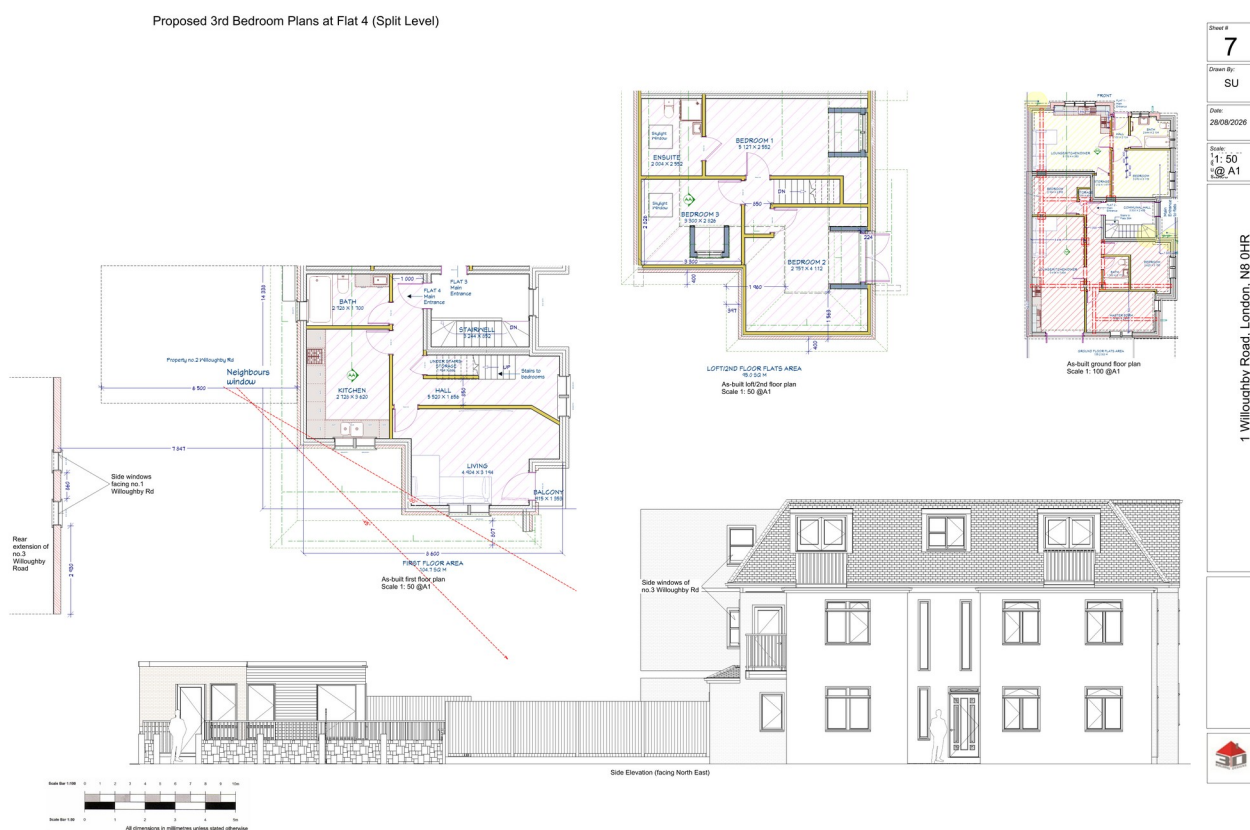


ENERGY & SUSTAINABILITY STATEMENT

Flat 4 only - Proposed Third Bedroom / Split-Level Alterations 1 Willoughby Road, London, N8 0HR



Planning submission status

Prepared as a proportionate energy and sustainability statement for the London Borough of Haringey. The report is specific to Flat 4 and does not assess Flats 1-3 except where the submitted sheet is referenced for context.

Prepared for: London Borough of Haringey | Report date: 28 August 2026

Current regulatory baseline: Approved Document L, Volume 1: Dwellings, 2021 edition incorporating 2023 amendments.

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Basis and limitations

The submitted drawing provides the proposed layout, elevations and sectional context, but it does not provide a complete construction specification, heating system schedule, glazing performance certificates, SAP model or measured air permeability. Accordingly, the U-value calculations in this report are design-stage calculations based on explicit proposed build-ups and standard thermal conductivities. They are suitable for establishing a planning-stage fabric specification, but must be checked against final product data and detailed construction drawings before Building Control sign-off.

Important distinction

No SAP/GLA carbon percentage is fabricated in this report. A valid regulated-carbon comparison requires a complete SAP model and system inputs. Because the proposal is an alteration to an existing Flat 4 rather than the creation of a new dwelling, the report takes a proportionate retrofit/alteration approach while aligning with Haringey and London Plan energy principles.

1. Executive summary

This Energy & Sustainability Statement accompanies the proposed third-bedroom works to Flat 4 at 1 Willoughby Road, London N8 0HR. The submitted sheet identifies Flat 4 as a split-level dwelling and shows first-floor living/kitchen accommodation with upper-level bedrooms, including a proposed third bedroom. The drawing also contains the side elevation and cross-sections of the host building.

The strategy is deliberately fabric-first. New or materially altered thermal elements are to meet or improve upon the limiting standards applicable to new fabric elements in existing dwellings. The proposed planning-stage performance is:

Element	Proposed design U-value	Part L 2021 limiting value	Status
Dormer/external timber-framed wall	0.16 W/m ² K	0.18 W/m ² K	PASS
Pitched/dormer roof	0.13 W/m ² K	0.15 W/m ² K	PASS
Floor over unheated/external space (where applicable)	0.16 W/m ² K	0.18 W/m ² K	PASS
Windows / roof windows	≤1.20 W/m ² K target	1.40 W/m ² K for windows; rooflights 2.20 W/m ² K	PASS / betterment
External doors (if replaced)	≤1.40 W/m ² K	1.40 W/m ² K	PASS

The calculated opaque-element U-values include a simple parallel-path allowance for repeating timber bridging. The design also commits to airtightness detailing, insulated junctions, low-energy LED lighting, efficient controls, water-efficient fittings, responsible material selection and construction waste management. Active cooling is not proposed as the default response to summer heat; passive and ventilation measures are prioritised.

2. Scope and project description

The submitted drawing is Sheet 7, titled “Proposed 3rd Bedroom Plans at Flat 4 (Split Level)”, dated 28 August 2026. It identifies the property as 1 Willoughby Road, London N8 0HR and illustrates the building at ground, first and loft/second-floor levels. Flat 4 is labelled on the first-floor plan, with kitchen and living accommodation, while the loft/second-floor plan shows bedroom accommodation including Bedroom 3.

- The report assesses Flat 4 only.
- It addresses energy demand, thermal fabric, heating/ventilation principles, overheating, water, materials and construction sustainability.
- It does not claim that the whole-building floor-area figures printed on the drawing are the net internal area of Flat 4.
- It does not alter the planning drawing or certify structural, fire, acoustic or party-wall compliance.

3. Planning and regulatory policy framework

3.1 London Borough of Haringey

Haringey’s current minor-development guidance identifies Local Plan Policy SP4 (Working towards a Low Carbon Haringey) and Policy DM21 (Sustainable Design and Construction) as the principal local energy policies. The guidance also directs applicants to London Plan Policies SI2, SI3 and SI4. Haringey’s validation

material is most stringent where development creates new residential/commercial units; the present proposal is an alteration to an existing dwelling, so the principles are applied proportionately rather than presenting a fictitious new-dwelling carbon model.

3.2 London Plan 2021

Policy SI2 establishes the “Be Lean, Be Clean, Be Green, Be Seen” hierarchy. The 35% on-site carbon reduction and formal zero-carbon offset framework apply to major development, but the hierarchy itself remains an appropriate design framework for smaller development and major refurbishment. Policy SI4 requires heat risk to be addressed through the cooling hierarchy, with passive design prioritised before active cooling.

3.3 Building Regulations - Part L

At the date of this report (28 August 2026), Approved Document L 2021 incorporating 2023 amendments remains the relevant current guidance for ordinary non-higher-risk building work. The 2026 Approved Document L has been published but is stated to take effect from 24 March 2027 for non-higher-risk building work, subject to transitional provisions. This report therefore uses the 2021/2023 standards as the operative benchmark while recommending specifications that remain robust for future performance.

Policy / standard	Relevance to Flat 4
Haringey SP4	Reduce energy use and carbon emissions; support low-carbon development.
Haringey DM21	Sustainable design and construction, resource efficiency and environmental performance.
London Plan SI2	Energy hierarchy: Be Lean, Be Clean, Be Green, Be Seen.
London Plan SI3	Consider efficient low-carbon energy infrastructure where relevant.
London Plan SI4	Manage heat risk using passive-first cooling hierarchy.
Approved Document L 2021/2023	Current fabric and services baseline for existing dwellings/alterations.
Approved Document O 2021	Overheating regulatory framework where within scope of Building Regulations.

4. Energy hierarchy and fabric-first strategy

4.1 Be Lean - use less energy

- High-performance insulation to new/altered roof and wall elements.
- Thermally improved windows/roof windows and doors where replaced.
- Continuous insulation layers to reduce repeating timber bridging.
- Airtightness continuity around roof, dormer cheeks, windows and service penetrations.
- Efficient LED lighting with sensible zoning and controls.
- No routine active cooling; minimise summer gains first.

4.2 Be Clean - supply energy efficiently

The drawing does not identify the existing central-heating plant. The planning commitment is therefore to retain a serviceable efficient system where appropriate, with upgraded zoning and controls, or to use a low-

carbon electric heat-pump solution if the system is comprehensively replaced and the acoustic/location constraints are acceptable. New direct electric resistance heating is not proposed as a preferred whole-home strategy.

4.3 Be Green - renewable energy

The roof form shown on the submitted elevation gives a potential opportunity for solar PV, but the drawing does not define a PV array or usable roof area. PV should be considered at detailed design, taking account of orientation, shading, roof geometry, structural capacity and visual impact. It would be inappropriate to state a generation figure before a roof survey and layout are available.

4.4 Be Seen - performance verification

Final product datasheets, insulation thicknesses, window U-values and commissioning information should be retained as an evidence pack. Any SAP assessment required by Building Control should use the final as-built specification rather than the planning assumptions in this statement.

5. Proposed thermal envelope specification

Element	Planning-stage proposed build-up	Design intent
Dormer / new external timber wall	12.5 mm plasterboard; 50 mm continuous PIR; 100 mm PIR between timber studs; 11 mm OSB/ply sheathing; breather layer and drained/ventilated external finish as detailed.	Target $U \approx 0.16 \text{ W/m}^2\text{K}$; continuous insulation reduces timber bridging.
Pitched / dormer roof	12.5 mm plasterboard; 40 mm continuous PIR below rafters; 150 mm PIR between rafters; 18 mm timber deck/sheathing where applicable; ventilated or breathable roof build-up to manufacturer design.	Target $U \approx 0.13 \text{ W/m}^2\text{K}$.
Floor over unheated/external space, if created	18 mm timber deck; 100 mm mineral wool between timber joists; 75 mm continuous PIR; 12.5 mm plasterboard lining below, subject to fire/acoustic build-up.	Target $U \approx 0.16 \text{ W/m}^2\text{K}$.
Windows	Low-e double or triple glazing, insulated spacer, draught-proof frames.	Whole-window $U_w \leq 1.20 \text{ W/m}^2\text{K}$ target.
Roof windows	High-performance proprietary units.	Target $U_w \leq 1.20\text{-}1.30 \text{ W/m}^2\text{K}$ where practicable.
Doors	Insulated external doorset if replaced.	$U_d \leq 1.40 \text{ W/m}^2\text{K}$.

The above are thermal-performance specifications only. Fire resistance, acoustic separation, moisture control, structural capacity, cavity barriers and external finish must be coordinated separately with the relevant Building Regulations and manufacturer requirements.

6. U-value calculations

Calculations use the thermal-resistance method $U = 1 / R_{total}$ with parallel heat-flow paths through insulation and repeating timber framing. Surface resistances are included. Conductivities are representative design values and final calculations must use declared product values.

6.1 Timber-framed external / dormer wall

Layer	Thickness	Conductivity λ	Resistance R (m ² K/W)
Internal surface	-	-	0.130
Plasterboard	12.5 mm	0.25 W/mK	0.050
Continuous PIR	50 mm	0.022 W/mK	2.273
Stud zone - PIR path	100 mm	0.022 W/mK	4.545
Stud zone - timber path	100 mm	0.13 W/mK	0.769
OSB/ply sheathing	11 mm	0.13 W/mK	0.085
External surface	-	-	0.040

Insulation-path R = 7.123 m²K/W, U = 0.140 W/m²K. Timber-path R = 3.347 m²K/W, U = 0.299 W/m²K. Assuming 47 mm studs at 400 mm centres gives a repeating timber fraction of 11.75%. Area-weighted U = $(0.8825 \times 0.140) + (0.1175 \times 0.299) = 0.159$ W/m²K. Adopted design U-value: 0.16 W/m²K.

Result - wall

0.16 W/m²K, which is better than the 0.18 W/m²K Part L limiting value for a new wall element in an existing dwelling.

6.2 Pitched / dormer roof

Layer	Thickness	Conductivity λ	Resistance R (m ² K/W)
Internal surface (upward heat flow)	-	-	0.100
Plasterboard	12.5 mm	0.25 W/mK	0.050
Continuous PIR below rafters	40 mm	0.022 W/mK	1.818
Rafter zone - PIR path	150 mm	0.022 W/mK	6.818
Rafter zone - timber path	150 mm	0.13 W/mK	1.154
Timber deck/sheathing	18 mm	0.13 W/mK	0.138
External surface	-	-	0.040

Insulation-path R = 8.965 m²K/W, U = 0.112 W/m²K. Timber-path R = 3.300 m²K/W, U = 0.303 W/m²K. With 11.75% repeating timber fraction, area-weighted U = approximately 0.134 W/m²K. Adopted design U-value: 0.13 W/m²K.

Result - roof

0.13 W/m²K, which is better than the 0.15 W/m²K Part L limiting value for a new roof element in an existing dwelling.

6.3 Floor over unheated / external space (where applicable)

Layer	Thickness	Conductivity λ	Resistance R ($\text{m}^2\text{K/W}$)
Internal surface (downward heat flow)	-	-	0.170
Timber deck	18 mm	0.13 W/mK	0.138
Joist zone - mineral wool path	100 mm	0.035 W/mK	2.857
Joist zone - timber path	100 mm	0.13 W/mK	0.769
Continuous PIR	75 mm	0.022 W/mK	3.409
Plasterboard	12.5 mm	0.25 W/mK	0.050
External/unheated surface	-	-	0.040

Insulation-path $R = 6.665 \text{ m}^2\text{K/W}$, $U = 0.150 \text{ W/m}^2\text{K}$. Timber-path $R = 4.577 \text{ m}^2\text{K/W}$, $U = 0.218 \text{ W/m}^2\text{K}$. With 11.75% repeating timber fraction, area-weighted $U = \text{approximately } 0.158 \text{ W/m}^2\text{K}$. Adopted design U -value: $0.16 \text{ W/m}^2\text{K}$.

Result - floor

$0.16 \text{ W/m}^2\text{K}$, which is better than the $0.18 \text{ W/m}^2\text{K}$ Part L limiting value for a new floor element in an existing dwelling.

6.4 Openings

For proprietary windows, roof windows and doors, the whole-product declared U -value should be used rather than a layer calculation. The design target is $U_w \leq 1.20 \text{ W/m}^2\text{K}$ for new windows/roof windows where practicable and $U_d \leq 1.40 \text{ W/m}^2\text{K}$ for external doors. Installation should include insulated cavity closers/reveals and airtight tapes or equivalent to limit thermal bypass and infiltration.

7. Space heating, hot water, ventilation and lighting

7.1 Heating and hot water

No plant specification is shown on the submitted drawing. The following planning commitments are therefore recommended: retain efficient existing plant where serviceable; provide time and temperature zoning; use thermostatic or room controls; insulate new hot-water pipework; and, where a full replacement is undertaken, assess an air-source heat pump or other low-carbon electric system before installing new fossil-fuel plant.

7.2 Ventilation and indoor air quality

- Background ventilation and mechanical extract to wet rooms to be designed to Approved Document F.
- Kitchen and bathroom extract ducts to be short, smooth, insulated where passing through cold spaces, and properly terminated.
- Airtightness improvements must be coordinated with intentional ventilation so that indoor air quality is not compromised.
- Where roof-space works materially improve airtightness, consider continuous mechanical extract or MVHR only where the dwelling layout and airtightness justify it.

7.3 Lighting and appliances

All new fixed lighting should use high-efficacy LED luminaires. Lighting controls should be zoned so that the new bedroom, circulation and living spaces can be controlled independently. White goods, if replaced as part of the works, should be selected for high energy efficiency and suitable load capacity.

8. Renewable and low-carbon energy assessment

Technology	Planning-stage assessment	Position
Solar PV	Potentially feasible on suitable unshaded roof slopes, subject to survey and visual/structural checks.	Recommended for detailed feasibility review.
Solar thermal	Technically possible but competes for limited roof area and is less flexible than PV with electrified heat.	Lower priority.
Air-source heat pump	Potential low-carbon replacement system; requires suitable external unit location, acoustic design and emitter sizing.	Assess if heating system is replaced.
Ground-source heat pump	Urban flat context and ground access make this unlikely to be proportionate.	Not preferred.
Communal heat network	Not indicated by the submitted plans and disproportionate to a single-flat alteration.	Not applicable at this scale.
Battery storage	Could complement PV but not required to establish planning acceptability.	Optional future measure.

9. Overheating and climate resilience

The upper-level bedroom accommodation and roof glazing can be vulnerable to summer heat. The cooling hierarchy should therefore be applied before any active cooling is considered.

- Limit unnecessary solar gain through sensible glazing area and glazing g-value selection.
- Use opening windows/roof windows to provide effective purge ventilation where safe and acoustically acceptable.
- Provide internal blinds and, where architecturally appropriate, external shading to roof windows.
- Specify light-coloured or solar-reflective roof finishes where compatible with the approved appearance and roof product.
- Use low-energy lighting and efficient appliances to reduce internal gains.
- Avoid comfort cooling unless passive measures cannot achieve acceptable conditions.

If Building Regulations Approved Document O applies to the works, the final design should follow the relevant simplified or dynamic thermal modelling route and coordinate security, noise and fall-protection constraints with the proposed ventilation strategy.

10. Water efficiency and sustainable materials

10.1 Water

- Dual-flush WC where sanitary fittings are renewed (typically 4/2.6 L or similarly efficient).
- Shower flow rate targeted around 8 L/min, subject to user comfort and system pressure.
- Basin taps targeted around 5-6 L/min with flow regulation.
- Prompt repair of leaks and accessible isolation valves.
- Water-efficient appliances where replaced.

10.2 Materials and embodied impacts

- Retain existing building fabric wherever practical rather than replace serviceable components.
- Specify insulation with Environmental Product Declarations where commercially available.
- Use responsibly sourced timber (e.g. FSC/PEFC or equivalent chain of custody).
- Prefer low-VOC paints, sealants and adhesives.
- Use recycled-content plasterboard/metalwork where available and avoid unnecessary composite finishes that impede future recycling.

11. Construction, waste and responsible procurement

The scheme is small but the construction phase should still follow the waste hierarchy: prevent, reduce, reuse, recycle, recover, dispose. The contractor should segregate clean timber, metals, plasterboard and packaging where site conditions permit, and should use licensed waste carriers.

Construction issue	Commitment
Waste	Order to measured quantities; reuse sound materials; segregate recyclable streams.
Insulation	Protect from moisture and install without gaps, compression or discontinuity.
Airtightness	Seal window perimeters, service penetrations and membrane junctions before closing up.
Moisture	Use appropriate vapour control/breather layers and maintain ventilation paths.
Commissioning	Record heating controls, extract rates and relevant certificates.
Resident information	Provide product manuals and simple guidance for heating, ventilation and shading.

12. Biodiversity, external environment and transport considerations

The proposal is an alteration to an existing flat and does not, on the submitted sheet, indicate significant new ground-level hardstanding or landscape loss. Sustainability benefits therefore arise mainly through fabric improvement, efficient services and retention/reuse of the existing building. Any external plant should be sited to control noise and visual impact. Cycle/public-transport measures are not materially altered by the third-bedroom works, but secure cycle storage and low-car living remain consistent with Haringey sustainability objectives where relevant to the wider property.

13. Compliance schedule and planning commitments

Ref	Commitment for Flat 4	Evidence at detailed design / completion
E1	New/alterd external wall U-value ≤ 0.18 W/m ² K; design target 0.16.	Detailed section + insulation datasheet.
E2	New/alterd roof U-value ≤ 0.15 W/m ² K; design target 0.13.	Roof build-up + insulation datasheet.
E3	New floor over external/unheated space, if any, U-value ≤ 0.18 W/m ² K; target 0.16.	Floor build-up.
E4	New windows target $U_w \leq 1.20$ W/m ² K where practicable.	Manufacturer declaration.
E5	Continuous airtightness and insulation at junctions.	Site inspection / photographs.
E6	LED fixed lighting with zoning.	Electrical schedule.
E7	Efficient heating controls; low-carbon heating considered at replacement.	Plant/control specification.
E8	Passive-first overheating strategy.	Window/shading/ventilation specification.
E9	Water-efficient fittings where renewed.	Sanitaryware datasheets.
E10	Responsible materials and construction waste segregation.	Contractor records / purchase information.

14. Conclusions

The proposed third-bedroom works to Flat 4 can be delivered in a manner consistent with the energy and sustainability objectives of the London Borough of Haringey and the London Plan. The submitted drawing confirms a split-level Flat 4 with upper-floor bedroom accommodation and the proposed Bedroom 3; this report translates that proposal into a measurable fabric-first specification.

The calculated design U-values are approximately 0.16 W/m²K for new timber-framed wall elements, 0.13 W/m²K for new/alterd pitched or dormer roof elements, and 0.16 W/m²K for any new floor over external or unheated space. These values improve upon the current Part L limiting values for new fabric elements in existing dwellings. New windows should target 1.20 W/m²K or better where practicable, with careful installation to control thermal bridging and air leakage.

The proposal also adopts the wider energy hierarchy through efficient controls, passive overheating measures, low-energy lighting, water efficiency, responsible material selection and consideration of solar PV / low-carbon heating where technically and visually feasible. On this basis, and subject to the final detailed design and Building Control verification, the works are capable of achieving a high standard of energy and sustainability performance appropriate to the scale and nature of the application.

Planning conclusion

The scheme is supportable from an energy and sustainability perspective provided the thermal-performance commitments in Section 13 are secured in the detailed design.

Appendix A - U-value calculation methodology and assumptions

Method: simplified BS EN ISO 6946-style resistance calculation using representative conductivities, with an area-weighted parallel-path method for repeating timber members. It does not include every point thermal bridge, fastener correction or proprietary system correction. A competent designer should verify the final build-up using declared conductivity values and exact member spacing.

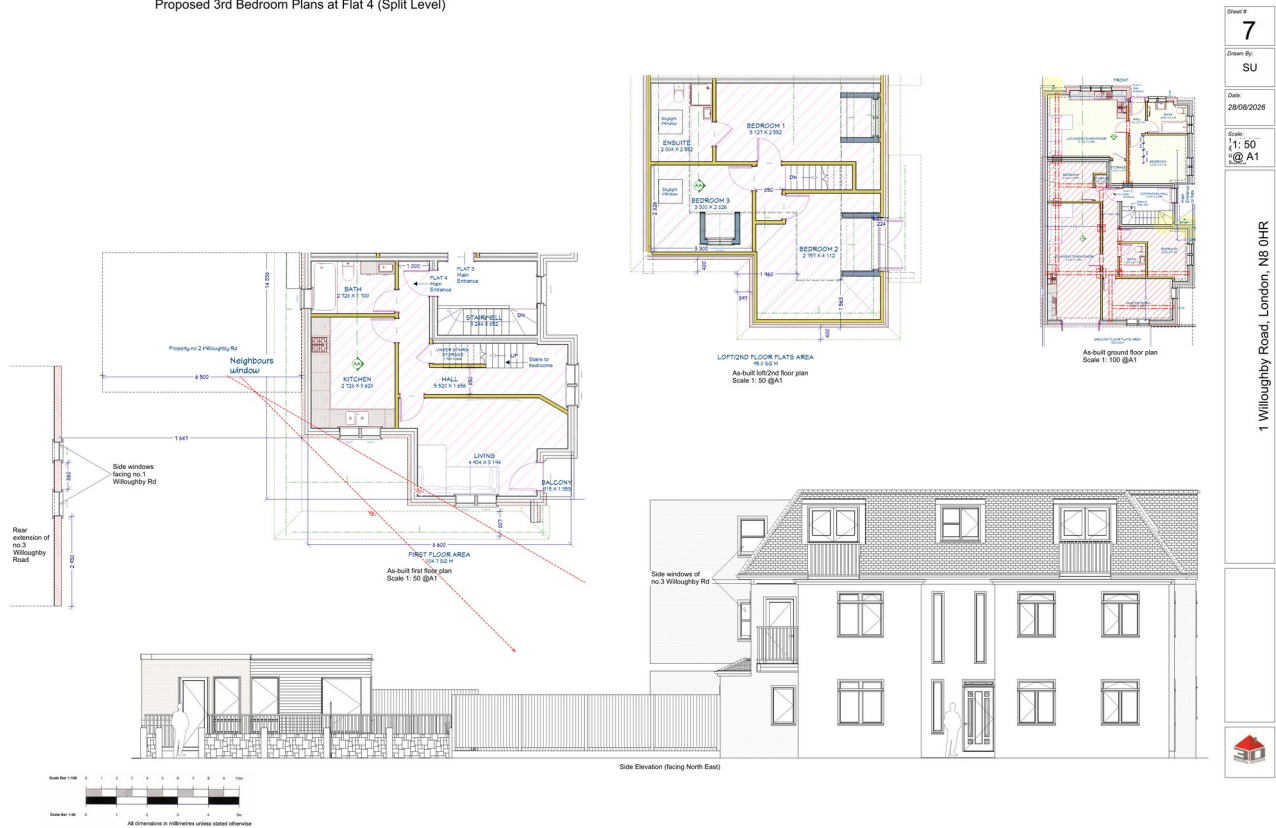
Material / condition	Assumed λ or R
PIR insulation	$\lambda = 0.022 \text{ W/mK}$
Mineral wool insulation	$\lambda = 0.035 \text{ W/mK}$
Softwood framing	$\lambda = 0.13 \text{ W/mK}$
OSB / timber deck	$\lambda = 0.13 \text{ W/mK}$
Plasterboard	$\lambda = 0.25 \text{ W/mK}$
Internal surface resistance - wall	$R_{si} = 0.13 \text{ m}^2\text{K/W}$
Internal surface resistance - roof/upward flow	$R_{si} = 0.10 \text{ m}^2\text{K/W}$
Internal surface resistance - floor/downward flow	$R_{si} = 0.17 \text{ m}^2\text{K/W}$
External surface resistance	$R_{se} = 0.04 \text{ m}^2\text{K/W}$
Repeating timber fraction	47 mm member / 400 mm centres = 11.75%

Formulae: $R = d/\lambda$ for each homogeneous layer. For each parallel path, $U_{\text{path}} = 1/R_{\text{path}}$. Overall U is calculated as the area-weighted sum of path U-values. Values are rounded to two decimal places for the adopted design specification.

Appendix B - Drawing reviewed

The report is based on the single submitted A1 sheet identified below. It shows the proposed first-floor and loft/second-floor arrangements for Flat 4, cross-sections, side elevation and as-built reference plans.

Proposed 3rd Bedroom Plans at Flat 4 (Split Level)



Sheet 7 - Proposed 3rd Bedroom Plans at Flat 4 (Split Level), 1 Willoughby Road, London N8 0HR, dated 28/08/2026.

Appendix C - References

Source	Document / relevance	Web reference
London Borough of Haringey	Energy statement requirements for minor developments; identifies SP4, DM21 and London Plan SI2/SI3/SI4, and explains formal evidence requirements for minor development creating new units/new floorspace.	https://haringey.gov.uk/planning-building-control/planning/planning-applications/how-does-planning-application-process-work/energy-statement-requirements-minor-developments
London Borough of Haringey	Local Plan: Development Management DPD, adopted 24 July 2017.	https://haringey.gov.uk/planning-building-control/planning/planning-policy/local-plan/local-plan-development-management-dpd
Greater London Authority	The London Plan 2021, Chapter 9, Policy SI2 Minimising greenhouse gas emissions and associated energy hierarchy.	https://www.london.gov.uk/programmes-strategies/planning/london-plan/the-london-plan-2021-online/chapter-9-sustainable-infrastructure
HM Government / GOV.UK	Approved Document L, Conservation of fuel and power, Volume 1: Dwellings, 2021 edition incorporating 2023 amendments.	https://www.gov.uk/government/publications/conservation-of-fuel-and-power-approved-document-l
HM Government / GOV.UK	Approved Document L (2026) and Building Circular 01/2026. The 2026 edition is published but takes effect on 24 March 2027 for non-HRB work, subject to transition.	https://www.gov.uk/government/publications/approved-document-l-2026
HM Government / GOV.UK	Approved Document O: Overheating.	https://www.gov.uk/government/publications/overheating-approved-document-o

Policy and statutory references were checked on 28 August 2026. Where a future standard has already been published but is not yet in force, this is stated expressly in the report.