

ENERGY STATEMENT

SAP 10.2 Energy & Sustainability Assessment

01 Mayfair Gardens, London, N17 7LP

Proposed New-Build Detached Bungalow

Site Address	01 Mayfair Gardens, London, N17 7LP
Report Status	Energy Statement – Planning Submission
Assessment Standard	SAP 10.2 (Building Regulations Part L 2021)
Assessor	Heyare Jayantha <i>Chartered Building Services Engineer</i> <i>Domestic & Non-Domestic Energy Assessor</i> HARITHA CONSULTANTS LIMITED 06 Sutton Plaza Sutton Court Road Sutton SM1 4FS United Kingdom

This Energy Statement has been prepared in accordance with Greater London Authority (GLA) Energy Assessment Guidance, the London Plan (2021) Policy SI 2, the National Planning Policy Framework and Building Regulations Approved Document Part L (2021). It should be read alongside the accompanying SAP 10.2 calculation output.

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1. Executive Summary

This Energy Statement has been prepared to support a planning application for a new-build detached bungalow at 01 Mayfair Gardens, London, N17 7LP. It demonstrates that the proposed dwelling has been designed in accordance with the Mayor of London's Energy Hierarchy (Be Lean, Be Clean, Be Green), London Plan Policy SI 2, and Building Regulations Approved Document Part L (2021).

The accompanying SAP 10.2 assessment confirms that the proposed dwelling achieves a Dwelling Emission Rate (DER) of $-0.56 \text{ kgCO}_2/\text{m}^2/\text{year}$ against a Target Emission Rate (TER) of $15.49 \text{ kgCO}_2/\text{m}^2/\text{year}$ — a 103.62% improvement in regulated carbon emissions over the Part L 2021 notional building. This exceeds the Local Planning Authority's requirement for a minimum 35% improvement (and full net-zero regulated carbon performance, achieved on-site) without recourse to a carbon offset payment.

Headline Results

Metric	Proposed Dwelling	Target / Notional Building
SAP Rating	104 (Band A)	—
Environmental Impact (EI) Rating	100 (Band A)	—
Dwelling / Target Emission Rate ($\text{kgCO}_2/\text{m}^2/\text{yr}$)	-0.56 (DER)	15.49 (TER)
Regulated carbon improvement over Part L 2021	103.62%	≥100% required
Fabric Energy Efficiency ($\text{kWh}/\text{m}^2/\text{yr}$)	56.26 (DFEE)	59.23 (TFEE)
Primary Energy Rate ($\text{kWh}/\text{m}^2/\text{yr}$)	-9.78 (DPER)	82.80 (TPER)
Net regulated CO_2 emissions (t/yr)	-0.06	0.68

Table 1 : SAP 10.2 output Summary

Carbon Dioxide Emissions for Residential Buildings (Tonnes CO_2 per annum)	Regulated	Unregulated
Baseline: Part L 2021 Building Regulations compliant development	0.684	N/A
After energy demand reduction (Be Lean)	0.65	N/A
After low-carbon heating (Be Clean)	0.291	N/A
After renewable energy (Be Green)	-0.025	N/A

Table 2 Carbon Dioxide Emissions after each stage of the Energy Hierarchy for Residential Buildings

Regulated Residential Carbon Dioxide Savings	Tonnes CO_2 Annum	%
Be Lean: savings from energy demand reduction	0.034	0.0501
Be Clean: savings from low-carbon heating	0.359	0.525
Be Green: savings from renewable energy	0.316	0.461
Cumulative on-site savings	0.709	1.0362
Annual savings from off-set payment	0	—
Cumulative savings for off-set payment	0.709	103.62%
Cash in-lieu contribution (£)	0	—

Table 3 Regulated Carbon Dioxide Savings from each stage of Energy Hierarchy

This performance has been achieved through the sequential application of the Energy Hierarchy: minimising fabric heat loss (Be Lean), providing efficient all-electric heat-pump space and water heating (Be Clean), and offsetting the residual demand through roof-mounted photovoltaic generation with battery storage (Be Green). The dwelling has a net-negative Dwelling Emission Rate, meaning modelled on-site renewable generation exceeds the regulated operational carbon emissions of the building. No cash-in-lieu carbon offset contribution is therefore required.

Key Findings

- The dwelling exceeds the London Plan's net-zero carbon standard for regulated emissions on-site, without recourse to the borough's carbon offset fund.
- A 103.62% improvement in regulated CO₂ emissions is achieved against the Part L 2021 notional building — approximately three times the minimum 35% on-site improvement typically expected of major development, and full net-zero performance for a minor scheme of this scale.
- The building fabric alone (prior to the introduction of low-carbon heating or renewables) already satisfies the Fabric Energy Efficiency Standard, with a 5.01% improvement over target.
- The heating and hot water strategy is 100% electric, with no fossil fuel combustion within the dwelling, consistent with the Future Homes Standard trajectory and Part L 2021 transitional arrangements.
- On-site photovoltaic generation (circa 2,330 kWh/year) is sufficient to more than offset the dwelling's residual regulated electricity demand, resulting in a negative DER and DPER.

This Statement should be read as the primary evidential document supporting the energy and sustainability case for the application. It draws exclusively on the SAP 10.2 output referenced above; no figures have been introduced other than those demonstrably present within, or arithmetically derived from, that assessment.

2. Introduction and Scope

This report has been prepared to accompany a planning application for the proposed dwelling described in Section 3 below. Its purpose is to provide a transparent, evidence-based account of the development's energy strategy and to demonstrate compliance with national, regional (GLA/London Plan) and local planning policy relating to energy efficiency, carbon reduction and climate change mitigation.

The scope of this Statement covers:

- The regulated energy performance of the dwelling (space heating, hot water, fixed lighting and ventilation), assessed using SAP 10.2;
- Application of the Mayor's Energy Hierarchy (Be Lean, Be Clean, Be Green) and the resulting reduction in regulated carbon emissions relative to the Part L 2021 notional building;
- The building fabric specification, low-carbon heating strategy and on-site renewable energy technologies;
- Compliance with Building Regulations Parts L, O, F, G and S; and
- A single, consolidated compliance statement suitable for determination purposes.

Unregulated energy use (e.g. domestic appliances, cooking and other plug loads) falls outside the scope of Part L / SAP compliance and is therefore excluded from the regulated carbon assessment, consistent with standard GLA and Building Regulations methodology.

This report has been structured to present a single, internally consistent set of performance figures, drawn directly from the SAP 10.2 output, and to avoid the duplication of data across multiple sections that can obscure the headline case for a determining officer. Each performance metric is presented once, in the Energy Performance and Carbon Emissions Summary (Section 9), and is cross-referenced elsewhere in the report rather than restated.

Report Author and Reliance

This Statement has been prepared with reference to the SAP 10.2 calculation undertaken by Mr Heyare Jayantha (Assessor ID DW98-0001), Elmhurst Energy SAP 10 Online v3.1.62. Reliance may be placed on this report by the applicant and the Local Planning Authority for the purpose of determining the application to which it relates. It should not be relied upon for any other purpose, including Building Regulations compliance sign-off, without independent verification of the final as-built specification against the assumptions set out in Section 5 below.

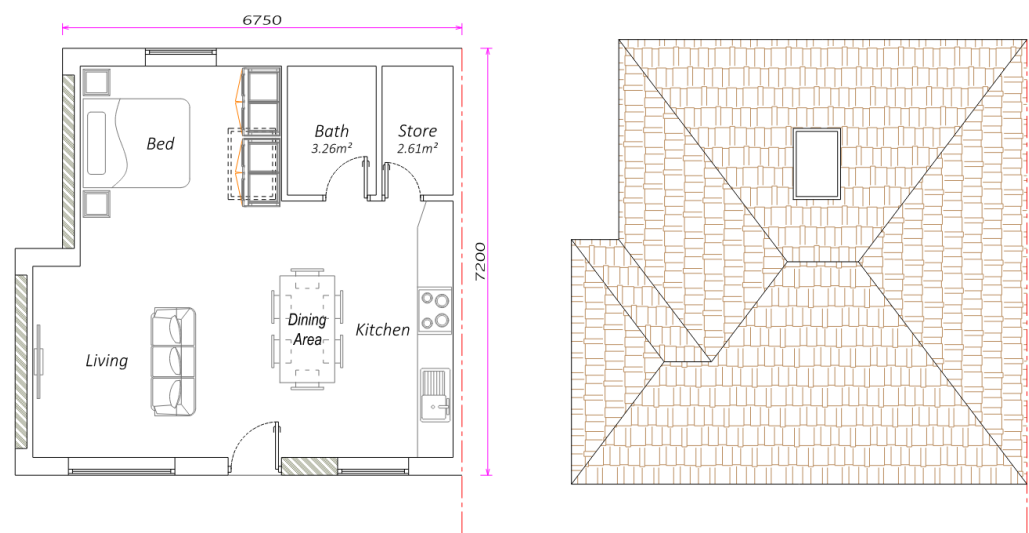
3. Site and Development Description

Item	Detail
Site address	01 Mayfair Gardens, London, N17 7LP
Proposed development	New-build detached bungalow (single storey)
Total floor area (TFA)	44.16 m ²
Number of storeys	1
Terrain type	Urban
Number of sheltered sides	0
Living area	25.97 m ²

Table 4 Project Summery

The dwelling has been designed as a high-performance, all-electric residential unit, combining a highly insulated fabric with a low-carbon heat pump heating system and on-site photovoltaic generation, in line with best-practice sustainable design principles.

Dwelling Geometry



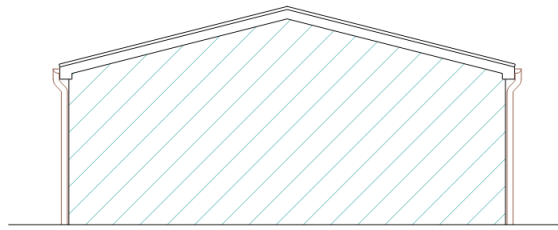
Proposed Ground Floor Plan 1:50
GIA 44.16m²

Proposed Roof Plan 1:50

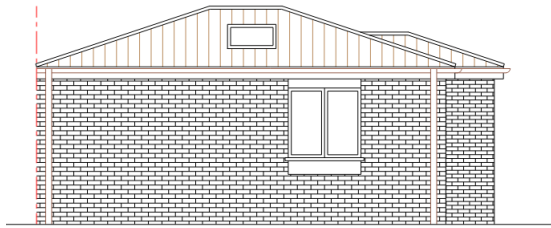
Figure 1 Proposed ground floor and roof plan



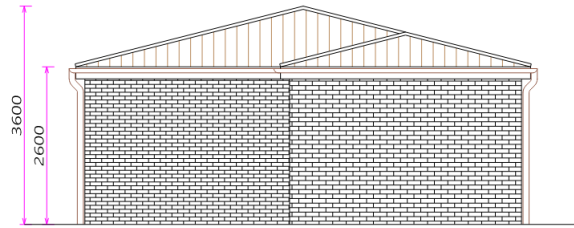
Proposed Front Elevation 1:50



Proposed Side Elevation 1:50



Proposed Rear Elevation 1:50



Proposed Side Elevation 1:50

Figure 2 Proposed elevations

4. Policy and Regulatory Framework

The energy strategy has been developed with reference to the following policy and regulatory framework:

- National Planning Policy Framework (NPPF) — sustainable development, energy efficiency and climate change resilience;
- The London Plan (2021), Policy SI 2 — Minimising Greenhouse Gas Emissions, requiring application of the Mayor's Energy Hierarchy and a net-zero carbon standard for new residential development, supported by GLA Energy Assessment Guidance;
- Building Regulations Approved Document Part L (2021) — Conservation of Fuel and Power;
- Building Regulations Approved Document Part O — Overheating;
- Building Regulations Approved Document Part F — Ventilation;
- Building Regulations Approved Document Part G — Sanitation, Hot Water Safety and Water Efficiency; and
- Building Regulations Approved Document Part S — Infrastructure for Charging Electric Vehicles.

Policy SI 2 requires major and, where applicable, minor residential development to achieve the greatest possible reduction in regulated carbon emissions on-site through the Energy Hierarchy, with any shortfall against a net-zero carbon target met through a cash-in-lieu contribution to the relevant borough's carbon offset fund. Section 9 of this Statement demonstrates that the proposed dwelling achieves a net-negative Dwelling Emission Rate on-site, and that no offset contribution is therefore required.

4.1 The Mayor's Energy Hierarchy — Requirements at Each Stage

GLA Energy Assessment Guidance requires each stage of the Energy Hierarchy to be evidenced separately, rather than presented only as a combined result, so that the relative contribution of demand reduction, efficient supply and renewable generation can be scrutinised individually. This Statement addresses each stage in turn in Section 6, with the corresponding carbon savings tabulated in Section 9.

Hierarchy Stage	Policy Expectation	Development Response
Be Lean	Minimise demand through passive design and fabric performance ahead of specifying building services	Enhanced U-values, low air permeability, junction-based thermal bridging control — see Section 6.1
Be Clean	Supply remaining demand efficiently, prioritising low-carbon/heat network connection where feasible	All-electric air source heat pump with zoned controls — see Section 6.2
Be Green	Maximise on-site renewable generation to further reduce residual regulated emissions	12.0 kWp roof-mounted PV with 8.0 kWh battery storage — see Section 6.3

Table 5 : Energy Hierarchy – Policy Expectations and Development Response

4.2 Local Planning Policy

The site falls within the administrative area of the London Borough of Haringey (postcode N17), and the energy strategy has therefore also had regard to the Council's adopted Local Plan policies concerning climate change mitigation, sustainable design and construction, and renewable energy, which apply London Plan Policy SI 2 at the local level. In the absence of site-specific planning constraints identified to the assessor, the strategy set out in this Statement is considered a reasonable and policy-compliant response for a dwelling of this scale; this should be confirmed against any adopted borough-specific energy or sustainability checklist as part of the wider application submission.

Policy / guidance	Relevant requirement	Project response
National Planning Policy Framework (Dec 2024)	Supports sustainable development and planning responses that mitigate and adapt to climate change.	Energy-efficient, low-carbon design with on-site renewable generation.
London Plan 2021 - SI 2	Minimise greenhouse gas emissions through the energy hierarchy: Be Lean, Be Clean, Be Green; Be Seen applies monitoring requirements principally to major development.	Report structured around the energy hierarchy; final SAP demonstrates net-negative regulated carbon emissions.
London Plan 2021 - SI 3	Promotes efficient, resilient energy infrastructure and consideration of heat-network opportunities.	For a single detached dwelling, an individual all-electric ASHP is a proportionate low-carbon solution; no communal network is proposed.
London Plan 2021 - SI 4	Apply the cooling hierarchy and manage heat risk, prioritising passive measures before active cooling.	No fixed cooling is included in SAP; detailed overheating compliance to be demonstrated through the appropriate Part O route.
Haringey Local Plan - SP4	Working towards a Low Carbon Haringey.	High-performance fabric, all-electric heat pump and PV/battery strategy.
Haringey Development Management - DM21	Sustainable design and construction.	Energy demand reduction, low-carbon services and renewable energy incorporated as integral design measures.

Table 6 Planning Policy and Energy Strategy Compliance Summary

5. Assessment Methodology and Assumptions

The regulated energy performance of the dwelling has been assessed using the Government's Standard Assessment Procedure, SAP 10.2 (Elmhurst SAP 10 Online, v3.1.62), in accordance with the National Calculation Methodology. The assessment is based on the as-designed specification of the dwelling and incorporates:

- Building fabric U-values, thermal bridging (calculated on a junction-by-junction basis) and air permeability;
- Space heating and domestic hot water demand, plant efficiency and controls;
- Fixed lighting and ventilation strategy; and
- On-site renewable electricity generation and battery storage.

The calculation produces the Dwelling Emission Rate (DER), Dwelling Fabric Energy Efficiency (DFEE) and Dwelling Primary Energy Rate (DPER), each benchmarked against the corresponding Target figures (TER, TFEE, TPER) derived from the Part L 2021 notional building of the same geometry. The full SAP worksheets accompany this Statement as Appendix A.

5.1 Key Modelling Assumptions

The following principal assumptions, taken from the SAP input schedule, underpin the results reported in this Statement:

Input	Assumption
Property type / exposure	Detached bungalow, urban terrain, 0 sheltered sides
Air permeability	5.0 m ³ /(h·m ²) @ 50 Pa, evidenced by blower-door pressure test (design/target basis)
Thermal bridging	Calculated using Appendix K (junction-specific ψ -values), Y-value 0.07 W/m ² K — not a default/generic allowance
Ventilation	2 No. intermittent extract fans; no mechanical whole-dwelling ventilation system modelled
Heating controls	Time and temperature zone control (SAP control code 2207)
Occupancy	SAP-standardised assumed occupancy of 1.52 persons, derived from TFA per SAP methodology
Electricity tariff	Standard tariff; smart electricity meter fitted
PV overshadowing	"Modest" overshadowing, factor 0.80

Table 7 Summary of Key SAP Calculation Inputs and Design Assumptions

6. Energy Strategy: The Energy Hierarchy

The proposed development follows the recognised three-stage Energy Hierarchy — reducing energy demand before introducing efficient low-carbon building services and, finally, on-site renewable generation.

6.1 Be Lean — Fabric-First Design

Energy demand has been minimised through a fabric-first approach: enhanced thermal insulation, high-performance glazing, controlled air permeability and explicit, junction-by-junction treatment of thermal bridging.

Building Element	Construction	U-value (W/m ² K)
External wall	Cavity wall — dense plaster / dense block, filled cavity	0.16
Roof (sloping)	Insulated external slope roof	0.09
Ground floor	Slab-on-ground, screed over insulation	0.11
Windows	Double glazed, low-E soft coat	1.20
Roof windows	Double glazed, low-E soft coat	1.20

Table 8 : Proposed Building Fabric Performance and U-Values

Glazing is specified with a g-value of 0.63 and a frame factor of 0.70, providing a balanced approach between daylighting, useful solar gain and fabric heat loss. Openings are distributed to the north and south elevations, together with a south-facing rooflight.

Air permeability has been set at a design value of 5.0 m³/(h·m²) @ 50 Pa, to be confirmed by blower-door pressure testing prior to completion. Thermal bridging has been calculated explicitly for each junction (lintels, sills, jambs, ground floor perimeter, external corners, eaves, ridge and roof-window reveals) rather than assumed generically, giving a calculated Y-value of 0.07 W/m²K and a thermal mass parameter of 390.88 kJ/m²K.

This fabric specification results in a Dwelling Fabric Energy Efficiency (DFEE) of 56.26 kWh/m²/year against a Target (TFEE) of 59.23 kWh/m²/year — a 5.01% improvement — confirming that the fabric energy efficiency requirement is satisfied ahead of the introduction of building services.

Thermal Bridging Schedule

In accordance with best practice and GLA expectations, thermal bridging has not been assumed via a default/generic uplift but has been calculated for each individual junction using Appendix K of SAP, as summarised below.

Junction	Length (m)	ψ-value (W/m·K)
E2 — Other lintels (incl. steel lintels)	5.10	0.30
E3 — Sill	4.20	0.04
E4 — Jamb	11.90	0.05
E5 — Ground floor (normal)	27.40	0.16
E16 — Corner (normal)	12.50	0.09
R1 — Head of roof window	0.80	0.08
R2 — Sill of roof window	0.80	0.06
R3 — Jamb of roof window	2.40	0.08

Junction	Length (m)	ψ -value (W/m ² ·K)
E11 — Eaves (insulation at rafter level)	27.40	0.04
E17 — Corner (inverted)	2.50	-0.09
R4 — Ridge (vaulted ceiling)	21.09	0.08
R5 — Ridge (inverted)	2.07	0.04

Table 9 : Thermal Bridging Junctions and ψ -Values

All ψ -values taken from Government Approved Construction Details (Gov Approved Scheme) as recorded in the SAP input; combined γ -value = 0.07 W/m²K.

Ventilation Heat Loss

The design air permeability of 5.0 m³/(h·m²) @ 50 Pa, together with two intermittent extract fans, produces an average effective infiltration rate of approximately 0.60 air changes per hour and an average annual ventilation heat loss of 25.2 W/K, forming part of the overall Heat Loss Parameter of 1.44 W/m²K reported in Section 3. No mechanical whole-dwelling ventilation system (e.g. MVHR) has been modelled; the ventilation strategy relies on background/purge ventilation combined with local intermittent extract, to be confirmed at Building Regulations stage (see Section 7.2).

6.2 Be Clean — Low-Carbon Heating and Hot Water

The remaining space heating and domestic hot water demand is met entirely by an efficient electric air source heat pump, removing any reliance on fossil-fuel combustion within the dwelling.

Parameter	Specification
Heating system	Air source heat pump — Vaillant aroTHERM 5 kW (SAP database ref. 102608)
Fuel	Electricity
Seasonal efficiency (SAP)	Winter 323.78% / Summer 163.58%
Heat emitters	Radiators, 35°C design flow temperature
Controls	Time and temperature zone control (SAP control code 2207)
Space heating contribution	100% (no secondary heating)
Domestic hot water	From main heating system; 210-litre cylinder, cylinder stat, independent time control, fully insulated primary pipework, measured standing loss 1.63 kWh/day

Table 10 Proposed Space Heating and Domestic Hot Water System Specification

The combination of heat-pump technology with low-temperature radiator distribution and zoned time/temperature control provides an efficient, fully electric heating strategy that is directly compatible with continuing decarbonisation of the national electricity grid.

Space Heating and Hot Water Demand

The SAP assessment calculates a net space heating requirement of approximately 2,086 kWh/year (47.25 kWh/m²/year) and a domestic hot water heat requirement of approximately 2,028 kWh/year, before application of the heat pump's seasonal efficiency. Reflecting the heat pump's high seasonal coefficient of performance, the resulting delivered (fuel) energy is substantially lower than the heat demand itself — approximately 644 kWh/year of electricity for space heating and 1,240 kWh/year of electricity for hot water — underlining the efficiency benefit of heat-pump technology relative to direct electric or fossil-fuel alternatives.

6.3 Be Green — On-Site Renewable Energy

Following the reduction of demand and the provision of efficient low-carbon heating, the residual electricity demand is addressed through on-site photovoltaic generation with battery storage.

Parameter	Specification
PV array capacity	12.0 kWp
Elevation (pitch)	30°
Overshading	Modest (overshading factor 0.80)
Connection	Connected to dwelling; no export-capable meter modelled
Battery storage	8.0 kWh
Modelled annual generation	Approximately 2,330 kWh/year

Table 11 : Proposed Solar Photovoltaic (PV) and Battery Storage System Specification

The battery storage system allows a greater proportion of on-site generated electricity to be retained and used within the dwelling, rather than relying solely on the coincidence of generation and demand, further reducing reliance on imported grid electricity.

Generation versus Regulated Demand

Total regulated electricity demand for the dwelling (space heating, hot water and fixed lighting, expressed as delivered energy before renewable offset) is approximately 2,000 kWh/year. Modelled on-site PV generation of circa 2,330 kWh/year therefore exceeds total regulated delivered energy demand, which — combined with the efficiency of the heat pump — is the principal driver of the dwelling's negative DER and DPER. This confirms that the renewable technology has been sized appropriately to the dwelling's demand rather than being materially under- or over-specified relative to the fabric and services strategy.

7. Overheating (Part O) and Ventilation (Part F)

7.1 Overheating

Overheating risk has been considered in line with the Cooling Hierarchy set out in Approved Document Part O, prioritising passive design measures ahead of mechanical cooling:

- A balanced glazing strategy (g-value 0.63) limiting unwanted solar gain while retaining daylight;
- Openable windows to north and south elevations providing purge and natural ventilation;
- A well-insulated, appropriately mass-buffered building envelope (thermal mass parameter 390.88 kJ/m²K); and
- No reliance on mechanical comfort cooling — the SAP assessment confirms no fixed cooling system is proposed.

Compliance with Part O will be confirmed through detailed design and the Building Regulations application.

7.2 Ventilation

The SAP assessment records two intermittent extract fans serving wet rooms, with no whole-dwelling mechanical ventilation system modelled. Ventilation will be finalised at Building Regulations stage in accordance with Approved Document Part F, coordinated with the design air permeability of 5.0 m³/(h·m²) @ 50 Pa to ensure adequate indoor air quality without compromising the fabric airtightness performance relied upon in this assessment.

8. Water Efficiency and Electric Vehicle Infrastructure

8.1 Part G — Water Efficiency

The dwelling is designed to a modelled water use of no more than 125 litres/person/day, in accordance with the optional requirement of Building Regulations Part G, through the specification of water-efficient sanitary fittings, including a low-flow shower (7.5 l/min).

8.2 Part S — Electric Vehicle Charging Infrastructure

The development will incorporate the necessary electrical infrastructure to support electric vehicle charging in accordance with Approved Document Part S, supporting the transition to low-emission transport.

9. Energy Performance and Carbon Emissions Summary

The table below presents the definitive SAP 10.2 performance outputs for the proposed dwelling, benchmarked against the corresponding Part L 2021 notional building targets. These figures supersede any performance data presented elsewhere in application documents and should be relied upon as the single source of truth for this assessment.

SAP Metric	Proposed (Design)	Target Building (Notional)	Improvement
SAP Rating (Band)	104 (A)	—	—
Environmental Impact Rating (Band)	100 (A)	—	—
Emission Rate — DER / TER (kgCO ₂ /m ² /yr)	-0.56	15.49	103.62%
Fabric Energy Efficiency — DFEE / TFEE (kWh/m ² /yr)	56.26	59.23	5.01%
Primary Energy Rate — DPER / TPER (kWh/m ² /yr)	-9.78	82.80	111.81%
Net regulated CO ₂ emissions (tonnes/year)	-0.06	0.68	—

Table 12 : SAP 10 Performance Summary – Proposed Dwelling Compared with the Notional Building

Carbon Dioxide Savings Through the Energy Hierarchy

The table below summarises the regulated carbon dioxide emissions and associated savings achieved at each stage of the Energy Hierarchy, consistent with the format required by GLA Energy Assessment Guidance.

Stage	Regulated CO ₂ (t/yr)	Saving vs Baseline (t/yr)	Saving (%)
Baseline: Part L 2021 notional building	0.684	—	—
After energy demand reduction (Be Lean)	0.650	0.034	5.0%
After low-carbon heating (Be Clean)	0.291	0.393	57.5%
After renewable energy (Be Green) — Proposed	-0.06	0.74	103.6%

Table 13: Energy Hierarchy – Stage-by-Stage Regulated CO₂ Emissions and Carbon Savings

10. Benchmarking Against Policy Requirements

To assist the decision-maker, the table below benchmarks the achieved performance directly against the specific numerical thresholds set by Building Regulations Part L (2021) and London Plan Policy SI 2.

Requirement	Policy Threshold	Achieved Performance	Met?
Part L 2021 — regulated CO ₂ (DER vs TER)	DER ≤ TER	DER -0.56 vs TER 15.49 kgCO ₂ /m ² /yr	Yes
Part L 2021 — Fabric Energy Efficiency	DFEE ≤ TFEE	DFEE 56.26 vs TFEE 59.23 kWh/m ² /yr	Yes
Part L 2021 — Primary Energy	DPER ≤ TPER	DPER -9.78 vs TPER 82.80 kWh/m ² /yr	Yes
London Plan SI 2 — on-site regulated carbon reduction	Minimum 35% (major); net-zero target	103.62% (net-negative)	Yes — exceeded
London Plan SI 2 — carbon offset contribution	Payable on any shortfall to net-zero	No shortfall — £0 contribution required	N/A
EPC Band (indicative, from SAP)	No statutory minimum for new-build, benchmark only	Band A (SAP 104)	Exceeds typical B/C benchmark

Table 14 : Planning and Building Regulations Energy Compliance Summary

This benchmarking confirms that the proposed dwelling does not merely meet the applicable thresholds but does so with a substantial margin across every regulated metric, providing a robust basis for the Local Planning Authority to conclude that the energy and sustainability objectives of both national and regional policy are satisfied.

11. Compliance Statement

On the basis of the SAP 10.2 assessment and the measures described in this Statement, the proposed dwelling is considered to:

- Fully comply with Building Regulations Approved Document Part L (2021), achieving a DER of $-0.56 \text{ kgCO}_2/\text{m}^2/\text{year}$ against a TER of $15.49 \text{ kgCO}_2/\text{m}^2/\text{year}$, and satisfying both the DFEE and DPER target metrics;
- Satisfy London Plan Policy SI 2, achieving a 103.62% reduction in regulated carbon emissions on-site — exceeding the net-zero carbon standard without recourse to a carbon offset contribution;
- Comply with the relevant requirements of Building Regulations Parts O, F, G and S, subject to confirmation of final detailed design at Building Regulations stage; and
- Align with the objectives of the National Planning Policy Framework relating to sustainable design, energy efficiency and climate change mitigation.

This performance has been achieved through the integrated application of a fabric-first design, an efficient all-electric air source heat pump and substantial on-site photovoltaic generation with battery storage, representing a robust and evidence-based energy strategy for the proposed development.

12. Limitations and Recommendations

This Statement is based on the SAP 10.2 "as-designed" assessment provided and is intended to demonstrate the energy and carbon performance of the dwelling as currently specified. In line with standard professional practice, the following limitations and recommendations should be noted:

- The results presented are as-designed and rely on the specification, dimensions and construction details input to the SAP calculation; they do not constitute a guarantee of as-built or in-use performance.
- The design air permeability of $5.0 \text{ m}^3/(\text{h}\cdot\text{m}^2)$ @ 50 Pa should be confirmed by an as-built blower-door pressure test; a materially worse result would increase the ventilation heat loss and regulated emissions and may require re-assessment.
- The PV array orientation is recorded as North within the SAP input (see Section 6.3); this should be verified against the approved roof plan, as a materially different orientation would alter the modelled annual generation and the resulting DER/DPER.
- Final ventilation strategy, extract rates and any mechanical ventilation specification should be confirmed at Building Regulations stage in accordance with Approved Document Part F.
- Overheating risk assessment under Part O should be finalised through the detailed Building Regulations submission, using the dynamic/simplified methodology applicable to the dwelling.
- Any subsequent design change affecting fabric U-values, air permeability, heating plant, controls, or renewable technology capacity should be re-modelled in SAP to confirm continued compliance with the figures reported in this Statement.

Subject to the above being addressed through the normal Building Regulations and technical approval process, this Statement is considered a robust basis for demonstrating energy and sustainability compliance at the planning stage.

13. Conclusion

The proposed dwelling at 01 Mayfair Gardens, London, N17 7LP has been designed to deliver an energy strategy that significantly exceeds current Building Regulations and London Plan requirements. Through the sequential application of the Energy Hierarchy — a high-performance fabric, an efficient electric air source heat pump and a substantial on-site photovoltaic array with battery storage — the dwelling achieves a net-negative Dwelling Emission Rate and an EPC Band A rating (SAP 104), placing it within the highest tier of residential energy performance.

The all-electric heating strategy ensures the dwelling is well positioned to benefit from continued decarbonisation of the electricity grid, providing a future-ready, low-carbon and climate-resilient form of development that is fully supportable in energy and sustainability terms.

Overall, the development is considered to represent a sustainable, high-performing and policy-compliant scheme, and is acceptable in planning terms from an energy and sustainability perspective.

Appendix A — SAP 10.2 Calculation Output

Predicted Energy Assessment



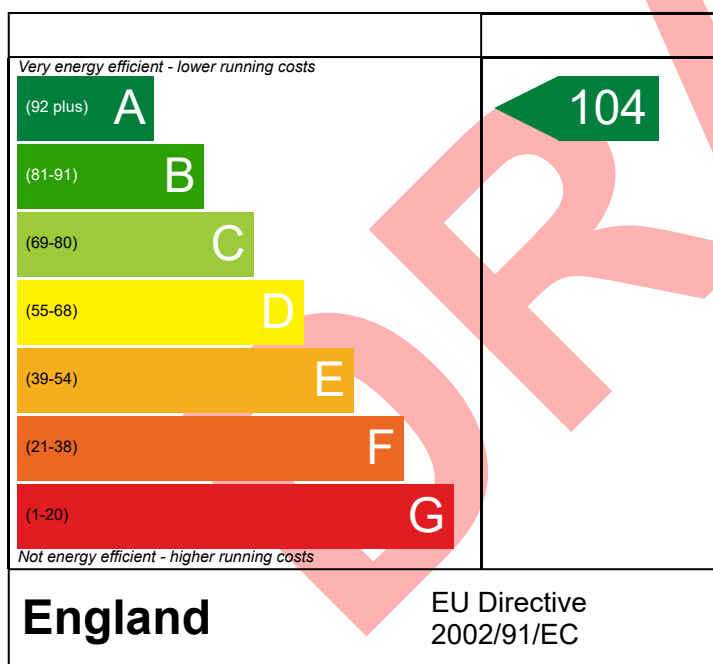
01, MAYFAIR GARDENS, LONDON, N17 7LP

Dwelling type: Bungalow, Detached
Date of assessment: 11/08/2026
SAP Version: 10.2
Produced by: Heyare Jayantha
Total floor area: 44.16 m²
DRRN:

This document is a Predicted Energy Assessment for properties marketed when they are incomplete. It includes a predicted energy rating which might not represent the final energy rating of the property on completion. Once the property is completed, this rating will be updated and an official Energy Performance Certificate will be created for the property. This will include more detailed information about the energy performance of the completed property.

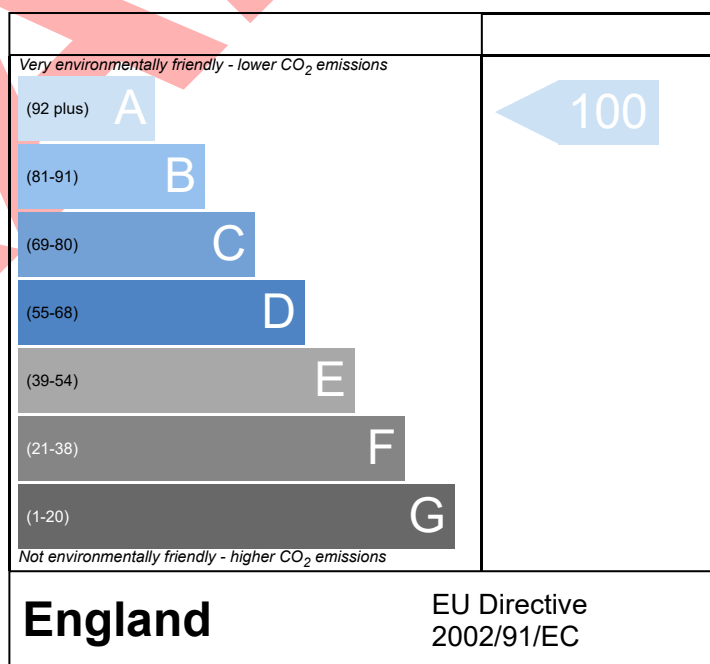
The energy performance has been assessed using the Government approved SAP 10 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO₂) emissions.

Energy Efficiency Rating



The energy efficiency rating is a measure of the overall efficiency of a home. The higher the rating the more energy efficient the home is and the lower the fuel bills are likely to be.

Environmental Impact (CO₂) Rating



The environmental impact rating is a measure of a home's impact on the environment in terms of carbon dioxide (CO₂) emissions. The higher the rating the less impact it has on the environment.

Summary for Input Data

Plot Reference	0003	Issued on Date	11/08/2026
Assessment Reference	00001	Plot Type Ref	
Plot Address	01, MAYFAIR GARDENS, LONDON, N17 7LP	SAP Version	10.2

SAP Rating	104 A	DER	-0.56	TER	15.49
Environmental	100 A	% DER < TER			103.62
CO ₂ Emissions (t/year)	-0.06	DFEE	56.26	TFEE	59.23
Compliance Check	See BREL	% DFEE < TFEE			5.01
% DPER < TPER	111.81	DPER	-9.78	TPER	82.80

Assessor Details	Mr. Heyare Jayantha	Assessor ID	DW98-0001
Client			

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Urban	
1.0 Property Type	Bungalow, Detached	
2.0 Number of Storeys	1	
3.0 Date Built	2026	
4.0 Sheltered Sides	0	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	390.88	kJ/m²

7.0 Electricity Tariff	Standard
Smart electricity meter fitted	Yes
Smart gas meter fitted	No

7.0 Measurements	Ground floor:	Heat Loss Perimeter 27.40 m	Internal Floor Area 44.16 m²	Average Storey Height 2.80 m
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8.0 Living Area	25.97	m²
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Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : dense plaster, dense block, filled cavity, any outside structure	0.16	190.00	68.50	61.24	0.00	None	7.26	Enter Gross Area

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Plasterboard on timber frame	9.00	40.33

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
External Roof	External Slope Roof	Plasterboard, insulated slope	0.09	9.00	45.96	45.00	None	0.00	Enter Gross Area	0.96

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Slab on ground, screed over insulation	0.11	None	0.00	110.00	44.16

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	Manufacturer	Window	Double Low-E Soft 0.05			0.63		0.70	1.20
Door	Manufacturer	Solid Door				0.00			1.00
Roof Window	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.20

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
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Summary for Input Data

Window_N	Windows	External Wall 1	North	5.88	
Window_S	Windows	External Wall 1	South	1.38	
Roof Light_S	Roof Window	External Roof	South	0.96	0

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Gov Approved Scheme	5.10	0.30	0.30	Yes
E3 Sill	Gov Approved Scheme	4.20	0.04	0.04	No
E4 Jamb	Gov Approved Scheme	11.90	0.05	0.05	Yes
E5 Ground floor (normal)	Gov Approved Scheme	27.40	0.16	0.16	Yes
E16 Corner (normal)	Gov Approved Scheme	12.50	0.09	0.09	No
R1 Head of roof window	Gov Approved Scheme	0.80	0.08	0.08	Yes
R2 Sill of roof window	Gov Approved Scheme	0.80	0.06	0.06	Yes
R3 Jamb of roof window	Gov Approved Scheme	2.40	0.08	0.08	Yes
E11 Eaves (insulation at rafter level)	Gov Approved Scheme	27.40	0.04	0.04	No
E17 Corner (inverted – internal area greater than external area)	Gov Approved Scheme	2.50	-0.09	-0.09	No
R4 Ridge (vaulted ceiling)	Gov Approved Scheme	21.09	0.08	0.08	No
R5 Ridge (inverted)	Gov Approved Scheme	2.07	0.04	0.04	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys

Number of open flues

Number of chimneys/flues attached to closed fire

Number of flues attached to solid fuel boiler

Number of flues attached to other heater

Number of blocked chimneys

Number of intermittent extract fans

Number of passive vents

Number of flueless gas fires

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m³/(h.m²) @ 50 Pa

Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting 1	85.00	5.00	425.00	20

24.0 Main Heating 1

Percentage of Heat %

Database Ref. No.

Fuel Type

In Winter

In Summer

Model Name

Manufacturer

System Type

Controls SAP Code

Controls description

Summary for Input Data

Is MHS Pumped	Pump in heated space
Heating Pump Age	2013 or later
Heat Emitter	Radiators
Flow Temperature	Enter value
Flow Temperature Value	35.00

25.0 Main Heating 2	None
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26.0 Heat Networks	None
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27.0 Secondary Heating	None
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28.0 Water Heating	
Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	0
Immersion Only Heating Hot Water	No

28.1 Showers							
Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To		
1	Combi boiler or unvented hot water system	7.50		Yes	Storage System		

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	210.00	L
Loss	1.63	kWh/day
Pipes insulation	Fully insulated primary pipework	

31.0 Thermal Store	None
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32.0 Photovoltaic Unit	One Dwelling
Export Capable Meter?	No
Connected To Dwelling	Yes
Diverter	No
Battery Capacity [kWh]	8.00

PV Cells kWp	Orientation	Elevation	Overshading	FGHRS	MCS Certificate	Overshading Factor	MCS Certificate Reference	Panel Manufacturer
12.00	North	30°	Modest		No	0.80		

34.0 Small-scale Hydro	None
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Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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Recommendations
 Lower cost measures
 None
 Further measures to achieve even higher standards

Ratings after improvement

Summary for Input Data



	Typical Cost	Typical savings per year	SAP rating	Environmental Impact
Solar water heating			A 104	A 100
Photovoltaic			0	0
Wind turbine			0	0

Energy Report



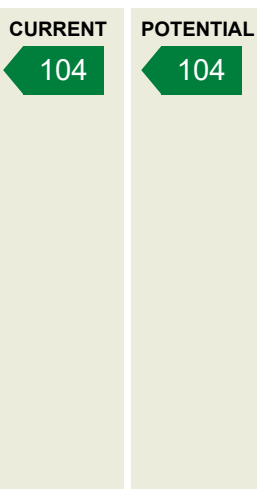
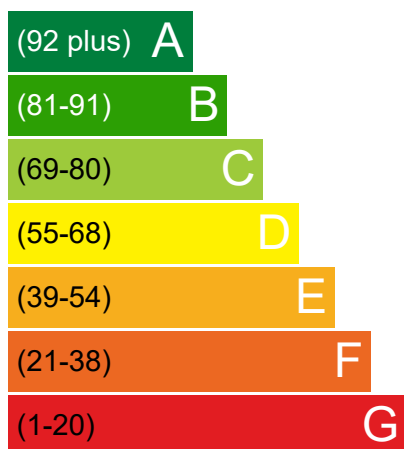
Dwelling Address	01, MAYFAIR GARDENS, LONDON, N17 7LP
Reference	0003-00001
SAP Version	10.2
Assessment Date	04/08/2026
Submission Date	
Property Type	Bungalow, Detached
Total Floor Area	44

This Energy Report has been generated using the UK's National Calculation Methodology for dwellings, Standard Assessment Procedure (SAP). This methodology is used to assess the energy efficiency of dwellings which is calculated based on a dwelling's heating, hot water, ventilation and lighting usage.

This document is not an Energy Performance Certificate (EPC) as required by the Energy Performance of Buildings Regulations

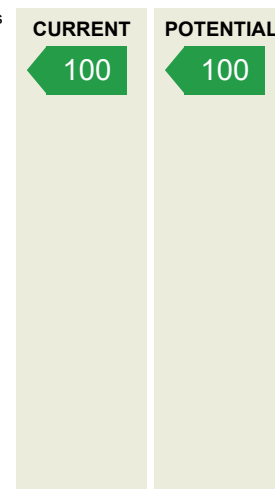
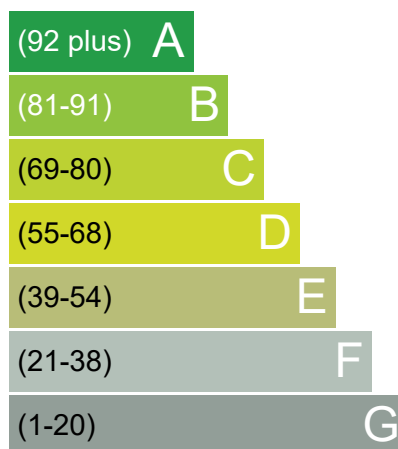
Energy Efficiency Rating

Most energy efficient - lower running costs



Carbon Dioxide (CO2) Emissions Rating

Very environmentally friendly - lower CO2 emissions



Additional ratings for your home

	Primary Energy	Energy	Carbon	Cost	HTC
CURRENT	-16.88 kWh	-540 kWh	-56 kg	-149.43 £	63 W/K
POTENTIAL	-16.88 kWh	-540 kWh	-56 kg	-149.43 £	63 W/K

Breakdown of property's energy performance

Each feature is assessed as one of the following:

Very Poor	Poor	Average	Good	Very Good
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Feature	Description	Energy Performance
Walls	Average thermal transmittance 0.16 W/m ² K	Very Good
Roof	Average thermal transmittance 0.09 W/m ² K	Very Good
Floor	Average thermal transmittance 0.11 W/m ² K	Very Good
Windows	High performance glazing	Very Good
Main heating	Air source heat pump, radiators, electric	Very Good
Main heating controls	Time and temperature zone control	Very Good
Secondary heating	None	
Hot water	From main system	Poor
Lighting	Good lighting efficiency	Good
Air tightness	Air permeability [AP50] = 5.0 m ³ /h.m ² (assumed)	Good

Recommendations

The recommended measures provided below will help to improve the energy efficiency of the dwelling. To reach the dwelling's potential energy rating all of the recommended measures shown below would need to be installed. Having these measures installed individually or in any other order may give a different result when compared with the cumulative potential rating.

Recommended measures	Cumulative savings (per year)	Cumulative rating	Typical costs	Incremental savings (per year)	Cumulative CO2 rating
Solar water heating	£-24	A 104			A 100

The typical cost is based on average installation prices across the country so may not be representative of the actual costs in your area.

Estimated energy costs of the dwelling

The table below shows the estimated running costs of the space and water heating and lighting within the dwelling. It does not include the energy used from household appliances. The estimated annual costs after potential improvements indicates the total energy cost if all recommended measures named above were installed.

		Estimated annual costs	Estimated annual costs after potential improvements	Potential future savings
Lighting		£31	£31	
Heating		£124	£124	
Hot Water		£343	£343	
New Technologies e.g. Impact of PV		-(£647)	-(£647)	
TOTAL		-(£149)	-(£149)	

Estimated energy use and potential savings



Space Heating

448
kWh per year



Water Heating

1240
kWh per year

About this document

Created by:
Company/Trading name:
Phone number:
Email address:

Disclaimer

This Energy Report should not under any circumstances be treated as a Condition Survey and cannot be used to indicate that any element of the dwelling (e.g. heating system) is working correctly.
This Energy Report must not be used in situations where an Energy Performance Certificate (EPC) is required.
This Energy Report is generated from a set of data inputs which may not reflect the actual dimensions, services or construction of the dwelling.
The calculation used to generate this report reflects the SAP Methodology current at the time of report generation.

Glossary terms for additional metrics

Primary Energy	The measure of the energy required for lighting, heating and hot water in a property. This includes the efficiency of the property's heating system, power station efficiency for electricity and the energy used to produce the fuel and deliver it to the property.
Energy Used	The estimated amount of fuel energy for lighting, heating and hot water for the property. The estimate is based on typical usage which is likely to be different to actual consumption.
Carbon (CO ₂)	The current emissions based on the energy estimates.
Cost	The estimated cost of energy. The cost of each unit of fuel is based on an industry standard which is likely to be different to those the occupier actually pays.
Heat Transfer Coefficient	Heat flow through the property envelope where internal and external temperatures are different.