Energy and Sustainability Statement

34A Carew Road, Tottenham, London N17 9BA

Energy and sustainability statement submitted in support of a full planning application for one dwelling.

5 November 2026

Summary

This statement accompanies a full planning application for one single-storey, one-bedroom self-build dwelling of approximately 38 m² gross internal area at 34A Carew Road, replacing an existing domestic garage. It has been prepared with reference to Haringey's explanatory note on energy statements for minor developments (November 2025), Local Plan Policies SP4 and DM21, and London Plan Policies SI2, SI3 and SI4. [E1, E2]

The dwelling will be all-electric, with an individual air-to-water heat pump serving low-temperature underfloor heating and a hot water cylinder. There will be no gas connection and no on-site combustion. The building fabric will be designed to enhanced insulation and airtightness targets that exceed the Part L 2021 minimum standards, with the aim of reducing emissions by at least 10% through energy efficiency alone (Be Lean), as Haringey's guidance encourages.

As is usual for a small self-build scheme, the detailed construction design, including final wall, roof and floor build-ups, junction details and heat-pump product selection, will be prepared at Building Regulations stage, once planning permission has been granted. The carbon figures in this statement are therefore design-stage estimates rather than accredited SAP results. Accredited SAP output sheets and the GLA carbon emissions reporting spreadsheet will be prepared once the detailed design is fixed, and the applicant requests that their submission be secured by a pre-commencement condition, which is proportionate to a single 38 m² dwelling.

On these estimates, the dwelling achieves a Be Lean reduction of around 12–15% and an overall reduction in regulated carbon emissions of around 59–63% against the Part L 2021 baseline, with residual emissions of approximately 0.19–0.21 tonnes of CO_2 a year. The applicant will meet the remaining shortfall through a carbon offset contribution, calculated from the final SAP results and secured by unilateral undertaking. On current estimates, this is approximately £540 to £600.

1. The development

Item	Detail
Proposal	One self-contained Use Class C3 self-build dwelling; single-storey; one bedroom; one-person occupancy
Gross internal area	Approximately 38 m² (internal dimensions approximately 12.2 m × 3.1 m; average ceiling height approximately 2.8 m)
Existing building	Uninsulated, unheated domestic garage, to be demolished
Form	Compact single-storey building whose form recalls the original garage
Glazing	Approximately 1.6 m² of double-glazed windows in the walls; approximately 4 m² of triple-glazed rooflights

Item	Detail
Floor	Insulated ground-bearing concrete slab
Heating and hot water	Individual air-to-water heat pump (provisionally around 3.5 kW thermal output), low-temperature underfloor heating and hot water cylinder
Fuel	Electricity only; no gas connection

2. Policy requirements

Haringey Local Plan Policy SP4 requires new development to be zero carbon, meaning a 100% reduction in regulated carbon emissions compared with the Part L 2021 Building Regulations baseline. Haringey's explanatory note for minor developments sets out that residential schemes should aim to exceed a 10% reduction through energy efficiency (Be Lean), that developments should achieve at least a 20% reduction from on-site renewable energy (Be Green), and that any remaining emissions should be offset through a financial contribution. [E1]

The offset contribution is calculated as £95 per tonne of CO_2 per year of shortfall, over 30 years, and is usually secured for minor applications by a unilateral undertaking. [E1]

This statement follows the Mayor of London's energy hierarchy: Be Lean (use less energy), Be Clean (supply energy efficiently), Be Green (use renewable energy) and, where residual emissions remain, carbon offsetting. [E3]

3. Basis of the figures

The figures in this statement have been prepared using a simplified monthly calculation following the SAP methodology, with SAP 10.2 carbon factors (0.136 kg CO_2/kWh for electricity and 0.210 kg CO_2/kWh for mains gas) and London climate data. The accredited assessment at detailed design stage will use the methodology approved at that time, currently SAP 10.3, so the final figures may differ. The assumptions are listed in Appendix A. [E4, E5]

The baseline is the Part L 2021 notional dwelling of the same size and form, not the existing unheated garage. It has a gas boiler and roof-mounted solar panels sized in accordance with SAP Appendix R. In line with the GLA approach, the Be Lean case combines the proposed fabric with the notional gas heating and solar panels, and the Be Green case adds the heat pump.

Two cases are shown:

- a central case, in which the fabric targets in Section 4 are achieved at the middle of their ranges; and
- a sensitivity case, using the less favourable end of the target ranges and lower heat-pump efficiencies.

4. Be Lean: energy efficiency

The dwelling will follow a fabric-first approach, with enhanced insulation, airtightness and attention to thermal junctions. The fabric will be designed to the following targets, which exceed the Part L 2021 minimum standards. Final values will be confirmed at detailed design.

Element	Part L 2021 minimum (limiting value)	Proposed target
External walls	0.26 W/m²K	Approximately 0.13–0.16 W/m²K
Roof	0.16 W/m²K	Approximately 0.10 W/m²K
Ground floor	0.18 W/m²K	Approximately 0.10 W/m²K (insulated ground-bearing slab)
Windows	1.6 W/m²K	Approximately 1.0–1.2 W/m²K
Rooflights	2.2 W/m²K	Approximately 1.0–1.1 W/m²K, triple glazed with solar-control specification
External doors	1.6 W/m²K	Approximately 1.0 W/m²K
Air permeability	8.0 m³/h·m² at 50 Pa	3 m³/h·m² at 50 Pa or better, confirmed by pressure test
Thermal bridging	No limiting value	Junctions detailed to recognised construction details (y-value approximately 0.05 W/m²K)

In addition:

- all fixed lighting will be low-energy LED;
- the hot water cylinder and primary pipework will be insulated;
- heating will be controlled by room thermostat and timer, with the low flow temperatures suited to underfloor heating; and
- ventilation will be designed to comply with Part F of the Building Regulations.

On these targets, the estimated Be Lean emissions are 0.43–0.45 t CO_2 a year, a reduction of around 12–15% against the baseline, exceeding Haringey's 10% aim. Because the dwelling is small and single-storey, with a large external surface relative to its floor area, the airtightness and junction-detailing targets make a particular contribution to this result and will be prioritised in the detailed design.

5. Be Clean: efficient energy supply

The development is a single small dwelling. Connection to a district heat network is not considered practicable at this scale, and no network is understood to be available at Carew Road. The all-electric, low-temperature heating system would not prevent a future connection if a network were to become available.

6. Be Green: renewable energy

Space heating and hot water will be provided by an individual air-to-water heat pump, provisionally around 3.5 kW thermal output, serving low-temperature underfloor heating, which allows the heat pump to operate efficiently. The heat pump will be selected at detailed design stage, and its seasonal performance will be taken from manufacturer data in the final SAP calculation. The estimates assume seasonal efficiencies of 3.0 for space heating and 2.2 for hot water in the central case, and 2.7 and 2.0 in the sensitivity case.

The outdoor unit will be positioned in a ventilated location shown on the proposed plans, taking account of neighbouring windows, noise and maintenance access. Its final siting and noise performance will be confirmed as part of the detailed specification.

The heat pump is estimated to reduce emissions by more than 50% compared with the Be Lean case, well above Haringey's minimum of 20% from on-site renewable energy.

Solar panels are not included in the present proposal. The roof is approximately 39 m², including about 4 m² of rooflights, and the usable area will depend on the roof form, orientation, shading and installation clearances. The heat pump is proposed as the principal renewable technology. The potential for a small solar array will be reviewed before the detailed specification is fixed and incorporated where technically and architecturally practical.

7. Estimated carbon emissions

Stage	Central case	Sensitivity case
Baseline (Part L 2021 notional dwelling)	0.51 t CO_2/yr	0.51 t CO_2/yr
Be Lean (proposed fabric)	0.43 t CO_2/yr (around 15% reduction)	0.45 t CO_2/yr (around 12% reduction)
Be Clean	No change	No change
Be Green (with heat pump)	0.19 t CO_2/yr	0.21 t CO_2/yr
Total reduction against baseline	Around 63%	Around 59%
Residual emissions (shortfall)	0.19 t CO_2/yr	0.21 t CO_2/yr
Offset contribution (£95 × t/yr × 30 years)	Approximately £540	Approximately £600

These are design-stage estimates and will be confirmed by the accredited SAP calculations.

8. Carbon offset contribution

The applicant will pay a carbon offset contribution for the residual regulated emissions, calculated using Haringey's formula of £95 per tonne of CO_2 per year over 30 years and based on the final SAP calculations. The contribution will be secured by unilateral undertaking, using the Council's template. On current estimates, it is approximately £540 to £600. [E1]

9. Overheating and the cooling hierarchy

No active cooling is proposed. The design follows the cooling hierarchy in London Plan Policy SI4: first minimising solar heat gain, then reducing internal heat gains, using thermal mass, and providing effective natural ventilation.

- Wall glazing is limited to approximately 1.6 m² to moderate solar gain, and glazing orientation and solar performance will inform the final specification.
- The rooflights, approximately 4 m² or around 10.5% of the floor area, will be specified with solar-control glazing and external shading where practicable. Internal blinds alone will not be relied on for Part O compliance.

- The six deciduous birch trees and planted beds will provide summer shading and help reduce heat build-up, while allowing winter sun.
- Openable windows and, where feasible, openable rooflights will allow purge ventilation, and secure ventilation openings and cross-ventilation will be considered in the detailed design.
- Low-energy lighting and insulated hot water pipework will limit internal heat gains, and the concrete floor slab will provide useful thermal mass.

The design will be assessed against Part O of the Building Regulations. A full dynamic overheating model is not required for minor development, and the Good Homes Alliance early-stage overheating tool will be completed as part of the detailed design, so that the position, opening area and solar-control performance of the rooflights are compatible with Part O. [E1]

10. Other sustainability measures

- Water: the dwelling will be designed to meet the optional Building Regulations requirement of 110 litres per person per day, consistent with London Plan Policy SI5.
- Surface water: runoff from the approximately 39 m² roof will pass to a 3,000-litre below-ground attenuation tank with controlled discharge, replacing the existing uncontrolled drainage. The garden will be permeable gravel-grid rather than an impermeable patio. Approximately 6 m² of new impermeable surface is proposed and 2 m² of existing tarmac will be replaced with permeable material, giving a net increase of approximately 4 m². See the accompanying Flood Risk Assessment.
- Greening and biodiversity: approximately 8 m² of planted beds and six birch trees will be provided.
- Air quality: the heating system involves no on-site combustion, so there are no on-site NOx or particulate emissions from heating.
- Materials and demolition: the existing garage, with its uninsulated corrugated roof, air gaps and no heating, will be demolished. Reusable and recyclable materials will be salvaged or recycled, and construction waste kept to a minimum.

11. Summary of commitments

- The dwelling will be all-electric, with an air-to-water heat pump and no gas connection.
- The fabric will be designed to the enhanced targets in Section 4, which exceed the Part L 2021 minimum standards, with the aim of a Be Lean reduction of at least 10%.
- Accredited SAP output sheets (Be Lean and Be Green) and the GLA carbon emissions reporting spreadsheet will be prepared at detailed design stage; the applicant requests that their submission be secured by a pre-commencement condition.
- A carbon offset contribution, calculated from the final SAP results, will be secured by unilateral undertaking.
- Overheating will be addressed through solar-control rooflights, natural ventilation and other passive measures, with no active cooling.

12. References

[E1] Haringey Council, Explanatory Note: Energy Statement and Sustainability Assessment Information Requirements for Minor Developments (November 2025, Version 1). Available at: https://haringey.gov.uk/sites/default/files/2025-11/energy_statement_guide_for_minor_developments.pdf

[E2] Haringey Council, Energy statement requirements for minor developments. Available at: https://haringey.gov.uk/planning-building-control/planning/planning-applications/how-does-planning-application-process-work/energy-statement-requirements-minor-developments

[E3] Mayor of London, Energy Assessment Guidance (2022), and The London Plan (2021), Policies SI2, SI4 and SI5.

[E4] BRE, The Government's Standard Assessment Procedure for Energy Rating of Dwellings, SAP 10.2, including Appendix R (notional dwelling) and carbon emission factors.

[E5] UK Government, Standard Assessment Procedure (updated June 2026). Available at: https://www.gov.uk/guidance/standard-assessment-procedure

Appendix A: Assumptions used in the estimates

Input	Central case	Sensitivity case
Floor area	37.8 m² (internal approx. 12.2 m × 3.1 m)	As central
Ceiling height	2.8 m (average)	As central
External walls (U-value)	0.15 W/m²K	0.16 W/m²K
Roof (U-value)	0.10 W/m²K	As central
Ground floor (U-value)	0.10 W/m²K	As central
Windows, 1.6 m² (U-value)	1.1 W/m²K	1.2 W/m²K
Rooflights, 4 m², triple glazed (U-value)	1.05 W/m²K	1.1 W/m²K
Doors, 4 m² (U-value)	1.0 W/m²K	As central
Thermal bridging (y-value)	0.05 W/m²K	As central
Air permeability	3 m³/h·m² at 50 Pa	As central
Ventilation	Natural ventilation with intermittent extract fans	As central
Occupancy (SAP formula)	1.35 persons	As central
Heat pump seasonal efficiency	3.0 space heating; 2.2 hot water	2.7 space heating; 2.0 hot water
Lighting	Low-energy LED	As central
Carbon factors (SAP 10.2)	Electricity 0.136; gas 0.210 kg CO_2/kWh	As central
Baseline and Be Lean heating	Part L 2021 notional: gas boiler (89.5%) and solar panels of approx. 2.3 kWp	As central

These are design-stage estimates and will be superseded by the accredited SAP calculations.