed Development consists of 614 new units (50% private sale, 38% social rent and 12% shared ownership), more generous public space, improving on connectivity of the site and minimising the reliance on managed waste solutions across the site. The Site is located along Thurlow Street and North of Albany Road.



Figure 1. Aylesbury Estate Regeneration – Phase 2B
Figure 2 The Proposed Development

The Proposed Development aims to exceed the current high standards for sustainability as set out in the London Plan.

1.1 London Plan Energy Hierarchy

The energy strategy for the project has been developed following the London Plan, and the GLA guidance on energy strategies. The carbon emissions for the development have been assessed using the Standard Assessment Procedure

(SAP). The carbon emissions for the development were initially calculated using SAP 2012 carbon factors – these were then converted to SAP 10 carbon factors using the conversion spreadsheet tool provided by the GLA. The figures discussed below are all provided after the SAP 10 conversion, in line with the GLAs draft guidance issued in April 2020. An in depth Energy Statement (AE-MXF-Ph2B-XX-RP-900002 Energy Statement) is issued in support of this application.

Be Lean: use less energy

Passive design measures including as enhanced fabric U-values, improved air tightness and active enhancements such as Mechanical Ventilation with Heat Recovery (MVHR) and low energy lighting, achieving a 16% (residential) and 32% (non-residential) improvement on Building Regulations from energy efficiency.

Be Clean: supply energy efficiently

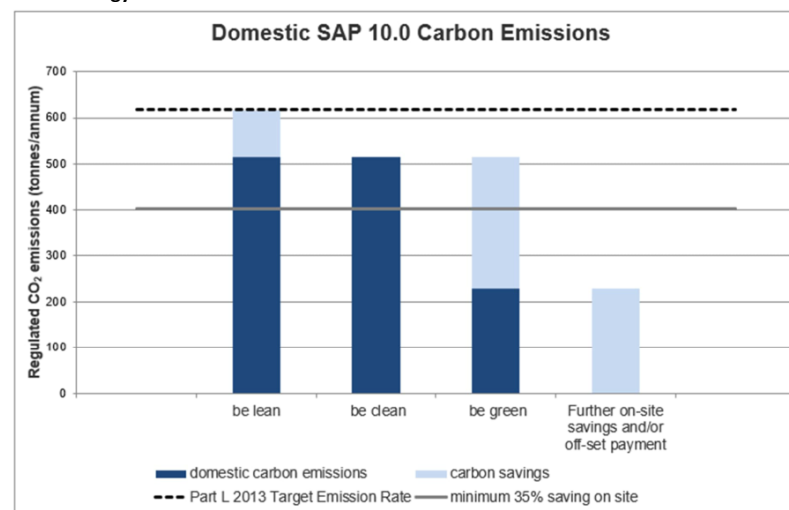
A phase-level heat network designed to reduce distribution losses is proposed. The design includes provision to connect to a future area-wide district heating network or a site-wide heating network (incorporating low carbon technologies that may be available at the time of later phases) as the site evolves across the phasing program.

Be Green: use renewable energy

The use of renewable energy technologies on site was considered and the development is proposed to have a district heating system fed by central Air Source Heat Pumps (ASHP) with local Heat Interface Units (HIUs). Back up boilers are proposed for peak heat loads and to provide redundancy. In addition, solar PV is proposed on appropriate areas of roof to maximise on-site renewable energy generation, resulting in on-site CO₂ savings in excess of the minimum requirements.

The overall effect of these measures is that the regulated carbon emissions are reduced by 63% for domestic and 40% for non-domestic, giving a site wide improvement of 61% over Building Regulation Part L 2013 minimum requirements. The improvements against the baseline at each stage of the hierarchy are shown in Table 1. The remaining CO₂ emissions for the residential and commercial schemes would be met through a payment to the Southwark Council’s carbon offset fund.

Table 1 Overall residential carbon reductions after the Be Lean, Be Clean, Be Green and Offsets. Refer to Energy statement for non-domestic results



Be Seen: monitor energy use

The energy performance of the development will be monitored and reported post-construction to ensure that the actual carbon performance of the development is aligned with the Mayor’s net zero carbon target.

1.2 Planning Requirements

There are several documents that the development must adhere to in its approach to energy use and sustainability:

- National Planning Policy Framework (February 2021)
- GLA London Plan (2021)
- The Southwark Plan 2022

The relevant policies have been highlighted the beginning of each section and full summary of all relevant policies can be found in Appendix A.

For a reference on how the overall Sustainability Strategy covers the relevant planning policies for both the new London Plan and the Southwark Plan, refer to Table 2 .

1.3 Sustainability Strategies

Climate Change Risk Adaption

The cooling hierarchy has been applied to minimise the risk of overheating with measures using passive and environmental design strategies. The massing design, orientation of the buildings, self-shading shading, high albedo materials, fenestration and insulation will reduce the amount of heat entering, while internal heat generation is reduced through energy efficient design and exposed thermal mass. Passive ventilation is supplemented with a MVHR supply minimising the need for active cooling where pollution/noise concerns limit window opening.

Detailed analysis of the risk of overheating has been undertaken in line with the guidance in CIBSE TM59 and TM49. The analysis demonstrated that, through the use of passive design measures, the proposed development passes the requirements of CIBSE TM 59 and TM49.

The Site is in Flood Zone 3, and is benefitting from flood defences. Therefore the Site is at extremely low residential risk of tidal flooding from the River Thames. Overland flood routes will be designed into the development to take account of overland flood flow routes from exceedance events, and to divert any excess floodwater around and away from the Proposed Development. In an exceedance event, such as the 1 in 100 year plus 40% allowance for climate change rainfall event, runoff from the built development will be directed away from properties via overland flow routes towards the proposed storage areas and/or areas of open space.

Health and Well-being

Both noise and air pollution impact assessments have been undertaken for the proposed development with mitigation measures specified as required. The Proposed Development is therefore considered to be in accordance with the air quality neutral requirements and the London Plan.

The Proposal for the redevelopment will replace the existing gas boilers with heat pumps, contributing significantly to the improvement of the air quality of the Site. Additionally, the design encourages sustainable modes of transport (cycling, walking) reducing further any emissions associated with vehicle use.

Secured By Design Principles have been incorporated into the design to improve safety across the site. Passive surveillance is increased along street frontages to reduce the requirement for CCTV cameras. External private entrances are PAS 24 and ADQ compliant. Accessible windows and external doors will be PAS 24 certified.

All flats have been designed in accordance with the M4(2) Category 2: Accessible and adaptable dwellings as set out in Approved Document M of the Building Regulations and more than 10% of dwellings have been designed in accordance with M4(3) Category 3. The external lighting strategy is also being developed in collaboration with East to ensure it does not compromise safety, security, and night pollution.

Daylight and sunlight

All rooms within the proposed development have been assessed using the BRE guidance: Site layout planning for daylight and sunlight: a guide to good practice (BR209). A high proportion achieve their guideline ADF target, which is a good result for a high density central urban site.

Noise Impact

Plant equipment specifications for all parts of the scheme are not finalised at the time of the planning submission, and so a detailed plant noise analysis is not undertaken at this stage. However the equipment will be selected to comply with (anticipated) planning conditions, namely compliance with the requirements given in *Technical Guidance for Noise* published by the London Borough of Southwark, and the impact of this scenario is assessed.

Nature, Landscape and Biodiversity

The new public realm design scope consists of two distinct areas – public spaces and communal areas.

- Biodiversity Net Gain calculations show a 38.97% net gain in area-based habitats and 100% gain in hedgerows habitats.
- Green roofs that are compatible with PV, such as BioSolar, are being coordinated across the scheme.
- Planted boundaries and planted structures are being incorporated into the design of communal spaces across the scheme.
- Traffic calming measures are provided in the streetscape to reduce vehicle speeds, improve pedestrian and cycling environments and increase street greening.
- The SUDS strategy incorporates a swale, green roofs, permeable paving, tree pits and attenuation tanks. These combined measures have been incorporated in line with the SUDS hierarchy, and provide attenuation and interception as well as improving water quality and biodiversity
- The scheme is seeking to balance a high level of greening wherever possible in the streetscape, public and communal spaces with a high level of usefulness and accessibility. This varies from space to space depending on their role, capacity and constraints, but is being addressed as part of a holistic, phase-wide strategy.
- The site will achieve an urban greening factor of 0.38

Water and Surface Water Run-off

The Proposed Development is targeting a maximum residential mains water consumption of 105 litres/person/day through a fittings-based approach. Leakage and water consumption across the development will also be monitored to reduce water consumption further. Green roofs, permeable paving and tree pits are also included within the proposals. The design allows rainwater harvesting to be incorporated in later stages to help reduce potable water consumption.

Materials and Waste

Both a Circular Economy Report and Whole Life Carbon Assessment have been prepared to accompany this planning application.

The proposed development aims to divert 95% (either by volume or tonnage) of all demolition, construction and excavation waste from landfill to be reused and/or recycled. A Resource Management Plan (RMP) will be developed to monitor and track waste generated during the construction process.

The Whole Lifecycle Carbon (WLC) performance of the proposed development (Modules A1-A5) is 715kgCO_{2e}/m². The scheme incorporates a range of measures to reduce WLC, including the following:

- A 20% GGBS, 20% recycled aggregate base concrete mix (although mix may vary depending upon application);
- 30% recycled content in façade elements
- 15% recycled content in internal partitions drylining
- Rationalised structural design to reduce material volumes
- Focus on sustainable and considerate finishes specification and procurement.

A number of further initiatives have been identified as to be explored further during Stage 4 as the design develops.

Transport

The Proposed development offers new pedestrian pathways, better connections, and traffic considerations to minimise negative health impact to the Site. Vehicular access to the site has been carefully developed to minimise vehicle traffic movements within the site. There will be 16 EV charge points.

Cycle parking (1124 long stay and 62 short stay cycle parking spaces) is provided as per London Plan requirements. Cycle and pedestrian permeability are encouraged through a new east/west walkway, the 'Community Spine', and a new London Cycle Hire docking station will be provided to accommodate 30 cycles at the southern boundary of block 5a to the east of Thurlow Square.

Community

A robust engagement and consultation programme was conducted by Soundings, in partnership with Notting Hill Genesis and the London Borough of Southwark. The focus of the engagement has been to gather local insights and knowledge from residents and stakeholders in and around the Phase 2B area throughout the design process, while aspiring to deliver more affordable homes, better connections and active travel options.

Play space has been designed integrating all the inputs from the local community following a series of consultation and workshops. The Proposed

Development offers a new public realm with open active spaces and multi-use games area.

Resident growing beds have been included in all courtyards as well as areas of edible/forage-able hedges and shrubs in the 5C garden and Bagshot Park.

Table 2 Planning policies and Aylesbury Sustainability Framework

	Climate change risk adaptations	Energy and As-Built Performance	Water and Surface water run-off	Health and wellbeing	Materials, circular economy and waste	Transport	Nature, Landscape and Biodiversity	Communities
The London Plan – the Spatial Development Strategy for Greater London (March 2021)								
Policy GG6 - 'Increasing Efficiency and Resilience'	✓							
Policy SI1 - 'Improving air quality'				✓				
Policy SI2 - 'Minimising greenhouse gas emissions'		✓						
Policy SI3 - 'Energy Infrastructure'		✓						
Policy SI4 - 'Managing heat risk'	✓							
Policy SI5 - 'Water Infrastructure'			✓					
Policy SI12 - 'Flood Risk Management'	✓							
Policy SI13 - 'Sustainable Drainage'	✓							
Policy SI4 - 'Reducing Waste and Supporting the Circular Economy'					✓			
Policy S4 - 'Play and Informal Recreation'								✓
Policy G1 - 'Green Infrastructure'							✓	
Policy G4 - 'Open Space'							✓	
Policy G5 - 'Urban Greening'							✓	
Policy G6 - 'Biodiversity and access to nature'							✓	
Policy T5 - 'Cycling'						✓		
Policy T6 - 'Car Parking'						✓		
Policy D6 - 'Housing Quality and standards'								
Policy D7 - 'Accessible housing'				✓				
Policy D14 - 'Noise'				✓				
London Borough of Southwark (New Southwark Plan 2022)								
Policy SP6 - 'Climate Emergency'	✓	✓						
Policy SP5 - 'Thriving neighbourhoods and tackling health inequalities'						✓		
Policy P.60 - 'Biodiversity'							✓	
Policy P.61 - 'Trees'							✓	
Policy P.62 - 'Reducing Waste'					✓			
Policy P.65 - 'Improving air quality'				✓				
Policy P.66 - 'Reducing noise pollution and enhancing soundscaped'				✓				
Policy P67 - 'Reducing water use'			✓					
Policy P.68 - 'Reducing flood risk'	✓							
Policy P.69 - 'Green Infrastructure'								
Policy P.70 - 'Energy'		✓						

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2.0 INTRODUCTION

2.1 Aylesbury Estate Redevelopment and Phase 2B

The Site is in the southeast of the Aylesbury Regeneration Area. The principle of the regeneration of this area has been established within local planning policy and through the grant of outline planning permission (reference 14/AP/3844) for the phased redevelopment of the Aylesbury Estate to provide a mixed-use development of up to 2,745 residential units, employment, retail, and community floorspace.

The Site sits within the existing street pattern and comprises the land bound by Kinglake Street to the north, Bagshot Street to the east, Albany Road to the south and Thurlow Street to the west. As set out within the Southwark Plan (2022), the Site is within an area designated as the Aylesbury Area Action Core - Phase 2. The Site comprises the southern part of Phase 2, and for the purposes of this planning application, including pre-application consultation, is known as Phase 2B.

While much of the Site sits within the boundary of the outline planning permission, the proposed development is a standalone scheme which builds upon the principles established within the masterplan and comprises a high-quality mixed-use development that will contribute towards the regeneration of the wider Aylesbury Estate.

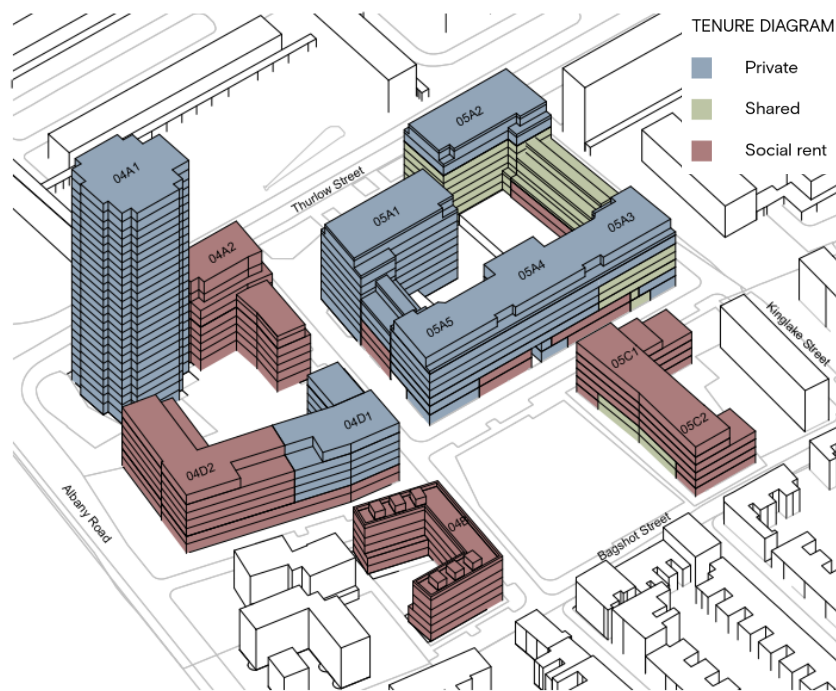


Figure 3 Axonometric view of Phase 2B looking North West

The proposed description of development is demolition of the existing buildings and redevelopment to provide a mixed use development comprising five buildings of a variety of heights with basements, providing affordable and market homes (Class C3); flexible floorspace for commercial, business and service uses (Class E) and local community and learning uses (Class

F1/F2(a)(b)); public open space and playspace; private and communal amenity space; formation of new accesses and routes within the site; alterations to existing accesses; and associated car and cycle parking; refuse storage; hard and soft landscaping and associated works.

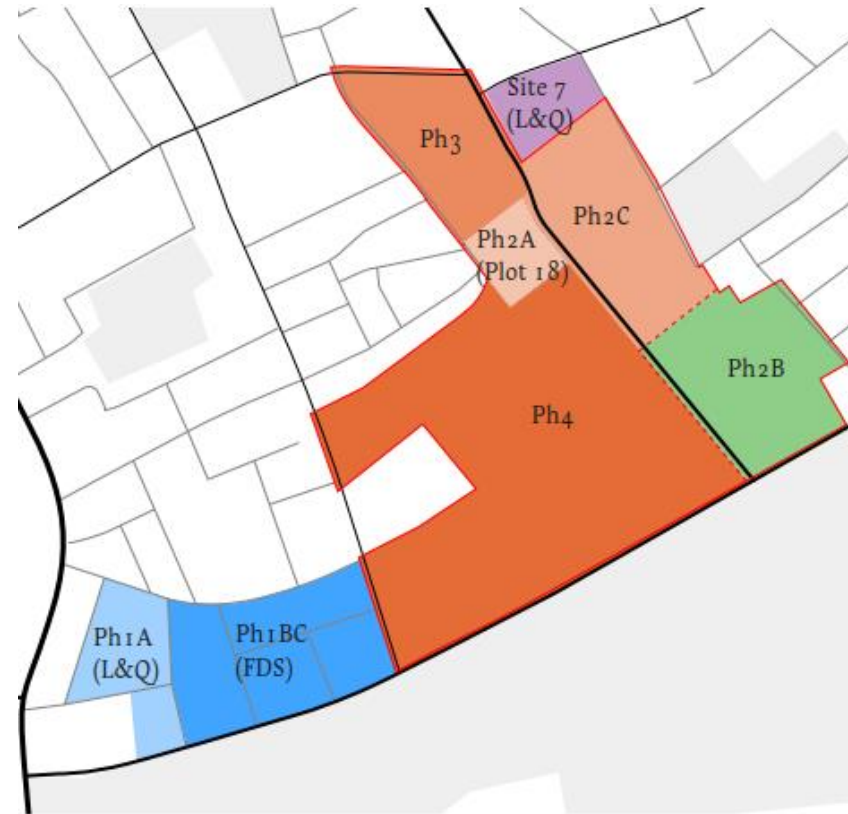


Figure 4 Phasing diagram - Phase 2B indicated in green

In summary, the scheme will provide:

- A new public realm for the existing and future demand and small commercial units to meet local demand
- a positive impact on the lives of residents and the local context ensuring a positive legacy for Southwark council
- new safe and secure neighbourhood with a sense of place and belonging
- a sociable public realm and entry sequence which encourages integration of new and established residents
- maximise their utility, efficiency and minimise future maintenance
- 50% private sale (NDSS standards);
- 38% social rent (AAC standards);
- 12% shared ownership (NDSS standards) – check with ML
- 20% maisonettes
- 10% wheelchair accessible units

2.2 Sustainability Statement

This sustainability statement details the proposed sustainability strategies for the Proposed Development and describes how the proposed scheme fulfils the measures set out in legislation and that of the required planning policy.

The key sustainability drivers for the design are:

- Net Zero Carbon
- Reduce the risk of fuel poverty
- Low cost, easily operable homes
- Healthy and inclusive homes that promote wellbeing
- High Quality Design
- Longevity & Durability
- Climate resilience
- Development that promotes an active lifestyle

3.0 RESPONSE TO SUSTAINABILITY POLICY

3.1 Energy and As Built Performance

Demand reduction (Be Lean)

In Response to London Plan Policy GG6 'Increasing Efficiency and Resilience' and SI2 'Minimising Greenhouse Gas Emissions'; and the Southwark Plan Policy P.70 'Energy'

Demand reduction measures used in the Be Lean stage include passive enhancements such as:

- Optimising building form, orientation and site layout
- Use of natural ventilation
- Maximising day lighting
- Use of high-performance triple glazing
- Optimising glazing ratio and use of solar shading.
- Significant enhancement to thermal insulation and improvements to U-Values compared to part L 2013 and interim part L 2021.
- Significant improvements to fabric air permeability
- Minimising thermal bridging

The architectural design considers the buildings' orientation and site layout to optimise natural ventilation and lighting, while preventing overheating through the use of thermal mass and solar shading.

High performance building fabric has been specified including an air permeability of 3 m³/h.m² @ 50 Pa and efficient U-Values as shown in Table 33. An exercise has been carried out to ensure that glazing proportions achieve a balance between heat loss, heat gains, daylighting, and ventilation whilst meeting the Be Lean targets. The below targets will be reviewed and detailed during the relevant stages.

Table 3 Proposed building fabric performance

Table 11: Typical building fabric performance targets

Element	Proposed Performance	
	Residential	Commercial
External walls	0.15 W/m ² .K	0.15 W/m ² .K
Walls to unheated spaces	0.2 W/m ² .K	0.15 W/m ² .K
Roofs	0.11 W/m ² .K	n/a
Ground floor	0.11 W/m ² .K	0.11 W/m ² .K
Separating floor (between residential and commercial)	0.12 W/m ² .K	0.15 W/m ² .K
Windows	0.8 W/m ² .K and G Value – 0.4	1.4 W/m ² .K and G-Value – 0.4
Doors	1.0 W/m ² .K	1.0 W/m ² .K
Air Permeability	3.0 m ³ /h.m ² at 50 Pa	3.0 m ³ /h.m ² at 50 Pa
Thermal bridging	0.12	0.12
Glazed area/Façade Area	Approximately 40%	Approximately 45%

Following the application of passive design measures, active design measures have been applied to further reduce the energy demand and CO₂ emissions. Active design measures considered include the following:

- Use of mechanical ventilation with heat recovery (MVHR) system with summer bypass
- Installation of low energy LED lighting with photocell/timer clock/presence detection controlling where possible
- Use of smart meters for heat and electricity networks
- Use of programmable thermostatic controls with individual zone control for heating and hot water
- Provision of Building Management System (BMS) for central plant metering and controls
- Use of variable speed pumps and fans for heating/cooling
- Optimal distribution temperatures and use of enhanced thermal insulation for heating pipework to reduce distribution losses

The Be Lean improvements result in a 16% improvement in Regulated CO₂ emissions for the residential scheme, and a 32% improvement for the commercial spaces, meeting the targets set out in London Plan.

Heating Infrastructure (Be Clean)

In response to London Plan Policy SI3 'Energy Infrastructure' Policy GG6 'Increasing Efficiency and Resilience' and SI2 'Minimising Greenhouse Gas Emissions'; and the Southwark Plan Policy P.70 'Energy'

The potential to connect to an existing heat network was investigated in the production of the outline planning application. This concluded that connecting to an existing heat network such as SELCHP and planned Haygate was not feasible due to the distance, related cost and available capacity. SELCHP have also confirmed through correspondence that the project cannot connect to their network (Figure 4).

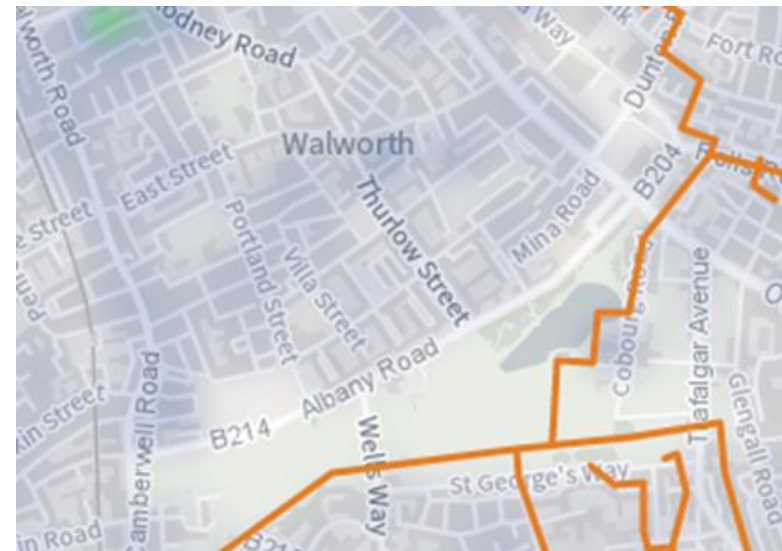


Figure 5: Proposed heat network (SELCHP) from London heat map in relation to Albany Road and Thurlow Street

Therefore, the development was identified as a development in an HNPA but no firm plans for a heat network currently exists as outlined in energy assessment guide.

The proposal for this development is to provide an energy centre to serve the whole of the application site. The intention is that this would be connected up to the heat networks that serve each of the subsequent phases, such that one large heat network will exist across all of the later phases of the Aylesbury Estate Regeneration masterplan.

Renewable Energy (Be Green)

In Response to London Plan Policy SI2 'Minimising Greenhouse Gas Emissions' the Southwark Plan Policy P.70 'Energy'

The opportunities for producing, storing, and using renewable energy on-site will be maximised. The design team carried out an assessment of what LZC Technologies were feasible for the scheme.

Following the analysis a district heating system comprising of communal air source heat pumps (ASHP) coupled with dwelling heat interface units (HIUs), as well as roof mounted solar photovoltaic (PV) panels have been identified as suitable renewable technologies for the proposed heat network.

It is estimated that available roof area would enable installation of a solar PV array up to a capacity of 184 kW_p as shown in Figure 10



Figure 6 Solar PV installations areas shown in blue Note - the areas shown above are the gross areas of roof that will have PV panels on them, not the actual areas of PV panels themselves. Regulated CO₂ emissions for the residential scheme following the application of Be Green measures, achieve a 63% improvement over the baseline, while the commercial spaces achieve a >40% improvement.

Application of the Be Lean, Be Clean and Be Green energy hierarchy to the development has resulted in a 63% and >40% reduction of CO₂ emissions over

Building Regulations Part L 2013 targets for residential and commercial schemes respectively. The Energy statement provides further details on the carbon savings at each stage of the hierarchy.

The development aims to be zero carbon for both the residential and commercial schemes. The site wide cumulative shortfall of carbon dioxide emissions would be met through a Carbon offset payment to Southwark Council's carbon offset fund. Refer to the Energy statement for more information.

Post Occupancy Evaluation - POE (Be Seen)

In Response to London Plan Policy GG6 'Increasing Efficiency and Resilience' and SI2 'Minimising Greenhouse Gas Emissions'; and the Southwark Plan Policy P.70 'Energy'

Post occupancy evaluation will be carried out on the development in accordance with the London Plan and Southwark Plan policies. The building's energy performance will be monitored post-construction through the installation of smart meters for heat and electricity networks which would enable occupants to monitor, manage and reduce their energy usage. In addition, a Building Management System (BMS) for the energy centre would be provided which will facilitate monitoring, managing and control of central plant.

For further detailed information on the Energy Strategy, refer to Max Fordham Energy Assessment Report (AER-MXF-Ph2B-XX-RP-J-900002).

Service Charge

Notting Hill Genesis provides a transparent service on its developments, which helps residents understand and engage with their energy use.

In pursuit of maintainable, efficient solutions, the design team has communicated with maintenance and facilities teams during design reviews to enable lessons learnt and help to reduce energy demand in-use. This informs the maintenance and facilities teams, better allowing them to run the building after it is handed over.

3.2 Climate Change Risk Adaptations

Mitigating overheating

In Response to London Plan Policy GG6 'Increasing Efficiency and Resilience' and SI4 'Managing Heat Risk', and Southwark Plan Policy SP6 - 'Climate Emergency'

Potential overheating risk has been identified early in the design process and suitable passive measures have been incorporated within the building envelope and services design to mitigate overheating and reduce cooling demand.

Cooling hierarchy

The cooling hierarchy in Policy SI 4 of the London Plan has been applied to the development. The following measures have been incorporated to reduce demand for cooling:

- Reduce the amount of heat entering the building through orientation, shading, high albedo materials, fenestration, insulation and the provision of green infrastructure
- Minimise internal heat generation through energy efficient design
- Manage the heat within the building through exposed internal thermal mass and high ceilings
- Passive ventilation
- Mechanical ventilation
- Active cooling systems

Overheating modelling and risk analysis

In order to identify key factors contributing to overheating risk, and possible mitigation measures, the GHA Early Stage Overheating Risk Tool has been completed and Detailed analysis of the risk of overheating has also been undertaken in line with the guidance in CIBSE TM59 and TM49.

The analysis demonstrated that, through the use of passive design measures, the proposed development passes the requirements of CIBSE TM 59 and TM49. Passive measures such as rationalised glazing design and specification, reveal depths, shading from balconies, and solar control glazing have been incorporated as baseline measures to minimise the need for active cooling. The majority of windows are fully openable, in order to optimise the passive ventilation capabilities of the dwellings, and the mechanical ventilation with heat recovery (MVHR) system incorporates a summer bypass and boost setting to mitigate night time overheating.

The development meets CIBSE compliance criteria for the DSY1 weather scenario, however when assessed against DSY 2 and DSY 3, it is expected that a number of the spaces fail at least one criterion.

For further detailed information on the overheating risk analysis, refer to Max Fordham's Energy Assessment Report (AER-MXF-Ph2B-XX-RP-J-900002).

Flood Risk

Responding to London Plan Policy SI12 'Flood Risk Management' and Southwark Plan Policy P.68 - 'Reducing flood risk'

The Site is in Flood Zone 3, which is defined as having a 1 in 100 or greater annual probability of river flooding. Flood Zone 3 currently is benefitting from flood defences. This Flood Zone is located within an area benefitting from flood defences. Therefore, the Site is considered to be at extremely low residential risk of tidal flooding from the River Thames.

The London Borough of Southwark's map of areas at risk of flooding from groundwater shows that the Site has a 'potential for groundwater flooding to occur on the surface'. A ground investigation carried out by Hydrock (2021) concluded that the recorded groundwater levels were significantly below ground level and the risk of groundwater flood is considered to be low. The Proposed Development will include suitable waterproofing to prevent any ingress of groundwater under 4A and 4D basement levels.

The Environmental Agency's Indicative Surface Water Flooding Map shows that the majority of the Site is within the 'Very Low' risk of surface water flooding, however some areas of the surrounding public highways (including Bagshot Street and Albany Road9 are shown to be at 'high' risk. As a response, the external levels will be designed to drain away from the building, and a new drainage system, including Sustainable drainage, will be

constructed to prevent off-site 1 in a 100-year flooding. The design takes into account of the impact of climate change.

The Proposed Development will provide attenuation storage with volume required to accommodate the 100 years plus 40% climate change storm event in a below ground drainage strategy.

For the full assessment and mitigation strategies, refer to the Price & Myers Flood Risk Assessment and Drainage Strategy (AER-PAM-Ph2B-ZZ-RP-C-00001)

3.3 Health and Well-being (including Air Quality)

Noise Impact

Responding to London Plan Policy D14 - 'Noise' and Southwark Plan Policy P.66 - 'Reducing noise pollution and enhancing soundscapes'

Following the requirements given in *Technical Guidance for Noise*, published by the London Borough of Southwark, noise emissions from plant equipment from the Proposed Development are to be designed such that:

- The sound rating level does not exceed the typical minimum $L_{A90,15min}$ background sound level at any time
- The unrated specific sound level does not exceed 10dB below the typical minimum $L_{A90,15min}$ background sound level at any time

Plant equipment specifications for all parts of the scheme are not finalised at the time of the planning submission, and so a detailed plant noise analysis is not undertaken at this stage, however the equipment will be selected to comply with (anticipated) planning conditions, and the impact of this scenario is assessed.

For more information refer to Chapter 9, Noise and Vibration, from the Environmental Impact Assessment.

Air quality

Indoor air quality

The project specification will improve indoor air quality by preventing the specification of the following materials:

- Urea formaldehyde in foams or other materials which may release gases in quantities which may be hazardous with reference to any limit set by the Health and Safety Executive;
- Plywood or sheet materials with glues, resins and surface treatments that produce irritant volatiles;
- Plastics for water storage and delivery that release toxic materials
- Materials including or requiring chlorofluorocarbons (CFCs) or hydrofluorocarbons (HFCs) in their manufacture or any other such materials prohibited by the Montreal Protocol;
- PTEE fabrics;

Outdoor air-quality

Responding to London Plan Policy SI1 'Improving Air Quality', and Southwark Plan Policy P.65 - 'Improving air quality'

An air quality assessment has been carried out to consider the potential air quality impacts and likely effects in the construction and operational phases of the Project.

For the construction phase, the impacts from dust and PM10 emissions were assessed. Mitigation will be required to ensure no adverse significant effect due to dust and PM10 emissions during the construction phase. With appropriate mitigation in place, all impacts are anticipated to be negligible. This mitigation will be secured by planning condition and accord with the Mayor of London's SPG requirements to address dust and PM10 emissions.

The potential air quality impacts on NO2, PM10 and PM2.5 concentrations due to road traffic emissions during the construction phase were assessed, assuming peak construction activities in 2025 and Block 4D completed and occupied. These impacts were determined to be negligible, with no significant adverse effect. Future receptors were found to meet London Councils' APEC A level, indicating acceptable air quality.

The potential air quality impacts on NO2, PM10 and PM2.5 concentrations due to road traffic and energy centre (gas boiler) emissions in the operational phase were assessed. These impacts were determined to be negligible, with no significant effect, even assuming worst-case boiler operations to provide 100% of the heat and hot water demand. These impacts were determined to be negligible, with no significant adverse effect. Future receptors were found to meet London Councils' APEC A level, indicating acceptable air quality.

With regard to the London Plan Policy SI 1 the Project was determined to be air quality neutral, in accordance with the Mayor of London's guidance.

For more information, refer to Chapter 6 of the Environmental Statement.

Inclusivity and Access

In Response to London Plan Policy D7 - 'Accessible housing'

The Proposed Development is designed with all building users in mind, creating a sense of inclusivity and community. The social sustainability strategy, as proposed by the team, includes:

- the use of appropriate signage. Tactile paving at all crossing points to aid visually impaired movement.
- Footways and paths are being designed to comfortable gradients.
- material treatments for wayfinding and disability issues, such as safe landscaped external spaces. Landscape material strategy to provide safe, accessible surfaces.
- Outdoor spaces to be accessible to people with varied impairments including mobility and visual. The sitewide levels strategy is being developed to allow level thresholds to buildings.
- The arrangement of street furniture and other elements in the landscape are being designed to allow clear accessible routes throughout.
- Mix of seating types in the landscape scheme (with armrests, with backs, higher ledges etc) to provide seating opportunities for different needs.
- Development to provide spaces suitable to different age groups
- Minimum of at least 1no lift (17-person capacity) to serve all floors-supports better accessibility for those with disabilities (wheelchair turning);
- all homes are designed to be accessible and adaptable to meet AD Part M4 (2) standards. In addition, the scheme will provide 10%+ Part M4(3)

wheelchair accessible dwellings in line with The London Plan and current Part M Building Regulations.

Secured By Design Principles have been incorporated into the design to improve safety across the site. Passive surveillance is increased along street frontages to reduce the requirement for CCTV cameras. External private entrances are PAS 24 and ADQ compliant. Accessible windows and external doors will be PAS 24 certified.

For further information refer to the Design and Access Statement Masterplan (MLUK-471A-21-03-220328) and Design and Access Statement – Landscape (Maccreanor Lavington and East Architects)

Internal Daylight

Internal daylighting analysis within the proposed development has been undertaken based on the BRE guidance: Site layout planning for daylight and sunlight: a guide to good practice (BR209).

This document provides a method for calculating the Average Daylight Factor (ADF) within each room. All rooms within the proposed development have been assessed and a high proportion achieve their guideline ADF target. This is a good result for a high density central urban site. For further information, refer to the Waterslade Daylight Assessment.

Internal daylighting analysis has been undertaken with the criteria defined within BS8206 Part 2 'Lighting for Buildings: Code of Practice for Daylighting'. For further information on the external lighting strategy, refer to Design and Access Statement – Landscape (Maccreanor Lavington and East Architects).

External daylight and Lighting

Responding to London Plan Policy T2 'Healthy Streets'

Planning for appropriate levels and areas of darkness should be an intrinsic part of public realm lighting design. The external lighting strategy is being developed to ensure it does not compromise safety, security, and light pollution.

The Proposed Development is located in an urban area, so the scope for significantly dark areas is limited to modest soft-landscaped areas such as the courtyards, as long as it does not compromise safety and security. On the vertical plane, care will be taken to ensure extraneous lighting doesn't significantly impact on residential properties, especially bedrooms, or above a modest height, such as second storey.



Figure 7 Indicative Street Light Layout (Landscape Design and Access Statement, EAST Architects)

External daylighting proposals satisfy the BRE guidance: Site layout planning for daylight and sunlight: a guide to good practice (BR209).

A detailed assessment of the levels of external daylight, sunlight and overshadowing in the existing baseline have been analysed and compared to the levels following the construction of the Project. The Project will result in Negligible to Minor Adverse effects to the majority of properties, with a few isolated instances of Moderate effects. Given the scale of the massing proposed and the urban context of the site, these effects are likely to be unavoidable in relation to new development. The sunlight amenity within the project will be good and all residents will have access to reasonable levels of sunlight, especially in the summer months when the amenity areas are most likely to be used.

The development of the proposed scheme has involved a carefully considered effort from the project team to respect the daylight and sunlight amenity enjoyed by the existing neighbouring buildings. Daylight and sunlight have also been considered in conjunction with other competing constraints to ensure that the site potential is optimised. The design has gone through various iterations with development at each stage to minimise the overall impact on existing neighbours. As a result, the majority of residential dwellings surrounding the site will continue to enjoy good levels of daylight and sunlight for a central urban environment, which clearly follows the intentions of the BRE Guidelines.

3.4 Nature, Landscape & Biodiversity

Public Realm Design

Responding to London Plan Policy G1 'Green Infrastructure', Policy G4 'Open Space', Policy G5 'Urban Greening', and Southwark Plan Policy P.60 - 'Biodiversity', Policy P.61 - 'Trees', and Policy P.69 - 'Green Infrastructure'.

The landscape and public realm proposals aim to provide the spatial infrastructure for a sustainable, robust and enjoyable residential neighbourhood that is actively rooted in its local context. The aspiration is to provide a landscape that supports the lives of those living within Phase 2B and enhances the experience of those visiting or passing through to surrounding neighbourhoods and amenities.

The proposals are structured around two new public spaces – a neighbourhood square and a neighbourhood park – providing over 4,000m² of new public space and retaining a number of existing trees. Around the edges the proposals tie in with existing uses and spaces, especially cycle routes and the strategy for an improved Bagshot Street that provides a green connection between Burgess Park and Surrey Square Park. Figure 8 overleaf shows an overview of the landscape proposals.

The proposals are knitted together with a network of new SSDM compliant tree-lined streets. The new streets connect existing and new routes with an emphasis on providing a high-quality environment for pedestrians and cyclists.

The development plots are tailored to the potential and architectural ambitions of their specific location within the site. Collectively these spaces will offer a unique identity to each block and contribute to a rich and diverse landscape offer across the neighbourhood.



Figure 8 Isometric view of Landscape design on Phase 2B

Retained Trees

Responding to London Plan Policy G5 'Urban Greening' and Policy G7 'Trees' and London Borough of Southwark (Southwark Plan 2022) Policies Policy P.60 - 'Biodiversity' and Policy P.61 - 'Trees'.

There are a number of trees on the site that can be retained in the current scheme. Most notably, larger retained specimens include a cluster of London plane trees along Thurlow Street and a particularly attractive London plane marking the junction of Thurlow Street and Albany.

- Thurlow Square and Thurlow Street: Existing trees retained with new planted 'street garden' understory planting.
- Bagshot Park and Bagshot Street: Existing mature tree retained
- Albany Road: Existing London plane tree retained with new understory planting

Urban Greening Factor

Responding to London Plan Policy G5 'Urban Greening' and Southwark Plan Policy P.69 - 'Green Infrastructure'.

Policy G5 of the London Plan requires Urban Greening to be integral to the planning and design of new developments.

The London Plan states that 'Boroughs should develop an Urban Greening Factor (UGF) to identify the appropriate amount of urban greening required in new developments'. For residential-led developments the target is 0.4. Discussion with the GLA early design development of Phase 2B noted a score of 0.375 would be considered acceptable given the specific limitations of the scheme with regards to access and adoptable highways. The scheme is achieving a score of 0.38.

The Proposed Development includes wide range of contributors including intensive green roofs, an attenuation swale, rain gardens, areas of semi-natural habitat planting, areas of flowering, ground cover and grass planting, climbing plants, permeable paving where possible and appropriate and extensive new tree planting.

Biodiversity and Green Infrastructure

Responding to London Plan Policy G6 'Biodiversity and Access to Nature', London Borough of Southwark (New Southwark Plan) Policies Policy P.60 - 'Biodiversity'.

The NERC Act 2006 places a duty on public authorities to consider biodiversity in development. Policy G6 of the London Plan states that boroughs should apply policies that "support the protection and conservation of priority species and habitats".

Biodiversity improvements are being pursued through a wide-ranging mix of planting species across the scheme as well as consciously making space for wildlife within the landscape. This includes both tailoring the mix of and distribution of planting species (hedges and trees in particular) to support local wildlife – including supporting established local habitats in Burgess Park – and establishing habitat areas within the scheme. The latter includes dedicated areas with restricted human access (other than maintenance) to enable undisturbed areas of unmown grass and logpiles. Further to this, nectar-rich flowering species are proposed in both the low-level and climbing plant palettes. Green roofs on all blocks further support invertebrate life across the scheme.

New species have been selected for their ability to thrive in semi-urban conditions, including drought and pollution tolerance. Increasing seasonal variety will ensure the planting looks good year-round.

A habitat corridor is proposed for plot 4B. In this area re-use of existing soils and recycled crushed brick rubbles and organic material provides a free draining, low-nutrient and moisture-retentive growing medium. This allows wildflowers to flourish and establish healthily to create an open mosaic habitat, a priority habitat identified in the Southwark Biodiversity action plan. The habitat corridor will include habitats for wildlife such as log piles, biodiverse meadows, bird, bee & bat homes.

Biodiversity Net Gain

Thomson Environmental Consultants have conducted a Biodiversity Net Gain calculation for the proposed landscape scheme, showing a 38.97% net gain in area based habitats and 100% gain in hedgerows habitats. This exceeds the 10% net gain requirement detailed within the Environment Act 2021 and provides a net gain in line with relevant planning policy.



Mixed herbaceous planting with good seasonal interest and biodiversity value, and including native species. Shade tolerant where under trees.

Wildflower Meadow Mixes

Figure 9: Examples of planting to increase biodiversity.

3.5 Water and Surface Water Run-off

Water Efficiency

Responding to London Plan Policy S15 'Water Infrastructure' and Southwark Plan Policy P67 'Reducing water use'

The development is targeting a mains water consumption of between 100 and 105l/person/day. This is consistent with building regulation AD G2 requirement and current London Plan policy S15 'Water Infrastructure'

A fitting based approach will be used to determine the water consumption of the development.

The following are suggested flow rates which would meet the 105l/person/day requirement:

- Dual flush WC (6 litre / 3 litre);
- Max 3.5 litre/min wash hand basin taps;
- Max 8 litre/m shower;
- Max 171 litre capacity bath;
- Max 8 litre/min kitchen taps;
- Dishwasher with 1.3 litre/place setting (where provided);
- Washing machine with 7 litre/kg dry load (where provided).
- Cleaner's sink tap flow rate 5 litres/minute

These will be used to inform the selection of fittings at subsequent design stages.

Sustainable Urban Drainage Systems (SUDS)

In Response to London Plan Policy S13 'Sustainable Drainage', and Southwark Plan Policy P.68 - 'Reducing flood risk'

In accordance with the London Plan, EA guidelines, Southwark Council's Guide for Surface Water Management and CIRIA documents, surface water run-off should be managed as close to its source as possible. The London Plan states that all new developments should aim to reduce run-off to greenfield rates "utilising SuDS unless there are practical reasons for not doing so".

The strategy for the proposed sustainable drainage system has been developed in consideration of the 'drainage hierarchy' of The London Plan policies, and the Southwark Plan P67.

The proposed landscape, levels and drainage strategies work together to direct surface water runoff away from buildings and towards SuDS features throughout the site. The SuDS features will serve to improve biodiversity within the site and filter surface water runoff that drains to the local sewer network.

Infiltration testing to BRE365 was carried out in two site locations at 3m depth. The results of the testing showed that the infiltration rate was very poor and therefore it is not viable to dispose of surface water via soakaways. It is proposed to provide the attenuation storage volume required using a below ground attenuation tank and a swale with an underdrain. Green roofs, permeable paving and tree pits are also included within the proposals.

SuDS Method	Area Used on site:	Comment:
Swale	External	Provides attenuation, interception, improves water quality and biodiversity.
Green Roofs	Building Roofs	Provides interception and improves biodiversity.
Permeable Paving	Parking Bays	Provides interception and improves water quality.
Tree Pits	Beneath Parking Bays	Provides attenuation, interception and improves water quality.
Attenuation Tanks	External	Provide attenuation

Figure 10 Summary of SuDS Methods used on site



Figure 11 Example images of rain gardens and SUDS paving
The drainage system exceedance flows have been assessed for events that exceed the critical storm event and in the event that the drainage system

fails. The external levels have been designed to slope away from the building entrances to reduce the risk of flooding in an exceedance event.

For further information refer to Price & Myers Flood and Drainage Report (AER-PAM-PH2B-XX-RP-S-00005)

3.6 Materials and Waste

Circular economy

Responding to London Plan Policy S17 – 'Reducing Waste and Supporting the Circular Economy' and Southwark Plan Policy P.62 - 'Reducing Waste'

The project has adopted Circular Economy (CE) principles and carried out a Whole Life Cycle Carbon Assessment in order to adopt a sustainable strategy for materials and waste.

The following key circular economy strategies have been developed for the project:

- Prioritise robust and durable materials to ensure longevity, and consider how these can be re-used or recycled at end-of-life;
- Reduce energy and water consumption, both in-use and during construction, as far as possible.
- Maximise material efficiency in the design through energy and structurally efficient designs, and specifying recycled content in materials;
- Sourcing materials responsibly and sustainably;
- Design for flexibility in commercial spaces by designing to shell only specification;
- Minimise construction, excavation and demolition waste being sent to landfill (5% maximum); and,
- Follow the waste hierarchy and provide adequate space and facilities to segregate waste streams and divert as much waste from landfill as feasible.



Figure 12: The waste hierarchy has been followed in developing the proposed development's waste strategy

Currently the Proposed Development seeks to incorporate materials with at least 20% recycled content.

Areas where circular economy principles have been applied include, but are not limited to:

- Demolition materials to be crushed and reused onsite where feasible.
- Minimisation of water and energy use during construction through management procedures and monitoring; and in-use through low carbon design and specification of energy and water efficient equipment.
- Optimising the concrete design to maximise recycled content (subject to availability), and to reduce required cement and water content
- Rationalised, stacked structural grid to minimise transfer structures and the associated concrete volume.
- Materials selected for longevity and durability as well as recoverability and recyclability at end of life;
- Consideration of offsite prefabrication of a number of elements; and,
- Efficient segregation and processing of waste streams, both in construction and in use, through site waste management plans, construction environmental management plan and operational waste management plan, and targets to divert waste from landfill in line with policy.

Commitments have been made to source materials with recycled content as follows:

- A minimum of 20% of road construction material shall be sourced from reclaimed or recycled material.
- Other hard landscaping materials shall be 25% recycled or reclaimed content.
- The concrete will include 20% GGBS – this could increase if higher amount of cement replacement is available prior to construction.
- The recycled content of steel reinforcement will be 20 %; (industry average)
- The façade elements are targeting between 18 and 30% recycled content
- Partitions are targeting 20% recycled content
- Fit-out items shall be considered for recycled content in the detailed design, with an initial target of 20% recycled content.

For detailed information on the Circular Economy strategy for the scheme refer to Max Fordham's Circular Economy Statement.

Embodied Carbon

Responding to London Plan Policy S12 'Minimising Greenhouse Gas Emissions'

As per London Plan requirements for GLA referable development a full, RICS compliant Whole Life Carbon (WLC) assessment has been undertaken for the Proposed Development. As part of the WLC analysis the embodied carbon of the Proposed Development was assessed with the aim of implementing measures to reduce its impact. The Whole Lifecycle Carbon (WLC) emissions of the proposed development are shown in Table 4 below. The emissions for Modules A1-A5 are 715kgCO₂e/m²GIA. Table 4 shows that the results are at the lower end of the GLA WLC benchmarks for typical residential development, but outside the GLA WLC Aspirational benchmarks.

Table 4 Estimated WLC emissions

	Module A1-A5	Module B-C (excl. B6, B7)	Module A-C (excl. B6, B7)
TOTAL kgCO₂e/m² GIA	715	320	1015
WLC Benchmark	< 850	< 350	< 1200
Aspirational WLC Benchmark	< 500	< 300	< 800

A 'base case' was developed based on the RIBA Stage 2 cost plan looking at block by block basis. This was presented to the Project Team at a dedicated workshop and measures discussed to reduce the proposed development's embodied carbon. The following measures were implemented as a result of this process:

- A 20% GGBS, 20% recycled aggregate base concrete mix (although mix may vary depending upon application);
- Recycled content in façade elements; and
- Focus on sustainable and considerate internal finishes specification and procurement.

Further measures have been identified that could reduce the associated embodied carbon:

- 40% GGBS replacement
- Reduce the area of suspended ceiling systems
- Include recycled content in floor screed
- Include crushed aggregate in landscape

Material Selection

The scheme is driven by the desire to create high quality background architecture made of robust, durable and affordable materials that weather well and age gracefully over time.

3.7 Transport

The Ph2B site has been developed with the likely future resident's travel behaviours in mind. The site is well located providing future residents, visitors, and employees the choice to travel sustainability. The site has also been designed to encourage walking and cycling with good connections to the surrounding areas and illustrates good planning for people. More detail on the following sections is provided in the RPS Transport Assessment (AER-RPS-Ph2B-ZZ-RP-D-90002).

Healthy Streets

Responding to London Plan Policy T2 'Healthy streets' and London Borough of Southwark (Southwark Plan 2022) Policies P45 'Healthy Developments' and SP5 'Thriving neighbourhoods and tackling health inequalities'.

Pedestrian access improvements that are being implemented as part of the development are delivered through a comprehensive re-design of the area to pedestrian friendly streets. The proposals introduce a grid network of streets and improve the permeability of site for pedestrians and cyclists, also

removing the existing barriers to movement created by the linear tower block on Thurlow Street and the block on Bagshot Road.

The existing sections of footways around the development will be improved in terms of width, and include the provision of trees and planting to provide a more pedestrian friendly environment. In addition, the existing streets will be resurfaced in accordance with the pedestrian and cycle delivery plan.

The existing streets that form the quadrant around the site, the proposed changes to these streets and the proposed new street have been assessed against the 10 Healthy Streets indicators using the TfL Healthy Streets Check for Designers (HSCD) tool. The HSCD indicates that the existing streets will be significantly improved to address existing constraints. The design of the new sections of Mina Road and Alvey Street both achieve excellent HSCD scores and will encourage active travel. The Ph2B development will comprehensively address the existing poor and confusing street layout, by creating streets and public realm where the needs of pedestrians and cyclists are prioritised over the private car.



Figure 13 Proposed site public realm and highway network layout

Vehicular Access & Parking

Responding to London Plan Policy T6 'Car Parking' and the Southwark Plan Policy P54 'Car Parking'

The vehicular access to the site has been carefully developed to minimise vehicle traffic movements within the site. The primary vehicular movements through the site will be access for parking, loading and servicing and through movements to Kinglake Street, Smyrk's Road and Mina Road.

The proposed development will be served by 41 on-plot car parking spaces, 32 on-street parking spaces within the new public realm and 6 on-streetcar club spaces. This results in an overall parking provision of 79 spaces. This provides an overall parking provision of 1 space per 0.13 dwellings, which is significantly below the consented scheme provision (which allows for 1 space per 0.4 dwellings). The development will provide 3 years free Car Club membership via Zipcar (or alternative provider) for every eligible adult residing in a dwelling meeting the Car Club operational membership criteria. The provision of Car Club membership will provide future residents with an alternative to private car ownership and accommodate the need for occasional journeys by car.

It is proposed that the 614 residential dwellings are served by 21 Blue Badge parking spaces which equates to a 3.4% provision. The Blue Badge parking is provided in accordance with the TfL requirements and the approach set out in the Southwark Plan. The podium and basement car parks also provide the ability to provide a total of circa 7% Blue Badge parking spaces if required.

Active Electric vehicle charging facilities will be provided for all 16 on plot parking spaces provided in podium and basement car parks equating to 20% of the total spaces. The remaining private spaces will have passive provision.

The scheme requires 5 loading bays. These have been located on Kinglake Street, Alvey Street and Mina Road, with a double length bay on integrated into the footway extents on Albany Road. A Delivery and Servicing Plan (DSP) has been prepared as separate document to support the planning application for Ph2B development (AER-RPS-Ph2B-ZZ-RP-D-90008). The DSP sets out how the development will enable safe, clean, and efficient deliveries to their site.

Pedestrian and Cycle Permeability

Responding to London Plan Policy T5 'Cycling' and London Borough of Southwark (Southwark Plan 2022) Policy SP5 'Thriving neighbourhoods and tackling health inequalities'.

The public realm will arrange to maximise pedestrian accessibility. Routes will be established that link squares and parks along desire lines creating direct and pleasant walking routes between the new dwellings and key services, such as shops, schools, local bus stops and other facilities.

The primary walking routes are anticipated to be Thurlow Street – as a major route through the local area – as well as Bagshot Street as a key link between parks, and the Alvey Street Extension/Haywood Street as part of a local north-south route. The key pedestrian and cycle improvements are the creation of two new streets bisecting the site east to west and north to south, shown in Figure 14. The Mina Road Extension will provide continuous east-west connectivity from Old Kent Road through Phase 2B.



Figure 14 New streets and public realm

The local streets will also be traffic calmed with all junctions within Phase 2B are designed with raised junctions at intersections, enabling level access across all streets. All crossing areas will feature tactile paving as per LBS SSDM requirements. Existing crossings on Thurlow Street will have new replacement tactile paving as part of the streetscape improvements.

The new sections of footway bounding the development site will be wider and include the provision of tree and planting to provide a more pedestrian friendly environment. In addition, existing footways that form the quadrant around the site will be re-surfaced in accordance with the pedestrian and cycle delivery plan.

Cycle Parking

Responding to London Plan Policy T5 'Cycle Parking' and Southwark Plan Policy P53 'Cycling'

The proposed development will provide dedicated storage in line with the Local Plan. The cycle parking has been designed in accordance with the TfL 'London Cycling Design Standards Chapter 8 Cycle Parking' and comprises a mixture of Sheffield Stands and upper cycle racks and 5% oversized cycle parking for cargo bikes. All homes will be provided with generous cycle storage, with communal cycle stores located conveniently close to shared entrances. Cycle parking will also be located at key destinations around the new development, near entrances to buildings to encourage visitors to cycle.

The short stay cycle parking will be provided in the form of Sheffield Stands spread throughout the public realm, located at key destinations near entrances to buildings to encourage visitors to cycle. In addition, visitor cycle parking will be provided adjacent to the public spaces at Thurlow Square and Bagshot Park

The Ph2B development will therefore provide a new London Cycle Hire docking station to accommodate 30 cycles at the southern boundary of block 5a to the

east of Thurlow Square. The location of docking station will be easily accessible to residents and is near Thurlow Street. The development will also provide all eligible residents with an initial free membership of the Santander Cycle scheme for 2 years. The free membership of the cycle scheme will allow residents to use the bikes for short journeys and hopefully establish and maintain new travel patterns.

Access for mobility impaired

Responding to aspects of the Southwark Plan's Policy P51 'Walking'

The Ph2B site has been carefully designed to accommodate the mobility impaired including:

- 21 blue badge wheelchair accessible car parking spaces. These spaces will all be provided off-street in the under-podium and basement car parks;
- Larger Sheffield stands to accommodate adaptable cycles; and
- Wheelchair accessible bin stores.

3.8 Community

Play Space

Responding to London Plan Policy S4 'Play and Information Recreation', Policy G4 – 'Open Space'

Series of public consultation took place between July 2021 and March 2022. Local community groups from various ages had the opportunity to comment and contribute towards the design of these public realm. In particular – a series of play and ball court sessions were held with local young people inspired the design team to understand the types of play appropriate for the proposed playgrounds on Bagshot Park, Thurlow Square and Kinglake. Some of them include:

- sports pitches for teenagers and young adults
- outdoor spaces which are considerate and safe for girls
- open green spaces which receive a lot of sun

A Social Value workshop was held. Some of the feedback, a summarised below, helped the design team to understand the needs of the wider community

- specific street furniture arrangements that support sociability, publicness or intimacy.
- Proximities and relationships between seating and planting.
- The pleasure of differing views from one location (near and far).
- The significance of experiencing the landscape from different levels.
- Subtleties of physical and visual accessibility)

Resident growing beds have been included in all courtyards as well as areas of edible/forage-able hedges and shrubs in the 5C garden and Bagshot Park.



Figure 15 MUGA Space provision

Community engagement

A robust engagement and consultation programme has been conducted by Soundings, in partnership with Notting Hill Genesis and the London Borough of Southwark, to support the development and design of the Aylesbury Phase 2B Regeneration area.

The focus of the engagement has been to gather local insights and knowledge from residents and stakeholders in and around the Phase 2B area throughout the design process, while aspiring to deliver more affordable homes, better connections and active travel options since the 2016 Aylesbury Estate Masterplan was approved.

A summary of how community feedback has been incorporated into the scheme can be found in the Statement of Community Involvement.

APPENDIX A - POLICIES & REQUIREMENT

The proposed development is submitted within the context of national, regional and local planning policies that seek to address the challenges of climate change and sustainable development. The policies outline how the Government, the Mayor of London, and the London Borough of Southwark are endeavouring to improve the way energy and other resources are used in London's building stock.

3.9 Policy Summary

- **Climate Change Act (2008):** 80% reduction in greenhouse gas (GHG) emissions compared to 1990 levels by 2050.
- **Current 2013 Part L of the Building Regulations for England & Wales:** Sets out maximum levels of CO₂ emissions by comparing the actual buildings, to a notional building.
- **Consideration of High-efficiency Alternative Systems:** Building Standards requires the technical, environmental and economic feasibility of high-efficiency alternative systems such as renewables, cogeneration, district heating and heat pumps to be considered and taken into account.
- **National Planning Policy Framework (2021):** Development to promote healthy and safe communities; encourage sustainable modes of transport and use of technology; support transition to low carbon future; mitigate and adapt to climate change, including taking account of flood risk, water supply and biodiversity; conserve and enhance the natural environment; and facilitate the sustainable use of materials.
- **London Plan:** The energy hierarchy to be followed: be lean, be clean, be green and be seen, all developments to be zero carbon, offsetting can still be used, CHP strongly discouraged due to air quality and grid decarbonisation.
- **London Borough of Southwark:** The New Southwark Plan (NSP) sets out the Council's vision, objectives and key policies for the development of Southwark. The proposed development is identified as being within the Aylesbury area Vision (AV.01), as such should generate new neighbourhoods with a range of housing that will attract existing and new residents, served with good transport links and set amongst green and open spaces. Strategic Policies (SP) have been set out in NSP to support the council's regeneration strategy. These set the out the context for more detailed policy, the Development Management Policies (DMP).
- **London Air Quality Management Areas:** The development is located within one of London's Air Quality Management Areas (AQMA).

3.10 The Climate Change Act (2008)

The Climate Change Act (2008) commits the UK to a reduction of greenhouse gas emissions (GHGs) by at least 80% by 2050 from 1990. The Act also requires annual emissions reduction targets are set. They restrict the amount of greenhouse gas the UK can legally emit in a five-year period. The UK is currently in the third carbon budget period (2018 to 2022). The 3rd Carbon budget (2018-22) is targeting a reduction of 37% by 2020 from the base year.

UK emissions were 41% below 1990 levels in 2016. The first carbon budget (2008 to 2012) was met and the UK is currently on track to outperform on the second (2013 to 2017) and third (2018 to 2022).

To meet future carbon budgets and the 80% target for 2050, the UK Government will need to apply more challenging measures. The construction and operation of UK buildings account for approximately 60% of national carbon dioxide emissions. Therefore, planning legislation seeks to mitigate the impact (in particular) of new construction to minimise these emissions and to meet the national targets.

3.11 National Planning Policy Framework (2021)

The National Planning Policy Framework (NPPF) sets out the Government's planning policies on the delivery of sustainable development through the planning system and how these are expected to be applied. It provides a framework within which local people and their councils can produce their own local and neighbourhood plans, which reflect the needs and priorities of their communities.

8. Promoting Healthy and Safe Communities: Developments to consider how to enable and support healthy lifestyles, including improving safety, accessibility, and community interaction as well as access to open, green spaces and recreation.

9. Promoting Sustainable Transport: Developments to consider the environmental implications of traffic and mitigate the impacts. Air quality and public health can be improved through encouraging sustainable modes of transport and offering genuine choices.

14. Meeting the challenge of climate change, flooding and coastal change: Planning system should support the transition to low carbon future in a changing climate, taking full account of long term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and risk of overheating from rising temperatures. Includes requirements for developing energy strategies that are compatible with renewable and low carbon energy sources

15. Conserving and enhancing the natural environment: Policies and decisions should contribute to enhance the natural and local environment.

17. Facilitating the sustainable use of materials: Developments to consider the impact of developments on the material supply chain and how to source materials sustainably.

3.12 The London Plan 2021

The London Plan 'Spatial Development Strategy for Greater London', published in March 2021, forms the statutory development plan for Greater London over the next 20-25 years. In it, the Mayor of London lays out the

London-wide policy context within which London Boroughs should set their local planning policies.

All policies within the plan promote sustainable development, including mitigating and adapting to the impacts of climate change, as well as promoting health and equality within London. A number of policies directly related to energy use within buildings and energy generation, which form an integral part of the London Plan.

Policy GG6 'Increasing Efficiency and Resilience'

Help London become a more efficient and resilient city:

- Improve energy efficiency and support move toward a low carbon circular economy, contributing towards London becoming a zero-carbon city by 2050.
- Building and infrastructure are designed to adapt to a changing climate, making efficient use of water, reducing impacts from natural hazards like flooding and heatwaves, and avoiding contributing to the heat Island effect.

Policy S4 'Play and Informal Recreation'

Development proposals are required to increase opportunities for play and information recreation and enable children and young people to be independently mobile.

For residential schemes at least 10m² of playspace is required per child that:

- Provides a stimulating environment;
- Can be accessed safely from the street by children and young people independently;
- Forms an integral part of the surrounding neighbourhood;
- Incorporates trees and/or other forms of greenery;
- Is overlooked to enable passive surveillance; and
- Is not segregated by tenure.

Accessible routes to existing play provision, should and youth centres within the local area should also be incorporated where relevant.

Policy G1 'Green Infrastructure'

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

Policy G4 'Open Space'

Development proposals should not result in a loss of protected open space. Where possible, proposals should also create areas of publicly accessible open space, particularly in areas of deficiency.

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... 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 (excluding B2 and B8 uses).

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

Policy G7 ‘Trees’

Development proposals should ensure that, wherever possible, existing trees of quality are retained. If it is imperative that trees have to be removed, there should be adequate replacement based on the existing value of the benefits of the trees removed. 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.

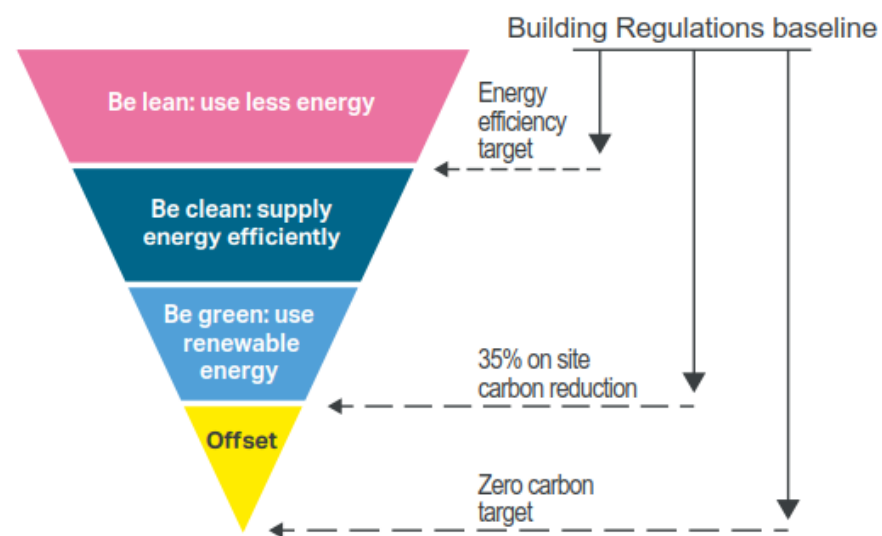
Policy SI1 ‘Improving Air Quality’

- All major developments need to demonstrate that they will be at least air quality neutral.
- All energy proposals should have emissions lower than those generated by ultra-low NOx emission gas boilers.
- Developments in Air Quality Focus Areas (AQFA) will be under particular scrutiny.
- For major developments preliminary Air Quality Assessments (AQAs) should be carried out before designing the development to inform the design process.

Policy SI2 ‘Minimising Greenhouse Gas Emissions’

The existing requirements have been strengthened, and some aspirations of the previous plan have been clarified:

The New Energy Hierarchy:



Be Lean: Use less energy and manage demand during operation

Be Clean: Exploit local energy resources (such as secondary heat) and supply energy efficiently and cleanly

Be Green: Maximise opportunities for renewable energy by producing, storing and using renewable energy onsite

Be Seen: Monitor, verify and report on energy performance

- Major developments to be net-zero carbon overall, although this can be achieved through off-site or offsetting payments.
- As with current London Plan at least a 35% reduction on building regulations must be achieved on site.
- For residential developments 10% of the reductions must be achieved through energy efficiency.
- For non-domestic 15% of reductions must be achieved through energy efficiency.
- Major development proposals should calculate and minimise carbon emissions of unregulated emissions.
- Development proposals referable to the Mayor should calculate whole lifecycle carbon emissions through a nationally recognised Whole Life-Cycle Carbon Assessment and demonstrate actions taken to reduce life-cycle carbon emissions.
- All developments to demonstrate how the development will achieve net-zero carbon on-site by 2050.
- All major developments to monitor and report on their energy use for 5 years after completion. It has suggested that DEC's might be used to do this (currently only required for public buildings).
- Gas-engine CHP will not be permissible in developments due to the new air quality standards and decarbonising electricity grid.
- The Mayor recognises that Building Regulations use outdated carbon emission factors and that this will continue to cause uncertainty until they are updated by Government. Further guidance on the use of appropriate emissions factors will be set out in the Mayor's Energy Planning Guidance to help provide certainty to developers on how these policies are implemented.
- Demand-side response, specifically through installation of smart meters, minimising peak energy demand and promoting short-term energy storage, as well as consideration of smart grids and local micro grids where feasible, required.

Policy SI3 ‘Energy Infrastructure’

Major development proposals within Heat Network Priority Areas should have a communal **low-temperature** heating system.

Requirement for an energy masterplan for large-scale developments (town centres and areas of multiple developments) which should consider:

- 1) major heat loads (including anchor heat loads, with particular reference to sites such as universities, hospitals and social housing)
- 2) heat loads from existing buildings that can be connected to future phases of a heat network
- 3) major heat supply plant including possible opportunities to utilise heat from energy from waste plants
- 4) secondary heat sources
- 5) opportunities for low temperature heat networks
- 6) possible land for energy centres and/or energy storage

- 7) possible heating and cooling network routes
- 8) opportunities for futureproofing utility infrastructure networks to minimise the impact from road works
- 9) infrastructure and land requirements for electricity and gas supplies
- 10) Implementation options for delivering projects, considering issues of procurement, funding and risk, and the role of the public sector.
- 11) opportunities to maximise renewable electricity generation and incorporate demand-side response measures

The heat source for the communal heating system should be selected in accordance with the following **heating hierarchy**:

- a) connect to local existing or planned heat networks
- b) use available zero-emission or local secondary heat sources (in conjunction with heat pump, if required)
- c) Use low-emission combined heat and power (CHP) (only where there is a case for CHP to enable the delivery of an area-wide heat network).
- d) Use ultra-low NOx gas boilers.

CHP and ultra-low NOx gas boiler communal or district heating systems to meet the requirements of policy SI1 (Air Quality).

Policy SI4 ‘Managing Heat Risk’

Show steps to minimise overheating and avoid active cooling:

- 1) minimise internal heat generation through energy efficient design
- 2) reduce the amount of heat entering a building through orientation, shading, albedo, fenestration, insulation and the provision of green roofs and walls
- 3) manage the heat within the building through exposed internal thermal mass and high ceilings
- 4) provide passive ventilation
- 5) provide mechanical ventilation
- 6) Provide active cooling systems.

Policy SI5 ‘Water Infrastructure’

In order to minimise the use of mains water, water supplies and resources should be protected and conserved in a sustainable manner.

Minimise the use of mains water in line 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).

Encourage to incorporate measures such as smart metering, water saving and recycling measures, including retrofitting, to help to achieve lower water consumption rates and to maximise future proofing.

Policy SI7 ‘Reducing Waste and Supporting the Circular Economy’

Waste reduction, increases in material re-use and recycling and reductions in waste going for disposal will be achieved by:

- 1) Promoting a more circular economy that improves resources efficiency and innovation to keep products and materials at their highest use for as long as possible.

- 2) Encouraging waste minimisation and waste avoidance through the reuse of materials and using fewer resources in the production and distribution of products.
- 3) Ensuring that is zero biodegradable or recyclable waste to landfill by 2026.
- 4) Meeting or exceeding the recycling targets for each of the following waste streams and generating low-carbon energy in London from suitable remaining waste:
 - a) Municipal waste – 65% by 2030.
 - b) Construction, demolition and excavation waste – 95% by 2020.
- 5) Designing developments with adequate and easily accessible storage space that supports the separate collection of dry recyclables (at least card, paper, mixed plastics, metals, glass) and food.

Referable applications should promote circular economy outcomes and aim to be net zero-waste. A circular economy statement should be submitted, to demonstrate:

- 1) How all materials arising from demolition and remediation works will be re-used and/ or recycled.
- 2) How the proposal’s design and construction will enable building materials, components and products to be disassembled and re-used at the end of their useful life.
- 3) Opportunities for managing as much waste as possible on site
- 4) Adequate and easily accessible storage space to support recycling and re-use.
- 5) How much waste the proposal is expected to generate, and how and where the waste will be handled.

Policy SI12 ‘Flood Risk Management’

Current and expected flood risk from all sources across London should be managed in a sustainable and cost-effective way in collaboration with the Environment agency, the Lead Local Flood Authorities, developers and infrastructure providers.

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:

- 1) Rainwater harvesting (including a combination of green and blue roofs).
- 2) Infiltration techniques and green roofs.
- 3) Rainwater attenuation in open water features for gradual release.
- 4) Rainwater discharge direct to a watercourse (unless not appropriate).
- 5) Rainwater attenuation above ground (including blue roofs).
- 6) Rainwater attenuation below ground.
- 7) Rainwater discharge to a surface water sewer or drain.
- 8) Rainwater discharge to a combined sewer.

Development proposals for impermeable paving should be refused where appropriate, including on small surfaces such as front gardens and driveways

Drainage should be designed and implemented in ways that address issues of water use efficiency, river water quality, biodiversity, amenity and recreation.

Policy T2 ‘Healthy Streets’

Development proposals should deliver patterns of land use that facilitate residents making shorter, regular trips by walking or cycling.

In opportunity areas and other growth areas, new and improved walking, cycling and public transport networks should be planned at an early stage, with delivery phased appropriately to support mode shift towards active and public transport travel. Designs for new or enhanced streets must demonstrate how they deliver against the **ten** healthy streets indicators.

Development proposal should:

- 1) Demonstrate how they will deliver improvements that support the ten healthy streets indicators in line with transport for London guidance.
- 2) Reduce dominance of vehicles on London’s streets whether stationary or moving.
- 3) be permeable by foot and cycle and connect to local walking and cycling networks as well as public transport.

Policy T5 ‘Cycling’

(...) development proposals should help remove barriers to cycling and create a healthy environment in which people choose to cycle. This will be achieved through:

- 1) Supporting the delivery of a London-wide network of cycle routes, with new routes and improved infrastructure.
- 2) Securing the provision of appropriate levels of cycle parking which should be fit for purpose, secure and well-located. Developments should provide cycle parking in accordance with the minimum standards set out within the London Plan (see below) and should be designed and laid out in accordance with the guidance contained in the London Cycling design Standards.

For residential use classes

Use Class	Long-stay (e.g. for residents or employees)	Short-stay (e.g. for visitors or customers)
C3-C4 Dwellings (all)	1 space per studio 1.5 spaces per 1 bedroom unit 2 spaces per all other dwellings	1 space per 40 units

Where it is not possible to provide suitable short stay cycle parking off the public highway, the borough should work with stakeholders to identify an appropriate on-street location for the require provision. This may mean the reallocation of space from other uses such as on-streetcar parking. (...)

Where it is not possible to provide adequate cycle parking within residential developments, boroughs must work with developers to propose alternative solutions which met the objectives of the standard these may include options such as providing spaces in secure, conveniently-located, on street parking facilities such as bicycle hangers.

Where flexible commercial uses are proposed and exact uses are not determined at the point of application, the highest potential applicable cycle parking standard should be applied.

Policy T6.1 ‘Residential Parking’

The London Plan sets limits on the maximum parking allowable for new residential development with at least 20% of the car parking provision provided with active charging facilities. The remaining provision should be provided with passive provision.

Minimum standards for disabled persons parking bays are also set:

- For 3% of dwellings, at least one designated disabled persons parking bay per dwelling available from the outset; and
- Demonstrate as part of the Parking Design and Management Plan, how an additional 7% of dwelling should be provided with one designated disabled persons parking space per dwelling in future upon request.

3.13 The Southwark Plan, 2022

The New Southwark Plan (NSP) sets out the Council’s vision, objectives and key policies for the development of Southwark.

The proposed development is identified as being within the Aylesbury area Vision (AV.01), as such should generate new neighbourhoods with a range of housing that will attract existing and new residents, served with good transport links and set amongst green and open spaces.

Strategic Policies (SP) have been set out in NSP to support the council’s regeneration strategy. These set the out the context for more detailed policy, the Development Management Policies (DMP).

Strategic Policy

The two key Strategic Policies with a sustainability focus which will help deliver these aspirations are as follows:

SP5 Thriving neighbourhoods and tackling health inequalities (P45-P55)

6. Delivering a safer walking and cycling network to address the climate emergency
7. Increasing, protecting and improving green spaces
9. Introducing the concept of active design which, among other things, makes using the stairs an attractive alternative to using lifts and encourages walking and the use of bicycles for local trips
10. Reducing health inequalities by improving the economic wellbeing, physical and mental health of our communities including providing healthy food options, improving air quality, improving green spaces and creating healthy streets and low traffic neighbourhoods to enable our residents to get to everywhere they need to go without using a car.

SP6 Climate Emergency (P56-P70)

1. Protecting, improving and enhancing our environment through making new and existing buildings as energy efficient as possible

2. Making Southwark a place where walking, cycling and public transport are the first choice of travel as they are convenient, safe and attractive
3. Protecting and improving our network of open spaces, waterways, trees and biodiverse habitats and green corridors that make places open and attractive and provide important sport, leisure and food growing opportunities
4. Improving our natural environment through the use of urban greening to reduce flood risk and improve air quality; and
5. Working with local people to deliver the very best so that the borough is clean, green and safe.

Development Management Policies

The Development Management Policies (DMP), set out further detail required to deliver the SP's, against which the planning applications will be assessed.

P45 Healthy Developments

1. Be easily accessible from walking and cycling networks.
2. Provide, or support opportunities for healthy activities.

P49 Public Transport

2. Improve accessibility to public transport by creating and improving walking and cycling connections to public transport stops or stations.
3. Improve, maintain and enhance public transport services.

P50 Highway Impacts

1. Minimise the demand for private car journeys
4. Ensure safe and efficient delivery and servicing that minimises the number of motor vehicle journeys

P51 Walking

- Enhance the borough's walking networks by providing footways, routes and public realm that enable access through development sites and adjoining areas.
- Ensure routes and access are safe and designed to be inclusive and meet the needs of all pedestrians, with particular emphasis on disabled people and the mobility impaired. Street furniture must be located to allow the movement of pushchairs, wheelchairs and mobility scooters.
- Ensure that disruption of walking routes during construction is minimised and any diversions are convenient and clearly signposted.
- Enhance strategic networks such as the Green Chain walking route, the Low Line and support new and existing green links across the borough and sub-regionally.

P53 Cycling

1. Ensure delivery of the Southwark Spine cycle route and wider cycling route network. All site on or adjacent to the network must be supported and integrated into the network.
2. Provide Cycle parking for building users and visitors (...)
3. Provide cycle parking that is secure, weatherproof, conveniently located, well-lit and accessible.

4. Provide cycle parking that includes an adequate element of parking suitable for accessible bicycles and tricycles.
5. For commercial uses, provide associated showers and changing facilities that are proportionate to the number of cycle parking spaces provided.
6. Contribute towards the provision of cycle hire schemes and docking stations. (...)
7. Provide a free two-year cycle hire for per dwelling where a docking station is located within 400m of the proposed development.

Zone of accessibility to public transport	Residential cycle parking provision (minimum)
PTAL 6a, 6b and 5 areas	1 space per bedroom plus one space per dwelling. 1 visitor space per 10 units.
PTAL 3 and 4 areas	1 space per one-bedroom dwellings, 2 spaces per two or more bedroom dwellings. 1 visitor space per 10 units.
PTAL 1 and 2 (Excluding Suburban South)	1 space per one-bedroom dwellings, 2 spaces per two or more bedroom dwellings. 1 visitor space per 10 units.
PTAL 1 and 2 (Suburban South)	1 space per one-bedroom dwellings, 2 spaces per two or more bedroom dwellings. 1 visitor space per 10 units.
Aylesbury Action Area	1 space per one-bedroom dwellings, 2 spaces per two or more bedroom dwellings. 1 visitor space per 10 units.
PTAL 1 to 4 Canada Water core/town centre	1 space per one-bedroom dwellings, 2 spaces per two or more bedroom dwellings. 1 visitor space per 10 units.

Table 5 Except from NSP, Table 9 Residential cycle parking standards

P54 Car Parking

Zone of accessibility to public transport	Residential car parking provision (maximum)
PTAL 6a, 6b and 5 and 4 areas	Zero maximum spaces per home. On street permits will not be available for residents and businesses.
PTAL 3	0.25 maximum spaces per home. On street permits will not be available for residents and businesses for new developments in controlled parking zones.
PTAL 2	0.5 maximum spaces per home.
PTAL 1	0.75 maximum spaces per home.
Aylesbury Action Area	0.25 maximum spaces per home for the entire site redevelopment. Some sites may provide up to 0.4 maximum spaces per home where this is demonstrated to be required to enable rehousing of existing residents.
Canada Water core/town centre	Zero maximum spaces per home.

Table 6 PTAL Output for Aylesbury Area

Development must:

1. Adhere to the residential car parking standards in Table 11
2. Provide all car parking spaces within the development site and not on the public highway
3. Provide electric vehicle charging points (EVCP) where on site parking is permitted
4. Provide a minimum of three years free membership, per eligible adult who is the primary occupier of the development, to a car club if a car club bay is located within 850m of the development; and / or contribute towards the provision of new car club bays proportionate to the size and scale of the development if it creates 80 units or more

P55 Parking Standards for Disabled people and the physically impaired

Development must:

1. Provide accessible car parking spaces up to a maximum of one car parking space per wheelchair accessible unit. (...)
2. Ensure that car parking spaces that are provided for disabled people and the physically impaired:
 - a. Are located within the development and in close proximity to the nearest entrance or lift core
 - b. Allow sufficient space to access the vehicle
 - c. Have entrance ramps
 - d. Enable easy manoeuvrability into and out of the space provided
 - e. Remain designated for people with disabilities or mobility impairments in perpetuity

P59 Green Infrastructure

All developments:

Provide green infrastructure with arrangements in place for long term stewardship and maintenance funding. Major development that is referable to the Mayor of London must:

1. Provide new publicly accessible open space and green links.
2. Green infrastructure should be designed to:
 - a. Provide multiple benefits for the health of people and wildlife; and;
 - b. Integrate with the wider green infrastructure network and townscape / landscape, increasing access for people and habitat connectivity; and
 - c. Be adaptable to climate change and allow species migration while supporting native and priority species; and
 - d. Extend and upgrade the walking and cycling networks between spaces to promote a sense of place and ownership for all.

P60 Biodiversity

1. Development must contribute to net gains in biodiversity through:

- Enhancing the nature conservation value of Sites of Importance for Nature Conservation (SINCs), Local Nature Reserves (LNRs), designated ancient woodland, populations of protected species and priority habitats/species identified in the United Kingdom, London or identified and monitored in the latest adopted Southwark Nature Action Plan;
- Protecting and avoiding damage to SINCs, LNRs, populations of protected species and priority habitats/species
- Including features such as green and brown roofs, green walls, soft landscaping, nest boxes, habitat restoration and expansion improved green links and buffering of existing habitats.

2. Any shortfall in net gains in biodiversity must be secured off site through planning obligations or as a financial contribution.

P62 Reducing waste

Development must:

1. Demonstrate how the following waste management hierarchy will be applied during construction

1. Avoid creating waste
2. Reduce the amount of waste produced
3. Prepare waste materials for reUse
4. Recycle and compost waste materials
5. Recover energy from waste materials
6. Dispose waste materials in landfill

2. Provide adequate recycling, composting and waste disposal
3. Provide suitable off-site waste management strategy (...)
4. Major referable development should submit a Circular Economy Statement.

P63 Land for waste management

- a. The Integrated Waste Management Facility (IWMF) will be protected for waste management purposes
- b. New and extended waste management facilities should be permitted where:
 1. They are in a suitable location which does not cause unacceptable harm to residential amenity, the environment or transport network; and
 2. They are planned and designed according to the following principles of sustainable waste management:
 - a. The waste management hierarchy as prescribed in P62 (1); and
 - b. The proximity principle of managing waste as close to the source as is practicable; and
 - c. The 'circular economy' principles to provide social, economic and environmental benefits; and
 - d. Facilities are sited in close proximity to potential heat consumers where any facilities will provide low carbon energy recovery which produces heat.

P65 Improving air quality

- a. Development must:
 1. Achieve or exceed air quality neutral standards; and
 2. Address the impacts of poor air quality on building occupiers and public realm users by reducing exposure to and mitigating the effects of poor air quality. This must be achieved through design solutions that include:
 - a. Orientation and layout of buildings, taking into account vulnerable building occupiers and public realm and amenity space users
 - b. Ventilation systems
 - c. Urban greening appropriate for providing air quality benefits proportionate to the scale of the development
2. Any shortfall in air quality standards on site must be secured off site through planning obligations or as a financial contribution.

P66 Reducing Noise Pollution and Enhancing Soundscapes

1. Developments must be designed to avoid, mitigate and manage any significant adverse impacts on health and quality of life cause by noise.
2. Major developments should be designed to enhance and protect positive aspects of acoustic environment through a public soundscape assessment.

3. They will be required to demonstrate how noise pollution impacts during the construction phase will be reduced, mitigated and managed.

P67 Reducing water use

Developments should reduce water use by:

1. Ensuring residential development has (...) water use of no more than 105l per person per day, excluding an allowance of 5litres or less per person per day for external water use.
2. (...) enable the use of grey water and/or rainwater for non-drinking uses.
3. Major development should assess the need for improvements to water supply infrastructure in discussion with water utility companies.

P68 Reducing Flood risk

1. Developments must not increase flood risk on or off site, by ensuring:
 - a. (...) safe and resilient to flooding
 - b. Finished floor levels are set no lower than 300mm above predicted max water level (...) if in flood risk zone.
 - c. Major development reduces surface water run-off to greenfield run-off rates. This must be through water sensitive design and Sustainable Urban Drainage Systems (SUDs), in accordance with (...) drainage hierarchy.
2. Development located on sites on or adjacent to the River Thames frontage should be set back from the River defence wall by 10m. This space should be designed and delivered for dual purposes by incorporating the required flood defence measures and providing an enhanced public amenity and environmental benefit.

P70 Energy

All development

1. Development must minimise carbon emissions on site in accordance with the following energy hierarchy:
 - a. Be lean (energy efficient design and construction); then
 - b. Be clean (low carbon energy supply); then
 - c. Be green (on site renewable energy generation and storage).

Major Development

2. Development must reduce operational greenhouse gas emissions and minimise both annual and peak energy demand. This must be in accordance with the following energy hierarchy:
 - a. Be lean (energy efficient design and construction); then
 - b. Be clean (low carbon energy supply); then
 - c. Be green (on site renewable energy generation and storage); then
 - d. Be seen (monitor, verify and report on energy performance); then
 - e. Offset residual carbon emissions to reach zero carbon target.
3. Major development must be net zero-carbon.

4. Major residential development must reduce carbon emissions on site (100% on 2013 Building Regulations).

5. Major non-residential development must reduce carbon emissions on site by a minimum of 40% on 2013 Buildings Regulations*. Any shortfall must be secured off site through planning obligations or as a financial contribution.
6. Development proposals referable to the Mayor must calculate whole life cycle carbon emissions through a nationally recognised assessment and demonstrate actions taken to reduce life cycle carbon emissions.

Decentralised energy

7. Major development must be designed to incorporate decentralised energy in accordance with the following hierarchy:
 - a. Connect to an existing or planned decentralised energy network; then
 - b. Be future-proofed to connect to a planned decentralised energy network; or
 - c. Implement a site-wide low carbon communal heating system; and
 - d. Explore and evaluate the potential to oversize the communal heating system for connection and supply to adjacent sites and, where feasible be implemented.

*Building Regulations 2013. If these are updated, the policy threshold will be reviewed.