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ENERGY STATEMENT

# Flat 15, 58 Shepherds Hill

## London N6 5RW

**Planning energy statement** New top-floor two-bedroom dwelling (2b4p), 75.50 m² treated floor area. SAP 10.2 new-build as-designed assessment, Revision A, issued 12 October 2026.

| Document item | Details |
|---|---|
| **Prepared by** | JSO Environmental |
| **Project** | Apartment 15 / Flat 15, 58 Shepherds Hill, London N6 5RW |
| **Purpose** | Planning submission and design coordination |
| **Assessment basis** | SAP 10.2; supplied DER/TER, DPER/TPER, DFEE/TFEE, EPC/PEA and input summary |
| **Report status** | Rev A — planning issue, 12 October 2026 |

ZERO REGULATED-CARBON BALANCE DEMONSTRATED

**DER −0.75 kg$CO_2$/m²/yr | 106.18% below TER | SAP 102 A**

**Important status note**

This statement records the supplied design-stage model and drawings. Product data, construction details, commissioning records, air-test results and the applicable Building Regulations transitional route must be confirmed before completion and final lodgement.

# Executive summary

Compliance position, principal results and report contents

**Conclusion:** The supplied SAP 10.2 assessment demonstrates compliance with all three Part L performance metrics and a zero regulated-carbon balance for Haringey planning purposes.

The model achieves a 106.18% reduction against the Part L carbon baseline and a 36.5% baseline-equivalent saving from PV alone; no modeled carbon-offset shortfall remains.

| Metric | Dwelling | Target / baseline | Result |
|---|---|---|---|
| **Carbon emissions** | DER −0.75 | TER 12.14 $kgCO_2/m^2/yr$ | PASS — 106.18% lower |
| **Primary energy** | DPER −1.17 | TPER 64.20 $kWhPE/m^2/yr$ | PASS — 101.82% lower |
| **Fabric energy efficiency** | DFEE 32.06 | TFEE 32.09 $kWh/m^2/yr$ | PASS — 0.11% lower |
| **SAP / environmental ratings** | 102 A / 101 A | Not a limiting target | High-performing design |
| **Annual regulated $CO_2$** | −0.057 $tCO_2/yr$ | 0.917 $tCO_2/yr$ baseline | Net-export credit exceeds demand |

## Energy strategy in one view

- Be Lean — low fabric heat loss through 0.18 $W/m^2K$ external walls, a 0.11 $W/m^2K$ flat roof, 1.20 $W/m^2K$ double glazing, calculated thermal bridging and design air permeability of 4.0 $m^3/(h·m^2)$ at 50 Pa.
- Be Clean — no communal or district heat connection is proposed; for a single roof-level dwelling the network option is not proportionate and provides no modeled carbon advantage.
- Be Green — all-electric Mitsubishi air-source heat pump for heating and hot water, operated at 35°C flow temperature, plus 3.0 kWp south-facing PV at 30° with a diverter and 5.0 kWh battery storage.
- Be Seen — commissioning, metering, handover and post-completion verification are included as implementation requirements, although formal GLA Be Seen reporting applies to major development.

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# Site and development

Apartment 15 — new top-floor dwelling within the Shepherds Hill building

The proposal is a single 2-bedroom, 4-person dwelling at fourth-floor / roof level of 58 Shepherds Hill. The supplied Level 04 drawing identifies 75.5 m² internal floor area and a 14.4 m² east terrace. The SAP model describes a top-floor, mid-terrace flat with one storey, average internal height 2.50 m and treated volume 188.75 m³.

| Parameter | Design information |
|---|---|
| **Address** | Flat 15 / Apartment 15, 58 Shepherds Hill, London N6 5RW |
| **Use / occupancy** | New dwelling; 2 bedrooms / 4 persons |
| **TFA / living area** | 75.50 m² / 35.50 m² |
| **Form** | Top-floor, mid-terrace flat; one storey; urban terrain; two sheltered sides |
| **Orientation** | SAP reference orientation east; primary terrace east; PV south |
| **Drawing status** | Planning S3 / P01, 18 August 2026; drawings state “Do Not Scale” |

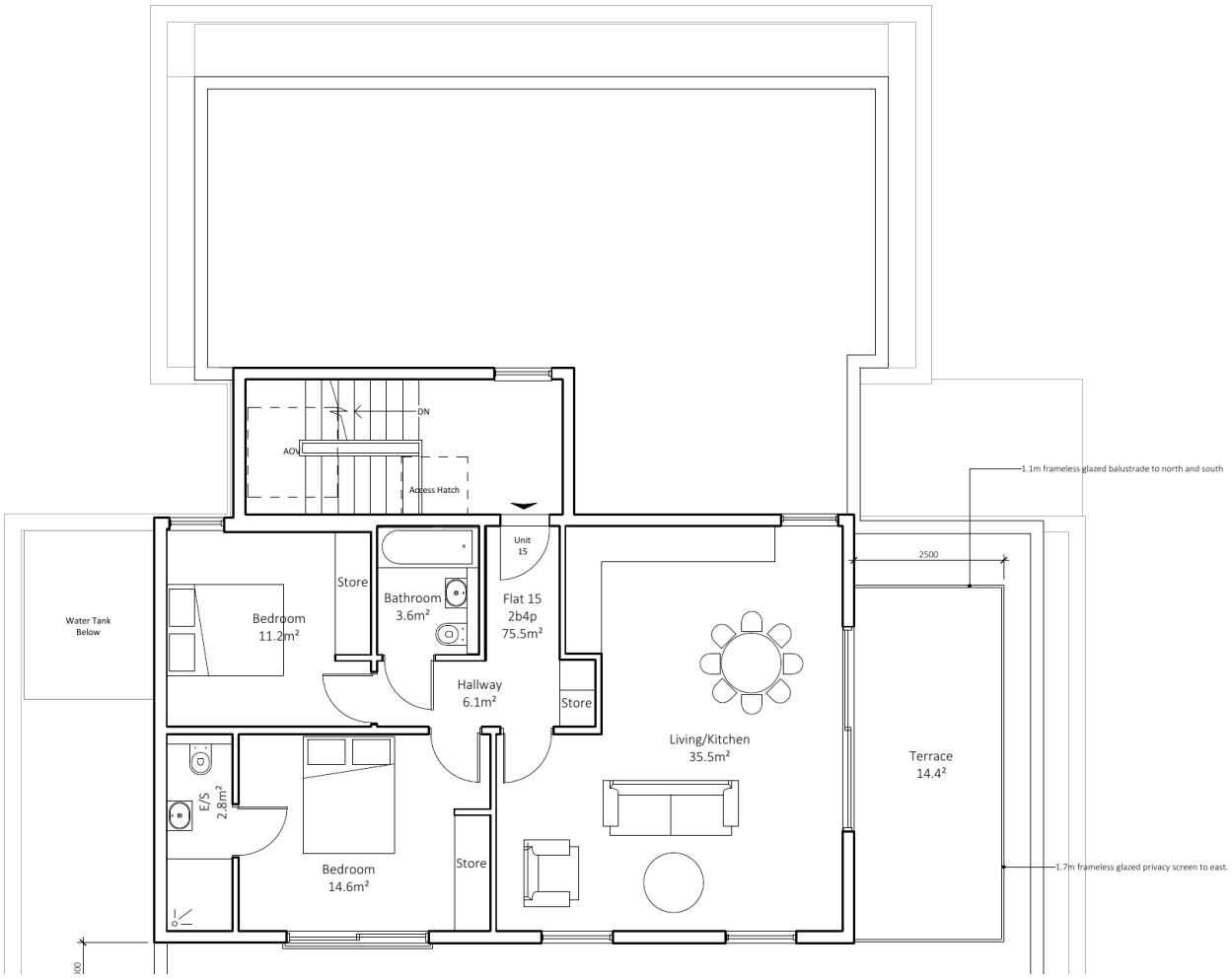



*Figure 1 — Level 04 proposed plan excerpt. Dimensions and envelope take-off remain subject to construction-stage verification.*

# Policy and compliance context

London Plan, Haringey Local Plan and Building Regulations

The development is assessed against the adopted development plan and Haringey's current published requirements for minor development. The emerging Haringey Local Plan is informative only until adopted; the operative policy basis remains the London Plan 2021 together with Haringey Strategic Policy SP4 and Development Management Policy DM21.

| Policy / guidance | Relevant requirement | Project response |
|---|---|---|
| **London Plan 2021 SI 2** | Apply Be Lean, Be Clean, Be Green and Be Seen. Major development has numerical on-site and zero-carbon duties. | Hierarchy followed. As a single dwelling it is not a major development, but the strategy demonstrates the same principles. |
| **London Plan 2021 SI 3** | Assess heat-network and low-carbon heat opportunities. | No network connection proposed; efficient individual electric heat pump selected. |
| **London Plan 2021 SI 4** | Manage heat risk using the cooling hierarchy. | No active cooling modeled; shading, opening strategy and detailed overheating review to be coordinated. |
| **Haringey SP4** | Work towards a low-carbon Haringey and secure low/zero-carbon development. | 106.18% modeled regulated-carbon reduction; all-electric low-carbon heat and PV. |
| **Haringey DM21** | Use sustainable design, layout and construction and demonstrate performance. | Efficient envelope, calculated junctions, air testing, low-temperature heating, water standard and evidence schedule. |
| **Haringey minor-development note** | 100% regulated-carbon reduction against Part L 2021 and at least 20% reduction from on-site renewables. | 100% balance exceeded; PV saving equals approximately 36.5% of baseline. |

## Building Regulations basis

The supplied calculation is a SAP 10.2 new-build as-designed assessment and reports TER, TPER and TFEE target values consistent with Part L 2021 methodology. DER, DPER and DFEE are each below their target.

**Compliance statement:** On the supplied SAP 10.2 basis, the scheme meets the Haringey zero-carbon and renewable-energy tests, London energy-hierarchy principles, and the Part L target metrics. This conclusion remains conditional on the installed design matching the model and on confirmation of the applicable regulatory route.

# Assessment method and baseline

SAP 10.2 model, source information and carbon accounting GLA Assessment

## Baseline and calculation conventions

The Part L notional dwelling establishes TER 12.14 $kgCO_2/m^2$/year. Multiplying by 75.50 $m^2$ TFA gives an annual regulated-carbon baseline of 0.917 $tCO_2$/year. The revised DER of −0.75 $kgCO_2/m^2$/year gives approximately −0.057 $tCO_2$/year. The reported improvement is 106.18%. The EPC summary separately reports −0.09 $tCO_2$/year on its EPC calculation basis.

| Accounting item | Calculation | Result |
|---|---|---|
| **Part L baseline** | 12.14 × 75.50 ÷ 1,000 | 0.917 $tCO_2$/yr |
| **Final regulated emissions** | DER × TFA ÷ 1,000 | −0.057 $tCO_2$/yr |
| **Total annual saving** | (12.14 − (−0.75)) × 75.50 ÷ 1,000 | 0.973 $tCO_2$/yr |
| **Overall reduction** | SAP reported DER improvement | 106.18% |
| **PV carbon benefit** | SAP used + exported PV credits | 0.334 $tCO_2$/yr |
| **PV benefit / baseline** | 0.33433 ÷ 0.91657 | 36.5% |

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# Be Lean — reduce energy demand

Fabric, airtightness, thermal bridging, ventilation and lighting

Demand reduction is led by an efficient exposed envelope and controlled infiltration. The dwelling is compact but highly glazed: openings total 21.57 m², so continuity at window, door, roof and terrace junctions is essential. The SAP fabric target is passed, although the DFEE margin is narrow; the specified values should therefore be treated as minimum commitments rather than value-engineering allowances.

| Component | SAP design value | Implementation requirement |
|---|---|---|
| **External wall** | U = 0.18 W/m²K; net 51.89 m² | Final wall build-up and accredited U-value calculation before construction. |
| **Flat roof** | U = 0.11 W/m²K; 75.50 m² | Continuous insulation, upstands and roof/wall junction coordinated with PV supports. |
| **Windows / glazed doors** | Double low-e; nominal U = 1.20 W/m²K; g = 0.50 | Whole-product declarations for installed sizes; insulated/rebated reveals; airtight tapes. |
| **Airtightness** | 4.0 m³/(h·m²) at 50 Pa | Air-barrier drawing, site inspections and pre-completion pressure test. |
| **Thermal bridging** | Calculated; ΣLψ = 3.551 W/K; y ≈ 0.02 | Use cited RCD-MFF-150 / assessed ψ-values only where construction matches. |
| **Thermal mass** | 146.54 kJ/m²K | Maintain modeled concrete/aggregate internal heat capacity. |
| **Ventilation** | Natural ventilation + 3 intermittent extracts | Part F sizing, trickle ventilation, commissioning and user instructions. |
| **Lighting** | 18 fittings; 8 W; 100 lm/W | Install efficient fixed lighting throughout. |

## Heat-loss indicators

| Indicator | Value | Comment |
|---|---|---|
| **Fabric heat loss** | 42.34 W/K | Opaque + transparent elements |
| **Thermal bridge heat loss** | 3.55 W/K | Approximately 7.7% of total fabric heat loss |
| **Total fabric heat loss** | 45.89 W/K | Before ventilation heat loss |
| **Average HLP** | 1.0668 W/m²K | Efficient overall heat-loss performance |
| **Annual space heat demand** | 1,941.95 kWh/yr | 25.72 kWh/m²/yr in energy-rating worksheet |

# Be Clean and Be Green

Efficient all-electric heat, hot water and on-site renewable generation

## Be Clean — heat-network appraisal

The proposal is a single dwelling on the roof of an existing apartment building. No heat network is entered in SAP. A new communal distribution system would introduce standing losses, plant-space and commercial arrangements disproportionate to the dwelling and has not been shown to improve the carbon result. The design therefore uses individual low-carbon electric heat.

## Be Green — air-source heat pump

| Item | Modeled specification |
|---|---|
| **System** | Mitsubishi Electric Europe B.V. heat pump; PUZ-WZ50VAA + EHPT20X-MEHEW |
| **Fuel / distribution** | Electricity; radiators; 35°C flow temperature |
| **Controls** | Programmer, room thermostat and thermostatic radiator valves |
| **SAP efficiency** | 266.39% winter space heating; 285.70% summer / water heating |
| **Hot-water store** | 200 L internal cylinder; standing loss 1.59 kWh/day; cylinder-fed shower, 11 L/min; no electric shower |
| **Secondary heat / cooling** | None |

## Be Green — photovoltaic array

| Item | Modeled specification |
|---|---|
| **Array** | 3.00 kWp dedicated to the dwelling |
| **Orientation / pitch** | South / 30° |
| **Overshading** | None or little; factor 1.00 |
| **Metering / controls** | Export-capable meter; PV diverter to dwelling hot-water system |
| **Battery** | 5.00 kWh modeled |
| **Annual generation** | 2,591 kWh/year |
| **Carbon benefit** | 334 $kgCO_2$/year in the energy-rating worksheet (used + exported credits) |

**Renewable-energy test** PV alone provides a modeled carbon saving equal to approximately 36.5% of the Part L baseline, exceeding Haringey's 20% on-site renewable-energy criterion. The final array layout, structural loading, fire access, inverter location and MCS data remain to be coordinated.

# GLA carbon results

Energy-hierarchy accounting for the supplied final SAP design

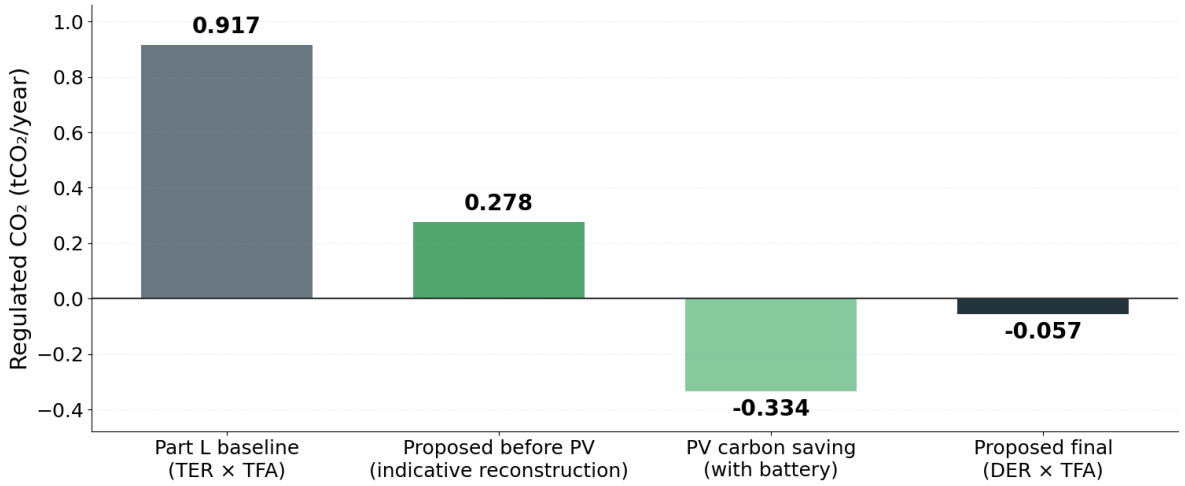



*Figure 2 — Carbon balance using DER × TFA and the energy-rating worksheet PV credit. The pre-PV value is an indicative reconstruction, not a separate Be Lean SAP run.*

| Stage | Regulated $CO_2$ | Saving vs baseline | Status / interpretation |
|---|---|---|---|
| **Part L baseline** | 0.917 t/yr | — | TER 12.14 × 75.50 m² |
| **Be Lean** | 0.278 t/yr | 0.639 t/yr / 69.7% | Indicative reconstruction before PV credit; includes ASHP |
| **Be Clean** | No further saving isolated | — | No heat network proposed |
| **Be Green — PV** | −0.334 t/yr credit | 36.5% of baseline | PV with battery: dwelling use + export credit |
| **Proposed final** | −0.057 t/yr | 0.973 t/yr / 106.18% | DER −0.75 $kgCO_2/m^2/yr$ |

## Planning compliance outcomes

| Test | Requirement | Result | Outcome |
|---|---|---|---|
| **Haringey zero-carbon balance** | 100% regulated-carbon reduction | 106.18% | Complies |
| **Haringey on-site renewables** | At least 20% reduction | PV ≈ 36.5% | Complies |
| **London Plan SI 2 hierarchy** | Lean / Clean / Green / Seen | Addressed | Complies in principle |
| **Part L carbon** | DER ≤ TER | −0.75 ≤ 12.14 | Pass |
| **Part L primary energy** | DPER ≤ TPER | −1.17 ≤ 64.20 | Pass |
| **Part L fabric energy** | DFEE ≤ TFEE | 32.06 ≤ 32.09 | Pass |

**Offset position** The modeled residual regulated emissions are below zero, so the calculated planning carbon-offset contribution is £0. Any post-design change that creates a positive residual must be reassessed and, if it cannot be removed on site, addressed in accordance with the Council's then-current offset process.

# Overheating and wider sustainability

Cooling hierarchy, ventilation, water, controls and operational resilience

## Heat-risk management

The top-floor location, east terrace glazing and 21.57 m² total opening area make summertime comfort a material design issue. SAP is not a substitute for the overheating assessment required under Approved Document O or any planning-specific methodology.

The detailed design should apply the cooling hierarchy and verify performance before glazing, shading and ventilation provisions are fixed.

| Priority | Design response / required action |
|---|---|
| **1. Minimise internal gains** | Efficient lighting and appliances; insulated hot-water distribution; avoid excessive distribution losses. |
| **2. Reduce solar gains** | Retain external/privacy screening where effective; verify glazing g-value 0.50 and assess additional external shading to east and south glazing. |
| **3. Passive ventilation** | Confirm safe, secure openable areas and purge paths; coordinate trickle vents and extract terminals. |
| **4. Thermal mass** | Retain modeled medium thermal mass (146.54 kJ/m²K) and allow night cooling where safe. |
| **5. Mechanical cooling** | None proposed or modeled; introduce only if passive measures are demonstrably insufficient and SAP is updated. |

## Water, air quality and resident use

- The SAP input confirms the design water-use standard is no more than 125 litres/person/day. A Part G water calculation and fitting schedule must verify this before installation.
- No combustion is proposed within the dwelling, avoiding local flue emissions from space and water heating. Outdoor-unit noise and vibration must be controlled through acoustic selection, siting and resilient mounting.
- The heat pump is designed for 35°C flow temperature. Radiators must be sized at the selected low-temperature condition; controls should be commissioned and explained to occupants.
- PV generation, dwelling import/export and heat-pump consumption should be separately visible through meters or controls so that under-performance can be identified.
- A simple home user guide should cover heat-pump operation, TRVs, ventilation, summer purge, PV diverter and battery operation and maintenance contacts.

# Implementation, verification and conclusion

Measures to secure the modeled design through construction and completion

## Planning and construction commitments

| Stage | Evidence / action required |
|---|---|
| **Before technical design sign-off** | Confirm wall/roof build-ups, glazing declarations, junction details, air-barrier strategy, ASHP duty/noise, PV layout/battery installation and regulatory edition. |
| **Before closing up** | Photograph insulation continuity, cavity barriers, window/door reveals, roof upstands, service penetrations and all critical thermal junctions. |
| **Commissioning** | Heat pump, cylinder, controls, ventilation, PV/inverter/diverter/battery and meters commissioned by competent installers. |
| **Testing** | Achieve air permeability ≤ 4.0 $m^3/(h \cdot m^2)$ at 50 Pa; complete ventilation testing and water-use calculation. |
| **Before occupation** | Update as-built SAP/BREL and EPC; provide product certificates, MCS information, commissioning sheets, warranties and home user guide. |
| **Post-completion** | Review meter data and complaints; investigate material deviation from expected performance. |

## Overall conclusion

**Compliant design strategy  On the evidence supplied, the proposal achieves the Haringey zero regulated-carbon balance and renewable-energy requirement, follows the London Plan energy hierarchy, and passes the SAP 10.2 carbon, primary-energy and fabric-energy targets. The result is delivered by an efficient envelope, calculated junctions, low-temperature electric heat-pump heating and hot water, and 3.0 kWp of on-site PV with 5.0 kWh battery storage.**

No modeled planning carbon-offset payment is required. The final compliance position depends on the installation matching the SAP specification, completion of the testing and evidence schedule above, an updated as-built assessment, and Building Control confirmation of the applicable Approved Document L route.

*Prepared for planning and design coordination by JSO Environmental. This report should be read with the supplied SAP outputs, drawings and specification records listed in Appendix C.*

APPENDIX A

# SAP design input schedule

| Category | SAP input / design commitment |
|---|---|
| **Dwelling** | Top-floor mid-terrace flat; one storey; TFA 75.50 m²; volume 188.75 m³; living area 35.50 m² |
| **Envelope** | External wall U 0.18; flat roof U 0.11 W/m²K; party floor over heated accommodation |
| **Openings** | Double low-e soft-coat glazing; nominal U 1.20 W/m²K; g 0.50; frame factor 0.70 |
| **Airtightness** | Design air permeability 4.0 m³/(h·m²) at 50 Pa; blower-door test |
| **Bridging** | Calculated thermal bridges; ΣLψ 3.5506 W/K; reported y-value 0.02 W/m²K |
| **Ventilation** | Natural ventilation/trickle provision plus three intermittent extract fans; no MVHR |
| **Heating** | Mitsubishi PUZ-WZ50VAA + EHPT20X-MEHEW ASHP; radiators; 35°C flow; programmer/thermostat/TRVs |
| **Hot water** | From main heat pump; 200 L internal store; loss 1.59 kWh/day; PV diverter; cylinder-fed shower at 11 L/min; no electric shower |
| **Renewables** | 3.0 kWp PV; south; 30°; none/little overshading; export capable; 5.0 kWh battery |
| **Cooling** | None |
| **Water** | ≤ 125 litres/person/day |

## SAP output summary

| Output | Dwelling | Target | Margin |
|---|---|---|---|
| **DER / TER** | −0.75 | 12.14 | 106.18% lower |
| **DPER / TPER** | −1.17 | 64.20 | 101.82% lower |
| **DFEE / TFEE** | 32.06 | 32.09 | 0.11% lower |
| **SAP / environmental rating** | 102 A / 101 A | — | — |
| **$CO_2$ emissions** | −0.09 t/yr on summary; −0.057 t/yr from DER × TFA | — | EPC and Part L calculation bases differ |

# Summary for Input Data

elmhurst energy

| | | | |
|---|---|---|---|
| Plot Reference | Apartment 15 | Issued on Date | 12/10/2026 |
| Assessment Reference | REV A | Plot Type Ref | |
| Plot Address | Apartment 15, 58, Shepherds Hill, London, N6 5RW | SAP Version | 10.2 |

| | | | | | |
|---|---|---|---|---|---|
| SAP Rating | 102 A | DER | -0.75 | TER | 12.14 |
| Environmental | 101 A | % DER < TER | | | 106.18 |
| $CO_2$ Emissions (t/year) | -0.09 | DFEE | 32.06 | TFEE | 32.09 |
| Compliance Check | See BREL | % DFEE < TFEE | | | 0.11 |
| % DPER < TPER | 101.82 | DPER | -1.17 | TPER | 64.20 |

| | | | |
|---|---|---|---|
| Assessor Details | Mr. Ruari Mulvenna | Assessor ID | AW51-0001 |
| Client | | | |

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

| | | |
|---|---|---|
| **Orientation** | East | |
| **Property Tenture** | ND | |
| **Transaction Type** | 6 | |
| **Terrain Type** | Urban | |
| **1.0 Property Type** | Flat, Mid-Terrace | |
| Position of Flat | Top-floor flat | |
| Which Floor | 4 | |
| **2.0 Number of Storeys** | 1 | |
| **3.0 Date Built** | 2026 | |
| **4.0 Sheltered Sides** | 2 | |
| **5.0 Sunlight/Shade** | Average or unknown | |
| **6.0 Thermal Mass Parameter** | Precise calculation | |
| Thermal Mass | 146.54 | kJ/m²K |
| **7.0 Electricity Tariff** | Standard | |
| Smart electricity meter fitted | No | |
| Smart gas meter fitted | No | |

**7.0 Measurements**

| | Heat Loss Perimeter | Internal Floor Area | Average Storey Height |
|---|---|---|---|
| **Ground floor:** | 30.14 m | 75.50 m² | 2.50 m |

| | | |
|---|---|---|
| **8.0 Living Area** | 35.50 | m² |

**9.0 External Walls**

| 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 | Cavity Wall | Cavity wall; plasterboard on dabs or battens, lightweight aggregate block, filled cavity, any outside structure | 0.18 | 110.00 | 73.46 | 51.89 | 0.00 | None | 21.57 | Enter Gross Area |

**9.1 Party Walls**

| Description | Type | Construction | U-Value (W/m²K) | Kappa (kJ/m²K) | Area (m²) | Shelter Res | Shelter |
|---|---|---|---|---|---|---|---|
| Corridor | Filled Cavity with Edge Sealing | Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill | 0.00 | 110.00 | 15.06 | 0.00 | None |

**10.0 External Roofs**

| Description | Type | Construction | U-Value (W/m²K) | Kappa (kJ/m²K) | Gross Area(m²) | Nett Area (m²) | Shelter Code | Shelter Factor | Calculation Type | Openings |
|---|---|---|---|---|---|---|---|---|---|---|
| Flat Roof | External Flat Roof | Plasterboard, insulated flat roof | 0.11 | 9.00 | 75.50 | 75.50 | None | 0.00 | Enter Gross Area | 0.00 |

**11.1 Party Floors**

| Description | Storey Index | Construction | Kappa (kJ/m²K) | Area (m²) |
|---|---|---|---|---|
| Party Floor 1 | Lowest occupied | Precast concrete planks floor, screed, carpeted | 40.00 | 75.50 |

**12.0 Opening Types**



*SAP input summary, page 1 of 3 (source extract).*

APPENDIX B




*Figure B1 — Proposed elevation excerpts showing the roof-level dwelling and screening.*

APPENDIX C

# Source documents, policy references and limitations

## Planning and regulatory references

- **The London Plan 2021, Chapter 9, Policies SI 2, SI 3 and SI 4**
  https://www.london.gov.uk/programmes-strategies/planning/london-plan/the-london-plan-2021-online/chapter-9-sustainable-infrastructure
- **GLA Energy Assessment Guidance**
  https://www.london.gov.uk/programmes-strategies/planning/planning-applications-and-decisions/pre-planning-application-meeting-service/energy-planning-guidance
- **Haringey Local Plan Strategic Policies 2017, Policy SP4**
  https://www.haringey.gov.uk/sites/default/files/2024-01/final_haringey_local_plan_2017_online.pdf
- **Haringey Development Management DPD 2017, Policy DM21**
  https://haringey.gov.uk/sites/default/files/2025-05/final_haringey_dmp_dtp_online-optimised.pdf
- **Haringey Energy Statement and Sustainability Assessment requirements for minor developments**
  https://haringey.gov.uk/sites/default/files/2025-11/energy_statement_guide_for_minor_developments.pdf
- **Approved Document L, Conservation of fuel and power**
  https://www.gov.uk/government/publications/conservation-of-fuel-and-power-approved-document-l

## Limitations

- This is a design-stage planning energy statement, not an as-built certificate, structural design, acoustic report, Part O assessment or services.
- The report does not verify product performance or installation. Final evidence, commissioning and an as-built SAP update are required.
- Policy and regulatory requirements should be rechecked if the application, programme, design or Building Regulations route changes.