



Liaise – ESOS

28 November 2025

ESOS ENERGY AUDIT REPORT

Ownership: Liaise Ltd

Assessment Scope: Buildings operated under Liaise (Audit of 5 sites covering 44 types) and transport.

Our Ref: 8200

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CONTENTS

Executive Summary.....	5
Introduction.....	6
Assessment Methodology	7
Site sampling approach.....	9
Energy Audit Survey.....	10
Transport.....	12
De minimis energy consumption	13
Assumptions and Limitations.....	13
Reference Period.....	13
Energy Baseline	13
Audit Recommendations.....	16
Action Plan	19
Conclusion.....	22
Sign off.....	23
Appendix A: Life-cycle Cost Analysis (LCCA) .	24
Appendix B: Site Energy Reports.....	25
Appendix C: Evidence Pack — Minimum Contents Checklist	27

Disclaimer

This Energy Savings Opportunity Scheme (ESOS) report has been prepared solely for the purpose of assisting Liaise's Ltd in meeting its compliance obligations under ESOS. The findings, recommendations, and proposed measures are based on information provided by the organisation, site inspections, and the auditor's professional assessment.

While all reasonable care has been taken to ensure the accuracy of the information presented, the responsibility for implementing the recommendations and ensuring compliance with ESOS requirements lies entirely with Liaise's Ltd. Futura Bright Limited, acting as the auditor, does not accept any liability for decisions made or actions taken by the organisation based on the contents of this report.

Liaise's Ltd retains full responsibility for verifying the feasibility and suitability of any recommended measures, as well as ensuring that any changes or updates to the organisation's energy use, processes, or compliance requirements are addressed appropriately. This report is provided without warranty, express or implied, and the auditor shall not be held liable for any direct, indirect, or consequential losses resulting from its use.

The responsibility for submitting the ESOS compliance notification, and ensuring all obligations are met, lies with Liaise's Ltd.

Estimated savings stated in this report are subject to detailed design.

The opportunities and savings presented in this report are derived from theoretical modelling (IES VE), engineering judgement, and site survey observations, and have been calibrated to the reference-year utility data where available. They are therefore indicative estimates, not guarantees. Actual performance may vary due to factors outside the model's control, including (but not limited to) weather and degree-days, occupancy and operating hours, production throughput, setpoints and user behaviour, equipment condition and commissioning quality, maintenance practices, and future tariff movements.

To manage this uncertainty, implementation should include commissioning of the installed measures and Measurement & Verification using the baselines and assumptions

documented in the evidence pack. Material changes in operations or systems should trigger a re-baseline. Budget costs shown are order-of-magnitude allowances (SPON/manufacture guidance) and should be confirmed by supplier quotations prior to investment.

EXECUTIVE SUMMARY

This report summarises the ESOS Phase 3 energy audit for Liaise, based on detailed assessment of five representative homes and extrapolated to the full portfolio of 44 care and supported-living units for the year April 2023–April 2024. Total qualifying energy use is estimated at 4,219,886 kWh/yr, of which 4,157,010 kWh/yr is building gas and electricity and 62,876 kWh/yr is company-vehicle fuel. Space heating, domestic hot water and interior lighting are the dominant Significant Energy Uses; small power and fans/pumps are secondary, while transport is modest in comparison. No de-minimis exclusion has been applied – 100% of known energy is in scope.

Site surveys show generally adequate but conventional gas-fired heating and hot water systems, mixed-age fabric, and extensive use of **T8/T5 fluorescent lighting** operating for long hours in bedrooms, corridors and communal areas. The calibrated energy model indicates that replacing these fittings with LEDs and adding daylight-responsive dimming and PIR controls in appropriate spaces reduces lighting consumption at the sample homes by just over **50%**. Applied to the 44-site portfolio, this equates to an estimated saving of around **519,000 kWh/yr**, or roughly **£88,000 per year** at a blended tariff of **£0.17/kWh**. The associated capital cost is provisionally assessed at **~£143,000 (ex VAT)**, based on about **1,584 luminaires** at **£90 per fitting (supply and install)**.

A four-year action plan has therefore been set out that focuses this ESOS cycle on delivering the **LED and controls upgrade** across all sites, with commissioning, staff training and simple monitoring to verify savings against the baseline. In parallel, Liaise will prepare a prioritised programme for the next compliance period to address **boiler and DHW plant renewal, improved heating/hot water controls and targeted window/fabric upgrades**, alongside light-touch fleet measures. Collectively, these actions provide a practical, resident-focused and cost-effective pathway to reducing Liaise's energy consumption and carbon emissions while maintaining safe, comfortable homes and ensuring ongoing ESOS compliance.

TABLE 1: SUMMARY OF ENERGY SAVING MEASURES

MEASURE	ENERGY REDUCTION KWH/YR	SAVINGS COST £/YR
Light upgrade and controls	519,000	£88,230

Together, the proposed measures are expected to save approximately **519,000kWh** annually, equating to around **£88,230 in yearly savings based on a simple payback**. Over a 60-year period, life cycle cost analysis estimates total savings of over **£TBC**.

Overall, the audit highlights practical, cost-effective improvements that align with Liaise Ltd sustainability goals and ESOS obligations. Regular reviews are advised to ensure continuous improvement and lasting energy efficiency across the company.

This report should be read in conjunction with the accompanying evidence pack.

INTRODUCTION

This ESOS Energy Audit Report fulfils Liaise Ltd.'s obligation under the Energy Savings Opportunity Scheme (ESOS) Phase 3. It identifies areas where the company can improve energy efficiency and provides recommendations for achieving cost and energy savings.

Scope of the Report:

- Company Operations.
- Energy Streams Assessed: Electricity, gas, and fuel.

Description of Developments and Assets

Liaise operates 44 units across the south of England, covering a wide geographic area. The estate comprises a mix of small to medium-sized residential care homes and supported living services. These are typically domestic-scale buildings providing individual bedrooms and/or self-contained flats with shared living spaces, kitchens and gardens. As 24-hour care environments, the buildings have relatively intensive use of heating, hot water, lighting and small power throughout the year.

The building stock ranges in age from the 1920s to the mid-1990s and consists mainly of typical residential-style houses that have been converted over time, with standard domestic construction types. The figures below are the selected samples used for the modelling.

FIGURE 1: BIRCHWOOD

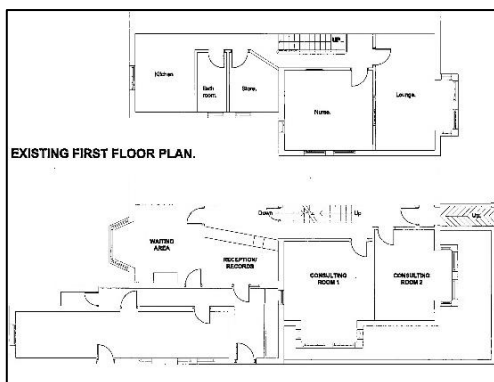


FIGURE 2: CASARITA

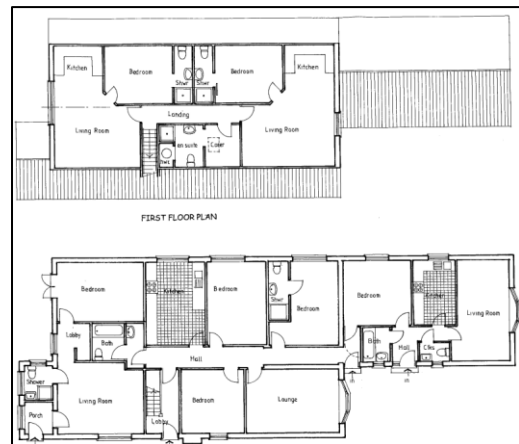


FIGURE 3: MIDDLETONS

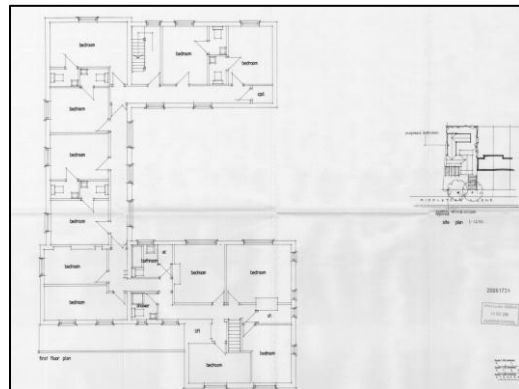
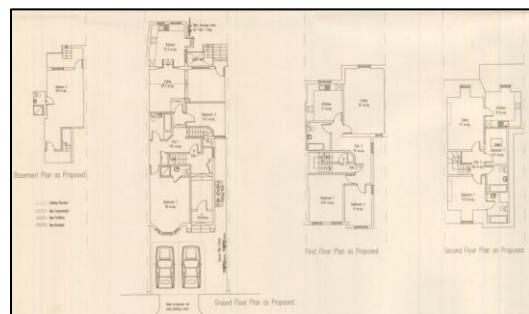


FIGURE 4: MIDDLETONS

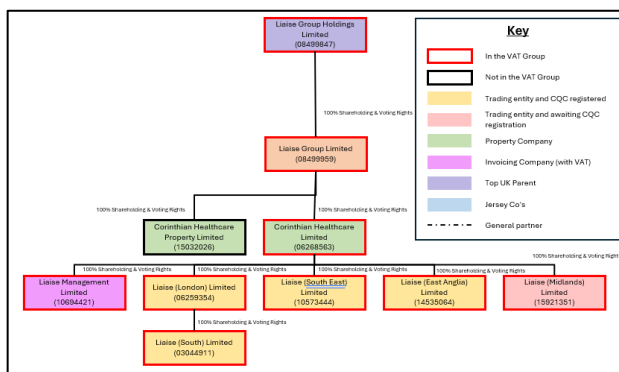


Organisational Structure

Liaise is a specialist provider of complex needs care, supporting adults with a wide range of needs including mental health conditions, autism, learning disabilities, epilepsy and numerous other health and behavioural needs. Services are designed around high levels of personalised support, with staff on site 24/7 in many settings to provide safe, consistent care.

Liaise operates in the UK through a group of companies headed by Liaise Group Holdings Limited. Liaise Group Holdings Limited owns Liaise Group Limited, which in turn holds the group's operating and property companies, as listed in figure 5 below.

FIGURE 5: OWNERSHIP & GOVERNANCE STRUCTURE



The ownership structure as of **21 November 2024** is shown in the group structure chart in Figure 4.

For the purposes of ESOS, **Liaise (London) Limited** is the business unit used to determine qualification as a **significant/large undertaking**. As Liaise (London) Limited meets the ESOS qualification thresholds and forms part of a wider UK group, the ESOS Regulations require compliance to be considered at **group level**.

Accordingly, **Liaise Group Holdings Limited**, as the **top UK parent company**, has been designated as the ESOS participant and has undertaken the ESOS Phase 3 submission **on behalf of itself and all qualifying UK subsidiaries** within the structure described above. All UK trading and property entities within this group that consume energy (buildings and transport) have been included within the scope of this assessment, subject to the 5% de minimis provision.

**ASSESSMENT
METHODOLOGY**

Energy Savings Opportunity Scheme Compliance

The Energy Savings Opportunity Scheme (ESOS) requires large organisations to conduct energy audits every four years to identify cost-effective energy-saving opportunities. Eligibility applies to organisations with 250+ employees or those exceeding £44 million in turnover and £38 million in balance sheet total.

The audits assess energy use across buildings, transport, and processes, recommending measures with estimated savings and payback periods. A report documenting the findings, signed off by a qualified Lead Assessor, must be submitted to the relevant regulatory body to demonstrate compliance.

An action plan for implementing recommendations is encouraged to ensure energy efficiency improvements and long-term cost savings.

This report has been structured to align with the requirements of the Energy Savings Opportunity Scheme. It includes a comprehensive energy audit covering buildings, transport, and processes to identify opportunities for improving energy efficiency. Recommendations for energy-saving measures are provided, with estimates of potential savings and payback periods.

Additionally, this report includes an action plan to facilitate the implementation of the recommended measures, supporting Liaise Ltd in achieving both regulatory compliance and long-term energy efficiency goals.

Compliance Panel (Phase 3)

Liaise previously submitted an ESOS Phase 3 notification and report. Following internal review and clarification of how the Phase 3 requirements apply to the Liaise group structure, this document has been prepared as a re-submission.

Group Undertakings

Relevant ESOS findings and recommendations will be shared with in-scope UK group undertakings to ensure opportunities are considered consistently.

CIBSE Methodology

CIBSE TM63 is a Technical Memorandum (TM) with a focus on predicting **Operational Performance Modelling and Calibration for Evaluation of Energy In-Use**. It outlines the approach adopted by CIBSE to provide a practical framework to undertake measurement and verification of building energy performance in-use.

CIBSE TM46, Energy Benchmarks, offers a standardised framework for evaluating energy performance across different building types. This guidance enables comparison of a building's energy performance against sector-specific benchmarks for various building categories.

In this assessment, CIBSE TM63 was applied as a calibration methodology, while TM46 was used to benchmark the fossil fuel energy consumption of Liaise Ltd.

The following steps were undertaken to prepare this report:

- Collection and analysis of energy consumption data.
- Identification of significant energy uses (SEUs).
- On-site audits of Liaise owned facilities only.
- Assessment of energy efficiency opportunities.

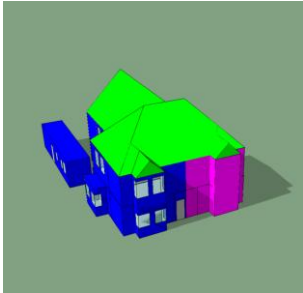
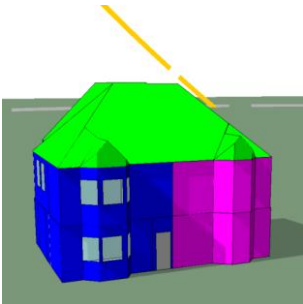
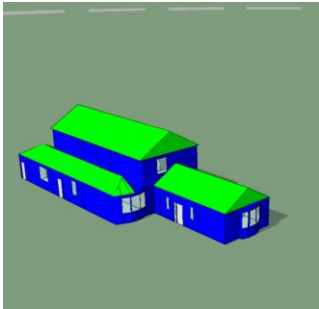
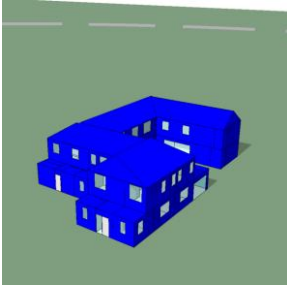
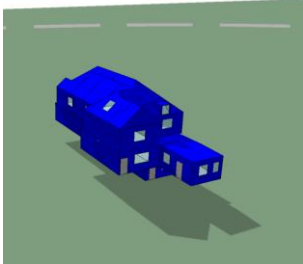
The following Data Sources were collected and used within our analysis:

- Electrical & Gas Utility bills and invoices.
- Electrical & Gas Submetering data.
- Fleet fuel consumption records.
- Tools used: IES Virtual Environment software package used for energy comparison analysis.

Calculation Tool

To show an accurate baseline, a 3D dynamic energy model of the proposed building was created using the IES Virtual Environment software package with version 7.0.27.0 of its Apache calculation engine, fully in accordance with CIBSE AM11.

TABLE 2: DIGITAL TWIN IES VE MODEL

Site	IES VE Image
Birchwood	
Bramshaw	
Casarita	
Middletons	
Parkhouse	

SITE SAMPLING APPROACH

Liaise operates 44 care and supported living services across the UK. Due to the similarity of building types and usage patterns across the estate, a sampling approach was adopted for Phase 3 in line with ESOS guidance on representative audits for sites

Five sites were selected for detailed energy audits: Birchwood, Casarita, Middletons, Parkhouse and Bramshaw. These sites were chosen to be broadly representative of the wider portfolio in terms of:

- Building type and layout (typical care home/supported living configurations)
- Age and construction (mix of older and newer fabric)
- Heating and hot water systems (gas boiler-led, typical of the estate)
- Occupancy patterns (24/7 operation with staff shift patterns)
- Geographic spread across the main operating regions

The sampling is designed so that the opportunities identified at these five sites are considered transferable to other sites of similar type across the Liaise portfolio. Corporate-level recommendations and cost-benefit analysis have therefore been extrapolated from these audit findings to the remainder of the estate.

Coverage of total energy consumption

Total qualifying energy consumption for Liaise has been calculated across all 44 sites, using supplier billing data for 1,330,692 kWh of electricity and 2,826,318 kWh of gas in the baseline year from April 2023-2024 (a combined building energy use of 4,157,010 kWh).

The five sampled sites (Birchwood, Casarita, Middletons, Parkhouse and Bramshaw) together consume around 526,208 kWh per year, representing approximately 13% of total building energy consumption. Although detailed on-site audits were undertaken only at these five locations, metered billing data have been collated for all 44 sites and corporate transport, and the opportunities identified at the sampled sites are extrapolated by building type to the remainder of the estate.

On this basis, at least 95% of Liaise's total energy consumption is included within the scope of this

ESOS Phase 3 assessment, satisfying the strengthened coverage requirement.

TABLE 3: SAMPLE PLOTS

Site	Image
Birchwood	
Bramshaw	
Casarita	
Middletons	
Parkhouse	

ENERGY AUDIT SURVEY

Energy audits were carried out during 2024 at five representative Liaise services – Birchwood, Bramshaw, Casarita, Middletons and Parkhouse – by the Liaise Estates Department. The surveys focused on building fabric, heating and hot water services, lighting, water use and operational practices, with the aim of identifying practical measures to reduce energy consumption and improve environmental performance across the wider estate.

Utilities and metering

Across the Liaise estate, each property is served by a standard low-voltage electricity supply and, where present, a low-pressure gas supply from the public networks. Incoming services are typically metered via a single main electricity meter and one or more gas meters per site, with billing based on either smart/automatic readings or periodic manual readings taken from conventional meters.

Building fabric and glazing

Most audited properties are traditional domestic-style buildings which have been adapted for care use. Several sites already benefit from double-glazed windows (e.g. Middletons, Parkhouse and Birchwood), offering reasonable thermal performance and acoustic control.

At Bramshaw, windows remain predominantly single glazed; the building lies within a conservation area and windows are understood to be listed, so any upgrade would need to be like-for-like timber double-glazed units. This presents a longer-term, higher-cost opportunity rather than an immediate measure.

External areas at Casarita require general improvement. While primarily an estate-management issue, better control of external areas will support safer access for contractors, enable future fabric improvements and reduce the risk of heat loss through frequently opened doors.

Heating and Ventilation

Heating and hot water are provided by domestic-scale wet heating systems and gas boilers. At Bramshaw, the boiler has already been upgraded to a more efficient model, providing a good baseline for heating efficiency at that site.

Some bathrooms and WCs, particularly at **Casarita**, would benefit from improved **mechanical extract ventilation** to manage moisture and maintain air quality, which indirectly supports energy performance by protecting building fabric and reducing the risk of damp.

Lighting

Across the sample plots, internal lighting is a mix of older fittings and newer LED luminaires. At Middletons and Birchwood, many areas already have LEDs installed, but there remains scope to upgrade remaining conventional T8 and T5 fittings to LED and to introduce presence-controlled (PIR) lighting in circulation spaces, bathrooms and staff areas to minimise unnecessary run hours.

At Casarita, lighting in several rooms and corridors is dated; replacement as part of planned redecoration would allow standardisation on efficient LED fittings with appropriate controls.

Domestic hot water

Across the audited sites (Birchwood, Casarita, Middletons, Parkhouse and Bramshaw), domestic hot water is typically supplied by central gas-fired boilers feeding stored hot water cylinders, which then distribute to bathrooms, en-suites, kitchens and utility areas. The cylinders are controlled using standard timeclocks and thermostats. In practice, time schedules and temperature setpoints are often only set to meet basic comfort and compliance needs, with little active optimisation. This suggests there is scope to refine these settings to cut unnecessary boiler operation while still maintaining safe and appropriate stored-water temperatures.

Documentation, compliance and other observations

Energy Performance Certificates (EPCs) were found to be on display at Middletons, Parkhouse and Birchwood, demonstrating compliance with display requirements and providing a useful reference for future energy-efficiency investment.

A range of minor estate issues were recorded at Casarita, including grounds maintenance, internal finishes and layout adjustments. While not all are directly energy-related, tackling these as part of planned maintenance will support the creation of more thermally efficient,

easy-to-manage environments and facilitate the rollout of energy-saving measures.

At Middletons, recommendations also included upgrading certain items of resident furniture to mental-health-specification units as part of broader environmental improvements; these works can be aligned with lighting, heating-control and refurbishment measures to minimise disruption and deliver energy and quality-of-life benefits together.

Key Observations:

The site surveys identified a number of recurring opportunities for improving energy performance across the Liaise estate. These can be summarised as follows:

Completion of LED lighting upgrades

Whilst many areas already benefit from LED lighting, there remain pockets of older, less efficient fittings. A programme to replace all remaining fluorescent and incandescent lamps with LEDs, including external luminaires, would deliver quick, low-disruption savings.

Improved lighting controls

In circulation spaces, bathrooms, stores and staff areas, the introduction of occupancy-based (PIR) controls and/or time scheduling would reduce unnecessary lighting hours and further enhance the benefits of LED upgrades.

Building fabric and glazing enhancements (longer term)

At selected properties, particularly those with single glazing or ageing fabric, there is scope for future improvement through replacement of windows with higher-performance units and targeted insulation upgrades, subject to planning and conservation requirements.

Ventilation upgrades in wet areas

In bathrooms and other wet rooms, upgrading or adding mechanical extract ventilation will help control moisture, protect building fabric and maintain good indoor air quality, supporting efficient space-heating operation.

Domestic hot water

Overall, the DHW systems across the audited homes are operating satisfactorily and meet current compliance requirements. However, there is clear scope to reduce energy consumption and associated emissions by tightening control of operating hours and

temperatures and improving insulation to cylinders and distribution pipework, particularly when planning future heating and DHW plant replacements.

Renewables

Several sites, including Middletons and Bramshaw, were noted as having potential for roof-mounted solar PV, subject in Bramshaw's case to conservation-area planning constraints. This represents a significant long-term opportunity for on-site renewable generation where planning allows.

Integration of energy measures with planned refurbishment

A number of sites require general refurbishment (e.g. internal finishes, flooring, layout changes). Aligning these works with energy improvements—such as lighting replacements, control upgrades and sanitaryware changes—will minimise disruption and deliver better value for money.

These opportunities provide a clear basis for an estate-wide programme of energy and carbon reduction, to be prioritised according to cost, payback period, resident impact and alignment with planned maintenance.

TRANSPORT

This section covers road-fuel use attributable to Liaise for the reference year 2023–2024. The scope comprises company-owned and leased cars and minibuses used by operations, maintenance and management staff. Data were taken from the fleet mileage schedule, which records odometer readings and annual mileage by vehicle together with fuel type (petrol or diesel). No electric-vehicle charging or other road-fuel types were identified in the dataset for this period. Public transport and staff mileage claims are treated separately and are not included in the figures presented here.

For reporting, Liaise’s transport energy has been established using the mileage-based method recommended for company vehicle datasets where annual distance and fuel type are known. Annual mileages for each vehicle were first converted from miles to kilometres. Greenhouse-gas emissions and energy consumption were then calculated by applying the latest UK Government GHG Conversion Factors for average petrol and diesel cars, using fuel-specific factors for kgCO₂e per kilometre and kWh per kilometre (net calorific value basis). From the resulting energy totals, notional fuel volumes in litres were derived using the corresponding kWh-per-litre factors for petrol and diesel, providing an internal cross-check on reasonableness of the results.

Transport Energy Use Analysis

Across the 2023–2024 reference year, the Liaise fleet travelled approximately 54,668 miles, split between petrol and diesel vehicles in line with the vehicle inventory. When converted using the mileage-based factors:

- Total road-fuel use corresponds to around 6,000–6,100 litres of fuel.
- Associated emissions are approximately 15,300 kgCO₂e
- Reportable transport energy use for ESOS purposes is approximately 63,000 kWh per year (net CV).

On an intensity basis, these figures are equivalent to approximately 0.28 kgCO₂e per mile and 1.15 kWh per mile across the Liaise fleet for the reporting year. These totals are incorporated into Liaise’s overall ESOS Phase 3 energy balance alongside building electricity and gas consumption.

TABLE 4: ESTIMATED TRANSPORT ENERGY USE AND CARBON EMISSIONS

Mileage (miles)	Fuel (litres)	Emissions (kgCO ₂ e)	Transport energy (kWh/yr)
54,668	6,069	15,312	62,876

These figures quantify the energy consumption and environmental impact of Liaise transport operations during the assessment period.

Opportunities for Improvement

Potential areas for improvement could include:

- Driver behaviour and policy – reinforce eco-driving practices (smooth acceleration/braking, adherence to speed limits), discourage unnecessary idling, and ensure regular tyre-pressure checks and vehicle maintenance.
- Travel planning – promote sensible route planning and lift-sharing where practicable to reduce duplicated journeys between services and offices.
- Modal shift where feasible – encourage the use of public transport, cycling or walking for staff movements that do not require a vehicle, subject to care-service and safeguarding requirements.
- Future vehicle choices – when vehicles are renewed, consider lower-emission or more efficient models where operationally suitable.

Transport-related energy use at Liaise was reviewed for the reference year and is modest relative to overall organisational energy consumption, which is dominated by gas and electricity use in care homes and supported living services. Day-to-day vehicle use is primarily for local travel between services, sites and community locations, so total fuel consumption and associated emissions are small compared with the energy required for heating, hot water and lighting across the estate.

Given this profile, the most proportionate approach is to manage transport impacts through light-touch governance and behaviour (policy, briefings and basic fleet management) while directing the majority of ESOS effort and investment towards the Significant Energy Uses (SEUs) in buildings—particularly heating, hot

water, fabric performance and lighting—where measures are easier to monitor and are likely to deliver materially larger energy and carbon savings.

DE MINIMIS ENERGY CONSUMPTION

Under the ESOS Phase 3 rules, organisations are permitted to exclude up to 5% of their total UK energy consumption as de-minimis. For Liaise, based on a total qualifying energy use of 4,219,886 kWh for the 2023–2024 reference year (buildings and transport combined), this equates to a maximum de-minimis allowance of approximately 210,994 kWh.

For this assessment, Liaise has not claimed any de-minimis exclusion. All known electricity and gas consumption across the 44 sites, together with the calculated energy use from company vehicles, has been included within the ESOS scope. The audit findings, opportunity schedule and action plan therefore cover 100% of Liaise's quantified UK energy consumption for the reference year.

ASSUMPTIONS AND LIMITATIONS

This ESOS Phase 3 assessment has been prepared using the best available information at the time of study. The following assumptions and limitations apply.

Energy consumption for buildings is based on supplier billing data for electricity and gas for the 2023–2024 reference year. Where bills were missing or incomplete, consumption has been estimated using adjacent months, pro-rated periods or typical usage patterns for similar sites.

Energy audits were undertaken at five representative sites (Birch Wood, Casarita, Middletons, Park House and Bramshaw). These have been used to identify improvement measures and then extrapolate potential opportunities to other properties of similar type and use across the 44-site portfolio.

The extrapolation assumes that building fabric, plant condition, control practice and occupancy patterns at the audited sites are broadly representative of their peer groups across the 44 sites. Actual savings at individual non-audited sites may be higher or lower depending on local conditions.

REFERENCE PERIOD

The audit and modelling are based on a continuous 12-month reference year: April 2023 to April 2024. The same baseline year has been applied consistently across all five audited sites to enable meaningful comparison of performance and to provide a robust basis for estimating potential energy and carbon savings from the identified improvement measures.

ENERGY BASELINE

To showcase the energy savings achieved through the implementation of energy-saving measures, it is essential to establish a performance baseline. This baseline serves as a reference point, enabling the quantification of improvements resulting from various energy-saving strategies.

Building Profiles

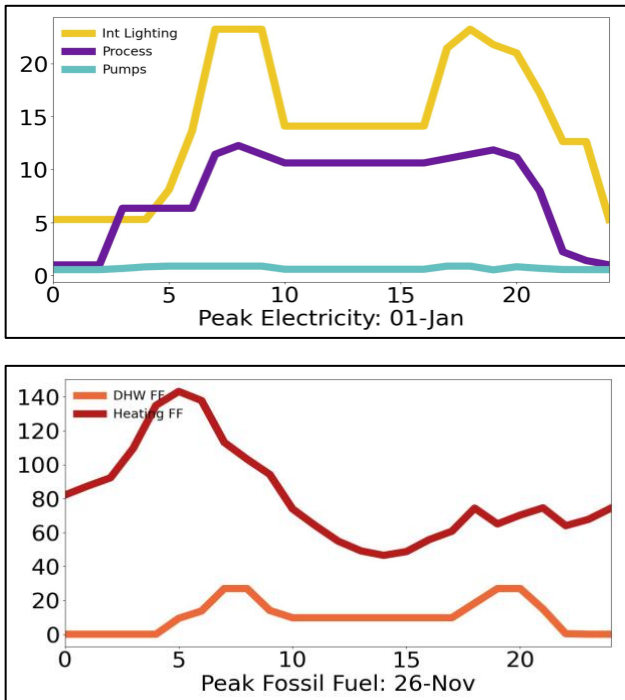
Building Time Use Profiles have been set up within the modelling to show actual use scheduling based on the site survey to schedule plant equipment, modulating casual gains (lighting and equipment) and ventilation rates, specifying the timing, use and defining time-varying set-points.

The energy use of background equipment has been included in the assessment through a W/m² load derived from the collected billing data. These values are benchmarked against recognised industry norms for domestic care environments and corroborated by observed site usage.

Occupancy, HVAC and lighting profiles have been constructed from actual building usage, reflecting a typical operating pattern for domestic care applications. The standard usage patterns are illustrated in the accompanying figures.

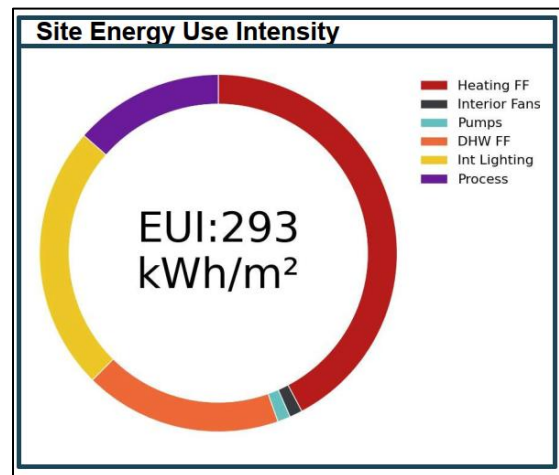
HVAC systems have been modelled with absolute, time-based profiles to represent variations such as occupied setpoints. In line with the site survey, the occupied heating setpoint in primary spaces has been set at 21 °C. These profiles have been calibrated to align with recorded gas and electricity meter readings, ensuring that the model reproduces measured consumption within expected tolerance.

FIGURE 6: PEAK ENERGY SOURCES FOR ELECTRICITY AND FOSSIL FUEL



hot water and lighting rather than relying solely on the existing fixed schedules. Priority measures include better zoning and time/temperature control of heating to match resident occupancy, improved insulation of hot water storage and distribution, and wider use of LED fittings with occupancy and daylight-responsive controls in circulation and staff areas. Together, these changes would improve operational efficiency while maintaining the safe, warm and well-lit environments required in Liaise's 24/7 care settings.

FIGURE 7: BASELINE ENERGY REPORT



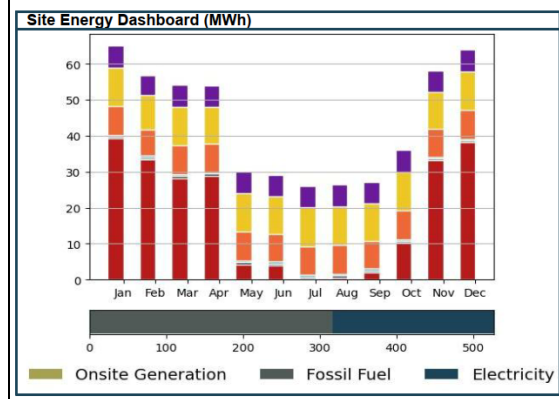
Baseline Energy Model

The energy baseline was developed in IES VE and calibrated against reference-year metered consumption. For 2023/24, a representative site energy intensity of 293 kWh/m² was adopted. The calibrated model for the five sites breaks down the main end-uses and aligns with the conditions observed during the site survey: fossil fuel heating is the largest consumer (as expected given the operational profile), with lighting and domestic hot water demand close behind.

The higher overall modelled consumption for the five Liaise sites is driven primarily by space heating, domestic hot water and interior lighting, which together account for the majority of end-use energy in the baseline model. The homes operate 24/7 with vulnerable residents, meaning sustained internal temperatures, continuous hot water availability and extended lighting hours are required, particularly in bedrooms, circulation spaces and care areas. Combined with relatively traditional building fabric and limited zoning or optimisation of heating and lighting controls, this naturally results in a higher energy intensity than a standard office or commercial benchmark

On this basis, there is clear potential to reduce consumption by tightening control of heating,

Energy End Use	Site Energy	Source Energy	CO2 Emissions
Heating Fossil Fuel	123.9	139.6	26.0
Heating Electricity	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0
Fans Interior	3.4	5.2	0.5
Heat Rejection	0.0	0.0	0.0
Pumps	3.4	5.2	0.5
DHW Fossil Fuel	52.3	58.9	11.0
DHW Electricity	0.0	0.0	0.0
Interior Lighting	70.4	106.6	9.8
Exterior Lighting	0.0	0.0	0.0
Receptacle	0.0	0.0	0.0
Data Center	0.0	0.0	0.0
Cooking Fossil Fuel	0.0	0.0	0.0
Cooking Electricity	0.0	0.0	0.0
Elevators & Escalators	0.0	0.0	0.0
Refrigeration	0.0	0.0	0.0
Process	39.7	60.0	5.5
TOTAL (ex renewables)	293	375	53



Significant Energy Uses across samples (SEUs):

The energy modelling conducted has allowed us to identify Significant Energy Uses (SEUs), a critical step in driving energy management and efficiency improvements. These cover 100% of the total energy consumption.

TABLE 5: THE BREAKDOWN OF SEUS ACROSS SAMPLES

Significant Energy Use	Description	Estimated Energy Contribution
Space heating (gas)	Gas-fired boilers providing space heating to resident bedrooms, lounges, staff areas and circulation spaces at the audited Liaise homes.	222,600 kWh/yr
Lighting (electric)	Internal Fluorescent T8/T5 lighting in bedrooms, lounges, corridors, kitchens, staff areas and external access routes.	126,500 kWh/yr
Domestic hot water (gas)	Gas-fired boilers and hot water cylinders serving bathrooms, en-suites, kitchens and utility rooms.	94,000 kWh/yr
Small power (electric)	General small-power and process load (laundry equipment, catering appliances, fridges/freezers, ICT/office equipment and other plug loads).	71,300 kWh/yr
Mechanical ventilation fans (electric)	Electrical consumption of supply and extract fans serving the audited homes.	6,100 kWh/yr
Heating circulation pumps (electric)	Electrical consumption of heating and hot water circulation pumps.	6,100 kWh/yr
Transport – company vehicles (road fuel)	Petrol and diesel used in Liaise-owned and leased vehicles for business travel in the 2023–2024 reference year (mileage-based calculation using UK GHG factors).	62,876 kWh/yr

Baseline SEU breakdown – 44 units (buildings and transport)

The SEU breakdown for the full Liaise portfolio has been derived by applying the end-use proportions from the calibrated IES model of the five audited homes to the total metered building energy for all 44 units (4,157,010 kWh/yr), and then adding company-vehicle transport energy (62,876 kWh/yr). In practice, the modelled energy for the five homes was first split by end use (space heating, domestic hot water, lighting, small power, fans and pumps) and expressed as percentages of their total building consumption. These percentages were then applied to the 44-site building total to estimate portfolio-wide SEUs. The same calibrated model has been used to determine the percentage reduction in lighting energy from the proposed LED and controls upgrade, which has been applied to the lighting SEU to estimate savings across the wider estate. This approach assumes the audited homes are broadly representative of the wider estate and provides a consistent baseline for targeting heating, hot water and lighting as the principal Significant Energy Uses. This provides the following total energy usage.

TABLE 6: THE BREAKDOWN OF SEUS ACROSS SAMPLES

Significant Energy Use	Estimated energy for 44 sites	Share of total organisational energy
Space heating (gas)	1,758,000 kWh/yr	41.7%
Lighting (electric)	998,000 kWh/yr	23.6%
Domestic hot water (gas)	744,000 kWh/yr	17.6%
Small power (electric)	561,000 kWh/yr	13.3%
Transport – company vehicles (road fuel)	62,876 kWh/yr	1.5%
Mechanical ventilation fans (electric)	48,000 kWh/yr	1.1%
Heating circulation pumps (electric)	48,000 kWh/yr	1.1%

The SEU analysis for the full Liaise portfolio shows that space heating, domestic hot water and interior lighting are the dominant energy users across the 44 homes and supported-living services. Space heating is the largest single load at around 1,758,000 kWh/yr ($\approx 41.7\%$), reflecting the need to maintain stable internal temperatures in 24/7 care environments with vulnerable residents. Domestic hot water contributes a further $\approx 744,000$ kWh/yr ($\approx 17.6\%$), driven by high hygiene requirements and frequent bathing, showering and laundry.

Lighting is the next major SEU at approximately 998,000 kWh/yr ($\approx 23.6\%$), consistent with long operating hours in bedrooms, corridors and communal areas and a mix of legacy fluorescent fittings alongside newer LEDs. Electrical small-power and process loads (laundry, catering, refrigeration, ICT and other plug loads) are more modest at around 561,000 kWh/yr ($\approx 13.3\%$), with fans and heating pumps together adding roughly 96,000 kWh/yr ($\approx 2.2\%$) to support heating, hot water and ventilation systems.

Transport energy from Liaise's company vehicles is also part of the picture, at approximately 62,900 kWh/yr ($\approx 1.5\%$) for the reference year, reflecting routine travel between homes, offices and community locations. Taken together, these SEUs represent effectively all of Liaise's quantified energy use across buildings and transport, and therefore provide the most credible focus for targeted energy and carbon reduction measures.

Energy Intensity Ratios (EIRs) — Reference Year (1 April 2023–2024)

- Space Heating: 1,758,000 kWh/year
- Lighting: 998,000 kWh/year
- Domestic hot water: 744,000 kWh/year
- Small power: 561,000 kWh/year
- Transport: 62,876 kWh/year
- Mechanical ventilation: 48,000 kWh/year
- Pumps: 48,000 kWh/year

The process intensity indicator has been selected in line with ESOS guidance and will be refined after implementation using sub-metered data (kWh per unit of output).

AUDIT RECOMMENDATIONS

Based on the ESOS energy audit for the 5 sample sites, the following actions are recommended to reduce energy use, cost and carbon while maintaining production and comfort:

Lighting upgrades (primary recommendation)

Liaise's earlier Phase 3 work already identified the replacement of T8 and T5 fluorescent fittings with LED luminaires as a key opportunity. The calibrated model and site surveys confirm that interior lighting is one of the largest electrical SEUs across the homes, with long operating hours in bedrooms, corridors and communal areas.

It is recommended that Liaise:

- Complete a full LED refurbishment programme across all 44 units, replacing remaining T8/T5 fluorescent and other legacy fittings with high-efficacy LED luminaires.
- Standardise on LED bulkheads and downlights with good colour rendering and appropriate diffusers for care environments, reducing maintenance and lamp-change frequency.
- Integrate simple controls wherever practicable, such as:
 - PIR/occupancy sensors in WCs, stores, corridors and staff areas.
 - Corridor/communal fittings with built-in presence and corridor-function dimming.
 - Daylight-linked control in any daylight areas with consistently high daylight availability.

This measure directly targets one of Liaise's most significant energy uses, offers short payback periods, and can be rolled out in phases with minimal disruption to residents.

Heating plant replacement – higher efficiency gas boilers (future phase)

Space heating is the single largest end use across the modelled homes. Many sites use older non-condensing or early-generation condensing gas boilers, which are less efficient than modern equipment.

It is recommended that, as boilers reach end of life or major maintenance:

- Liaise prioritises replacement with high-efficiency condensing gas boilers sized and zoned appropriately to the building layout.
- New boilers are installed with modern controls (weather compensation, load compensation and optimum start/stop) and integrated with room thermostats/TRVs to avoid overheating.
- Boiler replacement projects are used as a trigger to review flow temperatures, zoning and time schedules, aligned with care-home occupancy and staff shift patterns.

These plant upgrades should be scheduled as part of a medium-term capital works programme, potentially under an ESOS Phase 4 workstream, prioritising the highest-consumption or poorest-condition boilers first.

Domestic hot water (DHW) optimisation and renewal (future phase)

Domestic hot water is also a significant gas load, driven by high hygiene requirements in bathrooms, en-suites and kitchens.

Recommended actions include:

- Improve insulation to hot water cylinders, distribution pipework and valves where missing or degraded, to cut standing losses.
- Review DHW time schedules, ensuring generation and circulation run times match use patterns while respecting legionella and infection-control requirements.
- When major plant renewal is undertaken, select high-efficiency boilers/cylinders or packaged DHW solutions that minimise storage losses and allow good temperature control.
- Consider installing low-flow taps and shower heads (where clinically appropriate) to reduce hot water volumes at point of use.

These measures are largely low-disruption and can often be implemented alongside planned maintenance, for future ESOS phases.

Fabric improvements – window upgrades (future phase)

At some sites, particularly older properties and those in conservation areas, single-glazed or poor-performing windows were observed. These significantly increase heat loss and can contribute to drafts and resident discomfort.

Given the higher capital cost and, in places, planning constraints, window upgrades are recommended as a longer-term, targeted measure:

- As part of future refurbishment or lifecycle works, replace single-glazed units with high-performance double-glazed timber or uPVC units, sympathetic to the building's character and any conservation requirements.
- Prioritise rooms where residents spend long periods (bedrooms, lounges) and elevations most exposed to wind and weather.

These fabric works will reduce heating demand, improve comfort and support the effectiveness of new high-efficiency boilers and controls.

Other measures to be considered such as:

- Implement a light-touch travel policy covering trip avoidance, route planning, tyre-pressure checks and eco-driving standards, using exception-based reporting from fuel-card data to sustain behaviours over time.

Audit Summary

In combination, these recommendations provide a clear roadmap:

- Short-term, high-impact: estate-wide LED lighting replacement with controls.
- Medium-term: progressive replacement of older boilers with efficient gas condensing plant and DHW improvements.
- Longer-term: fabric upgrades such as single-glazed window replacement during major refurbishments.

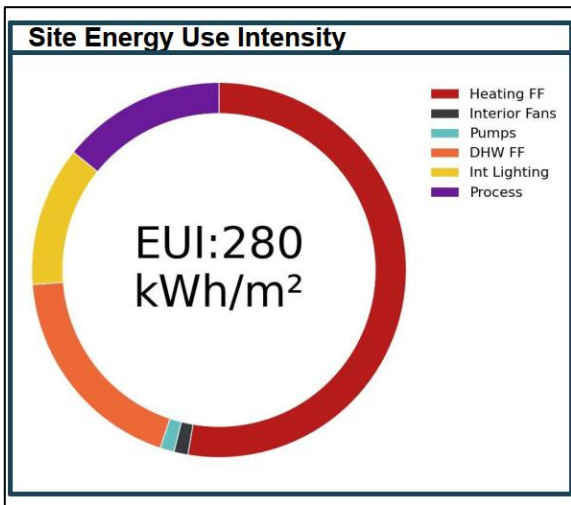
This sequencing targets Liaise's most significant energy uses first while aligning with practical constraints in a 24/7 care environment.

Energy Model Data across samples

This modelling approach allowed for a comprehensive understanding of building energy behaviour, particularly where metered data was limited. The results informed the ESOS energy audit findings and the identification of practical energy efficiency measures.

By incorporating the above recommendations into our 3D IES VE energy model, the following energy improvement results were identified.

FIGURE 8: ENERGY REDUCTION REPORT SAMPLE PLOTS



Energy End Use	Site Energy	Source Energy	CO2 Emissions
Heating Fossil Fuel	147.5	166.1	31.0
Heating Electricity	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0
Fans Interior	3.4	5.2	0.5
Heat Rejection	0.0	0.0	0.0
Pumps	3.4	5.2	0.5
DHW Fossil Fuel	52.3	58.9	11.0
DHW Electricity	0.0	0.0	0.0
Interior Lighting	33.8	51.1	4.7
Exterior Lighting	0.0	0.0	0.0
Receptacle	0.0	0.0	0.0
Data Center	0.0	0.0	0.0
Cooking Fossil Fuel	0.0	0.0	0.0
Cooking Electricity	0.0	0.0	0.0
Elevators & Escalators	0.0	0.0	0.0
Refrigeration	0.0	0.0	0.0
Process	39.7	60.0	5.5
TOTAL (ex renewables)	280	346	53

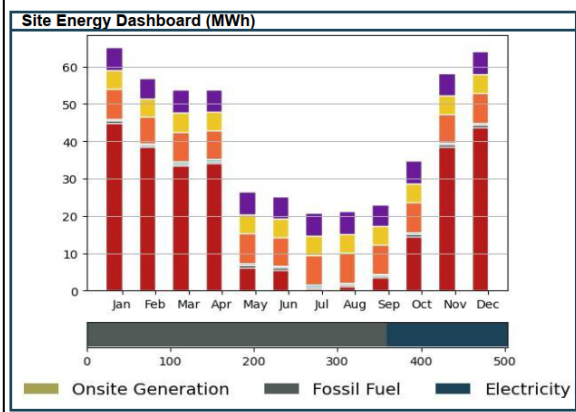


TABLE 7: SEUS REDUCTION

Item	5 audited homes (model) kWh/yr	44 units (extrapolated) kWh/yr
Baseline lighting use	126,500	998,000
Lighting use after LED upgrade	60,700	479,000
Annual saving	65,800	519,000

Savings are highly concentrated in lighting. For the five modelled homes, replacing the remaining T8/T5 fluorescent fittings with LEDs and introducing daylight-responsive dimming in office and lounge areas delivers an estimated ~65,800kWh/yr reduction in lighting demand, accounting for virtually all of the modelled net energy reduction and confirming lighting as the key electrical SEU. Overall site energy intensity falls from 293 to 280 kWh/m²-yr, so the project is expected to cut lighting electricity use by just over 50% while maintaining suitable illuminance and comfort for residents and staff.

When this saving is extrapolated to all 44 Liaise sites, applying the same proportional reduction to the portfolio SEU breakdown, the LED and control upgrade is expected to reduce estate-wide lighting consumption from roughly 998,000 kWh/yr to about 479,000 kWh/yr, delivering an annual saving in the region of 519,000 kWh/yr across the portfolio.

Energy Savings Opportunities

The following energy-saving opportunities have been identified, along with their estimated annual savings, investment costs, and potential payback periods.

For cost estimates, electricity has been priced at a blended tariff of £0.17/kWh. This rate has been derived from the billing data for the five audited sites and then applied across all 44 buildings as a single portfolio-average value. Using one consistent tariff enables clear, like-for-like comparison between measures; if tariffs change materially in future, the cost calculations can be re-baselined using the same method.

Installation costs include supply and installation of the recommended measures, with figures referenced from industry-standard pricing

sources, such as the SPONS guide, and our project experience.

These estimates provide a framework for evaluating the feasibility and cost-effectiveness of each proposed measure.

TABLE 8: IDENTIFIED MEASURES

MEASURE	ESTIMATED ANNUAL SAVINGS (£)	INVESTMENT COST (£)	PAYBACK PERIOD (YEARS)
Lighting replacement and controls	£88,230 (~519,000 kWh elec @ £0.17)	£142,560	1.6

On this basis, rolling out the LED lighting upgrade to all 44 Liaise sites is expected to require an indicative capital investment of around £143k (ex VAT), assuming approximately 1,584 luminaires replaced at £90 per fitting for supply and installation.

For ESOS purposes, the LED lighting investment has been costed using an assumed unit rate of £90 per fitting (supply and install), derived from typical UK market / Spon's-style rates rather than formal contractor quotations, and should therefore be treated as an indicative budget figure pending detailed design and tender.

A 60-year life-cycle cost analysis (LCCA) has been undertaken based on the above measures as shown in Appendix A. The LCCA covers detailed capital costs, including installation, replacement, and repair expenses over a 60-year period.

Targeted upgrade works can cut energy use significantly while remaining practical in a 24/7 care environment. In the near term, priority should be given to replacing remaining T8/T5 fluorescent fittings with LED luminaires and adding daylight-dimming and PIR controls in lounges, offices and circulation areas. These actions address one of the dominant SEUs in lighting and align with ESOS requirements. Expected savings as:

- Estimated total savings identified: ~519,000 kWh/year (~£88,230 /year under the simple payback method)

ACTION PLAN

The aim of this action plan is to enhance energy efficiency and reduce operational costs by

upgrading lighting and controls, while ensuring adherence to ESOS compliance requirements.

Year 1: Estate-wide lighting survey

Complete a lighting survey for all 44 units, building on the five audited homes:

- Confirm locations and quantities of T8/T5 and other legacy fittings.
- Identify key daylight areas (lounges, offices, corridors with windows, stairwells).
- Record typical run-hours by area (24/7, daytime only, staff-only zones, external).

LED & controls design standard

Define a group standard for lighting:

- Preferred LED panel/bulkhead types and outputs for bedrooms, corridors, lounges, offices and external routes.
- Standard use of PIR presence detection and daylight-dimming in lounges, offices and suitable corridors.
- Requirements for glare control, colour temperature, and emergency lighting.

Investment plan & phasing

- Develop a phased implementation plan for all 44 sites:
- Prioritise high-consumption / poor-condition sites and those easiest to access.
- Confirm assumed unit rate (e.g. £90 per fitting supply-and-install) and refine with budget prices.
- Produce site-by-site cost and kWh-saving estimates, using the calibrated model and SEU breakdown.

Governance & approval

- Present the lighting business case (cost, kWh/yr savings, CO₂ and payback) to senior management.
- Agree programme governance, budget envelope and target completion dates for each phase.
- Confirm metering and data-collection arrangements to verify savings against the ESOS baseline.

Year 2 – LED Rollout: Priority Sites

Implementation – Phase 1

- Deliver the LED replacement and basic controls (PIR where appropriate) at the first tranche of sites (e.g. top 10–15 units by energy intensity or condition).
- Remove and safely dispose of legacy T8/T5 lamps and fittings in line with WEEE requirements.
- Ensure commissioning checks are completed: correct light levels, sensor timeouts, and sensible manual overrides.

Resident and staff engagement

Brief managers and staff at upgraded homes on:

- How the new lighting and controls operate.
- The reasons for the upgrade and expected energy and maintenance savings.

Capture early feedback on comfort, usability and any operational issues.

Monitoring & adjustment

- Track electricity consumption at upgraded sites versus the 2023–24 baseline (allowing for occupancy changes).
- Fine-tune sensor settings and schedules where needed to balance savings with comfort and safety.
- Use early results to refine the business case and specification for subsequent phases.

Year 3 – LED Rollout: Remaining Sites & Optimisation

Implementation – Phase 2

- Extend the LED and control upgrade to the remaining Liaise homes, following the refined standard from Year 2.
- Address external lighting (paths, car parks, entrances) as part of the programme, prioritising safe access and wayfinding.

Consolidated optimisation

Review all sites with completed upgrades:

- Check light levels in resident areas against care and regulatory requirements.
- Adjust dimming levels, PIR timeouts and corridor “background” levels where appropriate.

Identify any remaining legacy fittings and plan mop-up works.

Heating, hot water and fabric – preparation for next cycle

In parallel with lighting, undertake desktop and site reviews to prepare a medium-term plan for:

- Replacement of older gas boilers with high-efficiency condensing models.
- DHW optimisation (cylinder/pipework insulation, schedules, low-flow fittings where appropriate).
- Targeted window/fabric upgrades (single-glazed or poor-performing windows, draughty elements).

Develop a prioritised register of plant and fabric projects for delivery in the next ESOS period, including high-level costs and indicative savings.

Year 4 – Review, Consolidation & Next-Period Programme

Verification of lighting savings

- Compare post-upgrade electricity use for all sites against the ESOS baseline, normalised for occupancy and operating hours.
- Quantify verified kWh and CO₂ savings from the lighting programme using the SEU breakdown and metered data.
- Document performance, lessons learned and any remaining opportunities (e.g. controls fine-tuning, emergency lighting upgrades).

Finalise heating/DHW/fabric strategy for next compliance period

Convert the Year 3 boiler/DHW/fabric review into a deliverable programme for the next ESOS cycle, including:

- A clear sequence of boiler and DHW plant replacements by site.
- Planned window and fabric upgrades as part of major refurbishments.
- Integration of control improvements (weather compensation, zoning, temperature optimisation) into plant projects.

ESOS compliance and forward plan

- Record all lighting works, savings and associated assumptions in an ESOS Action Plan update, aligned with Phase 3 and ready for Phase 4.

- Use the verified lighting savings to update energy intensity metrics and demonstrate progress against the Phase 3 action plan.
- Set out a forward-looking energy and carbon reduction roadmap where:
 - Lighting is largely addressed in the current 4-year period, and
 - Heating, hot water and fabric improvements form the core of the next compliance period's activity.

Continuous improvement

Embed a simple annual review process (energy, comfort, maintenance issues) so that future ESOS cycles build on the lighting programme rather than starting from scratch.

This action plan focuses the current ESOS period on delivering estate-wide lighting upgrades, which offer short paybacks and significant savings, while preparing a structured programme of heating, hot water and fabric investments for the next compliance cycle. Together, these actions provide a practical route to reducing Liaise's energy consumption, operational costs and carbon emissions, while maintaining safe, comfortable environments for residents and staff.

CONCLUSION

Liaise has clear, cost-effective opportunities to improve energy performance across its 44 homes and supported-living services. The energy audit and SEU analysis shows the estate is buildings-led, with space heating, domestic hot water and interior lighting dominating energy use, and transport playing a relatively modest but manageable role. Total qualifying energy for the 2023–2024 reference year is approximately 4,219,886 kWh, of which 4,157,010 kWh is building gas/electricity and 62,876 kWh is road fuel from company vehicles. No de-minimis has been claimed; 100% of this energy is within scope.

A phased 4-year action plan has been set out, focusing this ESOS cycle on an estate-wide lighting upgrade while preparing heating, hot water and fabric upgrades for the next compliance period. In summary:

Lighting (current ESOS cycle – main focus)

The calibrated model and portfolio SEU breakdown confirm lighting as a major electrical significant energy use (SEU). Replacing remaining T8/T5 fluorescents with LEDs and introducing daylight-responsive dimming and PIR controls in lounges, offices and circulation areas is expected to cut estate-wide lighting electricity by roughly half (a saving on the order of ~527,000 kWh/yr across all 44 sites). Based on an estimated 1,584 luminaires and an indicative rate of £90 per fitting (supply and install), the lighting programme represents an investment of around £143k (ex VAT), with short payback and minimal disruption.

Heating and domestic hot water (next compliance period – structured programme)

Gas consumption for space heating and DHW is the largest single SEU across the portfolio. The plan is to prepare a prioritised programme of boiler replacement with high-efficiency condensing plant, improved heating/DHW controls (schedules, setpoints, weather compensation, zoning) and better insulation of cylinders and pipework, ready for systematic delivery in the next ESOS cycle.

Fabric upgrades (longer-term lifecycle works)

At older and more exposed properties, there is longer-term scope to upgrade single-glazed or poor-performing windows and address localised fabric issues as part of planned

refurbishments. These works will support and amplify the benefits of heating and DHW improvements over time.

Transport (supporting actions)

Company-vehicle energy use is modest compared with building loads but still addressed through light-touch fleet management and behaviour—driver briefings, sensible route planning and consideration of more efficient vehicles at renewal.

Immediate actions for the current ESOS period are therefore to deliver the LED and controls upgrade across the estate, backed by basic monitoring to verify kWh savings against the 2023–2024 baseline, and to finalise a heating/DHW/fabric investment plan for the next compliance period. Longer-term, Liaise should embed an annual review of energy performance, update the opportunity schedule, and align plant and fabric renewals with the significant energy use (SEU) priorities identified in this report.

Collectively, the measures identified provide a practical, resident-focused pathway to reducing Liaise's energy consumption, operating costs and carbon emissions while maintaining safe, comfortable environments. This report has been prepared in compliance with the ESOS Regulations and reflects the energy-efficiency opportunities available within Liaise's scope of responsibility for its UK operations. A regular review of progress within each ESOS cycle is recommended to ensure delivery, verify savings and support continual improvement.

To support the simple-payback estimates, a Life-Cycle Cost Assessment (LCCA) has also been completed over a 60-year appraisal period in line with ESOS good practice. Full LCCA assumptions and results tables are provided in the appendix A for audit evidence.

This report has been prepared in compliance with the ESOS Regulations and reflects the energy efficiency opportunities available within the Client's scope of responsibility.

SIGN OFF


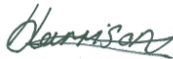
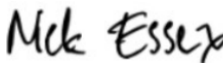
Assessment Findings							
	Detail of measure identified:	Assessed via:	Applicability:	Identified energy savings:	LCCA or SPB	Identified annual cost savings	LCCA cost savings over 60 years
Measure 1	Lighting replacement and controls	ESOS energy audit	Replacing T8/T5 fluorescents with LEDs and providing daylight-responsive dimming and PIR controls	519,000	LCCA	£88,230	£8,657,994

NAME OF ORGANISATION:	LIAISE LTD
ESOS PHASE 3 COMPLIANCE DEADLINE	27/03/2026 under resubmission
TOTAL ORGANISATIONAL ENERGY CONSUMPTION	4,219,886 kWh/year
TOTAL COST-EFFECTIVE ENERGY SAVING POTENTIAL IDENTIFIED	519,000kWh/year
TOTAL COST-EFFECTIVE FINANCIAL SAVING IDENTIFIED	£88,230/year
TOTAL 60 YEAR LIFE CYCLE COST ANALYSIS SAVINGS	£8,657,994

Futura Bright Ltd hereby confirm that the information provided within this report is accurate to the best of my knowledge and represents the current state of energy consumption, management practices, and compliance efforts within the organisation, as provided by the building users of Liaise Ltd.

Director Sign-Off on behalf of Liaise Ltd.

I confirm that I have reviewed this ESOS assessment, the recommendations and the evidence pack, and that Liaise Ltd has been made aware of cost-effective opportunities to reduce energy use and carbon emissions.

Role	Name	Signature	Date
Energy Assessor	Harry Notter		28/11/25
Lead Assessor	CIBSE Certification registration number: ESOS194385 Harry Notter		28/11/25
Director (Liaise Ltd)	Nick Essex		27.03.2026

APPENDIX A: LIFE-CYCLE COST ANALYSIS (LCCA)

LIFE-CYCLE COST ANALYSIS

	60 year Cost		60 year Savings	
	Current	Discount	Savings	
Construction				
Capital costs		£ 63,360		
Installation		£ 79,200		
Sub-total		£ 142,560		
Operation				
Gas	£ 17,562,484	£ 16,916,562	N/A	
Electric Utility	£ 23,069,798	£ 13,548,717	£9,521,080	
Electric Generation				
Cleaning	Negligible			
Management	Negligible			
Sub-total	£ 23,069,798	£ 13,548,717	£	9,521,080
Maintenance				
Planned Maintenance	Negligible			
Replacements		£ 600,439		
Repairs		£ 120,088		
Sub-total		£ 720,526		
Savings - Total				
	Current	Discount	Total Savings	
Total	£ 23,069,798	£ 14,411,804	£	8,657,994

APPENDIX B: SITE ENERGY REPORTS

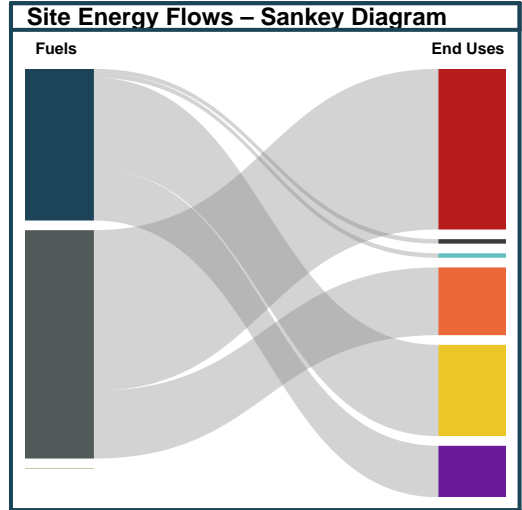
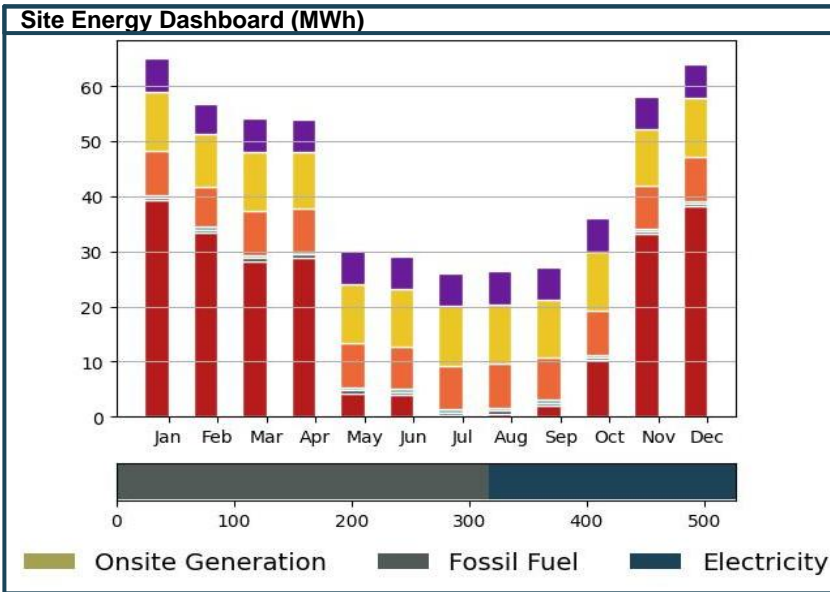
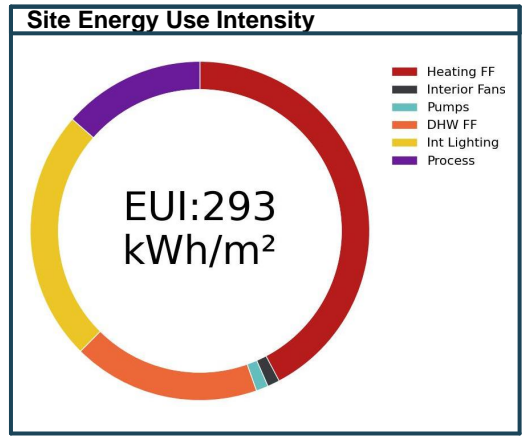
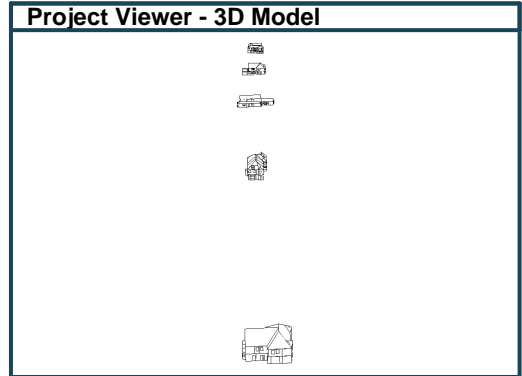
Baseline



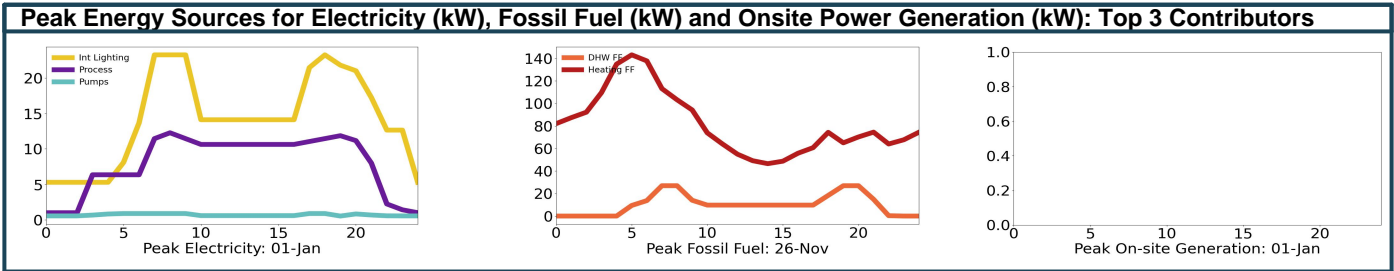
Project:	Liaise ESOS Energy Baseline
Address:	
Climate File:	London_LHR_DSY1_2020High50.epw
Simulation:	8200 - Liaise all 5 sites.aps

Design Team:	Futura Bright ...
Energy Analyst:	Harry Notter
Owner:	Liaise
Conditioned Area (m²):	1796.5512

Annual Energy Consumption (kWh/m²/year) & CO2 kgCO2/m²/yr			
Energy End Use	Site Energy	Source Energy	CO2 Emissions
Heating Fossil Fuel	123.9	139.6	26.0
Heating Electricity	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0
Fans Interior	3.4	5.2	0.5
Heat Rejection	0.0	0.0	0.0
Pumps	3.4	5.2	0.5
DHW Fossil Fuel	52.3	58.9	11.0
DHW Electricity	0.0	0.0	0.0
Interior Lighting	70.4	106.6	9.8
Exterior Lighting	0.0	0.0	0.0
Receptacle	0.0	0.0	0.0
Data Center	0.0	0.0	0.0
Cooking Fossil Fuel	0.0	0.0	0.0
Cooking Electricity	0.0	0.0	0.0
Elevators & Escalators	0.0	0.0	0.0
Refrigeration	0.0	0.0	0.0
Process	39.7	60.0	5.5
TOTAL (ex renewables)	293	375	53



Annual Fuel Costs and Peak Demands				
Fuels	Cost (£)	Peak Day	Peak Time	Peak Demand
Electricity	17,510.00	01-Jan	8:00	37.3 kW
Fossil Fuel	9,271.00	26-Nov	5:00	152.6 kW
Total	26,781.00	26-Nov	7:00	



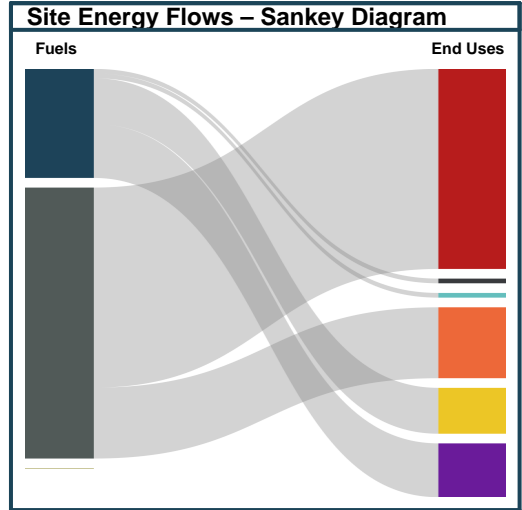
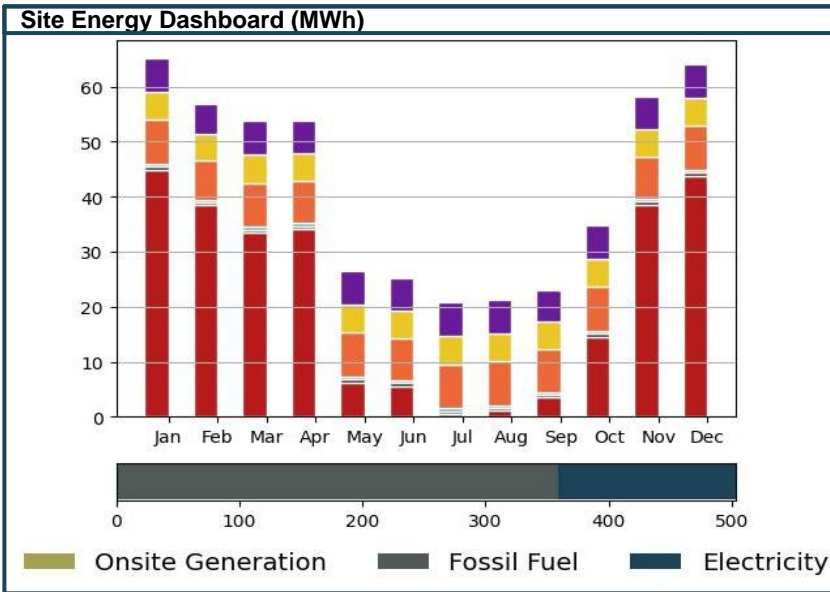
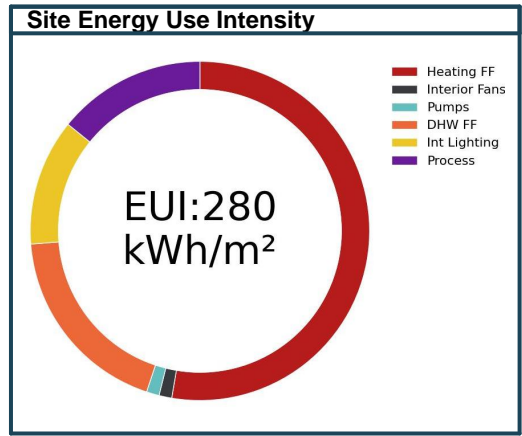
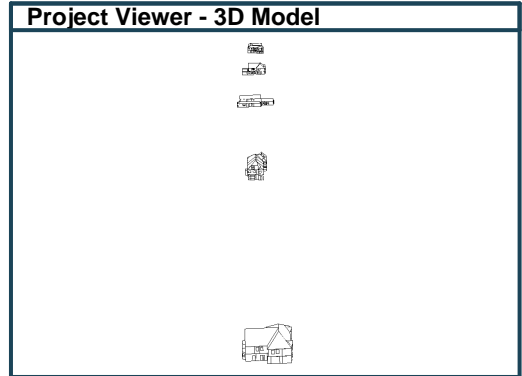
Energy reduction measures



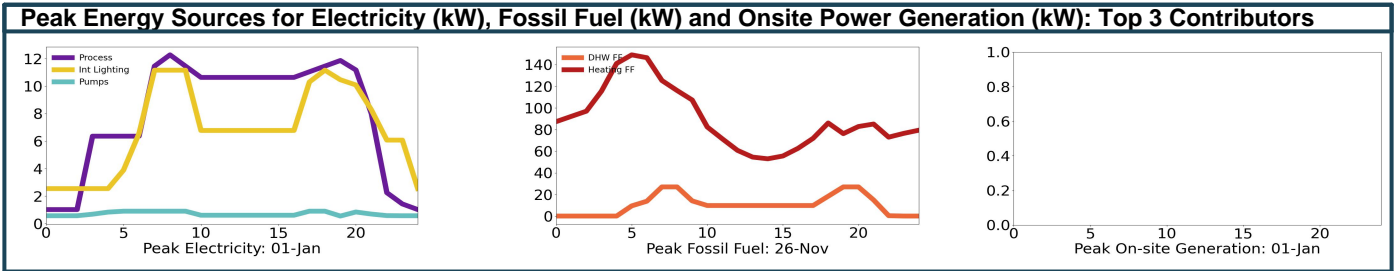
Project:	Liaise ESOS - Lighting upgrade
Address:	
Climate File:	London_LHR_DSY1_2020High50.epw
Simulation:	8200 - Liaise all 5 sites light upgrade...

Design Team:	Futura Bright ...
Energy Analyst:	Harry Notter
Owner:	Liaise 5 sampl...
Conditioned Area (m²):	1796.5512

Annual Energy Consumption (kWh/m ² /year) & CO2 kgCO2/m ² /yr			
Energy End Use	Site Energy	Source Energy	CO2 Emissions
Heating Fossil Fuel	147.5	166.1	31.0
Heating Electricity	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0
Fans Interior	3.4	5.2	0.5
Heat Rejection	0.0	0.0	0.0
Pumps	3.4	5.2	0.5
DHW Fossil Fuel	52.3	58.9	11.0
DHW Electricity	0.0	0.0	0.0
Interior Lighting	33.8	51.1	4.7
Exterior Lighting	0.0	0.0	0.0
Receptacle	0.0	0.0	0.0
Data Center	0.0	0.0	0.0
Cooking Fossil Fuel	0.0	0.0	0.0
Cooking Electricity	0.0	0.0	0.0
Elevators & Escalators	0.0	0.0	0.0
Refrigeration	0.0	0.0	0.0
Process	39.7	60.0	5.5
TOTAL (ex renewables)	280	346	53



Annual Fuel Costs and Peak Demands				
Fuels	Cost (£)	Peak Day	Peak Time	Peak Demand
Electricity	12,026.00	01-Jan	8:00	25.2 kW
Fossil Fuel	10,508.00	26-Nov	6:00	160.2 kW
Total	22,534.00	26-Nov	7:00	



APPENDIX C: EVIDENCE PACK — MINIMUM CONTENTS CHECKLIST

Item for ESOS compliance	Reference found
12-month energy data period(s) used for the audits and calibration.	April 2023–2024.
SEU coverage $\geq 95\%$ and de-minimis statement	none applied.
Energy Intensity Ratio methods (buildings, transport, processes) and calculations	Listed in the Executive Summary and Site Energy Consumption Overview.
Site survey notes, photos, and sampling rationale	Site photos are included in the accompanying evidence pack from the energy audit; site notes are provided in the Energy Audit Survey section of this report.
Modelling files/outputs (BMS, weather-comp, daylight, sub-metering scenarios)	Outputs are presented in Appendix B. Further iterations are included in the evidence pack, along with the IES VE modelling file.
Costing basis (tariffs, SPON/industry allowances), simple paybacks and 60-year LCCA assumptions/results.	Results are presented in Appendix A. Supporting Excel calculations are also included in the evidence pack.
Assumptions & limitations (incl. process profile assumptions and transport method).	As set out in the Assumptions & Limitations section and in the profiles within the Baseline Energy Modelling section.
Measurement & Verification plan (IPMVP Option B at sub-meter, Option C at building).	Referenced in the Executive Summary and the Conclusion.
Compliance artefacts: director sign-off, notification/AP/updates copies, distribution to group entities (if any).	Provided in the sign off section.



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