ENERGY STATEMENT

260 Coombe Lane,
London, UK, SW20 0RW

ASSESSED BY: GHLENN CAPUYAN
ASSESSOR ID: CN57-0001

ISSUED ON JANUARY 2024

A. PROJECT DESCRIPTION

A.1 INTRODUCTION & PROJECT DESCRIPTION

This Energy Statement has been prepared for the redevelopment of property at 260 Coombe Lane, London SW20 0RW, with a lot area of 587.39 sqm, into a 6 self-contained flats across a 2 storey dwelling with accommodation in the roof and basement level. The development would also have an off-street parking and dedicated bins and cycle storage. Floor areas are as follows:

Flat 1 (GF-Basement) - 3b4p - 91.70 sqm
Flat 2 (GF) - 2b3p - 62.57 sqm
Flat 3 (Basement) - 3b4P - 77.39 sqm
Flat 4 (1F)- 1b1p - 42.70 sqm
Flat 5 (1F)- 2b3p - 61.55 sqm
Flat 6 (2F)- 2b3p - 81.25 sqm

The SAP methodology used in this assessment is to model energy demand and carbon emissions of the development. The report assesses carbon emission reductions by following the energy hierarchy stipulated in the London Plan. C. Merton council stated that at design stage should secure at least 19% reduction in CO2 emissions rate based in Approved Document Part L1B. Energy efficiency should be considered in building primary energy and fabric to reduce its energy consumption.

B. POLICY CONTEXT

B.1 Policy SI 2: Minimizing Greenhouse Gas Emissions in Accordance to the London Plan 2021: Sustainable Infrastructure

A. Major development should be net zero-carbon. This involves reducing greenhouse gas emissions during operation and minimizing both annual and peak energy demand, following the energy hierarchy outlined below:
   1. Be lean: decrease energy usage and manage demand during operation.
   2. Be clean: utilize local energy resources, such as secondary heat, and distribute energy efficiently and cleanly.
   3. Be green: maximize opportunities for renewable energy by generating, storing, and utilizing renewable energy on-site.
   4. Be seen: monitor, verify, and report on energy performance.

B. Comprehensive energy strategies must be included in major development proposals to illustrate how the zero-carbon target will be met within the framework of the energy hierarchy.

C. Major development projects are required to achieve a minimum on-site reduction of at least 35 percent beyond Building Regulations. Residential developments should aim for a 10 percent reduction, while non-residential developments should target a 15 percent reduction through energy efficiency measures. In cases where it is evident that the zero-carbon goal cannot be fully achieved on-site, any shortfall should be addressed in agreement with the borough. This can be done through:

   1. A cash contribution to the borough's carbon offset fund, or
   2. Off-site, provided that an alternative proposal is identified, and delivery is certain.

D. Boroughs must establish and manage a carbon offset fund. Payments to the offset fund must be ring-fenced for implementing projects that result in carbon reductions. The operation of offset funds should undergo annual monitoring and reporting.

E. Major development proposals should calculate and minimize carbon emissions from any other part of the development, including plant or equipment, not covered by Building Regulations, i.e., unregulated emissions.

F. Development proposals subject to the Mayor's authority should calculate whole lifecycle carbon emissions through a nationally recognized Whole Life-Cycle Carbon Assessment and demonstrate actions taken to reduce life-cycle carbon emissions.

B.2 Policy CS 15 of Merton Core Planning Strategy (2011):

All minor and major developments, including significant refurbishments, must demonstrate the following, unless developers can convincingly justify why full compliance with the policy requirements is not feasible:

- How they effectively utilize resources and materials, minimize water use, and reduce CO2 emissions.
- How development proposals contribute maximally to reducing carbon dioxide emissions in alignment with the energy hierarchy:
    - 1. Be lean: use less energy.
    - 2. Be clean: supply energy efficiently.
    - 3. Be green: use renewable energy.
- How they are located and designed to withstand the long-term impacts of climate change, particularly the effects of rising temperatures on mechanical cooling requirements.
- Regeneration plans in town centers offer an excellent opportunity to implement District Heat and Power networks, and all major developments are strongly encouraged to be 'Multi Utility Services Company (MUSCo) ready where viable and actively contribute to the networks where possible.
- We will require that all new developments involving the creation of new dwellings achieve Code for Sustainable Homes Level 4.

B.3 London Borough of Merton Explanatory Note: Approaches to Sustainable Design and Construction (2020):

Minor development proposals must provide a sustainability statement (either within the Design and Access Statement or as a standalone statement) and all supporting evidence, outlining how the development will make the most substantial contribution to minimizing carbon dioxide emissions following the Mayor's energy hierarchy. At a minimum, minor schemes must achieve no less than a 19% reduction in regulated carbon dioxide emissions (beyond Building Regulations Part L 2013) on-site.

However, developers should be aware that they are expected to demonstrate that on-site savings have been maximized at all stages of the energy hierarchy, whether or not the minimum target has already been achieved. In accordance with the aforementioned local policies, the proposed scheme is required to secure at least a 19% reduction in CO2 emissions below the target emission rate (TER) based on Part L of the 2013 Building Regulations.

C. METHODOLOGY

Elmhurst Energy SAP 10 calculation is the methodology used to model energy demand and carbon emissions of the proposed development. It calculates both elements in Part L under R24-27C section 1 - Calculating the target primary energy rate, target emission rate and target fabric energy efficiency rate and section 2 - Calculating the dwelling primary energy rate (DPER), dwelling emission rate (DER) and dwelling fabric energy efficiency rate (DFEE).

Then the percent reduction will be calculated using the formula (Target Value – Dwelling Value) x 100 / Target Value. The % Reduction shall have a positive result for a passing score. The four key metrics are as follows:

- Primary Energy - Energy from renewable and non-renewable sources which has not undergone any conversion or transformation process. SAP calculates how much primary energy has been used to heat, light, cool and ventilate a dwelling, expressed in kWh/m2/yr.

- Carbon Emissions – the predicted carbon dioxide emissions based on the fuels used to heat, light, cool and ventilate a dwelling, expressed in kgCO2/

- Fabric Energy Efficiency – the predicted energy used to heat and cool a dwelling expressed in kWh/m2/yr.

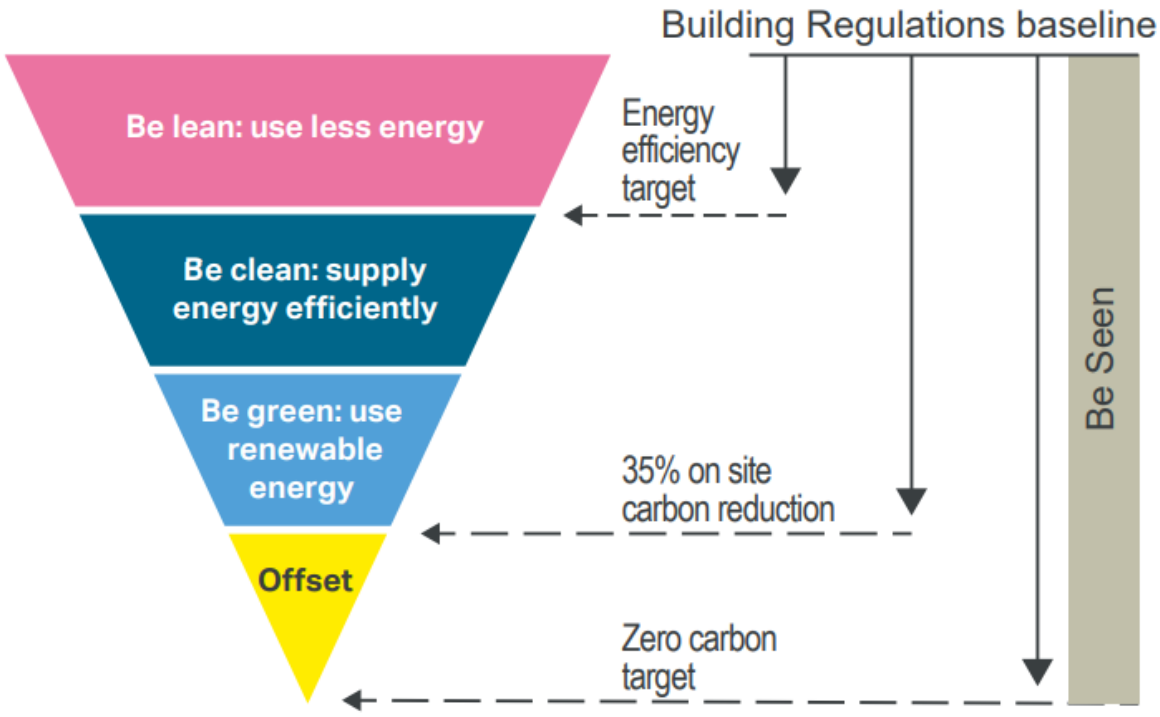
- Running Costs – the predicted running costs based on the fuels used to heat, light, cool and ventilate a dwelling, expressed in £/yr.

The report then assesses carbon emission reductions for the proposed scheme by following the energy hierarchy stipulated in the London Plan 2021:

1. **BE LEAN.** The initial stage involves adopting a 'be lean' approach, aiming to minimize the carbon dioxide emissions associated with a development by reducing energy consumption throughout its construction and occupancy. Consistent with the first step of the energy hierarchy, all developments should strive to enhance the insulating properties (U-values) of the building fabric, attain high levels of air tightness, and implement efficient services and lighting to lower energy demand in buildings.

2. **BE CLEAN.** The subsequent phase involves adopting a 'be clean' approach, aiming to supply the anticipated energy demands of a development with maximum efficiency. Major developments should assess the viability of decentralized energy systems, potentially fueled by combined heat and power systems, and explore connections to existing district heating networks wherever feasible.

3. **BE GREEN.** The final stage in the hierarchy is to 'be green' by integrating renewable energy technologies into developments.



The carbon emission figures derived from the above stages are then compared in order to establish whether the carbon reduction target set by the Council has been achieved or not. Refer to Table 3 for the detailed calculation methodology

% CO2 Reduction = (Baseline CO2 – Calculated CO2) x 100 / Baseline CO2

Calculated CO2 = Be Lean CO2 + Be Clean CO2 + Be Green CO2

Legend

% CO2 Reduction = C02 reduced implementing the London Plan 2021

Baseline CO2 = CO2 emission from notional dwelling

Calculated CO2 = Total CO2 emission calculated indicating the action steps in accordance to London Plan 2021 Chapter 9 Sustainable Infrastructures..

D. DESIGN PARAMETER

The DER, DPER, and DFEE constitute the total CO2 emission reduction required in London Plan 2021 under the Be Lean, Be Clean and Be Green program. The notional dwelling specification indicated in Approved Document Part L under summary of notional dwelling specification for new dwelling is the baseline of London Plan 2021. The

Element or system	Reference value for target setting
Opening areas (windows, roof windows, rooflights and doors)	Same as for actual dwelling not exceeding a total area of openings of 25% of total floor area[2]
External walls including semi-exposed walls	U = 0.18 W/(m²·K)
Party walls	U = 0
Floors	U = 0.13 W/(m²·K)
Roofs	U = 0.11 W/(m²·K)
Opaque door (less than 30% glazed area)	U = 1.0 W/(m²·K)
Semi-glazed door (30–60% glazed area)	U = 1.0 W/(m²·K)
Windows and glazed doors with greater than 60% glazed area	U = 1.2 W/(m²·K) Frame factor = 0.7
Roof windows	U = 1.2 W/(m²·K), when in vertical position (for correction due to angle, see specification in SAP 10 Appendix R)
Rooflights	U = 1.7 W/(m²·K), when in horizontal position (for correction due to angle, see specification in SAP 10 Appendix R)
Ventilation system	Natural ventilation with intermittent extract fans
Air permeability	5 m³/(h·m²) at 50 Pa
Main heating fuel (space and water)	Mains gas
Heating system	Boiler and radiators Central heating pump 2013 or later, in heated space Design flow temperature = 55 °C
Boiler	Efficiency, SEDBUK 2009 = 89.5%
Heating system controls	Boiler interlock, ErP Class V Either: – single storey dwelling in which the living area is greater than 70% of the total floor area: programmer and room thermostat – any other dwelling: time and temperature zone control, thermostatic radiator valves
Hot water system	Heated by boiler (regular or combi as above) Separate time control for space and water heating
Wastewater heat recovery (WWHR)	All showers connected to WWHR, including showers over baths Instantaneous WWHR with 36% recovery efficiency utilisation of 0.98
Hot water cylinder	If cylinder, declared loss factor = 0.85 × (0.2 + 0.051 $V^{2/3}$) kWh/day where V is the volume of the cylinder in litres
Lighting	Fixed lighting capacity (lm) = 185 × total floor area Efficacy of all fixed lighting = 80 lm/W
Air conditioning	None
Photovoltaic (PV) system	For houses: kWp = 40% of ground floor area, including unheated spaces / 6.5 For flats: kWp = 40% of dwelling floor area / (6.5 × number of storeys in block) System facing south-east or south-west

NOTE:
1. For a dwelling connected to an existing district heat network, an alternative notional building is used. See paragraph 1.8 and SAP 10.
2. See SAP 10 for details.

Then the data input in the Elmhurst SAP calculation reflects the Be Lean, Be Clean, and Be Green. These are the following:

Building Component	Parameter	Measures
External Cavity Wall, W/m2K	0.14	See Summary for Input Data
External Wall to Corridor, W/m2K	0.09	See Summary for Input Data
Basement Wall, W/m2K	0.11	See Summary for Input Data
External Wall - Room in Roof, W/m2K	0.14	See Summary for Input Data
Pitched Roof with Insulated Pitched Ceiling, W/m2K	0.11	See Summary for Input Data
Pitched Roof with Insulated Flat Ceiling, W/m2K	0.11	See Summary for Input Data
Flat Roof with Insulated Flat Ceiling, W/m2K	0.11	See Summary for Input Data
Basement Floor for Flat 1, W/m2K	0.11	See Summary for Input Data
Basement Floor for Flat 3, W/m2K	0.12	See Summary for Input Data
Party Wall, W/m2K	0	Plasterboard on timber frame
Party Ceiling, W/m2K	0	Plasterboard on timber frame
Party Floor, W/m2K	0	Plasterboard on timber frame
Door on Roof, W/m2K	1.4	Triple Glazed Air Filled
Roof Light, W/m2K	1.4	Triple Glazed Argon Filled
Window, W/m2K	1.3	Triple Glazed Air Filled
Flat Entrance Door, W/m2K	3	Solid Wooden Door
Ventilation System		Natural Ventilation with intermittent extract fans
Lighting Efficacy, Lm/W	80%	High efficacy LED luminaires
Air Permeability, m3/hr/m2	4	Designed AP50 Blower Door Method
Heating System fuel		electric
Space Heating System		Air source heat pump using radiators. Design Flow temperature is 55deg C
Water Heating System		Air source heat pump coupled with unvented and fully insulated hot water cylinder. Design Flow temperature is 55deg C
The boiler SEDBUK 2009 efficiency	N/A	ASHP will be use

PV Solar Power System is to be installed.
A+++ Air source heat pump will be used for space and water heating with SCOP of 3.57 at 55degC.

E. BE LEAN

To have a lowest possible U value, thicker with best U value PIR insulation boards in the market is highly considered as one of the primary layers of the wall, floor, and roof to prevent transmission (see wall, floor, and roof U value report). Solar blocks are also considered on walls as layer. The property is also committed to significantly reduce the thermal building by obeying the Accredited Building Construction details. Triple glazed window with specification of low e soft of 0.05 and 16mm glazing gap are chosen to minimize the heat transmission. Also, the developer is committed to have a 4m3/hr/m2 at AP50 blower type pressure test.

F. BE CLEAN

The most significant factor that contributes to this part is the usage of A+++ 6KW Ecodan Mitsubishi air source heat pump instead of gas boiler. Time and temperature zone control by device in PCDB will be used to manage and schedule space heating. Installation of hot water cylinder with independent time control and thermostat also have a good effect reducing the emission of CO2. Reduction of water usage to 110L/person also helps. Also, lighting with efficacy of not less than 80lm/watts will be used across the house.

G. BE GREEN

1.5KW PV solar panel is planned to be installed at the later phase of the project, for the renewable energy component of the property. Based on the calculation, it shows that it greatly helps the emission of CO2. In total, the property has at least 9KW power of renewable energy.

I. CONCLUSION

Flat	Calculated	Baseline	% CO2 Reduction
1	406.35	1761.15	76.93%
2	276.98	1287.73	78.49%
3	344.99	1508.93	77.14%
4	219.52	961.18	77.16%
5	271.76	1158.08	76.53%
6	384.54	1582.69	75.70%
TOTAL	**384.54**	**1582.69**	**75.70%**

With the figures above, this assessment report shows that the total CO2 emission reduction is 75.70% from the baseline value calculated in accordance to building regulation standards. The proposed development complies with energy conservation and efficiency relevant to the planning policies indicated above.

Summary for Input Data

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Property Reference	Flat 1	**Issued on Date**	29/11/2023
Assessment Reference	00001	**Prop Type Ref**	
Property	260, Coombe Lane, London, SW20 0RW		

SAP Rating	82 B	**DER**	4.43	**TER**	13.18
Environmental	96 A	**% DER < TER**			66.39
CO_2 Emissions (t/year)	0.34	**DFEE**	34.50	**TFEE**	37.78
Compliance Check	See BREL	**% DFEE < TFEE**			8.69
% DPER < TPER	34.47	**DPER**	46.03	**TPER**	70.25

Assessor Details	Ghlenn Capuyan	**Assessor ID**	CN57-0001
Client	0001, Cosy Hauz Development Ltd.		

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

Orientation	Southeast
Property Tenture	ND
Transaction Type	6
Terrain Type	Urban
1.0 Property Type	Flat, Semi-Detached
Position of Flat	Ground-floor flat
Which Floor	1
2.0 Number of Storeys	2
3.0 Date Built	2025
4.0 Sheltered Sides	2
5.0 Sunlight/Shade	Very little
6.0 Thermal Mass Parameter	Precise calculation
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	Yes
Smart gas meter fitted	Yes

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	24.00 m	49.00 m²	2.60 m
Ground floor:	22.30 m	42.70 m²	2.60 m

8.0 Living Area 28.18 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall	Cavity Wall	Cavity wall; plasterboard on dabs or battens, lightweight aggregate block, filled cavity, any outside structure	0.14	110.00	53.43	29.62	0.00	None	23.81	Enter Gross Area
External Wall to Corridor	Timber Frame	Timber framed wall (one layer of plasterboard)	0.09	9.00	15.60	13.71	0.00	None	1.89	Enter Gross Area
Basement Wall	Cavity Wall	Cavity wall; dense plaster, lightweight aggregate block, filled cavity, any outside structure	0.11	140.00	51.35	51.35	0.00	None	0.00	Enter Gross Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall 1	Solid Wall	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	47.58		None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Plasterboard on timber frame	9.00	193.83

10.1 Party Ceilings

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Ceiling	Timber I-joists, carpeted	20.00	42.70

10.2 Internal Ceilings

Description	Storey	Construction	Area (m²)
Internal Ceiling 1	Basement	Plasterboard ceiling, carpeted chipboard floor	42.57

Summary for Input Data

elmhurst energy

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Basement Floor	Basement	Slab on ground, screed over insulation	0.11	None	0.00	110.00	49.00

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	42.70

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Window	SAP table	Window	Triple Low-E Soft 0.05	≥ 16 mm	Argon Filled	0.57	PVC	0.70	1.30
Door	SAP table	Door to Corridor							1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Door	Door	External Wall to Corridor	South East	1.89	
Window NE	Window	External Wall	North East	10.71	
Window NW	Window	External Wall	North West	2.82	
Window SW	Window	External Wall	South West	10.28	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	11.90	0.04	0.04	No
E3 Sill	Independently assessed	8.50	0.03	0.03	No
E4 Jamb	Independently assessed	30.60	0.03	0.03	No
E16 Corner (normal)	Independently assessed	31.20	0.09	0.09	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Independently assessed	18.30	0.00	0.00	No
E6 Intermediate floor within a dwelling	Independently assessed	14.25	0.07	0.07	No
E22 Basement floor	Independently assessed	10.85	0.00	0.00	No
E8 Balcony within a dwelling, wall insulation continuous	Independently assessed	3.87	0.00	0.00	No
E5 Ground floor (normal)	Independently assessed	20.00	0.06	0.06	No

Y-value	0.04	W/m²K

18.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	No	

20.0 Fans, Open Fireplaces, Flues		
21.0 Fixed Cooling System	No	

22.0 Lighting

No Fixed Lighting	No	

Name	Efficacy	Power	Capacity	Count
LED Light	80.00	10	800	25

24.0 Main Heating 1	Database	
Description	Air Source Heat Pump	
Percentage of Heat	100.00	%
Database Ref. No.	104632	
Fuel Type	Electricity	
In Winter	245.56	
In Summer	189.21	
Model Name	Ecodan 6.0 kW	
Manufacturer	Mitsubishi Electric Europe B.V.	

Summary for Input Data

System Type	Heat Pump
Controls SAP Code	2208
Is MHS Pumped	Pump in unheated space
Heating Pump Age	2013 or later
Heat Emitter	Fan Coil Units
Flow Temperature	Enter value
Flow Temperature Value	55.00

25.0 Main Heating 2	None
26.0 Heat Networks	None

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	1
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	300.00	L
Loss	2.38	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	
31.0 Thermal Store	None	
32.0 Photovoltaic Unit	One Dwelling	
Export Capable Meter?	No	
Connected To Dwelling	Yes	
Diverter	No	
Battery Capacity [kWh]	0.00	

PV Cells kWp	Orientation	Elevation	Overshading	FGHRS	MCS Certificate	Overshading Factor	MCS Certificate Reference	Panel Manufacturer
1.50	North West	45°	None Or Little		No	1.00		

34.0 Small-scale Hydro	None

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Recommendations

Lower cost measures

None

Summary for Input Data

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement	
			SAP rating	Environmental Impact
			0	0
			0	0
			0	0

Summary for Input Data

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Property Reference	Flat 2	**Issued on Date**	29/11/2023
Assessment Reference	00002	**Prop Type Ref**	
Property	260, Coombe Lane, London, SW20 0RW		

SAP Rating	85 B	**DER**	4.43	**TER**	13.57
Environmental	97 A	**% DER < TER**			67.35
CO_2 Emissions (t/year)	0.23	**DFEE**	32.03	**TFEE**	33.12
Compliance Check	See BREL	**% DFEE < TFEE**			3.29
% DPER < TPER	35.80	**DPER**	45.93	**TPER**	71.55

Assessor Details	Ghlenn Capuyan	**Assessor ID**	CN57-0001
Client	0001, Cosy Hauz Development Ltd.		

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

Orientation	Northwest
Property Tenture	ND
Transaction Type	6
Terrain Type	Urban
1.0 Property Type	Flat, Semi-Detached
Position of Flat	Ground-floor flat
Which Floor	1
2.0 Number of Storeys	1
3.0 Date Built	2025
4.0 Sheltered Sides	1
5.0 Sunlight/Shade	Very little
6.0 Thermal Mass Parameter	Precise calculation
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	No
Smart gas meter fitted	No

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	30.64 m	62.57 m²	2.60 m

8.0 Living Area 25.72 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall	Cavity Wall	Cavity wall; plasterboard on dabs or battens, lightweight aggregate block, filled cavity, any outside structure	0.14	110.00	61.57	41.03	0.00	None	20.54	Enter Gross Area
External Wall to Corridor	Cavity Wall	Cavity wall; plasterboard on dabs or battens, lightweight aggregate block, filled cavity, any outside structure	0.09	110.00	17.84	15.95	0.00	None	1.89	Enter Gross Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall	Solid Wall	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00	110.00	16.09		None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Plasterboard on timber frame	9.00	136.97

10.1 Party Ceilings

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Ceiling	Concrete floor slab, carpeted	100.00	62.57

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor	Lowest occupied	Concrete floor slab, carpeted	100.00	62.57

Summary for Input Data

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12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Window	SAP table	Window	Triple Low-E Soft 0.05	≥ 16 mm	Argon Filled	0.57	PVC	0.70	1.30
Door	SAP table	Door to Corridor							1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Door	Door	External Wall to Corridor	North West	1.89	
Window SW	Window	External Wall	South West	5.99	
Window E	Window	External Wall	East	6.91	
Window SE	Window	External Wall	South East	2.41	
Window SW	Window	External Wall	North East	5.23	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	11.30	0.04	0.04	No
E3 Sill	Independently assessed	10.45	0.03	0.03	No
E4 Jamb	Independently assessed	32.60	0.03	0.03	No
E16 Corner (normal)	Independently assessed	13.00	0.09	0.09	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Independently assessed	6.85	0.00	0.00	No
E17 Corner (inverted – internal area greater than external area)	Independently assessed	2.60	-0.09	-0.09	No
E5 Ground floor (normal)	Independently assessed	25.70	0.06	0.06	No
E8 Balcony within a dwelling, wall insulation continuous	Independently assessed	4.62	0.00	0.00	No

Y-value	0.05	W/m²K
18.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	
19.0 Mechanical Ventilation		
Mechanical Ventilation		
Mechanical Ventilation System Present	No	
20.0 Fans, Open Fireplaces, Flues		
21.0 Fixed Cooling System	No	
22.0 Lighting		
No Fixed Lighting	No	

Name	Efficacy	Power	Capacity	Count
LED Light	80.00	10	800	25

24.0 Main Heating 1	Database	
Description	Air Source Heat Pump	
Percentage of Heat	100.00	%
Database Ref. No.	104632	
Fuel Type	Electricity	
In Winter	240.73	
In Summer	190.99	
Model Name	Ecodan 6.0 kW	
Manufacturer	Mitsubishi Electric Europe B.V.	
System Type	Heat Pump	
Controls SAP Code	2208	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Fan Coil Units	

Summary for Input Data

elmhurst energy

Flow Temperature	Enter value
Flow Temperature Value	55.00
25.0 Main Heating 2	None
26.0 Heat Networks	None

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1										
Heat source 2										
Heat source 3										
Heat source 4										
Heat source 5										

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	1
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	500.00	L
Loss	2.38	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	
31.0 Thermal Store	None	
32.0 Photovoltaic Unit	One Dwelling	
Export Capable Meter?	No	
Connected To Dwelling	Yes	
Diverter	No	
Battery Capacity [kWh]	0.00	

PV Cells kWp	Orientation	Elevation	Overshading	FGHRS	MCS Certificate	Overshading Factor	MCS Certificate Reference	Panel Manufacturer
1.50	South East	45°	None Or Little		No	1.00		

34.0 Small-scale Hydro	None

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

Summary for Input Data

	Typical Cost	Typical savings per year	Ratings after improvement	
			SAP rating	Environmental Impact
			0	0
			0	0
			0	0

Summary for Input Data

Property Reference	Flat 3	**Issued on Date**	29/11/2023
Assessment Reference	00003	**Prop Type Ref**	
Property	260, Coombe Lane, London, SW20 0RW		

SAP Rating	83 B	**DER**	4.46	**TER**	13.74
Environmental	97 A	**% DER < TER**			67.54
CO_2 Emissions (t/year)	0.28	**DFEE**	36.07	**TFEE**	39.58
Compliance Check	See BREL	**% DFEE < TFEE**			8.88
% DPER < TPER	36.26	**DPER**	46.12	**TPER**	72.36

Assessor Details	Ghlenn Capuyan	**Assessor ID**	CN57-0001
Client	0001, Cosy Hauz Development Ltd.		

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

Orientation	Southwest
Property Tenture	ND
Transaction Type	6
Terrain Type	Urban
1.0 Property Type	Flat, Semi-Detached
Position of Flat	Ground-floor flat
Which Floor	1
2.0 Number of Storeys	1
3.0 Date Built	2025
4.0 Sheltered Sides	1
5.0 Sunlight/Shade	Very little
6.0 Thermal Mass Parameter	Precise calculation
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	Yes
Smart gas meter fitted	Yes

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	27.76 m	77.39 m²	2.60 m

8.0 Living Area 27.16 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall	Cavity Wall	Cavity wall; plasterboard on dabs or battens, lightweight aggregate block, filled cavity, any outside structure	0.14	110.00	61.36	41.57	0.00	None	19.79	Enter Gross Area
External Wall to Corridor	Cavity Wall	Cavity wall; plasterboard on dabs or battens, lightweight aggregate block, filled cavity, any outside structure	0.09	110.00	10.79	8.90	0.00	None	1.89	Enter Gross Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall	Filled Cavity with Edge Sealing	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00	110.00	30.58		None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Plasterboard on timber frame	9.00	171.11

10.1 Party Ceilings

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Ceiling	Concrete floor slab, carpeted	100.00	77.39

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Basement Floor	Basement Floor	Lowest occupied	Slab on ground, screed over insulation	0.11	None	0.00	110.00	77.39

Summary for Input Data

elmhurst energy

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor	Lowest occupied	Concrete floor slab, carpeted	100.00	62.57

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Window	SAP table	Window	Triple Low-E Soft 0.05	≥ 16 mm	Argon Filled	0.57	PVC	0.70	1.30
Door	SAP table	Door to Corridor							1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Door	Door	External Wall to Corridor	South West	1.89	
Window NE	Window	External Wall	North East	5.48	
Window E	Window	External Wall	East	6.76	
Window SE	Window	External Wall	South East	2.41	
Window SW	Window	External Wall	South West	5.14	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	11.30	0.04	0.04	No
E3 Sill	Independently assessed	8.05	0.03	0.03	No
E4 Jamb	Independently assessed	34.30	0.03	0.03	No
E16 Corner (normal)	Independently assessed	20.80	0.09	0.09	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Independently assessed	11.18	0.00	0.00	No
E22 Basement floor	Independently assessed	39.57	0.06	0.06	No
E5 Ground floor (normal)	Independently assessed	25.77	0.06	0.06	No

Y-value	0.05	W/m²K
18.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	No	

20.0 Fans, Open Fireplaces, Flues

21.0 Fixed Cooling System	No	

22.0 Lighting

No Fixed Lighting	No	

Name	Efficacy	Power	Capacity	Count
LED Light	80.00	10	800	25

24.0 Main Heating 1	Database	
Description	Air Source Heat Pump	
Percentage of Heat	100.00	%
Database Ref. No.	104632	
Fuel Type	Electricity	
In Winter	244.01	
In Summer	190.39	
Model Name	Ecodan 6.0 kW	
Manufacturer	Mitsubishi Electric Europe B.V.	
System Type	Heat Pump	
Controls SAP Code	2208	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	

Summary for Input Data

Heat Emitter	Fan Coil Units
Flow Temperature	Enter value
Flow Temperature Value	55.00

25.0 Main Heating 2 — None

26.0 Heat Networks — None

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1										
Heat source 2										
Heat source 3										
Heat source 4										
Heat source 5										

28.0 Water Heating

Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	No	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
Cold Water Source	From mains	
Bath Count	1	
Immersion Only Heating Hot Water	No	

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	500.00	L
Loss	2.38	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	

31.0 Thermal Store — None

32.0 Photovoltaic Unit	One Dwelling	
Export Capable Meter?	No	
Connected To Dwelling	Yes	
Diverter	No	
Battery Capacity [kWh]	0.00	

PV Cells kWp	Orientation	Elevation	Overshading	FGHRS	MCS Certificate	Overshading Factor	MCS Certificate Reference	Panel Manufacturer
1.50	South West	Horizontal	None Or Little		No	1.00		

34.0 Small-scale Hydro — None

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Recommendations

Lower cost measures

Summary for Input Data

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement	
			SAP rating	Environmental Impact
			0	0
			0	0
			0	0

Summary for Input Data

elmhurst energy

Property Reference	Flat 4	**Issued on Date**	29/11/2023
Assessment Reference	00004	**Prop Type Ref**	
Property	260, Coombe Lane, London, SW20 0RW		

SAP Rating	85 B	**DER**	5.14	**TER**	15.74
Environmental	97 A	**% DER < TER**			67.34
CO_2 Emissions (t/year)	0.19	**DFEE**	33.75	**TFEE**	35.46
Compliance Check	See BREL	**% DFEE < TFEE**			4.82
% DPER < TPER	36.07	**DPER**	53.41	**TPER**	83.54

Assessor Details	Ghlenn Capuyan	**Assessor ID**	CN57-0001
Client	0001, Cosy Hauz Development Ltd.		

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

Orientation	Southeast
Property Tenture	ND
Transaction Type	6
Terrain Type	Urban
1.0 Property Type	Flat, Semi-Detached
Position of Flat	Mid-floor flat
Which Floor	2
2.0 Number of Storeys	1
3.0 Date Built	2025
4.0 Sheltered Sides	1
5.0 Sunlight/Shade	Very little
6.0 Thermal Mass Parameter	Precise calculation
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	Yes
Smart gas meter fitted	Yes

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	24.00 m	42.70 m²	2.60 m

8.0 Living Area 21.17 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall	Cavity Wall	Cavity wall; plasterboard on dabs or battens, lightweight aggregate block, filled cavity, any outside structure	0.14	110.00	51.35	41.71	0.00	None	9.64	Enter Gross Area
External Wall to Corridor	Timber Frame	Timber framed wall (one layer of plasterboard)	0.09	9.00	11.05	9.16	0.00	None	1.89	Enter Gross Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall 1	Solid Wall	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	16.90		None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Plasterboard on timber frame	9.00	72.54

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Flat Ceiling in Pitched Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	7.89	7.89	None	0.00	Enter Gross Area	0.00

10.1 Party Ceilings

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Ceiling	Timber I-joists, carpeted	20.00	32.50

Summary for Input Data

elmhurst energy

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor	Lowest occupied	Timber I-joists, carpeted	20.00	42.70

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Window	SAP table	Window	Triple Low-E Soft 0.05	≥ 16 mm	Argon Filled	0.57	PVC	0.70	1.30
Door	SAP table	Door to Corridor							1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Door	Door	External Wall to Corridor	South East	1.89	
Window NE	Window	External Wall	North East	3.56	
Window NW	Window	External Wall	North West	0.94	
Window SW	Window	External Wall	South West	5.14	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	5.60	0.04	0.04	No
E3 Sill	Independently assessed	5.60	0.03	0.03	No
E4 Jamb	Independently assessed	17.61	0.03	0.03	No
E16 Corner (normal)	Independently assessed	15.60	0.09	0.09	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Independently assessed	6.50	0.00	0.00	No
E6 Intermediate floor within a dwelling	Independently assessed	19.75	0.07	0.07	No
E8 Balcony within a dwelling, wall insulation continuous	Independently assessed	3.50	0.00	0.00	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	11.30	0.00	0.00	No

Y-value	0.05	W/m²K

18.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	No

20.0 Fans, Open Fireplaces, Flues

21.0 Fixed Cooling System	No

22.0 Lighting

No Fixed Lighting	No

Name	Efficacy	Power	Capacity	Count
LED Light	80.00	10	800	20

24.0 Main Heating 1	Database	
Description	Air Source Heat Pump	
Percentage of Heat	100.00	%
Database Ref. No.	104632	
Fuel Type	Electricity	
In Winter	226.17	
In Summer	191.82	
Model Name	Ecodan 6.0 kW	
Manufacturer	Mitsubishi Electric Europe B.V.	
System Type	Heat Pump	
Controls SAP Code	2208	
Is MHS Pumped	Pump in unheated space	

Summary for Input Data

elmhurst energy

Heating Pump Age	2013 or later	
Heat Emitter	Fan Coil Units	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	No	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
Cold Water Source	From mains	
Bath Count	1	
Immersion Only Heating Hot Water	No	
28.3 Waste Water Heat Recovery System		
29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	150.00	L
Loss	2.38	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	
31.0 Thermal Store	None	
32.0 Photovoltaic Unit	One Dwelling	
Export Capable Meter?	No	
Connected To Dwelling	Yes	
Diverter	No	
Battery Capacity [kWh]	0.00	

PV Cells kWp	Orientation	Elevation	Overshading	FGHRS	MCS Certificate	Overshading Factor	MCS Certificate Reference	Panel Manufacturer
1.50	North West	45°	None Or Little		No	1.00		

34.0 Small-scale Hydro	None

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement	
			SAP rating	Environmental Impact
			0	0
			0	0
			0	0

Summary for Input Data

elmhurst energy

Property Reference	Flat 5	**Issued on Date**	29/11/2023
Assessment Reference	00005	**Prop Type Ref**	
Property	260, Coombe Lane, London, SW20 0RW		

SAP Rating	85 B	**DER**	4.42	**TER**	13.06
Environmental	97 A	**% DER < TER**			66.16
CO_2 Emissions (t/year)	0.23	**DFEE**	28.86	**TFEE**	30.24
Compliance Check	See BREL	**% DFEE < TFEE**			4.59
% DPER < TPER	33.41	**DPER**	45.83	**TPER**	68.82

Assessor Details	Ghlenn Capuyan	**Assessor ID**	CN57-0001
Client	0001, Cosy Hauz Development Ltd.		

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

Orientation	Northwest
Property Tenture	ND
Transaction Type	6
Terrain Type	Urban
1.0 Property Type	Flat, Semi-Detached
Position of Flat	Mid-floor flat
Which Floor	2
2.0 Number of Storeys	1
3.0 Date Built	2025
4.0 Sheltered Sides	1
5.0 Sunlight/Shade	Very little
6.0 Thermal Mass Parameter	Precise calculation
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	Yes
Smart gas meter fitted	Yes

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	28.00 m	61.55 m²	2.60 m

8.0 Living Area 26.20 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall	Cavity Wall	Cavity wall; plasterboard on dabs or battens, lightweight aggregate block, filled cavity, any outside structure	0.14	110.00	59.98	43.74	0.00	None	16.24	Enter Gross Area
External Wall to Corridor	Cavity Wall	Cavity wall; plasterboard on dabs or battens, lightweight aggregate block, filled cavity, any outside structure	0.09	110.00	15.08	13.19	0.00	None	1.89	Enter Gross Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall	Solid Wall	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00	110.00	23.01		None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Plasterboard on timber frame	9.00	104.23

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Flat Ceiling in Pitched Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	6.43	6.43	None	0.00	Enter Gross Area	0.00

10.1 Party Ceilings

Description	Construction	Kappa (kJ/m²K)	Area (m²)

Party Ceiling	Concrete floor slab, carpeted	100.00	47.02

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor	Lowest occupied	Concrete floor slab, carpeted	100.00	61.55

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Window	SAP table	Window	Triple Low-E Soft 0.05	≥ 16 mm	Argon Filled	0.57	PVC	0.70	1.30
Door	SAP table	Door to Corridor							1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Door	Door	External Wall to Corridor	North West	1.89	
Window NE	Window	External Wall	North East	1.78	
Window E	Window	External Wall	East	6.91	
Window SE	Window	External Wall	South East	2.41	
Window SW	Window	External Wall	South West	5.14	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	
17.0 Thermal Bridging	Calculate Bridges	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	10.00	0.04	0.04	No
E3 Sill	Independently assessed	10.00	0.03	0.03	No
E4 Jamb	Independently assessed	28.92	0.03	0.03	No
E6 Intermediate floor within a dwelling	Independently assessed	11.40	0.07	0.07	No
E8 Balcony within a dwelling, wall insulation continuous	Independently assessed	5.40	0.00	0.00	No
E16 Corner (normal)	Independently assessed	10.40	0.09	0.09	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Independently assessed	6.85	0.00	0.00	No
E17 Corner (inverted – internal area greater than external area)	Independently assessed	2.60	-0.09	-0.09	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	13.86	0.00	0.00	No

Y-value	0.04	W/m²K
18.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	
19.0 Mechanical Ventilation		
Mechanical Ventilation		
Mechanical Ventilation System Present	No	
20.0 Fans, Open Fireplaces, Flues		
21.0 Fixed Cooling System	No	
22.0 Lighting		
No Fixed Lighting	No	

Name	Efficacy	Power	Capacity	Count
LED Light	80.00	10	800	25

24.0 Main Heating 1	Database	
Description	Air Source Heat Pump	
Percentage of Heat	100.00	%
Database Ref. No.	104632	
Fuel Type	Electricity	
In Winter	238.15	
In Summer	191.18	
Model Name	Ecodan 6.0 kW	
Manufacturer	Mitsubishi Electric Europe B.V.	

Summary for Input Data

elmhurst energy

System Type	Heat Pump
Controls SAP Code	2208
Is MHS Pumped	Pump in unheated space
Heating Pump Age	2013 or later
Heat Emitter	Fan Coil Units
Flow Temperature	Enter value
Flow Temperature Value	55.00

25.0 Main Heating 2 — None

26.0 Heat Networks — None

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1										
Heat source 2										
Heat source 3										
Heat source 4										
Heat source 5										

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	1
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder — Hot Water Cylinder

Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	500.00	L
Loss	2.38	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	

31.0 Thermal Store — None

32.0 Photovoltaic Unit — One Dwelling

Export Capable Meter?	No
Connected To Dwelling	Yes
Diverter	No
Battery Capacity [kWh]	0.00

PV Cells kWp	Orientation	Elevation	Overshading	FGHRS	MCS Certificate	Overshading Factor	MCS Certificate Reference	Panel Manufacturer

Summary for Input Data

1.50	South West	Horizontal	None Or Little	No	1.00	

34.0 Small-scale Hydro None

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement	
			SAP rating	Environmental Impact
			0	0
			0	0
			0	0

Summary for Input Data

elmhurst energy

Property Reference	Flat 6	**Issued on Date**	29/11/2023
Assessment Reference	00006	**Prop Type Ref**	
Property	260, Coombe lane, London, SW20 0RW		

SAP Rating	83 B	**DER**	4.01	**TER**	10.59
Environmental	96 A	**% DER < TER**			62.13
CO_2 Emissions (t/year)	0.34	**DFEE**	30.51	**TFEE**	32.23
Compliance Check	See BREL	**% DFEE < TFEE**			5.32
% DPER < TPER	24.54	**DPER**	41.75	**TPER**	55.33

Assessor Details	Ghlenn Capuyan	**Assessor ID**	CN57-0001
Client	0001, Cosy Hauz Development Ltd.		

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

Orientation	Southwest
Property Tenture	ND
Transaction Type	6
Terrain Type	Urban
1.0 Property Type	Flat, Semi-Detached
Position of Flat	Top-floor flat
Which Floor	2
2.0 Number of Storeys	2
3.0 Date Built	2025
4.0 Sheltered Sides	1
5.0 Sunlight/Shade	Average or unknown
6.0 Thermal Mass Parameter	Precise calculation
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	Yes
Smart gas meter fitted	Yes

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	2.10 m	2.97 m²	2.60 m
1st Storey:	45.17 m	92.88 m²	1.82 m

8.0 Living Area 32.81 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall - Filled Cavity	Cavity Wall	Cavity wall; plasterboard on dabs or battens, lightweight aggregate block, filled cavity, any outside structure	0.14	110.00	35.18	27.42	0.00	None	7.76	Enter Gross Area
External Wall - Room in Roof	Timber Frame	Timber framed wall (one layer of plasterboard)	0.09	9.00	30.51	30.51	0.00	None	0.00	Enter Gross Area
External Wall to Corridor	Timber Frame	Timber framed wall (one layer of plasterboard)	0.09	9.00	2.34	0.45	0.00	None	1.89	Enter Gross Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	8.19		None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Plasterboard on timber frame	9.00	177.76

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Pitched Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	70.63	54.27	None	0.00	Enter Gross Area	16.36
Flat Roof	External Flat Roof	Plasterboard, insulated flat roof	0.11	9.00	41.06	41.06	None	0.00	Enter Gross Area	0.00

11.1 Party Floors

Summary for Input Data

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Timber I-joists, carpeted	20.00	90.85

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Door on Roof	SAP table	Roof Window	Triple Low-E Soft 0.05	≥ 16 mm	Air Filled	0.57	PVC	0.70	1.40
Roof Light	SAP table	Roof Light	Triple Low-E Soft 0.05	≥ 16 mm	Air Filled	0.57	PVC	0.70	1.40
Window	SAP table	Window	Triple Low-E Soft 0.05	≥ 16 mm	Argon Filled	0.57	PVC	0.70	1.30
Door	SAP table	Solid Door							3.00

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Roof Light NW	Roof Light	Pitched Roof	North	5.60	45
Roof Light E	Roof Light	Pitched Roof	South East	2.24	45
Roof Light SE	Roof Light	Pitched Roof	South	1.12	0
Roof Window SW	Door on Roof	Pitched Roof	West	3.70	90
Roof Window E	Door on Roof	Pitched Roof	South East	3.70	90
Window NE	Window	External Wall - Filled Cavity	East	1.68	
Window SW	Window	External Wall - Filled Cavity	West	6.08	
Door	Door	External Wall to Corridor	East	1.89	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	19.96	0.03	0.03	No
E3 Sill	Independently assessed	14.18	0.04	0.04	No
E16 Corner (normal)	Independently assessed	21.60	0.09	0.09	No
E8 Balcony within a dwelling, wall insulation continuous	Independently assessed	4.40	0.00	0.00	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Independently assessed	46.56	0.00	0.00	No
R1 Head of roof window	Independently assessed	6.40	0.08	0.08	No
R2 Sill of roof window	Independently assessed	22.40	0.06	0.06	No
R3 Jamb of roof window	Independently assessed	6.40	0.08	0.08	No
R11 Upstands or kerbs of rooflights	Independently assessed	35.20	0.00	0.00	No
E17 Corner (inverted – internal area greater than external area)	Independently assessed	12.60	-0.09	-0.09	No
E4 Jamb	Independently assessed	24.62	0.03	0.03	No

Y-value	0.03	W/m²K

18.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	No	

20.0 Fans, Open Fireplaces, Flues

21.0 Fixed Cooling System	No	

22.0 Lighting

No Fixed Lighting	No	

Name	Efficacy	Power	Capacity	Count
LED Light	80.00	10	800	30

24.0 Main Heating 1	Database	
Description	Air Source Heat Pump	
Percentage of Heat	100.00	%
Database Ref. No.	104632	
Fuel Type	Electricity	
In Winter	244.96	
In Summer	189.67	

Summary for Input Data

elmhurst energy

Model Name	Ecodan 6.0 kW	
Manufacturer	Mitsubishi Electric Europe B.V.	
System Type	Heat Pump	
Controls SAP Code	2208	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Fan Coil Units	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1										
Heat source 2										
Heat source 3										
Heat source 4										
Heat source 5										

28.0 Water Heating

Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	No	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	No	
Cold Water Source	From mains	
Bath Count	1	
Immersion Only Heating Hot Water	No	

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	300.00	L
Loss	2.38	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	
31.0 Thermal Store	None	
32.0 Photovoltaic Unit	One Dwelling	
Export Capable Meter?	No	
Connected To Dwelling	Yes	
Diverter	No	
Battery Capacity [kWh]	0.00	

Summary for Input Data

PV Cells kWp	Orientation	Elevation	Overshading	FGHRS	MCS Certificate	Overshading Factor	MCS Certificate Reference	Panel Manufacturer
1.50	South West	Horizontal	Modest		No	0.80		

34.0 Small-scale Hydro None

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement	
			SAP rating	Environmental Impact
			0	0
			0	0
			0	0