Energy and Sustainability Statement

RIBA Stage 2

Simat Properties Limited

26 Rosslyn Hill
London Borough of Camden
NW3 1PA

London Borough of Camden

Version	Revision	Date	Author	Reviewer	Project Manager
1	A	14.02.2025	Honeyksha Waghela	Manas Bane	Manas Bane
1	B	17.02.2025	Honeyksha Waghela	-	Manas Bane
1	C	03.03.2025	Honeyksha Waghela	-	Manas Bane

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Executive Summary

This Energy and Sustainability Statement has been written to demonstrate the measures incorporated into the design of the Proposed Development at 26 Rosslyn Hill, London Borough of Camden. The scheme will deliver lower energy and water use, lower carbon emissions and lower operational costs than a 2021 Building Regulations compliant design.

The Proposed Development is an apartment block consisting of new build 3 no. residential units behind a retained front façade meeting the building standards.

The site is located within the Hampstead Conservation Area, with the Proposed Development located on the north-east side of Rosslyn Hill. The Proposed Development is set back from the street front and abuts the Grade II listed Building of the Former Hampstead Police Station on its south-east side.

The energy strategy has been developed by following the GLA Energy Hierarchy of Lean, Clean, Green and Seen along with local policy guidance. The chosen energy strategy is in line with the carbon aspirations set in the New London Plan and local planning policy. This includes Lean passive and active design measures and Green LZC technologies to achieve a 60% improvement through energy efficiency measures and an overall >50% improvement over Baseline CO_2 emissions on site over a Building Regulations 2021 Part L V1 compliant design.

In addition to the measures outlined within this report, a Whole Life Carbon Assessment (WLCA) has also been undertaken on the Proposed Development to determine the whole life carbon impact of the proposal. Full results are shown within the supporting Whole Life Carbon Assessment report.

Proposed Energy Strategy:

- Enhanced building fabric in line with LETI guidance
- High efficiency LED Lighting
- MVHR ventilation
- High efficiency ASHPs supplying heating and hot water
- 3.6 kWp Roof mounted PV/ unit

Energy Hierarchy Category	CO_2e emissions (t/yr)	Cumulative Improvement (%)	Improvement over Baseline (%)
Baseline	5.0		
Lean	3.6	26.29%	26%
Clean	3.6	0.00%	26%
Green	1.3	47.49%	74%

Table 1 - Summary of regulated CO_2e savings for the Proposed Development

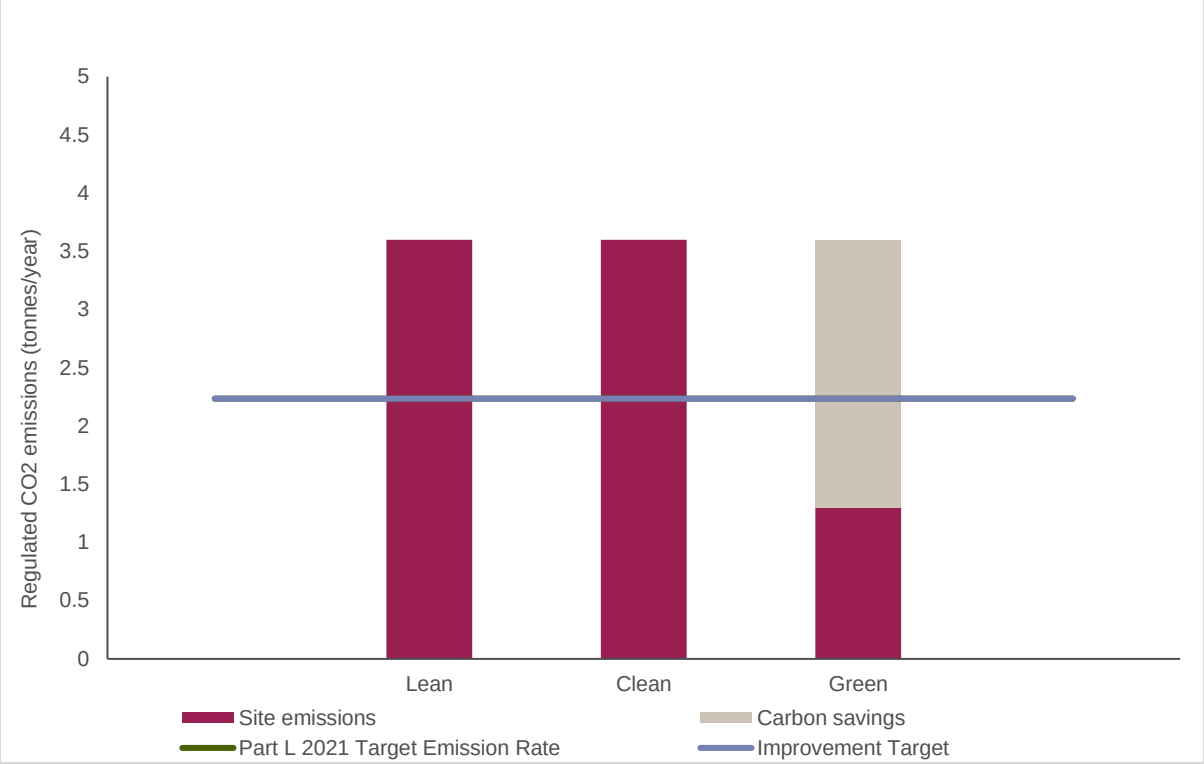


Figure 1 - Energy Hierarchy CO_2e emissions reduction graph

The energy strategy's measures are expected to deliver up to a **74% reduction in CO2 emissions** compared to the baseline set by Building Regulations Part L 2021.

Introduction

1.0 Introduction

This Energy and Sustainability Statement has been written by SRE Ltd on behalf of Simat Properties Limited (the Client) to demonstrate the measures incorporated into the design of 26 Rosslyn Hill, London, NW3 1PA (the Proposed Development). The development will deliver lower energy and water use, lower carbon emissions and lower operational costs than a 2021 Building Regulations Compliant design.

The statement compares the predicted actual building energy requirement with a Building Regulations compliant design, outlines passive and active design measures, and assesses the suitability of low and zero carbon (LZC) technologies specific to this site to address the relevant planning policy requirements.

1.1 The Site and the Proposed Development

The application site is located in Hampstead connecting the south end of Hampstead High Street and the north end of Haverstock Hill (A502). The existing building is a three-storey detached property comprising accommodation on the lower ground floor, upper ground floor and first floor.

The existing building at 26 Rosslyn Hill front elevation is facing southwest and is adjacent to Hampstead Police station on its North boundary. On the South side of the site a brick retaining wall separates No 26 and Nos 22-24 properties.

Figure 2 - Location of the application site (Google Earth)

The Proposed Development plans to retain the front façade and provide 3 no. residential units through full redevelopment meeting the building standards.

1.2 Planning Policies

The energy and sustainability planning policy requirements relevant to the Proposed Development are summarised in Table 2.

Planning Policy	Requirement
Camden Local Plan (2017)	<u>Policy CC1: Climate Change Mitigation</u> The Council will require all development to minimise the effects of climate change and encourage all developments to meet the highest feasible environmental standards that are financially viable during construction and occupation. We will: a) promote zero carbon development and require all development to reduce carbon dioxide emissions through following the steps in the energy hierarchy; b) require all major development to demonstrate how London Plan targets for carbon dioxide emissions have been met; c) ensure that the location of development and mix of land uses minimise the need to travel by car and help to support decentralised energy networks; d) support and encourage sensitive energy efficiency improvements to existing buildings; e) require all proposals that involve substantial demolition to demonstrate that it is not possible to retain and improve the existing building; and f) expect all developments to optimise resource efficiency. For decentralised energy networks, we will promote decentralised energy by: g) working with local organisations and developers to implement decentralised energy networks in the parts of Camden most likely to support them; h) protecting existing decentralised energy networks (e.g. at Gower Street, Bloomsbury, King's Cross, Gospel Oak and Somers Town) and safeguarding potential network routes; and i) requiring all major developments to assess the feasibility of connecting to an existing decentralised energy network, or where this is not possible establishing a new network. To ensure that the Council can monitor the effectiveness of renewable and low carbon technologies, major developments will be required to install appropriate monitoring equipment. Developments of five or more dwellings and/or more than 500 sqm of any gross internal floorspace are expected to achieve a 20% reduction in carbon dioxide emissions from on-site renewable energy generation (which can include sources of site related decentralised renewable energy), unless it can be demonstrated that such provision is not feasible. The 20% reduction should be calculated from the regulated CO_2 emissions of the development after all proposed energy efficiency measures and any CO_2 reduction from non-renewable decentralised energy (e.g. CHP) have been incorporated.

	Policy CC2: Adapting to climate change a) The Council will require development to be resilient to climate change. All development should adopt appropriate climate change adaptation measures such as: the protection of existing green spaces and promoting new appropriate green infrastructure; b) not increasing, and wherever possible reducing, surface water runoff through increasing permeable surfaces and use of Sustainable Drainage Systems; c) incorporating bio-diverse roofs, combination green and blue roofs and green walls where appropriate; and d) measures to reduce the impact of urban and dwelling overheating, including application of the cooling hierarchy. Any development involving 5 or more residential units or 500 sqm or more of any additional floorspace is required to demonstrate the above in a Sustainability Statement. Sustainable design and construction measures The Council will promote and measure sustainable design and construction by: e) ensuring development schemes demonstrate how adaptation measures and sustainable development principles have been incorporated into the design and proposed implementation; f) encourage new build residential development to use the Home Quality Mark and Passivhaus design standards; encouraging conversions and extensions of 500 sqm of residential floorspace or above or five or more dwellings to achieve “excellent” in BREEAM domestic refurbishment; and expecting non-domestic developments of 500 sqm of floorspace or above to achieve “excellent” in BREEAM assessments and encouraging zero carbon in new development from 2019.
Camden Planning Guidance – Energy Efficiency and Adaption (March 2019)	General Guidance from the London Borough of Camden on the preparation of Energy Statements for Planning, the requirements needing to be met, and the information required to be displayed.
The London Plan (2021)	Policy SI 2: Minimising Greenhouse Gas Emissions A minimum on-site reduction of 35% with at least 10% through energy efficiency measures alone. If the zero-carbon cannot be met onsite, a shortfall should be provided either through a cash lieu contribution to the borough or off-site provided that an alternative proposal is identified, and delivery is certain.
	Policy SI 4: Managing Heat Risk Limit internal heat gain through the cooling hierarchy

	Policy SI 5: Water Infrastructure Minimise the use of mains water in line with the optional requirement of the Building Regulations (residential development), achieving mains water consumption of 105 litres or less per head per day (excluding allowance of up to five litres for external water consumption)

Table 2 - Summary of local planning policy requirements

1.2.1 Applicability to Proposed Development

In addition to the policy requirements outlined in Table 2 above, the GLA Energy Assessment Guidance 2021 references an additional benchmark improvement for residential developments to strive to achieve above the minimum 35% onsite carbon reduction over Part L 2021.

Building Type	Minimum onsite improvement over Part L 2021	Benchmark improvement over Part L 2021
Residential	35%	50%

Table 3 – GLA Percentage improvement benchmark for residential developments[1]

In accordance with the Camden Planning Guidance – Energy Efficiency and Adaption (March 2019) document, the Proposed Development is deemed to be a 'medium' sized residential new build as the floor area exceeds 500m^2. Hence, the Proposed Development will strive to achieve the emissions reductions in line with those outlined within the London Plan, as follows:

- An improvement over Building Regulations 2021 by 10% from energy efficiency measures alone (Lean)
- An improvement over Building Regulations 2021 by 50% overall
- Carbon offset of >20% from Low/Zero Carbon technologies
- Reduced internal water use in line with the requirement of <105l/p/d
- Application of the cooling hierarchy
- General sustainability measures – incl. use of sustainable construction techniques and materials, sustainable travel options, inclusive design, site management and procurement procedures etc.

[1] https://www.london.gov.uk/sites/default/files/gla_energy_assessment_guidance_june_2022_0.pdf

Energy

2.0 Energy

2.1 Method

The energy strategy design follows national policy guidance[2] and seeks to be Lean, Clean, Green and Seen, as shown in Figure 3.

Lean

Minimise the overall environmental impact and energy use through energy efficiency measures

Clean

Ensure that energy systems on-site (heat & power) are efficient & produce minimal CO_2e emissions

Green

Implement suitable technologies to provide renewable and emission free energy sources

Seen

Incorporate monitoring through smart metering and accessible displays

Figure 3 - The Energy Hierarchy

CO_2e Conversion Factors in Table 4 below have been taken from the 2021 Building Regulations. However, within Integrated Environmental Solutions Virtual Environment (IES VE) 2023 software, the CO_2e conversion factor for electricity varies over the course of the year due to the changing mix of inputs to the electricity grid, i.e., increased Photovoltaic (PV) generation in the summer months.

Energy Source	CO_2e Conversion Factor ($kgCO_2e/kWh$)
Electricity (mains)	0.136[3]
Electricity (offset)	-0.136[3]
Gas (mains)	0.210

Table 4 - CO_2e conversion factors by energy source

The energy modelling for the Proposed Development has been carried out using the new SAP 10 software in accordance with Building Regulations 2021 Part L V1.

[2] The London Plan https://www.london.gov.uk/what-we-do/planning/london-plan/new-london-plan
[3] This value is not directly used but rather represents the average of the month-to-month values used.

The Target Emission Rate (TER) from the Green scenario is taken as the Baseline and is the exact size and shape of the Proposed Development but is based on notional U-values and heating specifications outlined in Approved Document L[4].

The Baseline represents the minimum compliance level in terms of Target Emissions Rate (TER) and Target Fabric Energy Efficiency (TFEE) of the Proposed Development, with all improvements measured from this level.

Energy Hierarchy Category	CO_2e emissions (t/yr)
Baseline	4.95

Table 5 - Baseline values for CO_2e emissions

2.2 LEAN – Demand Reduction

The Lean scenario includes passive and active design measures to reduce CO_2e emissions, with results shown in Table 6.

Energy Hierarchy Category	Average CO_2e emissions (t/yr)	Improvement (%)	Fabric Energy Efficiency (FEE) ($kWh/m^2/yr$)	Improvement (%)
Baseline	4.95		43.5	
Lean	3.65	26	36.2	16.7

Table 6 - Lean CO_2e emissions and fabric improvement over Baseline

The Lean scenario can achieve a 26% reduction in CO_2 emissions using passive and active design measures over a 2021 Building Regulations Baseline scenario. It is important to note whilst the Proposed Development is targeting a new build standard, a significant portion of the existing fabric is retained and enhanced to preserve the characteristics of the front façade due to its location in a conservation area.

Energy efficiency measures have been maximised where possible through an airtight fabric, the provision of good U-values for the new build elements in line with LETI guidance, the installation of high efficiency low energy lighting throughout, MVHR system for ventilation, and WWHR system to all shower/baths.

2.2.1 Passive Design Measures

Passive design measures have been enhanced where possible throughout the site to maximise building efficiency within the confines of the site constraints and capital costs. The

[4] https://www.london.gov.uk/sites/default/files/gla_energy_assessment_guidance_june_2022_0.pdf

Proposed Development has been massed and positioned within the site to maximise the usable space, both for the internal and the external space uses. The Proposed Development is positioned with a Northeast-Southwest orientation to maximise natural light and positive solar gains, with majority of the building having a northeast-southwest orientation, and majority of the glazing present on these façades.

There is provision of natural ventilation to be provided through openable windows which will enable purge ventilation to the dwellings thus help in balancing the overheating risks. All glazed areas of the building will have elements of shading provided by the building form and internal curtains or blinds to minimise the risk of overheating.

The Proposed Development is anticipated to have a medium thermal mass as the construction is load bearing masonry. A medium thermal mass will balance providing high energy efficiency during winter months and limiting overheating during the summer months. The building will be very well insulated through all external elements with a low infiltration rate. As the Proposed Development is located in a conservation area, the front façade walls will be retained and internally insulated, and the existing single glazing will be replaced with triple glazing whilst retaining the existing casement window characteristic. All other building elements will be new with proposed U-values in line with LETI guidance. The proposed U-values will exceed Building Regulations Part L V1 minimum fabric requirements and are provided within Table 7, with further details outlined in the specification sheet in Appendix B.

Thermal bridging will be considered further at detailed design stage however the thermal bridges will either follow a non-government approved scheme or be independently assessed such that the final psi-values achieve or exceed the target values based on notional specifications as specified in Appendix B.

Element	Proposed U-value (W/m^2K)
External Wall - Existing	0.27
External Wall - New	0.15
Ground Floor	0.10
Pitched Roof	0.13
Door	1.2
Windows and Glazed Doors	1.0
Additional Elements	
Air Tightness @50 Pa	4

Table 7 - Fabric energy efficiencies

The high-quality design of the Proposed Development will reduce the energy demand of the building, thus reducing the operational cost to the building occupants.

2.2.2 Active Design Measures

The Proposed Development will utilise 100% low energy/LED lighting in excess of Building Regulation requirements. External lighting, where installed, will also be energy efficient, and will be positioned to avoid excessive light pollution and be supported by PIR/daylight sensor and/or time controls to reduce operation times and subsequent energy use and emissions.

As part of the 'Lean' scenario, high efficiency individual gas boilers have been proposed to provide space heating and hot water, controlled by a time and temperature zone control. This will reduce the heat demand and wastage by allowing only specific areas to be heated when occupied.

In modern air-tight buildings, careful consideration needs to be given to the specification of ventilation systems to ensure moisture is removed from the building and ensure ventilation standards are met, and a healthy standard of internal air is maintained.

Mechanical Ventilation with Heat Recovery (MVHR) is specified to all occupied spaces and wet rooms to provide continuous air changes with minimal heat loss. MVHR removes the warm, damp air from kitchen and bathroom spaces and passes this over a heat exchanger whereby incoming fresh air is prewarmed, before being distributed to the habitable spaces of the dwelling.

A summer bypass is also to be specified whereby the heat exchanger is bypassed at times of high temperatures to provide fresh air directly to the habitable rooms. This, in conjunction with natural ventilation through window openings, will minimise the risk of overheating during times of high temperatures.

Waste water heat recovery (WWHR) is to be provided to showers/baths in master bedroom and bedroom suite 2 of the Proposed Development. This system recovers heat that would otherwise be lost down the drain as wastewater from a shower or bath through a simple heat exchanger. This heat is then used to pre-warm the mains water entering the dwelling and supplying either the shower heat and/or the hot water heating source.

Details of the systems used in the modelling are specified within the specification sheet in Appendix B.

2.2.3 Cooling

The cooling hierarchy has been used to ensure that passive building design principles has been optimised to reduce the cooling load for the Proposed Development.

Cooling Hierarchy	Potential Design Measures
Reducing the amount of heat entering the building in summer	Low E glass with solar control and internal blinds are to be provided to minimize solar gain. All walls are to be well insulated with a high level of air tightness to reduce heat entering the building.
Minimising internal heat generation through energy efficient design	All primary pipework to be insulated, therefore low system losses. High specification hot water cylinder installed with low heat loss. Low energy lighting throughout.

Use of thermal mass and high ceilings to manage the heat within the building	Thermal mass is anticipated to be medium.
Passive Ventilation	Openable windows will be provided to all rooms.
Mechanical Ventilation	Mechanical Ventilation with Heat Recovery is proposed in occupied spaces and wet rooms within the dwelling, with the ability to run at high flow rates in dwellings with restricted window openings. Automatic summer bypass also specified.

Table 8 - Design measures following the cooling hierarchy

A full overheating assessment has been carried out in accordance with Part O1 and CIBSE TM59 requirements, results which show that with the proposed measures, the assessed units comply with Part O1 and CIBSE TM59 requirements.

2.3 CLEAN – Heating Infrastructure

As the Proposed Development is an unconditioned space, connection to a district network is not applicable. No further improvements over the 'Lean' scenario have been recorded.

2.3.1 District Heating

The Proposed Development is within an area of low heat density and is not located near to any existing heat networks. While the area could benefit from the installation of a district-wide network, there is not yet one installed or planned.

2.3.2 Community Heating

Community heating systems utilise a communal plant to provide heating and hot water. As the Proposed Development consists of a single dwellings, a communal heating system will not be suitable for a development of this scale.

2.4 GREEN – Low Carbon and Renewable Energy

The addition of 'Green' technologies can provide a significant reduction in CO_2 emissions and enable the Proposed Development to exceed the minimum target of 35% improvement and the benchmark improvement target of 50% over Baseline emissions in line with the London Plan.

High efficiency ASHPs have been proposed to provide heating and hot water to the Proposed Development, replacing the gas boilers proposed at the 'Lean' stage. In addition to that, a 3.6 kWp rooftop PV system per residential unit has also been proposed to provide additional CO_2 offset on site. The Proposed Development achieves a total of 74% improvement over the baseline, surpassing the 50% offset outlined in the London Plan.

Energy Hierarchy Category	Average CO_2e emissions (t/yr)	Improvement over Baseline(%)
Baseline	4.95	
Green	1.30	74

Table 9 - Green CO_2e emissions and improvement over Baseline

Energy Hierarchy Category	Primary Energy Rate ($kWh/m^2/yr$)	Improvement over Baseline(%)
Baseline	58.13	
Green	30.42	47.67

Table 10 - Primary Energy Rate of the Proposed Development

2.4.1 Air Source Heat Pump

All Heat Pump systems consume electricity to operate - the Coefficient of Performance (CoP) of the system is the ratio of electrical energy consumed, to heat energy emitted. Generally, a CoP of 3 or 4 can be achieved, meaning 3 or 4 units of thermal energy are produced for each unit of electricity consumed.

Heat pumps will only deliver low grade heat (up to ~50°C) efficiently, and therefore HP systems alone are generally relatively inefficient in providing hot water, as this requires additional electrical input (immersion or increased compressor use).

ASHPs tend to generate some noise and therefore will be located in a concealed acoustic enclosure at the rear of the property in the garden. This will prevent both visual impact and noise disturbances to the building's occupants and neighbours. Specifications of the proposed ASHP used for modelling has been specified in the SAP summary sheet in Appendix B. The final ASHP chosen for installation will comply with the minimum standards outlined in the Enhanced Capital Allowances (ECA) product criteria and other relevant issues as outlined in the Microgeneration Certification Heat Pump Product Certification Requirements documents[5]. ASHPs have been considered and proposed as a 'Green' LZC technology for the Proposed Development to provide heating and hot water.

2.4.2 Photovoltaics

PV panels convert energy from daylight into direct electrical current (DC), which is then converted to alternating electrical current (AC) via an inverter, or a series of inverters subject to the size of the array. The panels are generally roof mounted and provide electrical generation which can either be utilised directly on-site (or nearby) by HPs, lighting and other

[5] http://www.microgenerationcertification.org

electrical equipment, stored in batteries, or exported back to the National Grid using export meters.

Noise will not be an issue since a PV array does not feature moving parts and is silent during operation.

The installation of PV is proposed in order to further reduce the on-site carbon emissions and offset some of the electrical demand within the Proposed Development with any excess being fed back into the National Grid.

The current roof-mounted PV array proposal is to install a solar PV array of 9 no. 400W monocrystalline panels (~2m^2 in area) per panel, equivalent to a 3.6 kWp array with a horizontal pitch. Details of the proposed PV installation are detailed in Table 11.

Proposed Array (kWp)	Approximate no. Panels @400W	Active area (m^2)	Pitch (degrees)	Orientation	Estimated Annual Generation (kWh/yr)
3.6	9	18	Horizontal	East	4,440

Table 11 - Proposed PV Array Summary for each unit

2.4.3 Energy Storage

Although it is believed that the PV generation will not exceed usage at the site, a 13.5kWh battery storage is proposed for the development linked to the installed rooftop PV panels, which will enable building occupants to use this energy at any required time. Battery storage can also draw power from the grid and use this at times of peak demand. This means building occupants can ultimately save money since grid energy can be stored at certain times of the day when it is cheaper.

2.5 SEEN – In-use Monitoring

The Proposed Development will be supplied with Smart Meters (where available from the utility supplier) and PV generation meters along with the associated internal energy displays. This will further improve energy efficiency by allowing building users to observe their energy use in ‘real time’ and manage it more effectively.

2.6 Energy Conclusion

The Proposed Development has considered energy efficiency at every stage of the design and will deliver energy demand reduction measures along with LZC technologies in order to reduce energy demand and associated CO_2e emissions resulting from the Proposed Development’s operation.

The following inputs and specifications will be provided to deliver the Part L and Planning Policy standards as a minimum:

- Enhanced building fabric in line with Building Regulations 2021 Part L .
- High-efficiency LED lighting. PIR automatic on-off control sensors in the building.
- 3.6 kWp roof-mounted PV array per residential unit.

Energy Hierarchy Category	CO_2e emissions (t/yr)	Cumulative Improvement (%)	Improvement over Baseline (%)
Baseline	4.95		
Lean	3.65	26.29%	26%
Clean	3.65	0.00%	26%
Green	1.30	47.49%	74%

Table 12 - Summary of regulated CO_2e savings and cumulative improvements

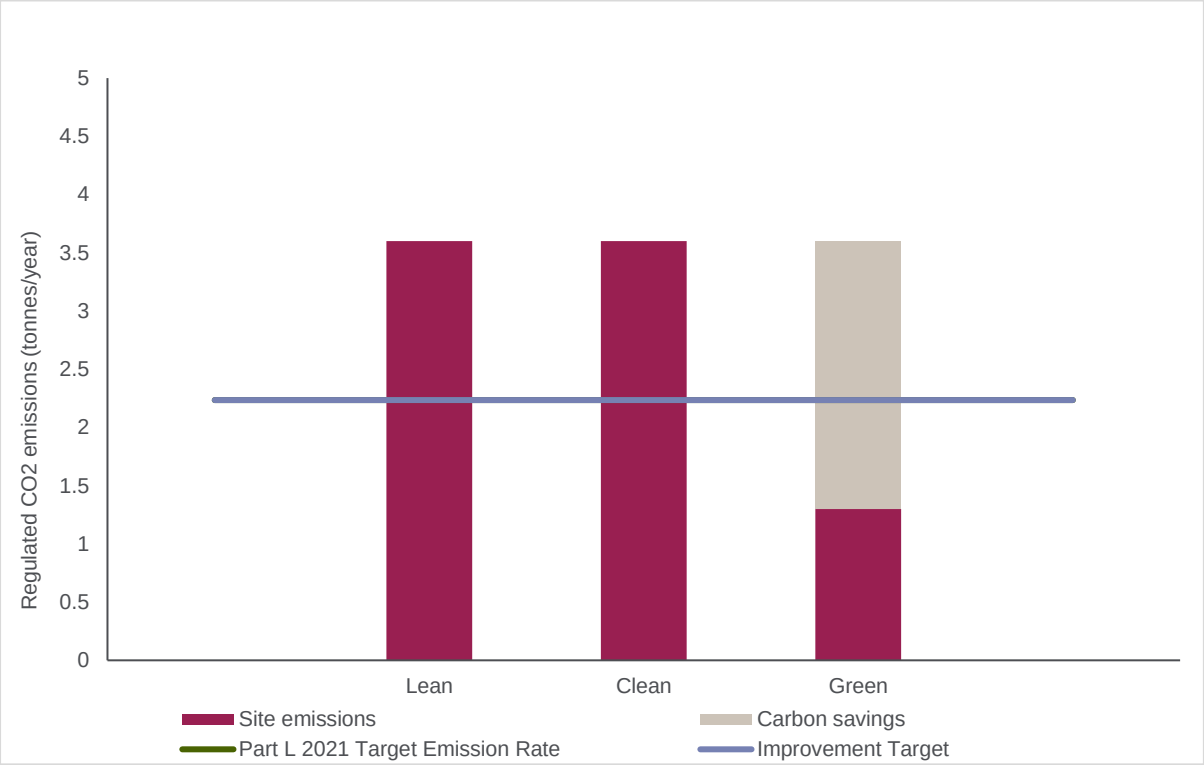


Figure 4 - Energy Hierarchy CO_2e emissions reduction graph

The energy strategy's measures are expected to deliver up to a **74% reduction in CO2 emissions** compared to the baseline set by Building Regulations Part L 2021.

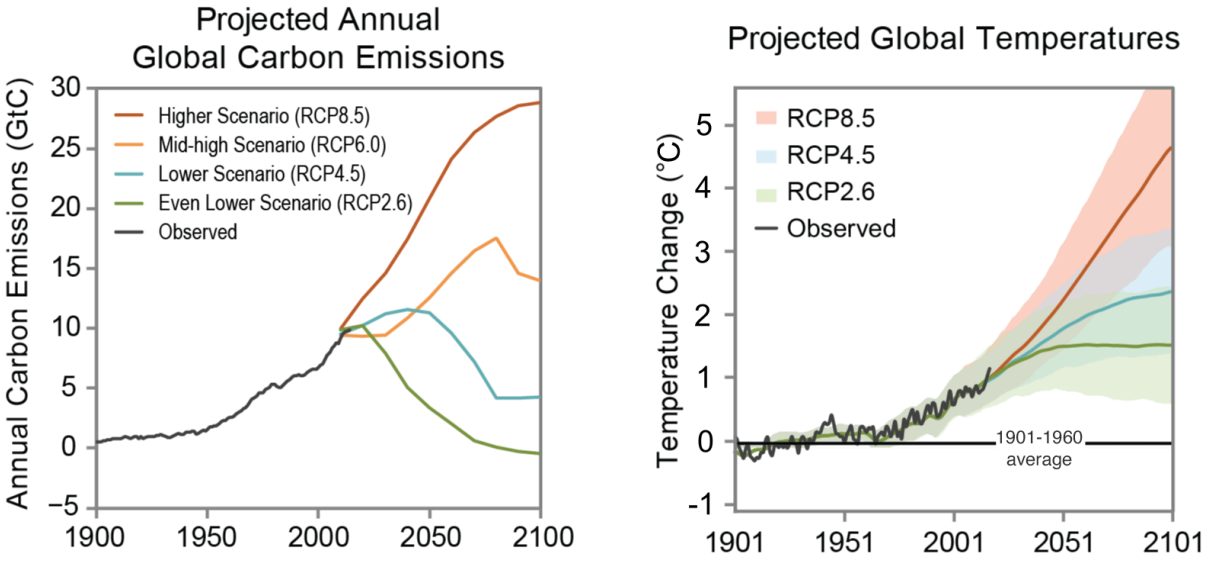
3.0 Sustainability

Sustainable Development – “meets the needs of the present without compromising the ability of future generation to meet their own needs.” (World Commission on Environment and Development: Our Common Future[6]).

The planning system focuses on three objectives to achieve sustainable development: economic, social, and environmental. These objectives mutually support each other and have been adapted in this statement to meet the objectives of the London Local Plan. This planning framework asks that developments make the best use of resources, increase the sustainability of the local communities and are adaptable to climate change. Careful considerations have been taken to ensure the Proposed Development meets these expectations.

3.1 Climate change

The year 2023 was the warmest year since global records began in 1850, with global temperatures reaching 1.18 °C above the century average.[7] According to the UK Meteorological Office, there is a 98% chance that the next warmest year will be within five years, with there being a two-in-three chance that global average temperature will exceed 1.5°C above pre-industrial levels.[8] Projected annual emissions are only expected to rise, with global temperatures following the same trendline (Figure 5).



2017 Climate Science Special Report, Figure ES-3

Figure 5 - Project global emissions and temperatures

The UK built environment is one of the largest contributors to greenhouse gas (GHG) emissions, contributing approximately 25% to the total share of UK GHG emissions according

[6] Report of the World Commission on Environment and Development: Our Common Future
[7] Annual 2023 Global Climate Report | National Centres for Environmental Information (NCEI) (noaa.gov)
[8] New global temperature records on the horizon - Met Office

to the UK Green Building Council[9]. For a sustainable future, a clear pathway to reducing emissions in our homes is no longer a choice, but a requirement.

3.2 Pollution

3.2.1 Air

The Proposed Development will aim to limit its contribution to local air pollution by installing ASHPs to provide heating and hot water, in addition to the installation of PV. The ASHPs will emit no onsite NO_X emissions but will consume grid electricity (when not consuming electricity generated by the PV). As the NOx emissions resulting from the production of electricity decreases at the national scale, the resulting theoretical emissions from the Proposed Development will do also. Furthermore, the use of PV panels will decrease the import of electricity from the national grid and replace it with PV generated electricity which produces no emissions during operation.

The Proposed Development is located within a medium to high NOx emissions area as defined by the UK NOx emissions map, see Figure 5. Internal pollution levels will be reduced through the use of MVHR with filtered intakes.

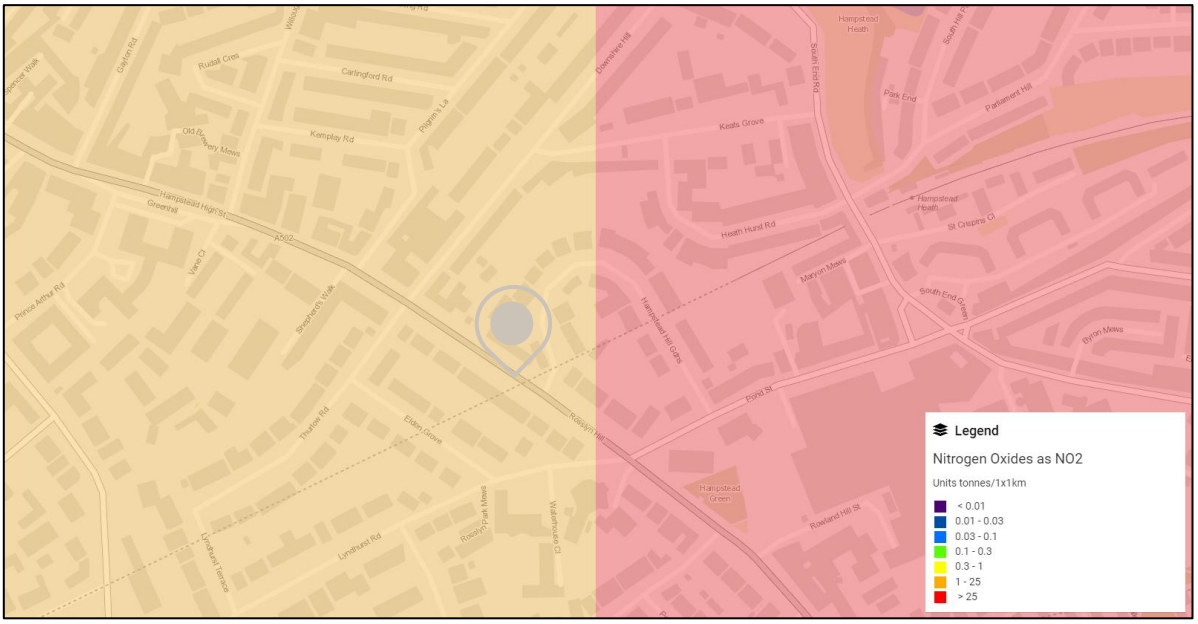


Figure 6 - UK Air Pollution Map showing pollution from Nitrogen Oxides as NO2 (https://naei.beis.gov.uk/emissionsapp/)

3.2.2 Noise and Vibration

Acoustic enclosures are recommended for the ASHP units to avoid disturbance to residents within the Proposed Development and surrounding buildings. Furthermore, the Proposed Development will be a highly insulated building with excellent airtightness which should limit any noise from inside the building.

[9] UKGBC – Climate Change Mitigation

3.2.3 Light

The design and layout of the site for practical use has been considered while trying to maximise internal daylight levels. All spaces occupied by residents have glazing to provide natural daylight, and light-coloured curtains or roller blinds will be provided to enable glare control and privacy.

Light pollution will be minimised where possible through the careful specification and positioning of external lighting around the Proposed Development, ensuring minimal light pollution from the site. Special attention will be given to security lighting (where fitted) to ensure it is appropriately focused and controlled.

All external space lighting will be provided through low energy fittings, with security lighting being PIR and daylight/timer controlled.

3.3 Flood Risk

The Proposed Development replaces to the existing building on the site (behind the front façade) and is within a very low flood risk zone from rivers, sea and surface water run-off as shown in Figure 7 and Figure 8.

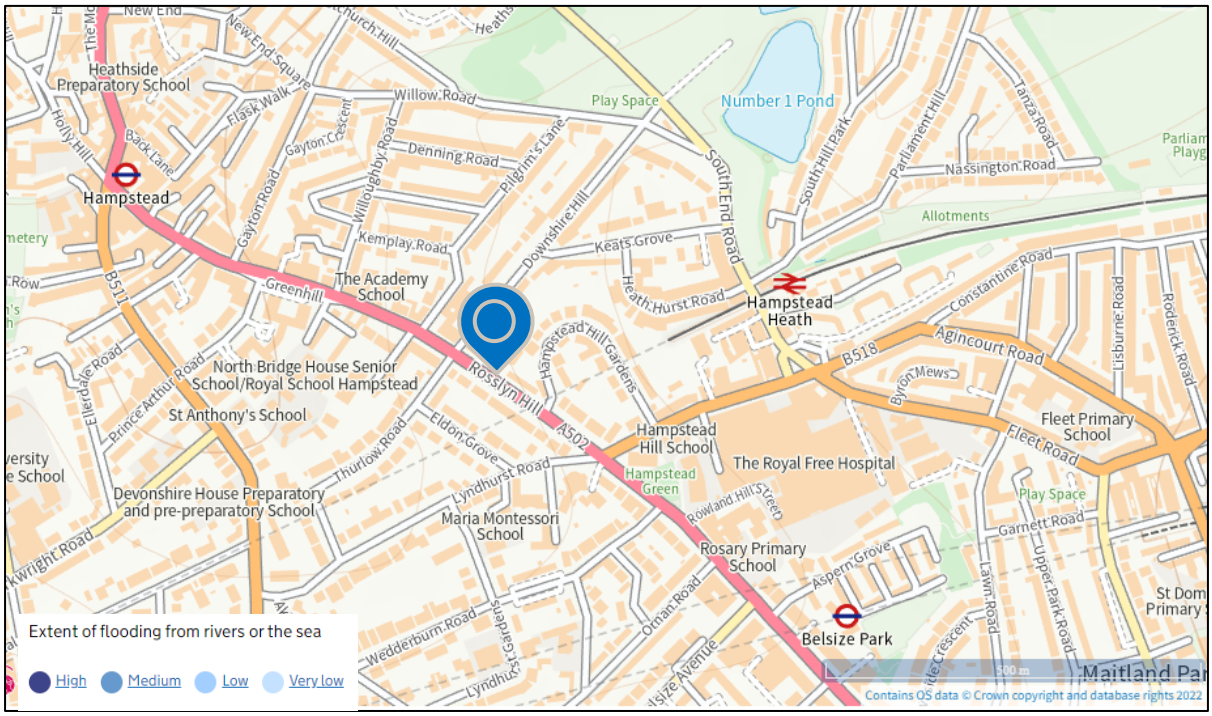


Figure 7 - Flood map showing risk of flooding from rivers or the sea (https://flood-warning-information.service.gov.uk/long-term-flood-risk/map)

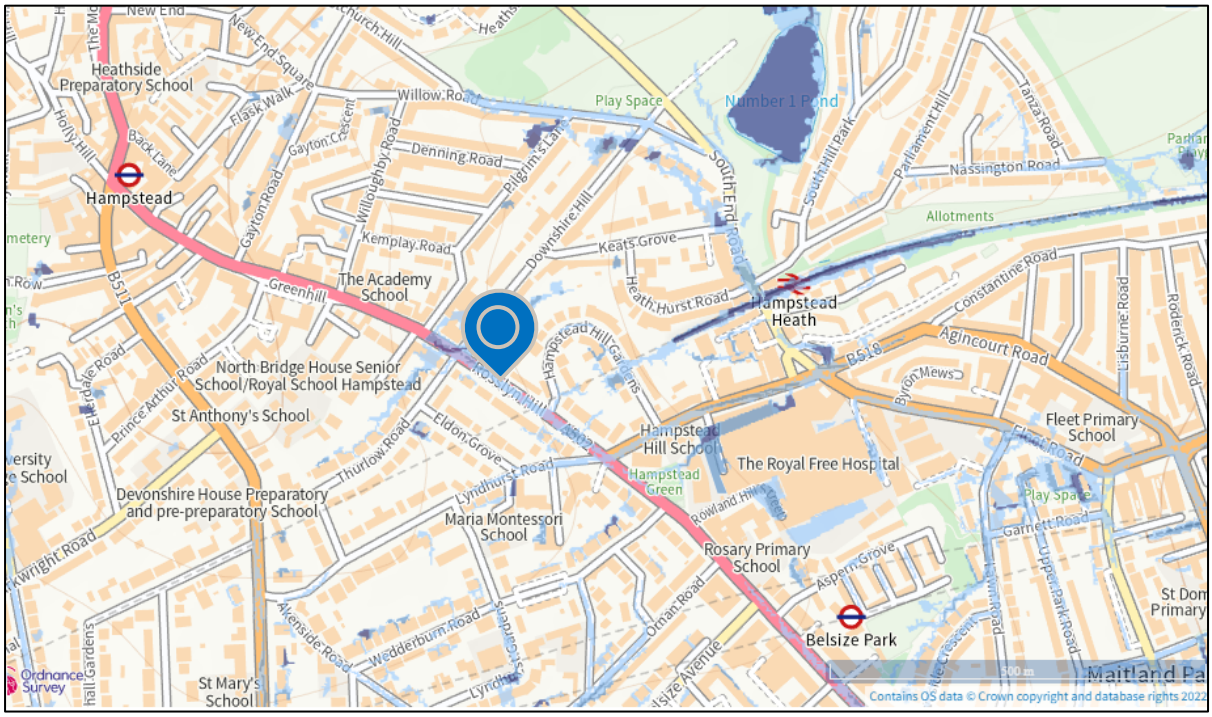


Figure 8 - Flood map showing risk of flooding from surface water (https://flood-warning-information.service.gov.uk/long-term-flood-risk/map)

3.4 Transport

3.4.1 Public transport

The nearest train station to the site is Hampstead Heath station which is a 7-minute walk away northeast of the site, which provides overground services and links to wider areas of Greater London.

There are a number of bus stops on Rosslyn Hill Road, the nearest which is Pilgrim's Lane a 2-minute walk away, providing services operated by Transport for London towards Golders Green, Paddington, South Hampstead, and City of London.

3.4.2 Cycle Storage

The Proposed Development will provide a secure cycle storage on site. This will be suitably secure, covered and lit to encourage the use of bicycles to travel for shorter, local journeys within the area.

3.5 Biodiversity

Biodiversity is generally considered to be the variety of life forms within a certain ecosystem. The rear yard will a permeable surface, therefore a fully-fledged garden. The front garden, which consists of some flowerbeds and hedges, will be retained. Bat and bird houses are proposed in the oak tree in the front garden, in efforts to add to overall site biodiversity, and that of the surrounding environment.

3.6 Resource Efficiency

3.6.1 Waste Management

The Proposed Development will aim to minimise the waste produced from the site during the construction phase through a mix of site policies and effective and efficient design and construction processes.

A comprehensive Construction Management Plan will be implemented from the outset of site works and will follow the principles of the waste hierarchy. Targets have been set in relation to volume of construction waste and diversion from landfill, with performance monitored by the Contractor to ensure exceedance of these levels is achieved.

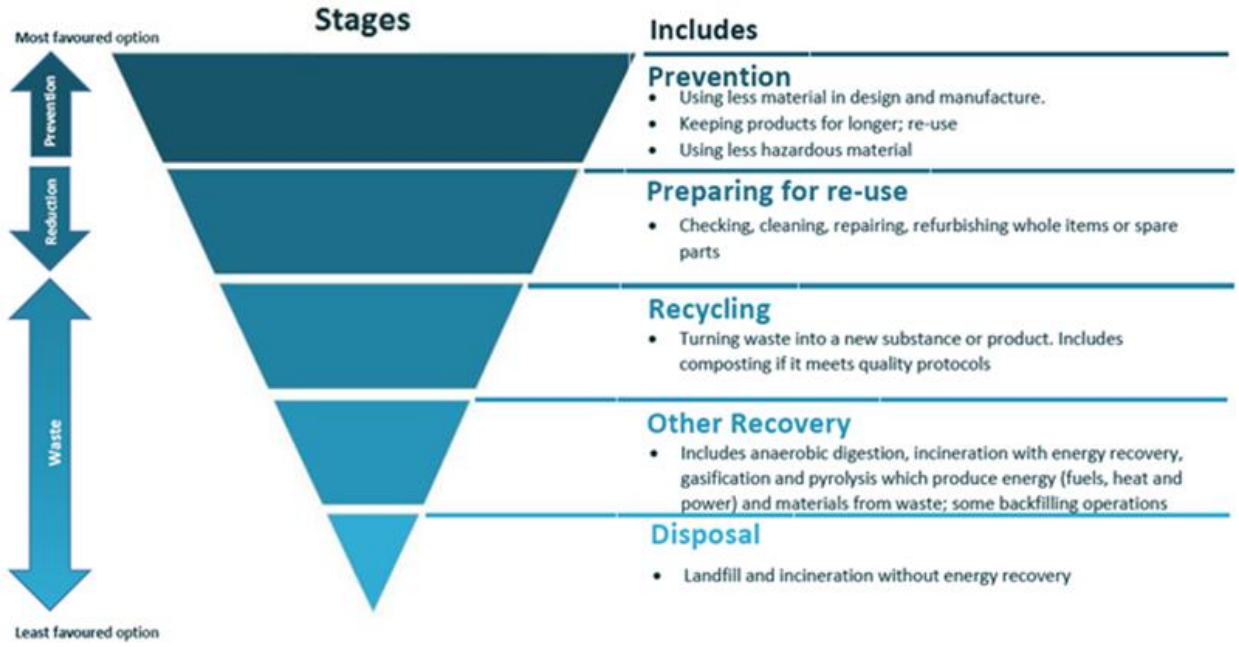


Figure 9 - The Waste Hierarchy

The construction and demolition waste generated as part of the extension will be segregated and monitored as per best practice. Suitable materials will be recycled as part of this process, either to be reused on site, if feasible, or introduced back into the supply chain through recycling by a Licensed Contractor. During construction, all waste arisings will be recorded using a waste management tool (e.g. SmartWaste).

New locally sourced materials will be used, wherever possible, and transportation to site will be managed in the most efficient way possible.

Nominal construction waste should be sent to a landfill or for incineration unless this is unavoidable subject to the nature of materials found on the existing site.

Waste should be recycled in accordance with the local authority collection scheme and suitable space will be provided to store waste until collection. It will be ensured that at least 50% of this operational waste storage space is dedicated to recyclable waste.

3.6.2 Resource Management

Policies will be put in place for management of site impacts such as air and water pollution in line with industry best practice. Monitoring and reporting on carbon emissions and water use from site related activities will take place in line with national benchmarks.

It is recommended that the overall management of the construction waste be monitored through the Considerate Constructors Scheme as part of Best Practice Site Management.

3.6.3 Materials

The Proposed Development is to use high quality, low impact materials in order to minimise the overall impact on the environment as far as possible.

The existing structure is proposed to be retained which will reduce the quantity of materials required and the associated embodied carbon.

Although, all the timber and timber-based products used on-site will be legally sourced from a reputable forest certification scheme, such as Forest Stewardship Council (FSC) with appropriate Chain of Custody certification.

As standard industry best-practice, all insulation[10] on the site will have a GWP of <5. Other ozone depletion materials will be avoided where feasible, including high VOC content paints and sealants, further minimising the Proposed Development's effect on global Climate Change.

All other materials will be sourced from suppliers who have an accredited Environmental Management System (EMS) certified through ISO 14001 or the Eco-Management and Audit Scheme (EMAS), wherever possible, ensuring that any environmental impacts caused are managed and reduced. In addition, wherever possible, procurement of materials in line with the following responsible sourcing principles will be sought:

- Source materials from suppliers and manufacturers with ISO14001 certification.
- Source materials locally and responsibly.
- Secure relevant certification and product details from suppliers and manufacturers prior to order.
- Maintain records of materials ordered, manufacturer, supplier and certification.
- Research each supplier and their credibility to ensure sustainable practices extend beyond the site.

3.6.4 Water

Areas of the Greater London have been declared areas of 'serious water stress'. Water is a vital resource, and efficient usage should be encouraged in all new buildings. The Proposed Development aims to significantly reduce mains water use through a combination of efficiency measures, including the use of fittings with a low capacity or flow restrictors to reduce water use and PIR sensors linked to water shut-offs valves to reduce the chances of water waste. The specification outlined below is indicative of one which will meet these requirements of <105 litres/person/day:

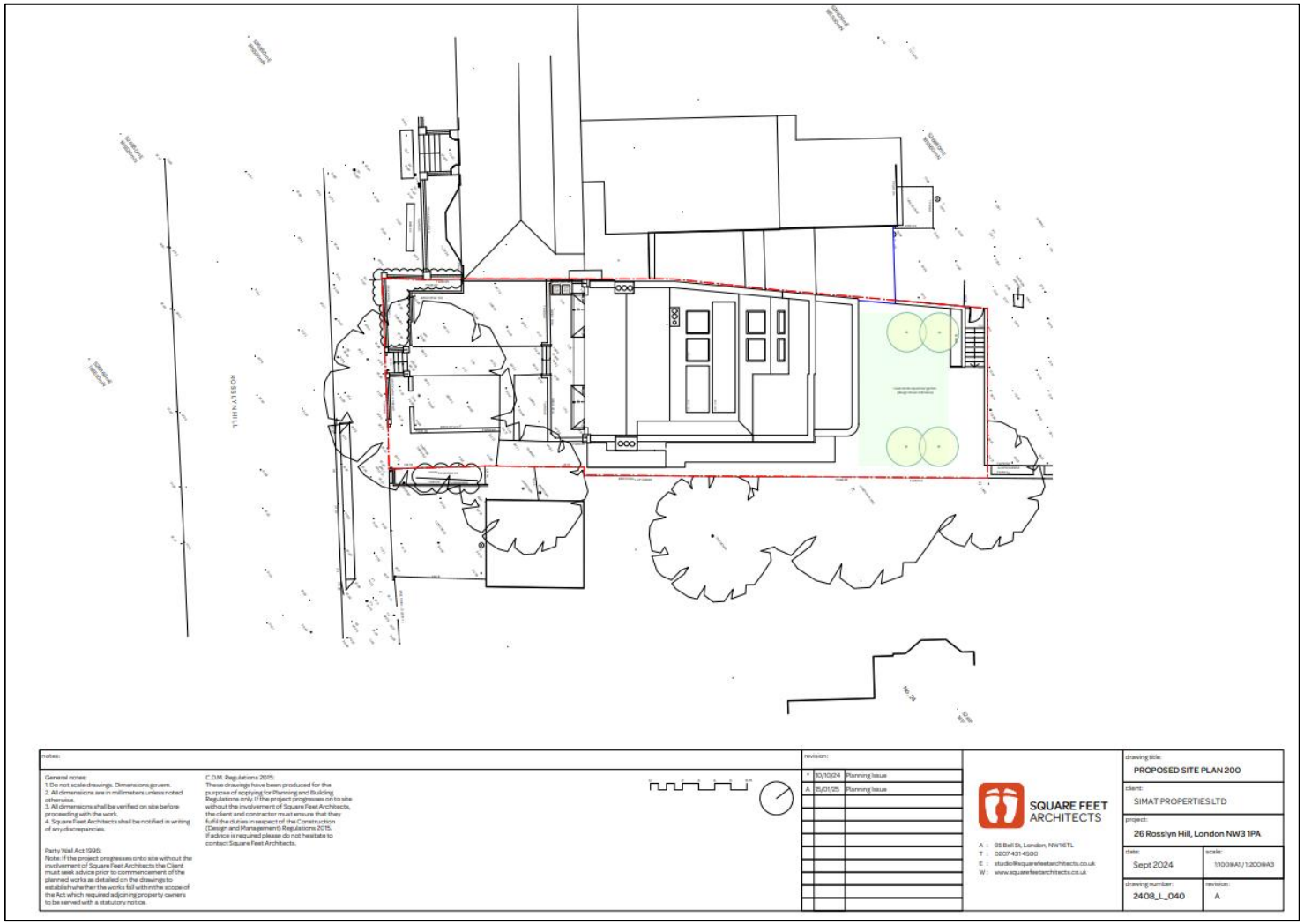
- WCs: 4.00 litre effective flush volume

[10] Internal insulation to the existing walls

- Hand wash basin taps: 4.50 litres/min
- Kitchenette taps: 5.00 litres/min
- Showers: 6.00 litres/min
- Baths: 140 litres
- Domestic sized dishwashers (if installed) 12.00 litres/cycle
- Domestic sized washing machines (if installed) 40.00 litres/use

Appendices

Appendix A – Site Plan



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Appendix B – SAP Summary Sheets

26 Rosslyn Hill, London

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BRegs LV1 2021 (with 2023 amendments) | Planning Authority: London Borough of Camden | V1 RevA

Block	Type	External Wall	External Wall (Esisting façade)	Cold Roof	Flat/Pitched Roof	Ground Floor	Windows & Glazed Doors	Roof Lights	External Door	Air Permeability	MVHR	Space Heating	DHW Heating	HW Cylinder	PV Allocation	EPC	DER v TER Improvement	DFEE vs TFEE Improvement	DPER vs TPER Improvement
Type	(#)	U Value	U Value	U Value	U Value	U Value	U Value	U Value	U Value	m³/m².hr	Y/N	Type	Type	(litres)	(# Panels)	(Rating)	%	%	%
-	Flats	0.15	0.27	-	0.13	0.10	1.00	1.00	1.20	4.00	Y/N	ASHP	ASHP	210.00	9	B	73.78%	16.71%	47.67%

Fabric Elements

Element	U Values	Description
External Wall (New Cavity Wall)	0.15	102.5mm brickwork. 185mm DriTherm Cavity Slab 32 (0.032 conductivity), 140mm Hnason Fenlite Background Solid Concrete Block, 15mm Wet Plaster
External Wall (Esisting façade)	0.27	440mm Existing Brickwork, 120mm Schneider Multitherm 110 (0.04 conductivity), 9mm Lime Hemp Plaster Ty-Mawr, 3mm Superfine Finish Plaster Ty-Mawr
Flat/Pitched Roof	0.13	Slates, 30mm treated battens, breather membranem Hardrock Multi-fix insulation, 200mm Rockwool Flexi insulation between joists, airitght membrane, 70mm suspended Gypsum MF Ceiling system with 30mm plasterboards, 2.5mm skim
Ground Floor *(slab on ground)*	0.10	20mm Stone Finish, 4mm Schluter Ditra Mat, 6mm Levelling Compound, 30mm screed, VCL Visqueen, 180mm Xtratherm Polyeurethane Thin, 20mm Cavity Drain Membrane Delta MS20, waterproof slurry and antilime coating, 325mm waterproofing RCm 50mm Concrete binding and permeable geotextile
Windows/Rooflights & Glazed Doors	1.00	Triple Glazed Windows (G value of 0.5) - whole window values
External Door - Solid	1.20	Insulated door to meet designated U-value. Assumed by SRE
Construction Details *(PSI values)*	-	See thermal bridge specification for further details

Building Systems

Element	Description
Air Permeability	Blower door air pressure test to be performed and designed to achieve 4.00m³/m²hr @50Pa or superior
Mechanical Ventilation	MVHR - Nuaire MRXBOXAB- ECO2 - Assumed by SRE
Lighting	100% Low Energy Lighting with 90 Lm/Watt efficacy
Space Heating and Domestic Hot Water	Vailant arotherm 10kW (Air to water) (Or equivalent or improved system)
Heating Controls	Time and temperature zone control by arrangement
Heat Emitters	Underfloor (Pipes in concrete)
Showers and Baths	Quantities as per plan. Showers modelled as 8l/min.
Hot Water Cylinder	Vailant arotherm 10kW (Air to water) (Or equivalent or improved system) 210 L hot water cylinder with a loss factor of 1.42 kWh/day
Waste Water Heat Recovery	RECOUP Easyfit+ to master bedroom and Bed 2 ensuite showers
Renewables	Proposed array of 1.2 kWp per flat (@400W/panel) on flat roof split in east facing with horizontal pitch
Notes	Corridors are assumed to be unheated

Sign Off Details					On behalf of the contractor/client:			
	Name	Manas Bane	Date	12.02.2025		Name		Date	
	Sign	(on behalf of SRE)				Sign			

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