ENERGY REPORT

building certification | compliance | testing

Energy Statement

for planning

2 London Road, Twickenham, TW1 3RY

J02838

17th May 2024

Issue:3

Registry of Amendments

Revision	Date	Amendment Details	Prepared by
1	11/01/24	Issue 1	T Pope
3	17/05/24	Changes to bedroom no. of bedrooms – inclusion of all SAPs	T Pope

About Energy Report Limited

A specialist building energy and sustainability consultancy offering expertise and experience to our clients within the construction and building sectors. Offering a full inclusive service from design to completion for any energy efficiency or sustainability issue.

Contents

1.0 EXECUTIVE SUMMARY

This Energy Statement has been prepared by Energy Report Ltd on behalf of Skylofts Ltd in support of a full planning application for the proposed conversion of 2 London Road Twickenham in the London Borough of Richmond ('LBR')

The report has been developed to address the energy performance policy requirements of the London Plan (2021) and LBR Local Plan. The report will highlight the proposed strategy to meet the planning requirements of 35% reduction in CO2 through the application of the energy hierarchy over and above Part L 2021.

The scheme is a commercial conversion development consisting of 6 residential units and therefore is not considered a major development. All residential parts of development will be assessed in accordance with Part L1 of the Building Regulations using approved SAP software.

The proposed strategy has been developed in line with the energy hierarchy methodology used to demonstrate the effects of the proposed energy efficiency measures is the 4 stage Energy hierarchy detailed in the London Plan 2021:

1. Be Lean: Use Less Energy
   In the first instance an optimised building fabric is proposed to reduce the energy demand of the scheme via a 'fabric first' approach. The remaining energy demands are to be met by energy efficient building services systems.

2. Be Clean: Supply Energy Efficiently
   Not required under this application

3. Be Green: Use Renewable Energy
   Use of highly efficient heat pumps to provide space and water heating.

4. Be Seen: Energy Monitoring Post Construction
   Extensive metering of all energy uses will be in place.

Extensive SAP energy performance calculations undertaken for the Proposed Development demonstrate that implementing these measures will reduce the CO_2 emissions associated with the scheme

In accordance with the GLA's guidance on energy assessments, all CO_2 calculations have been carried out using SAP 10 carbon conversion factors:

Electricity – 0.233KgCO_2kWh
Gas - 0.210KgCO_2kWh

Summary of CO_2 emission reduction for the Proposed Development using SAP 10 carbon factors

Scenario	Regulated CO2 Emissions (T/yr) Domestic	Saving achieved on CO2 Emissions (%)
Baseline Emissions	4.636	-
Be Lean Emissions	3.862	16.6
Be Clean Emissions	3.862	
Be Green Emissions	2.917	37.0

Table 1 - summary of emission reduction SAP 10

The Part L calculations demonstrating compliance with Part L 2021 carbon emission factors are included in Appendix 1.

2.0 DEVELOPMENT DESCRIPTION

Application for full planning permission for conversion of the site to provide 6 flats to the first, second & third floors.

3.0 PLANNING POLICES AND PROJECT REQUIREMENTS

The relevant planning policy energy related documents for the site are:

- The London Plan 2021 (adopted March 2021) which is the overarching Spatial Development Strategy for the entirety of Greater London.

- Richmond Local plan Policy LP22 details that the development must achieve a minimum on-site reduction in regulated carbon emissions of at least 35% beyond Building Regulations

London Plan Policy SI 2 ('Minimising Greenhouse Gas Emissions') Development proposals should make the fullest contribution minimising carbon dioxide emissions in accordance with the following energy hierarchy:

- BE LEAN: Use Less energy.
- BE CLEAN: supply energy efficiently.
- BE GREEN: use renewable energy.
- BE SEEN: Energy Monitoring Post Construction

This development is considered a minor development of between 1 and 9 units.

4.0 ENERGY STRATEGY AND APPROACH

The methodology used to determine the CO2 emissions is in accordance with the London Plan's 4 step Energy Hierarchy. The Energy hierarchy has four priorities, seeking to reduce energy use before meeting remaining demand by the leanest means possible.

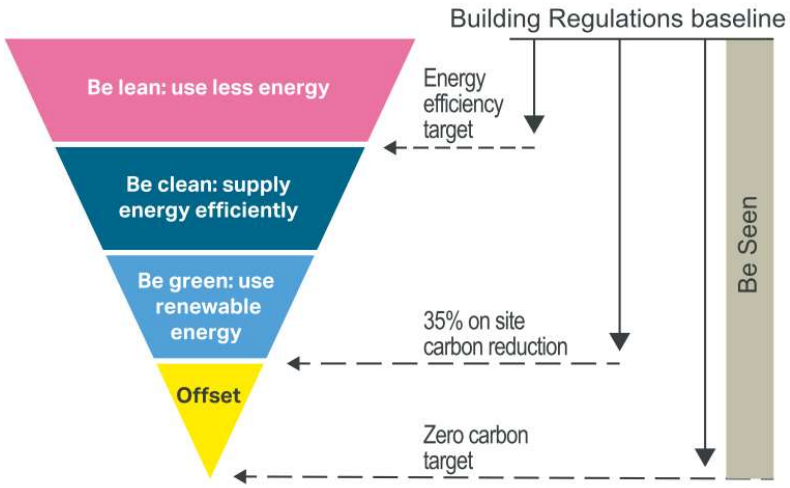

Figure 2 – Be Lean, Be Clean, Be Green

Be Lean – The first step is to reduce the requirement for energy by enhancing the thermal performance of the building envelope, utilising efficient and controllable equipment & lighting

Be Clean – to supply energy cleanly with less inherent wastage through generation & transmission; this involves investigating the feasibility of providing energy via heat networks, district heating and combined heat and power

Be Green – involves investigations into renewable and zero carbon technologies

Be Seen – Monitor and report energy savings

The GLA's current policy encourages applicants to use the proposed SAP 10 emission factors when estimating CO_2 emission performance against London Plan policies. These factors have been used throughout the report as follows:

Electricity	– 0.233KgCO_2kWh
Gas	- 0.210KgCO_2kWh

5.0 CALCULATION METHOD - Baseline

The baseline energy and carbon dioxide emissions are calculated using the Standard assessment procedure (SAP).

SAP replicates a version of the building which is the same size, shape and fitted with the same services but has a standard set of performance criteria applied.

This is then used to generate the 'Building Emission Rate'.(BER) which is the baseline allowable standard to meet Building Regulations Part L1 compliance..

Each unit has been assessed using approved software (SAP 2021) and a summary of the baseline TER's are provided in the table below. Please refer to Appendix 1 for a full schedule of the calculation results.

Baseline CO_2 calculations

Sample flats	TER (kgCO2/m²/year)	Floor Area m²	Annual Emissions CO_2 (Tonnes/year)
Flat 1	15.53	60.2	0.935
Flat 2	15.05	46.6	0.701
Flat 3	12.86	62.4	0.802
Flat 4	12.53	46.6	0.583
Flat 5	15.24	62.8	0.957
Flat 6	13.39	49.2	0.658
Total		327.8	4.636

Table 3 – baseline CO_2 emissions

6.0 CALCULATION METHOD – Be Lean

A fabric first approach has been taken, aiming to achieve very high efficiency standards thus reducing the requirement for energy.

The following efficiency improvements have been incorporated into the scheme:

- Thermal performance: improved U-values as detailed in table 4 below
- Low leakage/infiltration: design air permeability levels of 5 $m^3/h/m^2$@50pa

Be Lean Thermal properties.

Building Element	Proposed Development (W/m^2K)	Part L limits (W/m^2K)	Proposed Improvement
Walls	0.33	0.70	47%
Ground Floor	0.26	0.70	37%
Roof	0.16	0.35	45%
Window	1.3		
Door	2.0		

Table 4 – proposed thermal properties.

The Building Emission Rate (BER) has been calculated for sample flat of the development using the values above and returns the following results:

Be Lean CO_2 calculations.

Sample flats	TER (kgCO2/m²/year)	Floor Area m²	Annual Emissions CO_2 (Tonnes/year)
Flat 1	14.22	60.2	0.856
Flat 2	10.13	46.6	0.461
Flat 3	11.69	62.4	0.544
Flat 4	7.58	46.6	0.353
Flat 5	14.32	62.8	0.899
Flat 6	15.24	49.2	0.749
Total	10.76	327.8	3.862

Table 5 Be Lean CO_2 emissions.

7.0 CALCULATION METHOD – Be Clean

The London Plan policy SI 2 requires developers to investigate the feasibility of connecting to a heat network/ district heating system or consider onsite combined heat and power (CHP).

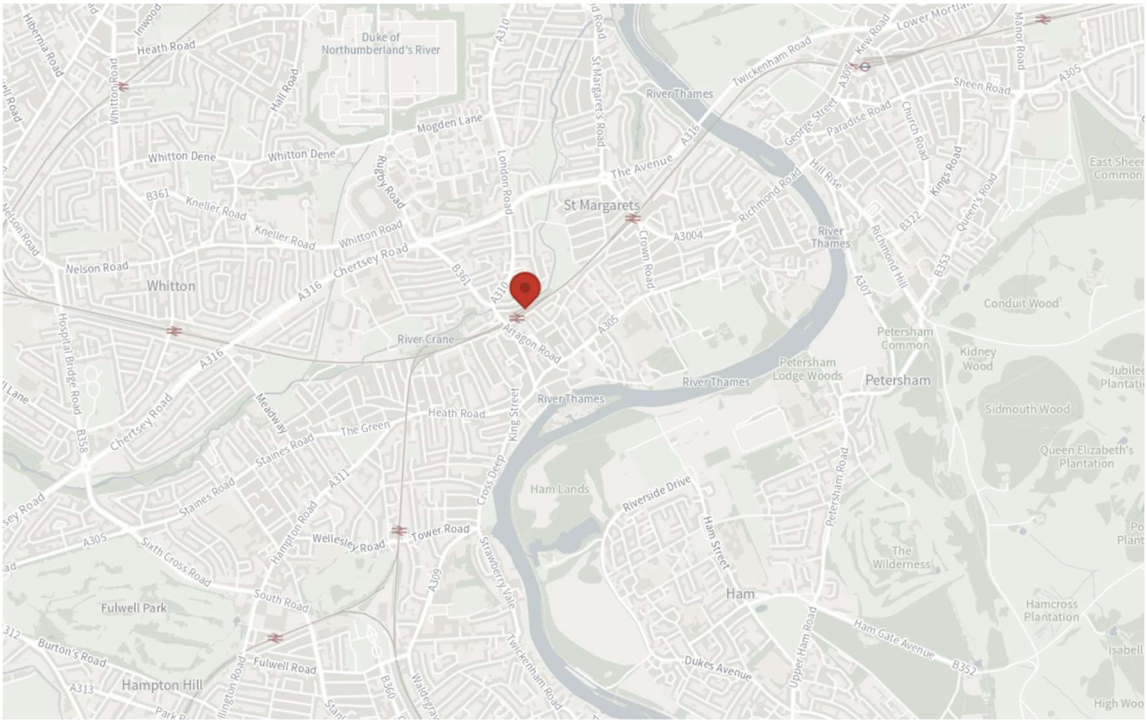

Figure 3 – Extract of the London Plan Heat Map

The above extract from the London Heat map identifies there are no proposed no existing heat networks that are within 1km of the site.

Be Clean CO_2 calculations.

Sample flats	TER (kgCO2/m²/year)	Floor Area m²	Annual Emissions CO_2 (Tonnes/year)
Flat 1	14.22	60.2	0.856
Flat 2	10.13	46.6	0.461
Flat 3	11.69	62.4	0.544
Flat 4	7.58	46.6	0.353
Flat 5	14.32	62.8	0.899
Flat 6	15.24	49.2	0.749
Total	10.76	327.8	3.862

CALCULATION METHOD – Be Green

The LBR LP22 policy requires that all minor developments meet 35% reduction in CO2 beyond Part L Building Regulations. Any shortfall in achieving this target must be met by an offsetting payment.

The proposed solution is the use of High Heat retention storage heaters for space heating, Air source heat pumps to produce domestic hot water coupled with Solar PV panels – 0.5kWh solar PV per flat.

Air source heat pump (medium temperature)

- This option uses a packaged heat pump with multiple compressors and integrated hydraulic module located externally. Users connect to the system using heat interface units (as per the boilers) but incoming temperatures are lower.

Solar Photovoltaic

- PVs, collect the sun's energy into electricity This can be stored via a battery or directly transferred electricity system.
- Solar PV systems are good for individual dwellings or small developments.
- There is insufficient roof area to provide the CO2 reductions that Heat pumps are able to produce.

Other discounted renewable options

Wind power

- Wind turbines are suited for installation in exposed areas or possibly atop taller buildings.
- As a relatively low urban development, wind power is considered unsuitable for this project.

Solar Thermal (Hot Water)

- Like PVs, solar thermal systems collect the sun's energy but use it to heat water. This can be stored or transferred directly into the heating system.
- Solar thermal systems are good for individual dwellings or small developments, but the erratic operation and inconsistent temperatures achieved do not make them viable for larger schemes such as this.
- On this basis, solar thermal is discounted for this development.

On site Combined Heat and Power (CHP)

- Using SAP methodology, CHP provides significant carbon reductions due to the large difference between gas and electricity carbon factors (and gas is converted to electricity in this case)
- High temperature system which, provides good flexibility for tenant connections.
- Easy to integrate to the district heating network.
- Provides electricity as well as heat.

The following table sets CO2 calculation reduction under the Gbe Green requirements.

In accordance with the requirements of the GLA, these are reported as below using SAP 10 factors.

Be Green CO_2 calculations.

Block	BER (kgCO2/m²/year)	Floor Area (m²)	Annual Emissions CO_2 (T/yr)
Flat 1	9.71	60.2	0.585
Flat 2	8.90	46.6	0.414
Flat 3	7.52	62.4	0.469
Flat 4	6.36	46.6	0.296
Flat 5	10.86	62.8	0.682
Flat 6	9.59	49.2	0.471
Total		327.8	2.917
Total development floor area		327.8	
Overall reduction in CO2 for whole development			**37.0%**

Table 5 Be Green CO_2 emissions.

Be Seen- Energy Monitoring

London Plan Policy SI2 requests all developments to 'be seen', to monitor, verify and report on energy performance.

The GLA requires all major development proposals to report on their modelled and measured operational energy performance. This will improve transparency on energy usage on sites, reduce the performance gap between modelled and measured energy use, and provide the applicant, building managers and occupants clarity on the performance of the building, equipement and renewable energy technologies.

During the planning process, the responsibility for data submission via the planning stage webform and ensuring accurate estimates as the design develops lies with the Applicant. The Applicant will be expected to ensure that all affected parties (for example, developer, building owner, landlord or occupier) are aware of their responsibilities at subsequent reporting stages. This should be appropriately secured through a legal agreement (Section 106 Agreement) between the Local Planning Authority and the applicant specifically for the as-built and in-use reporting stages. The responsibilities for reporting should be clearly set out in this agreement.

8.0 CONCLUSION

The Energy Statement outlines how the Proposed Development at 2 London Road, Twickenham will meet the energy requirements as specified by the London Plan and LBR Local Plan policies.

This Energy Statement has been prepared following the principles of the London Plan Energy Hierarchy: Be Lean, Be Clean, Be Green and Be Seen. In addition to the Energy Hierarchy, the Energy Statement also takes into consideration adopted London Plan (2021). and the requirements of Richmond Council

Be Lean: The energy strategy for the development has at its core, a reduction in energy of 16.6% through adopting a high standard of building fabric performance, high levels of air tightness, which significantly exceeds the minimum requirements of Part L1 2021 for fabric efficiency standards.

Be Clean: not required.

Be Green: The Proposed Development achieves a reduction in CO_2 emissions by 37% as a result of the use of High heat retention storage heaters, heat pumps for water heating and solar PV. This meets the requirement outlined in Richmond Council local Plan policy LP22.

Appendix 1- SAP Summaries

- Flats 1-6
    - Base
    - Lean
    - Green

Summary for Input Data

elmhurst energy

Property Reference	Plot 1_GF	**Issued on Date**	17/05/2024
Assessment Reference	Base	**Prop Type Ref**	Electric Heater
Property	Flat 1, 2, London Road, Twickenham, TW1 3RY		

SAP Rating	39 E	**DER**	15.53	**TER**	14.34
Environmental	88 B	**% DER < TER**			-8.30
CO_2 Emissions (t/year)	0.69	**DFEE**	76.55	**TFEE**	33.63
Compliance Check	See BREL	**% DFEE < TFEE**			-127.63
% DPER < TPER	-103.53	**DPER**	156.05	**TPER**	76.67

Assessor Details	Mr. Thomas Pope	**Assessor ID**	F764-0001
Client			

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

Orientation	East	
Property Tenture	1	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, Mid-Terrace	
Position of Flat	Mid-floor flat	
Which Floor	1	
2.0 Number of Storeys	1	
3.0 Date Built	2024	
3.0 Property Age Band	L	
4.0 Sheltered Sides	1	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	250.00	kJ/m²K
7.0 Electricity Tariff	7 Hour Off Peak	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	10.66 m	60.15 m²	3.99 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	28.07	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 1	Cavity Wall	Other	0.55	0.00	42.53	32.91	0.00	None	9.62	Calculate Wall 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	Other	0.00	0.00	104.02	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Other	0.00	53.86

10.1 Party Ceilings

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

Summary for Input Data

Party Ceiling 1	Other	0.00	60.15

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Other	0.00	60.15

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Opening Type 1	Manufacturer	Window	Double glazed		Air Filled	0.76	Wood	0.70	1.60

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Opening	Opening Type 1	External Wall 1	South West	5.74	0
Opening	Opening Type 1	External Wall 1	North	3.88	0

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

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Table K1 - Default	6.00	1.00	1.00	Yes
E3 Sill	Table K1 - Default	6.00	0.10	0.10	Yes
E4 Jamb	Table K1 - Default	18.20	0.10	0.10	Yes
E7 Party floor between dwellings (in blocks of flats)	Table K1 - Default	10.66	0.28	0.28	Yes
E18 Party wall between dwellings	Table K1 - Default	15.96	0.24	0.24	Yes

Y-value	0.20	W/m²K
18.0 Pressure Testing	No	
Designed AP_{50}	5.00	m³/(h.m²) @ 50 Pa
Property Tested?	Yes	
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
Lighting 1	100.00	5	500	4

24.0 Main Heating 1	SAP table	
Percentage of Heat	100.00	%
Database Ref. No.	0	
Fuel Type	Electricity	
SAP Code	691	
In Winter	100.00	
In Summer	100.00	
Controls SAP Code	2603	
Delayed Start Stat	No	
Burner Control	Modulating	
HETAS approved System	No	
Oil Pump Inside	No	
FI Case	0.00	
Fan Assisted Flue	Yes	
Flow Temperature	Enter value	

Summary for Input Data

elmhurst energy

Boiler Interlock	No	
Combi boiler type	Standard Combi	
Combi keep hot type	None	

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	None									
Heat source 2	None									
Heat source 3	None									
Heat source 4	None									
Heat source 5	None									

28.0 Water Heating

Water Heating	Independent	
SAP Code	909	
Fuel Type	Electricity	
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	
Summer Immersion	No	
Cold Water Source	From mains	
Bath Count	1	
Supplementary Immersion	No	
Immersion Only Heating Hot Water	No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Internal Store	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	201.00	L
Loss	1.61	kWh/day
In Airing Cupboard	No	

31.0 Thermal Store — None

34.0 Small-scale Hydro	None	
Electricity Generated	0.00	
Apportioned	0.00	kWh/Year
Connected to dwelling's electricity meter	Yes	
Electricity Generation	Annual	

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	Plot 1_GF	**Issued on Date**	17/05/2024
Assessment Reference	Green	**Prop Type Ref**	Electric Heater
Property	Flat 1, 2, London Road, Twickenham, TW1 3RY		

SAP Rating	78 C	**DER**	9.71	**TER**	14.17
Environmental	93 A	**% DER < TER**			31.47
CO_2 Emissions (t/year)	0.37	**DFEE**	68.14	**TFEE**	33.63
Compliance Check	See BREL	**% DFEE < TFEE**			-102.62
% DPER < TPER	-43.41	**DPER**	108.71	**TPER**	75.80

Assessor Details	Mr. Thomas Pope	**Assessor ID**	F764-0001
Client			

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

Orientation	East	
Property Tenture	1	
Transaction Type	6	
Terrain Type	Suburban	
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Position of Flat	Mid-floor flat	
Which Floor	1	
2.0 Number of Storeys	1	
3.0 Date Built	2024	
3.0 Property Age Band	L	
4.0 Sheltered Sides	1	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	250.00	kJ/m²K
7.0 Electricity Tariff	7 Hour Off Peak	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	10.66 m	60.15 m²	3.99 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	28.07	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 1	Cavity Wall	Other	0.33	0.00	42.53	32.91	0.00	None	9.62	Calculate Wall 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	Other	0.00	0.00	104.02	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Other	0.00	53.86

10.1 Party Ceilings

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

Summary for Input Data

Party Ceiling 1	Other	0.00	60.15

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Other	0.00	60.15

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Opening Type 1	Manufacturer	Window	Double glazed		Air Filled	0.76	Wood	0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Opening	Opening Type 1	External Wall 1	South West	5.74	0
Opening	Opening Type 1	External Wall 1	North	3.88	0

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

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Table K1 - Default	6.00	1.00	1.00	Yes
E3 Sill	Table K1 - Default	6.00	0.10	0.10	Yes
E4 Jamb	Table K1 - Default	18.20	0.10	0.10	Yes
E7 Party floor between dwellings (in blocks of flats)	Table K1 - Default	10.66	0.28	0.28	Yes
E18 Party wall between dwellings	Table K1 - Default	15.96	0.24	0.24	Yes

Y-value	0.20	W/m²K
18.0 Pressure Testing	No	
Designed AP_{50}	5.00	m³/(h.m²) @ 50 Pa
Property Tested?	Yes	
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
Lighting 1	100.00	5	500	4

24.0 Main Heating 1	SAP table	
Percentage of Heat	100.00	%
Database Ref. No.	0	
Fuel Type	Electricity	
SAP Code	409	
In Winter	100.00	
In Summer	349.41	
Controls SAP Code	2404	
Delayed Start Stat	No	
Burner Control	Modulating	
HETAS approved System	No	
Oil Pump Inside	No	
FI Case	0.00	
Fan Assisted Flue	No	
Flow Temperature	Enter value	

Summary for Input Data

Boiler Interlock	No
Combi boiler type	Standard Combi
Combi keep hot type	None

Number Of Heaters	PCDF Index
3	230002 m

25.0 Main Heating 2	Database	
Percentage of Heat	0.00	%
Database Ref. No.	190006	
Fuel Type	Electricity	
SAP Code	0	
In Winter	0.00	
In Summer	349.41	
Model Name	EDL200UK-630	
Manufacturer	GDC Group Ltd	
Controls	2100	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
FI Case	0.00	
Flue Type	None or Unknown	
Fan Assisted Flue	No	
Flow Temperature	Enter value	

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	None									
Heat source 2	None									
Heat source 3	None									
Heat source 4	None									
Heat source 5	None									

28.0 Water Heating	
Water Heating	Main Heating 2
SAP Code	914
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
Summer Immersion	No
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Internal Store
Cylinder Stat	No
Cylinder In Heated Space	No
Independent Time Control	No
Insulation Type	Measured Loss

Summary for Input Data

elmhurst energy

Cylinder Volume	201.00	L
Loss	1.61	kWh/day
In Airing Cupboard	No	

31.0 Thermal Store	None

32.0 Photovoltaic Unit	One Dwelling
Export Capable Meter?	Yes
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
0.50	South	Horizontal	None Or Little	No	No	1.00		

34.0 Small-scale Hydro	None	
Electricity Generated	0.00	
Apportioned	0.00	kWh/Year
Connected to dwelling's electricity meter	Yes	
Electricity Generation	Annual	

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Property Reference	Plot 1_GF	**Issued on Date**	17/05/2024
Assessment Reference	Lean	**Prop Type Ref**	Electric Heater
Property	Flat 1, 2, London Road, Twickenham, TW1 3RY		

SAP Rating	43 E	**DER**	14.22	**TER**	14.34
Environmental	89 B	**% DER < TER**			0.84
CO_2 Emissions (t/year)	0.62	**DFEE**	68.14	**TFEE**	33.63
Compliance Check	See BREL	**% DFEE < TFEE**			-102.62
% DPER < TPER	-86.49	**DPER**	142.98	**TPER**	76.67

Assessor Details	Mr. Thomas Pope	**Assessor ID**	F764-0001
Client			

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

Orientation	East	
Property Tenture	1	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, Mid-Terrace	
Position of Flat	Mid-floor flat	
Which Floor	1	
2.0 Number of Storeys	1	
3.0 Date Built	2024	
3.0 Property Age Band	L	
4.0 Sheltered Sides	1	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	250.00	kJ/m²K
7.0 Electricity Tariff	7 Hour Off Peak	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	10.66 m	60.15 m²	3.99 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	28.07	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 1	Cavity Wall	Other	0.33	0.00	42.53	32.91	0.00	None	9.62	Calculate Wall 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	Other	0.00	0.00	104.02	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Other	0.00	53.86

10.1 Party Ceilings

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

Summary for Input Data

Party Ceiling 1	Other	0.00	60.15

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Other	0.00	60.15

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Opening Type 1	Manufacturer	Window	Double glazed		Air Filled	0.76	Wood	0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Opening	Opening Type 1	External Wall 1	South West	5.74	0
Opening	Opening Type 1	External Wall 1	North	3.88	0

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

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Table K1 - Default	6.00	1.00	1.00	Yes
E3 Sill	Table K1 - Default	6.00	0.10	0.10	Yes
E4 Jamb	Table K1 - Default	18.20	0.10	0.10	Yes
E7 Party floor between dwellings (in blocks of flats)	Table K1 - Default	10.66	0.28	0.28	Yes
E18 Party wall between dwellings	Table K1 - Default	15.96	0.24	0.24	Yes

Y-value	0.20	W/m²K
18.0 Pressure Testing	No	
Designed AP_{50}	5.00	m³/(h.m²) @ 50 Pa
Property Tested?	Yes	
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
Lighting 1	100.00	5	500	4

24.0 Main Heating 1	SAP table	
Percentage of Heat	100.00	%
Database Ref. No.	0	
Fuel Type	Electricity	
SAP Code	691	
In Winter	100.00	
In Summer	100.00	
Controls SAP Code	2603	
Delayed Start Stat	No	
Burner Control	Modulating	
HETAS approved System	No	
Oil Pump Inside	No	
FI Case	0.00	
Fan Assisted Flue	Yes	
Flow Temperature	Enter value	

Summary for Input Data

elmhurst energy

Boiler Interlock	No	
Combi boiler type	Standard Combi	
Combi keep hot type	None	

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	None									
Heat source 2	None									
Heat source 3	None									
Heat source 4	None									
Heat source 5	None									

28.0 Water Heating

Water Heating	Independent	
SAP Code	909	
Fuel Type	Electricity	
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	
Summer Immersion	No	
Cold Water Source	From mains	
Bath Count	1	
Supplementary Immersion	No	
Immersion Only Heating Hot Water	No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Internal Store	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	201.00	L
Loss	1.61	kWh/day
In Airing Cupboard	No	

31.0 Thermal Store — None

34.0 Small-scale Hydro	None	
Electricity Generated	0.00	
Apportioned	0.00	kWh/Year
Connected to dwelling's electricity meter	Yes	
Electricity Generation	Annual	

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Property Reference	Plot 2 GF	**Issued on Date**	17/05/2024
Assessment Reference	Conversion	**Prop Type Ref**	Electric Heater
Property	Flat 2, 2, London Road, Twickenham, TW1 3RY		

SAP Rating	79 C	**DER**	10.13	**TER**	15.05
Environmental	93 A	**% DER < TER**			32.69
CO_2 Emissions (t/year)	0.31	**DFEE**	64.84	**TFEE**	31.40
Compliance Check	See BREL	**% DFEE < TFEE**			-106.48
% DPER < TPER	-37.77	**DPER**	111.22	**TPER**	80.73

Assessor Details	Mr. Thomas Pope	**Assessor ID**	F764-0001
Client			

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

Orientation	North	
Property Tenture	1	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, Mid-Terrace	
Position of Flat	Mid-floor flat	
Which Floor	1	
2.0 Number of Storeys	1	
3.0 Date Built	2024	
3.0 Property Age Band	L	
4.0 Sheltered Sides	1	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	250.00	kJ/m²K
7.0 Electricity Tariff	7 Hour Off Peak	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	8.10 m	46.64 m²	3.99 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	24.54	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 1	Cavity Wall	Other	0.33	0.00	32.32	22.89	0.00	None	9.43	Calculate Wall 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	Other	0.00	0.00	70.62	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Other	0.00	59.74

10.1 Party Ceilings

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

Summary for Input Data

Party Ceiling 1	Other	0.00	46.64

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Other	0.00	46.64

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Opening Type 1	Manufacturer	Window	Double glazed		Air Filled	0.76	Wood	0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Opening	Opening Type 1	External Wall 1	South East	9.43	0

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	
17.0 Thermal Bridging	Default	
Y-value	0.20	W/m²K
18.0 Pressure Testing	No	
Property Tested?	Yes	
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
Lighting 1	100.00	5	500	3

24.0 Main Heating 1	SAP table	
Percentage of Heat	100.00	%
Database Ref. No.	0	
Fuel Type	Electricity	
SAP Code	409	
In Winter	100.00	
In Summer	349.41	
Controls SAP Code	2404	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
Fan Assisted Flue	No	
Boiler Interlock	No	

Number Of Heaters	PCDF Index
2	230002 m

25.0 Main Heating 2	Database	
Percentage of Heat	0.00	%
Database Ref. No.	190006	
Fuel Type	Electricity	
SAP Code	0	
In Winter	0.00	

Summary for Input Data

In Summer	349.41	
Model Name	EDL200UK-630	
Manufacturer	GDC Group Ltd	
Controls	2100	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
FI Case	0.00	
Flue Type	None or Unknown	
Fan Assisted Flue	No	
Flow Temperature	Enter value	

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	None									
Heat source 2	None									
Heat source 3	None									
Heat source 4	None									
Heat source 5	None									

28.0 Water Heating

Water Heating	Main Heating 2	
SAP Code	914	
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	
Summer Immersion	No	
Cold Water Source	From mains	
Bath Count	1	
Supplementary Immersion	No	
Immersion Only Heating Hot Water	No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Internal Store	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	201.00	L
Loss	1.61	kWh/day
In Airing Cupboard	No	
31.0 Thermal Store	None	
34.0 Small-scale Hydro	None	
Electricity Generated	0.00	
Apportioned	0.00	kWh/Year
Connected to dwelling's electricity meter	Yes	
Electricity Generation	Annual	

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

Summary for Input Data

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Property Reference	Plot 2 GF	**Issued on Date**	17/05/2024
Assessment Reference	Green	**Prop Type Ref**	Electric Heater
Property	Flat 2, 2, London Road, Twickenham, TW1 3RY		

SAP Rating	82 B	**DER**	8.90	**TER**	15.05
Environmental	94 A	**% DER < TER**			40.86
CO_2 Emissions (t/year)	0.25	**DFEE**	64.84	**TFEE**	31.40
Compliance Check	See BREL	**% DFEE < TFEE**			-106.48
% DPER < TPER	-25.43	**DPER**	101.26	**TPER**	80.73

Assessor Details	Mr. Thomas Pope	**Assessor ID**	F764-0001
Client			

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

Orientation	North	
Property Tenture	1	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, Mid-Terrace	
Position of Flat	Mid-floor flat	
Which Floor	1	
2.0 Number of Storeys	1	
3.0 Date Built	2024	
3.0 Property Age Band	L	
4.0 Sheltered Sides	1	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	250.00	kJ/m²K
7.0 Electricity Tariff	7 Hour Off Peak	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	8.10 m	46.64 m²	3.99 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	24.54	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 1	Cavity Wall	Other	0.33	0.00	32.32	22.89	0.00	None	9.43	Calculate Wall 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	Other	0.00	0.00	70.62	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Other	0.00	59.74

10.1 Party Ceilings

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

Summary for Input Data

Party Ceiling 1	Other	0.00	46.64

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Other	0.00	46.64

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Opening Type 1	Manufacturer	Window	Double glazed		Air Filled	0.76	Wood	0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Opening	Opening Type 1	External Wall 1	South East	9.43	0

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	
17.0 Thermal Bridging	Default	
Y-value	0.20	W/m²K
18.0 Pressure Testing	No	
Property Tested?	Yes	
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
Lighting 1	100.00	5	500	3

24.0 Main Heating 1	SAP table	
Percentage of Heat	100.00	%
Database Ref. No.	0	
Fuel Type	Electricity	
SAP Code	409	
In Winter	100.00	
In Summer	349.41	
Controls SAP Code	2404	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
Fan Assisted Flue	No	
Boiler Interlock	No	

Number Of Heaters	PCDF Index
2	230002 m

25.0 Main Heating 2	Database	
Percentage of Heat	0.00	%
Database Ref. No.	190006	
Fuel Type	Electricity	
SAP Code	0	
In Winter	0.00	

Summary for Input Data

In Summer	349.41	
Model Name	EDL200UK-630	
Manufacturer	GDC Group Ltd	
Controls	2100	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
FI Case	0.00	
Flue Type	None or Unknown	
Fan Assisted Flue	No	
Flow Temperature	Enter value	

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	None									
Heat source 2	None									
Heat source 3	None									
Heat source 4	None									
Heat source 5	None									

28.0 Water Heating

Water Heating	Main Heating 2	
SAP Code	914	
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	
Summer Immersion	No	
Cold Water Source	From mains	
Bath Count	1	
Supplementary Immersion	No	
Immersion Only Heating Hot Water	No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Internal Store	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	201.00	L
Loss	1.61	kWh/day
In Airing Cupboard	No	

31.0 Thermal Store None

32.0 Photovoltaic Unit	One Dwelling	
Export Capable Meter?	Yes	
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
0.50	South	30°	None Or Little	No	No	1.00		

34.0 Small-scale Hydro	None	
Electricity Generated	0.00	
Apportioned	0.00	kWh/Year
Connected to dwelling's electricity meter	Yes	
Electricity Generation	Annual	

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Property Reference	Plot 2 GF	**Issued on Date**	17/05/2024
Assessment Reference	Lean	**Prop Type Ref**	Electric Heater
Property	Flat 2, 2, London Road, Twickenham, TW1 3RY		

SAP Rating	79 C	**DER**	10.13	**TER**	15.05
Environmental	93 A	**% DER < TER**			32.69
CO_2 Emissions (t/year)	0.31	**DFEE**	64.84	**TFEE**	31.40
Compliance Check	See BREL	**% DFEE < TFEE**			-106.48
% DPER < TPER	-37.77	**DPER**	111.22	**TPER**	80.73

Assessor Details	Mr. Thomas Pope	**Assessor ID**	F764-0001
Client			

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

Orientation	North	
Property Tenture	1	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, Mid-Terrace	
Position of Flat	Mid-floor flat	
Which Floor	1	
2.0 Number of Storeys	1	
3.0 Date Built	2024	
3.0 Property Age Band	L	
4.0 Sheltered Sides	1	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	250.00	kJ/m²K
7.0 Electricity Tariff	7 Hour Off Peak	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	8.10 m	46.64 m²	3.99 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	24.54	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 1	Cavity Wall	Other	0.33	0.00	32.32	22.89	0.00	None	9.43	Calculate Wall 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	Other	0.00	0.00	70.62	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Other	0.00	59.74

10.1 Party Ceilings

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

Summary for Input Data

Party Ceiling 1	Other	0.00	46.64

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Other	0.00	46.64

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Opening Type 1	Manufacturer	Window	Double glazed		Air Filled	0.76	Wood	0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Opening	Opening Type 1	External Wall 1	South East	9.43	0

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	
17.0 Thermal Bridging	Default	
Y-value	0.20	W/m²K
18.0 Pressure Testing	No	
Property Tested?	Yes	
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
Lighting 1	100.00	5	500	3

24.0 Main Heating 1	SAP table	
Percentage of Heat	100.00	%
Database Ref. No.	0	
Fuel Type	Electricity	
SAP Code	409	
In Winter	100.00	
In Summer	349.41	
Controls SAP Code	2404	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
Fan Assisted Flue	No	
Boiler Interlock	No	

Number Of Heaters	PCDF Index
2	230002 m

25.0 Main Heating 2	Database	
Percentage of Heat	0.00	%
Database Ref. No.	190006	
Fuel Type	Electricity	
SAP Code	0	
In Winter	0.00	

Summary for Input Data

In Summer	349.41	
Model Name	EDL200UK-630	
Manufacturer	GDC Group Ltd	
Controls	2100	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
FI Case	0.00	
Flue Type	None or Unknown	
Fan Assisted Flue	No	
Flow Temperature	Enter value	

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	None									
Heat source 2	None									
Heat source 3	None									
Heat source 4	None									
Heat source 5	None									

28.0 Water Heating

Water Heating	Main Heating 2	
SAP Code	914	
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	
Summer Immersion	No	
Cold Water Source	From mains	
Bath Count	1	
Supplementary Immersion	No	
Immersion Only Heating Hot Water	No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Internal Store	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	201.00	L
Loss	1.61	kWh/day
In Airing Cupboard	No	

31.0 Thermal Store None

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Property Reference	Plot 3 FF	**Issued on Date**	17/05/2024
Assessment Reference	Base	**Prop Type Ref**	storage heater
Property	Flat 3, 2, London Road, Twickenham, TW1 3RY		

SAP Rating	48 E	**DER**	12.86	**TER**	11.85
Environmental	90 B	**% DER < TER**			-8.52
CO_2 Emissions (t/year)	0.59	**DFEE**	59.29	**TFEE**	22.58
Compliance Check	See BREL	**% DFEE < TFEE**			-162.61
% DPER < TPER	-104.44	**DPER**	129.61	**TPER**	63.40

Assessor Details	Mr. Thomas Pope	**Assessor ID**	F764-0001
Client			

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

Orientation	East	
Property Tenture	1	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, Mid-Terrace	
Position of Flat	Mid-floor flat	
Which Floor	2	
2.0 Number of Storeys	1	
3.0 Date Built	2024	
3.0 Property Age Band	L	
4.0 Sheltered Sides	1	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	250.00	kJ/m²K
7.0 Electricity Tariff	7 Hour Off Peak	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	12.30 m	62.43 m²	3.02 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	28.07	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 1	Cavity Wall	Other	0.55	0.00	37.15	29.59	0.00	None	7.56	Calculate Wall 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	Other	0.00	0.00	81.45	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Other	0.00	40.76

10.1 Party Ceilings

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

Party Ceiling 1	Other	0.00	62.43

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Other	0.00	62.43

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Opening Type 1	Manufacturer	Window	Double glazed		Air Filled	0.76	Wood	0.70	1.60

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Opening	Opening Type 1	External Wall 1	South West	3.20	0
Opening	Opening Type 1	External Wall 1	North	4.36	0

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

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Table K1 - Default	5.00	1.00	1.00	Yes
E3 Sill	Table K1 - Default	5.00	0.10	0.10	Yes
E4 Jamb	Table K1 - Default	20.40	0.10	0.10	Yes
E7 Party floor between dwellings (in blocks of flats)	Table K1 - Default	12.30	0.28	0.28	Yes
E18 Party wall between dwellings	Table K1 - Default	12.08	0.24	0.24	Yes

Y-value	0.20	W/m²K
18.0 Pressure Testing	No	
Property Tested?	Yes	
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
Lighting 1	100.00	5	500	4

24.0 Main Heating 1	SAP table	
Percentage of Heat	100.00	%
Database Ref. No.	0	
Fuel Type	Electricity	
SAP Code	691	
In Winter	100.00	
In Summer	100.00	
Controls SAP Code	2603	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
Fan Assisted Flue	No	
Boiler Interlock	No	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	

Summary for Input Data

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	None									
Heat source 2	None									
Heat source 3	None									
Heat source 4	None									
Heat source 5	None									

28.0 Water Heating

Water Heating	Independent	
SAP Code	909	
Fuel Type	Electricity	
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	
Summer Immersion	No	
Cold Water Source	From mains	
Bath Count	1	
Supplementary Immersion	No	
Immersion Only Heating Hot Water	No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Internal Store	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	201.00	L
Loss	1.61	kWh/day
In Airing Cupboard	No	
31.0 Thermal Store	None	

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	Plot 3 FF	**Issued on Date**	17/05/2024
Assessment Reference	Green	**Prop Type Ref**	storage heater
Property	Flat 3, 2, London Road, Twickenham, TW1 3RY		

SAP Rating	83 B	**DER**	7.52	**TER**	11.69
Environmental	94 A	**% DER < TER**			35.67
CO_2 Emissions (t/year)	0.29	**DFEE**	51.80	**TFEE**	22.58
Compliance Check	See BREL	**% DFEE < TFEE**			-129.44
% DPER < TPER	-35.21	**DPER**	84.54	**TPER**	62.52

Assessor Details	Mr. Thomas Pope	**Assessor ID**	F764-0001
Client			

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

Orientation	East	
Property Tenture	1	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, Mid-Terrace	
Position of Flat	Mid-floor flat	
Which Floor	2	
2.0 Number of Storeys	1	
3.0 Date Built	2024	
3.0 Property Age Band	L	
4.0 Sheltered Sides	1	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	250.00	kJ/m²K
7.0 Electricity Tariff	7 Hour Off Peak	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	12.30 m	62.43 m²	3.02 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	28.07	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 1	Cavity Wall	Other	0.33	0.00	37.15	29.59	0.00	None	7.56	Calculate Wall 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	Other	0.00	0.00	81.45	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Other	0.00	40.76

10.1 Party Ceilings

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

Party Ceiling 1	Other	0.00	62.43

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Other	0.00	62.43

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Opening Type 1	Manufacturer	Window	Double glazed		Air Filled	0.76	Wood	0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Opening	Opening Type 1	External Wall 1	South West	3.20	0
Opening	Opening Type 1	External Wall 1	North	4.36	0

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

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Table K1 - Default	5.00	1.00	1.00	Yes
E3 Sill	Table K1 - Default	5.00	0.10	0.10	Yes
E4 Jamb	Table K1 - Default	20.40	0.10	0.10	Yes
E7 Party floor between dwellings (in blocks of flats)	Table K1 - Default	12.30	0.28	0.28	Yes
E18 Party wall between dwellings	Table K1 - Default	12.08	0.24	0.24	Yes

Y-value	0.20	W/m²K
18.0 Pressure Testing	No	
Property Tested?	Yes	
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
Lighting 1	100.00	5	500	4

24.0 Main Heating 1	SAP table	
Percentage of Heat	100.00	%
Database Ref. No.	0	
Fuel Type	Electricity	
SAP Code	409	
In Winter	100.00	
In Summer	349.41	
Controls SAP Code	2404	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
Fan Assisted Flue	No	
Boiler Interlock	No	

Number Of Heaters	PCDF Index
3	230002 m

25.0 Main Heating 2	Database	

Summary for Input Data

Percentage of Heat	0.00	%
Database Ref. No.	190006	
Fuel Type	Electricity	
SAP Code	0	
In Winter	0.00	
In Summer	349.41	
Model Name	EDL200UK-630	
Manufacturer	GDC Group Ltd	
Controls	2100	
Delayed Start Stat	No	
Burner Control	Modulating	
HETAS approved System	No	
Oil Pump Inside	No	
FI Case	0.00	
Flue Type	None or Unknown	
Fan Assisted Flue	No	
Flow Temperature	Enter value	
Combi boiler type	Standard Combi	
Combi keep hot type	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	None									
Heat source 2	None									
Heat source 3	None									
Heat source 4	None									
Heat source 5	None									

28.0 Water Heating

Water Heating	Main Heating 2	
SAP Code	914	
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	
Summer Immersion	No	
Cold Water Source	From mains	
Bath Count	1	
Supplementary Immersion	No	
Immersion Only Heating Hot Water	No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Internal Store	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	201.00	L
Loss	1.61	kWh/day
In Airing Cupboard	No	

Summary for Input Data

31.0 Thermal Store	None	
32.0 Photovoltaic Unit	One Dwelling	
Export Capable Meter?	Yes	
Connected To Dwelling	Yes	
Diverter	No	
Battery Capacity [kWh]	0.00	
34.0 Small-scale Hydro	None	
Electricity Generated	0.00	
Apportioned	0.00	kWh/Year
Connected to dwelling's electricity meter	Yes	
Electricity Generation	Annual	

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

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Property Reference	Plot 3 FF	**Issued on Date**	17/05/2024
Assessment Reference	Lean	**Prop Type Ref**	storage heater
Property	Flat 3, 2, London Road, Twickenham, TW1 3RY		

SAP Rating	53 E	**DER**	11.69	**TER**	11.85
Environmental	91 B	**% DER < TER**			1.35
CO_2 Emissions (t/year)	0.52	**DFEE**	51.80	**TFEE**	22.58
Compliance Check	See BREL	**% DFEE < TFEE**			-129.44
% DPER < TPER	-85.88	**DPER**	117.85	**TPER**	63.40

Assessor Details	Mr. Thomas Pope	**Assessor ID**	F764-0001
Client			

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

Orientation	East	
Property Tenture	1	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, Mid-Terrace	
Position of Flat	Mid-floor flat	
Which Floor	2	
2.0 Number of Storeys	1	
3.0 Date Built	2024	
3.0 Property Age Band	L	
4.0 Sheltered Sides	1	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	250.00	kJ/m²K
7.0 Electricity Tariff	7 Hour Off Peak	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	12.30 m	62.43 m²	3.02 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	28.07	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 1	Cavity Wall	Other	0.33	0.00	37.15	29.59	0.00	None	7.56	Calculate Wall 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	Other	0.00	0.00	81.45	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Other	0.00	40.76

10.1 Party Ceilings

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

Summary for Input Data

elmhurst energy

Party Ceiling 1	Other	0.00	62.43

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Other	0.00	62.43

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Opening Type 1	Manufacturer	Window	Double glazed		Air Filled	0.76	Wood	0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Opening	Opening Type 1	External Wall 1	South West	3.20	0
Opening	Opening Type 1	External Wall 1	North	4.36	0

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

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Table K1 - Default	5.00	1.00	1.00	Yes
E3 Sill	Table K1 - Default	5.00	0.10	0.10	Yes
E4 Jamb	Table K1 - Default	20.40	0.10	0.10	Yes
E7 Party floor between dwellings (in blocks of flats)	Table K1 - Default	12.30	0.28	0.28	Yes
E18 Party wall between dwellings	Table K1 - Default	12.08	0.24	0.24	Yes

Y-value	0.20	W/m²K
18.0 Pressure Testing	No	
Property Tested?	Yes	
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
Lighting 1	100.00	5	500	4

24.0 Main Heating 1	SAP table	
Percentage of Heat	100.00	%
Database Ref. No.	0	
Fuel Type	Electricity	
SAP Code	691	
In Winter	100.00	
In Summer	100.00	
Controls SAP Code	2603	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
Fan Assisted Flue	No	
Boiler Interlock	No	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	

Summary for Input Data

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	None									
Heat source 2	None									
Heat source 3	None									
Heat source 4	None									
Heat source 5	None									

28.0 Water Heating

Water Heating	Independent	
SAP Code	909	
Fuel Type	Electricity	
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	
Summer Immersion	No	
Cold Water Source	From mains	
Bath Count	1	
Supplementary Immersion	No	
Immersion Only Heating Hot Water	No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Internal Store	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	201.00	L
Loss	1.61	kWh/day
In Airing Cupboard	No	
31.0 Thermal Store	None	

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	Plot 4 FF	**Issued on Date**	17/05/2024
Assessment Reference	Conversion	**Prop Type Ref**	storage heater
Property	Flat 4, 2, London Road, Twickenham, TW1 3RY		

SAP Rating	84 B	**DER**	7.58	**TER**	12.53
Environmental	95 A	**% DER < TER**			39.51
CO_2 Emissions (t/year)	0.22	**DFEE**	46.27	**TFEE**	19.04
Compliance Check	See BREL	**% DFEE < TFEE**			-143.00
% DPER < TPER	-24.01	**DPER**	83.30	**TPER**	67.17

Assessor Details	Mr. Thomas Pope	**Assessor ID**	F764-0001
Client			

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

Orientation	North	
Property Tenture	1	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, Mid-Terrace	
Position of Flat	Mid-floor flat	
Which Floor	2	
2.0 Number of Storeys	1	
3.0 Date Built	2024	
3.0 Property Age Band	L	
4.0 Sheltered Sides	1	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	250.00	kJ/m²K
7.0 Electricity Tariff	7 Hour Off Peak	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	8.10 m	46.64 m²	3.02 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	24.54	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 1	Cavity Wall	Other	0.33	0.00	24.46	14.86	0.00	None	9.60	Calculate Wall 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	Other	0.00	0.00	53.45	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Other	0.00	45.21

10.1 Party Ceilings

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

Summary for Input Data

Party Ceiling 1	Other	0.00	46.64

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Other	0.00	46.64

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Opening Type 1	Manufacturer	Window	Double Low-E Soft 0.05		Air Filled	0.63	Wood	0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Opening	Opening Type 1	External Wall 1	South	9.60	0

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	
17.0 Thermal Bridging	Default	
Y-value	0.20	W/m²K
18.0 Pressure Testing	No	
Property Tested?	Yes	
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
Lighting 1	100.00	5	500	3

24.0 Main Heating 1	SAP table	
Percentage of Heat	100.00	%
Database Ref. No.	0	
Fuel Type	Electricity	
SAP Code	409	
In Winter	100.00	
In Summer	349.41	
Controls SAP Code	2404	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
Fan Assisted Flue	No	
Boiler Interlock	No	

Number Of Heaters	PCDF Index
2	230002 m

25.0 Main Heating 2	Database	
Percentage of Heat	0.00	%
Database Ref. No.	190006	
Fuel Type	Electricity	
SAP Code	0	
In Winter	0.00	

Summary for Input Data

In Summer	349.41	
Model Name	EDL200UK-630	
Manufacturer	GDC Group Ltd	
Controls	2100	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
FI Case	0.00	
Flue Type	None or Unknown	
Fan Assisted Flue	No	
Flow Temperature	Enter value	
26.0 Heat Networks	None	
28.0 Water Heating		
Water Heating	Main Heating 2	
SAP Code	914	
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	
Summer Immersion	No	
Cold Water Source	From mains	
Bath Count	1	
Supplementary Immersion	No	
Immersion Only Heating Hot Water	No	
28.3 Waste Water Heat Recovery System		
29.0 Hot Water Cylinder	Internal Store	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	201.00	L
Loss	1.61	kWh/day
In Airing Cupboard	No	
31.0 Thermal Store	None	

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Property Reference	Plot 4 FF	**Issued on Date**	17/05/2024
Assessment Reference	Conversion_Green	**Prop Type Ref**	storage heater
Property	Flat 4, 2, London Road, Twickenham, TW1 3RY		

SAP Rating	88 B	**DER**	6.36	**TER**	12.53
Environmental	96 A	**% DER < TER**			49.24
CO_2 Emissions (t/year)	0.16	**DFEE**	46.27	**TFEE**	19.04
Compliance Check	See BREL	**% DFEE < TFEE**			-143.00
% DPER < TPER	-9.18	**DPER**	73.34	**TPER**	67.17

Assessor Details	Mr. Thomas Pope	**Assessor ID**	F764-0001
Client			

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

Orientation	North	
Property Tenture	1	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, Mid-Terrace	
Position of Flat	Mid-floor flat	
Which Floor	2	
2.0 Number of Storeys	1	
3.0 Date Built	2024	
3.0 Property Age Band	L	
4.0 Sheltered Sides	1	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	250.00	kJ/m²K
7.0 Electricity Tariff	7 Hour Off Peak	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	8.10 m	46.64 m²	3.02 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	24.54	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 1	Cavity Wall	Other	0.33	0.00	24.46	14.86	0.00	None	9.60	Calculate Wall 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	Other	0.00	0.00	53.45	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Other	0.00	45.21

10.1 Party Ceilings

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

Summary for Input Data

Party Ceiling 1	Other	0.00	46.64

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Other	0.00	46.64

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Opening Type 1	Manufacturer	Window	Double Low-E Soft 0.05		Air Filled	0.63	Wood	0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Opening	Opening Type 1	External Wall 1	South	9.60	0

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	
17.0 Thermal Bridging	Default	
Y-value	0.20	W/m²K
18.0 Pressure Testing	No	
Property Tested?	Yes	
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
Lighting 1	100.00	5	500	3

24.0 Main Heating 1	SAP table	
Percentage of Heat	100.00	%
Database Ref. No.	0	
Fuel Type	Electricity	
SAP Code	409	
In Winter	100.00	
In Summer	349.41	
Controls SAP Code	2404	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
Fan Assisted Flue	No	
Boiler Interlock	No	

Number Of Heaters	PCDF Index
2	230002 m

25.0 Main Heating 2	Database	
Percentage of Heat	0.00	%
Database Ref. No.	190006	
Fuel Type	Electricity	
SAP Code	0	
In Winter	0.00	

Summary for Input Data

In Summer	349.41	
Model Name	EDL200UK-630	
Manufacturer	GDC Group Ltd	
Controls	2100	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
FI Case	0.00	
Flue Type	None or Unknown	
Fan Assisted Flue	No	
Flow Temperature	Enter value	
26.0 Heat Networks	None	
28.0 Water Heating		
Water Heating	Main Heating 2	
SAP Code	914	
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	
Summer Immersion	No	
Cold Water Source	From mains	
Bath Count	1	
Supplementary Immersion	No	
Immersion Only Heating Hot Water	No	
28.3 Waste Water Heat Recovery System		
29.0 Hot Water Cylinder	Internal Store	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	201.00	L
Loss	1.61	kWh/day
In Airing Cupboard	No	
31.0 Thermal Store	None	
32.0 Photovoltaic Unit	One Dwelling	
Export Capable Meter?	Yes	
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
0.50	South	30°	None Or Little	No	No	1.00		

34.0 Small-scale Hydro	None	
Electricity Generated	0.00	
Apportioned	0.00	kWh/Year

Summary for Input Data

Connected to dwelling's electricity meter	Yes
Electricity Generation	Annual

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

35.0 Special Features

Energy Saved	Fuel Saved	Energy Used	Fuel Used	Description	Monthly Air Change Rates	Special Technologies Type	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.00		0.00				CO2 saving feature	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	Plot 4 FF	**Issued on Date**	17/05/2024
Assessment Reference	Conversion_Lean	**Prop Type Ref**	storage heater
Property	Flat 4, 2, London Road, Twickenham, TW1 3RY		

SAP Rating	84 B	**DER**	7.58	**TER**	12.53
Environmental	95 A	**% DER < TER**			39.51
CO_2 Emissions (t/year)	0.22	**DFEE**	46.27	**TFEE**	19.04
Compliance Check	See BREL	**% DFEE < TFEE**			-143.00
% DPER < TPER	-24.01	**DPER**	83.30	**TPER**	67.17

Assessor Details	Mr. Thomas Pope	**Assessor ID**	F764-0001
Client			

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

Orientation	North	
Property Tenture	1	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, Mid-Terrace	
Position of Flat	Mid-floor flat	
Which Floor	2	
2.0 Number of Storeys	1	
3.0 Date Built	2024	
3.0 Property Age Band	L	
4.0 Sheltered Sides	1	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	250.00	kJ/m²K
7.0 Electricity Tariff	7 Hour Off Peak	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	8.10 m	46.64 m²	3.02 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	24.54	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 1	Cavity Wall	Other	0.33	0.00	24.46	14.86	0.00	None	9.60	Calculate Wall 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	Other	0.00	0.00	53.45	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Other	0.00	45.21

10.1 Party Ceilings

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

Summary for Input Data

Party Ceiling 1	Other	0.00	46.64

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Other	0.00	46.64

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Opening Type 1	Manufacturer	Window	Double glazed		Air Filled	0.63	Wood	0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Opening	Opening Type 1	External Wall 1	South	9.60	0

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	
17.0 Thermal Bridging	Default	
Y-value	0.20	W/m²K
18.0 Pressure Testing	No	
Property Tested?	Yes	
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
Lighting 1	100.00	5	500	3

24.0 Main Heating 1	SAP table	
Percentage of Heat	100.00	%
Database Ref. No.	0	
Fuel Type	Electricity	
SAP Code	409	
In Winter	100.00	
In Summer	349.41	
Controls SAP Code	2404	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
Fan Assisted Flue	No	
Boiler Interlock	No	

Number Of Heaters	PCDF Index
2	230002 m

25.0 Main Heating 2	Database	
Percentage of Heat	0.00	%
Database Ref. No.	190006	
Fuel Type	Electricity	
SAP Code	0	
In Winter	0.00	

Summary for Input Data

In Summer	349.41	
Model Name	EDL200UK-630	
Manufacturer	GDC Group Ltd	
Controls	2100	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
FI Case	0.00	
Flue Type	None or Unknown	
Fan Assisted Flue	No	
Flow Temperature	Enter value	
26.0 Heat Networks	None	
28.0 Water Heating		
Water Heating	Main Heating 2	
SAP Code	914	
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	
Summer Immersion	No	
Cold Water Source	From mains	
Bath Count	1	
Supplementary Immersion	No	
Immersion Only Heating Hot Water	No	
28.3 Waste Water Heat Recovery System		
29.0 Hot Water Cylinder	Internal Store	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	201.00	L
Loss	1.61	kWh/day
In Airing Cupboard	No	
31.0 Thermal Store	None	

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Property Reference	Plot 5 SF	**Issued on Date**	17/05/2024
Assessment Reference	Base	**Prop Type Ref**	Storage Heater
Property	Flat 5, 2, London Road, Twickenham, TW1 3RY		

SAP Rating	38 F	**DER**	15.24	**TER**	12.76
Environmental	88 B	**% DER < TER**			-19.44
CO_2 Emissions (t/year)	0.73	**DFEE**	72.08	**TFEE**	27.31
Compliance Check	See BREL	**% DFEE < TFEE**			-163.88
% DPER < TPER	-124.61	**DPER**	153.59	**TPER**	68.38

Assessor Details	Mr. Thomas Pope	**Assessor ID**	F764-0001
Client			

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

Orientation	East	
Property Tenture	1	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, Mid-Terrace	
Position of Flat	Top-floor flat	
Which Floor	3	
2.0 Number of Storeys	1	
3.0 Date Built	2024	
3.0 Property Age Band	L	
4.0 Sheltered Sides	1	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	250.00	kJ/m²K
7.0 Electricity Tariff	7 Hour Off Peak	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	11.48 m	62.84 m²	2.76 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	23.44	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 1	Cavity Wall	Other	0.55	0.00	31.68	26.20	0.00	None	5.48	Calculate Wall 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	Other	0.00	0.00	74.46	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Other	0.00	41.46

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area	Shelter Code	Shelter Factor	Calculation Type	Openings

Summary for Input Data

							(m²)				
External Roof 1	External Flat Roof	Other		0.16	0.00	62.84	62.84	None	0.00	Calculate Wall Area	0.00

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Other	0.00	62.84

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Opening Type 1	Manufacturer	Window	Double Low-E Soft 0.05		Air Filled	0.63	Wood	0.70	1.60

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Opening	Opening Type 1	External Wall 1	South	0.96	0
Opening	Opening Type 1	External Wall 1	North	4.52	0

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

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Table K1 - Default	4.10	1.00	1.00	Yes
E3 Sill	Table K1 - Default	4.10	0.10	0.10	Yes
E4 Jamb	Table K1 - Default	15.60	0.10	0.10	Yes
E7 Party floor between dwellings (in blocks of flats)	Table K1 - Default	11.48	0.28	0.28	Yes
E14 Flat roof	Table K1 - Default	11.48	0.16	0.16	Yes
E18 Party wall between dwellings	Table K1 - Default	11.04	0.24	0.24	Yes

Y-value	0.20	W/m²K
18.0 Pressure Testing	No	
Property Tested?	Yes	
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
Lighting 1	100.00	5	500	5

24.0 Main Heating 1	SAP table	
Percentage of Heat	100.00	%
Database Ref. No.	0	
Fuel Type	Electricity	
SAP Code	691	
In Winter	100.00	
In Summer	100.00	
Controls SAP Code	2603	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
Fan Assisted Flue	No	
Boiler Interlock	No	
25.0 Main Heating 2	None	

Summary for Input Data

elmhurst energy

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	None									
Heat source 2	None									
Heat source 3	None									
Heat source 4	None									
Heat source 5	None									

28.0 Water Heating

Water Heating	Independent	
SAP Code	909	
Fuel Type	Electricity	
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	
Summer Immersion	No	
Cold Water Source	From mains	
Bath Count	1	
Supplementary Immersion	No	
Immersion Only Heating Hot Water	No	

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Shower	Instantaneous electric shower		9.30	No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Internal Store	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	201.00	L
Loss	1.61	kWh/day
In Airing Cupboard	No	

31.0 Thermal Store	None

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Property Reference	Plot 5 SF	**Issued on Date**	17/05/2024
Assessment Reference	Conversion	**Prop Type Ref**	Storage Heater
Property	Flat 5, 2, London Road, Twickenham, TW1 3RY		

SAP Rating	73 C	**DER**		**TER**	
Environmental	92 A	**% DER < TER**			N/A
CO_2 Emissions (t/year)	0.5	**DFEE**		**TFEE**	
Compliance Check	See BREL	**% DFEE < TFEE**			
% DPER < TPER		**DPER**		**TPER**	

Assessor Details	Mr. Thomas Pope	**Assessor ID**	F764-0001
Client			

SUMMARY FOR INPUT DATA FOR: Conversion (As Designed)

Orientation	East	
Property Tenture	1	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, Mid-Terrace	
Position of Flat	Top-floor flat	
Which Floor	3	
2.0 Number of Storeys	1	
3.0 Date Built	2024	
3.0 Property Age Band	L	
4.0 Sheltered Sides	1	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	N/A	kJ/m²K
7.0 Electricity Tariff	7 Hour Off Peak	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	11.48 m	62.84 m²	2.76 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	23.44	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 1	Cavity Wall	Other	0.33	0.00	31.68	26.20	0.00	None	5.48	Calculate Wall 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	Other	0.00	0.00	74.46	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Other	0.00	41.46

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area	Shelter Code	Shelter Factor	Calculation Type	Openings

Summary for Input Data

elmhurst energy

							(m²)				
External Roof 1	External Flat Roof	Other		0.16	0.00	62.84	62.84	None	0.00	Calculate Wall Area	0.00

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Other	0.00	62.84

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Opening Type 1	Manufacturer	Window	Double Low-E Soft 0.05		Air Filled	0.63	Wood	0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Opening	Opening Type 1	External Wall 1	South	0.96	0
Opening	Opening Type 1	External Wall 1	North	4.52	0

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	
17.0 Thermal Bridging	Default	
Y-value	0.20	W/m²K
18.0 Pressure Testing	No	
Property Tested?	Yes	
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
Lighting 1	100.00	5	500	5

24.0 Main Heating 1	SAP table	
Percentage of Heat	100.00	%
Database Ref. No.	0	
Fuel Type	Electricity	
SAP Code	409	
In Winter	100.00	
In Summer	349.41	
Controls SAP Code	2404	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
Fan Assisted Flue	No	
Boiler Interlock	No	

Number Of Heaters	PCDF Index
3	230002 m

25.0 Main Heating 2	Database	
Percentage of Heat	0.00	%
Database Ref. No.	190006	
Fuel Type	Electricity	

Summary for Input Data

SAP Code	0
In Winter	0.00
In Summer	349.41
Model Name	EDL200UK-630
Manufacturer	GDC Group Ltd
Controls	2100
Delayed Start Stat	No
HETAS approved System	No
Oil Pump Inside	No
FI Case	0.00
Flue Type	None or Unknown
Fan Assisted Flue	No
Flow Temperature	Enter value

26.0 Heat Networks	None

28.0 Water Heating

Water Heating	Main Heating 2
SAP Code	914
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
Summer Immersion	No
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Shower	Instantaneous electric shower		9.30	No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Internal Store	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	201.00	L
Loss	1.61	kWh/day
In Airing Cupboard	No	

31.0 Thermal Store	None

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Property Reference	Plot 5 SF	**Issued on Date**	17/05/2024
Assessment Reference	Green	**Prop Type Ref**	Storage Heater
Property	Flat 5, 2, London Road, Twickenham, TW1 3RY		

SAP Rating	72 C	**DER**	10.86	**TER**	12.60
Environmental	92 A	**% DER < TER**			13.81
CO_2 Emissions (t/year)	0.48	**DFEE**	65.98	**TFEE**	27.31
Compliance Check	See BREL	**% DFEE < TFEE**			-141.57
% DPER < TPER	-78.88	**DPER**	120.83	**TPER**	67.55

Assessor Details	Mr. Thomas Pope	**Assessor ID**	F764-0001
Client			

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

Orientation	East	
Property Tenture	1	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, Mid-Terrace	
Position of Flat	Top-floor flat	
Which Floor	3	
2.0 Number of Storeys	1	
3.0 Date Built	2024	
3.0 Property Age Band	L	
4.0 Sheltered Sides	1	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	250.00	kJ/m²K
7.0 Electricity Tariff	7 Hour Off Peak	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	11.48 m	62.84 m²	2.76 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	23.44	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 1	Cavity Wall	Other	0.33	0.00	31.68	26.20	0.00	None	5.48	Calculate Wall 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	Other	0.00	0.00	74.46	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Other	0.00	41.46

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area	Shelter Code	Shelter Factor	Calculation Type	Openings

							(m²)				
External Roof 1	External Flat Roof	Other		0.16	0.00	62.84	62.84	None	0.00	Calculate Wall Area	0.00

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Other	0.00	62.84

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Opening Type 1	Manufacturer	Window	Double Low-E Soft 0.05		Air Filled	0.63	Wood	0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Opening	Opening Type 1	External Wall 1	South	0.96	0
Opening	Opening Type 1	External Wall 1	North	4.52	0

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

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Table K1 - Default	4.10	1.00	1.00	Yes
E3 Sill	Table K1 - Default	4.10	0.10	0.10	Yes
E4 Jamb	Table K1 - Default	15.60	0.10	0.10	Yes
E7 Party floor between dwellings (in blocks of flats)	Table K1 - Default	11.48	0.28	0.28	Yes
E14 Flat roof	Table K1 - Default	11.48	0.16	0.16	Yes
E18 Party wall between dwellings	Table K1 - Default	11.04	0.24	0.24	Yes

Y-value	0.20	W/m²K
18.0 Pressure Testing	No	
Property Tested?	Yes	
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
Lighting 1	100.00	5	500	5

24.0 Main Heating 1	SAP table	
Percentage of Heat	100.00	%
Database Ref. No.	0	
Fuel Type	Electricity	
SAP Code	409	
In Winter	100.00	
In Summer	349.41	
Controls SAP Code	2404	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
Fan Assisted Flue	No	
Boiler Interlock	No	

Number Of Heaters	PCDF Index
3	230002 m

Summary for Input Data

elmhurst energy

25.0 Main Heating 2	Database	
Percentage of Heat	0.00	%
Database Ref. No.	190006	
Fuel Type	Electricity	
SAP Code	0	
In Winter	0.00	
In Summer	349.41	
Model Name	EDL200UK-630	
Manufacturer	GDC Group Ltd	
Controls	2100	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
FI Case	0.00	
Flue Type	None or Unknown	
Fan Assisted Flue	No	
Flow Temperature	Enter value	
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	None									
Heat source 2	None									
Heat source 3	None									
Heat source 4	None									
Heat source 5	None									

28.0 Water Heating

Water Heating	Main Heating 2
SAP Code	914
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
Summer Immersion	No
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Shower	Instantaneous electric shower		9.30	No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Internal Store	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	201.00	L

Summary for Input Data

Loss	1.61	kWh/day
In Airing Cupboard	No	
31.0 Thermal Store	None	
32.0 Photovoltaic Unit	One Dwelling	
Export Capable Meter?	Yes	
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
0.50	South	Horizontal	None Or Little	No	No	1.00		

34.0 Small-scale Hydro	None	
Electricity Generated	0.00	
Apportioned	0.00	kWh/Year
Connected to dwelling's electricity meter	Yes	
Electricity Generation	Annual	

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Property Reference	Plot 5 SF	**Issued on Date**	17/05/2024
Assessment Reference	Lean	**Prop Type Ref**	Storage Heater
Property	Flat 5, 2, London Road, Twickenham, TW1 3RY		

SAP Rating	42 E	**DER**	14.32	**TER**	12.76
Environmental	89 B	**% DER < TER**			-12.23
CO_2 Emissions (t/year)	0.68	**DFEE**	65.98	**TFEE**	27.31
Compliance Check	See BREL	**% DFEE < TFEE**			-141.57
% DPER < TPER	-111.23	**DPER**	144.44	**TPER**	68.38

Assessor Details	Mr. Thomas Pope	**Assessor ID**	F764-0001
Client			

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

Orientation	East	
Property Tenture	1	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, Mid-Terrace	
Position of Flat	Top-floor flat	
Which Floor	3	
2.0 Number of Storeys	1	
3.0 Date Built	2024	
3.0 Property Age Band	L	
4.0 Sheltered Sides	1	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	250.00	kJ/m²K
7.0 Electricity Tariff	7 Hour Off Peak	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	11.48 m	62.84 m²	2.76 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	23.44	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 1	Cavity Wall	Other	0.33	0.00	31.68	26.20	0.00	None	5.48	Calculate Wall 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	Other	0.00	0.00	74.46	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Other	0.00	41.46

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area	Shelter Code	Shelter Factor	Calculation Type	Openings

Summary for Input Data

							(m²)				
External Roof 1	External Flat Roof	Other	0.16	0.00	62.84	62.84	None	0.00	Calculate Wall Area	0.00

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Other	0.00	62.84

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Opening Type 1	Manufacturer	Window	Double Low-E Soft 0.05		Air Filled	0.63	Wood	0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Opening	Opening Type 1	External Wall 1	South	0.96	0
Opening	Opening Type 1	External Wall 1	North	4.52	0

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	
17.0 Thermal Bridging	Default	
Y-value	0.20	W/m²K
18.0 Pressure Testing	No	
Property Tested?	Yes	
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
Lighting 1	100.00	5	500	5

24.0 Main Heating 1	SAP table	
Percentage of Heat	100.00	%
Database Ref. No.	0	
Fuel Type	Electricity	
SAP Code	691	
In Winter	100.00	
In Summer	100.00	
Controls SAP Code	2603	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
Fan Assisted Flue	No	
Boiler Interlock	No	
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	None									
Heat source 2	None									

Heat source 3	None
Heat source 4	None
Heat source 5	None

28.0 Water Heating

Water Heating	Independent	
SAP Code	909	
Fuel Type	Electricity	
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	
Summer Immersion	No	
Cold Water Source	From mains	
Bath Count	1	
Supplementary Immersion	No	
Immersion Only Heating Hot Water	No	

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Shower	Instantaneous electric shower		9.30	No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Internal Store	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	201.00	L
Loss	1.61	kWh/day
In Airing Cupboard	No	
31.0 Thermal Store	None	

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Property Reference	Plot 6 SF	**Issued on Date**	17/05/2024
Assessment Reference	Conversion	**Prop Type Ref**	Storage heater
Property	Flat 6, 2, London Road, Twickenham, TW1 3RY		

SAP Rating	79 C	**DER**		**TER**	
Environmental	94 A	**% DER < TER**			N/A
CO_2 Emissions (t/year)	0.36	**DFEE**		**TFEE**	
Compliance Check	See BREL	**% DFEE < TFEE**			
% DPER < TPER		**DPER**		**TPER**	

Assessor Details	Mr. Thomas Pope	**Assessor ID**	F764-0001
Client			

SUMMARY FOR INPUT DATA FOR: Conversion (As Designed)

Orientation	North	
Property Tenture	1	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, Mid-Terrace	
Position of Flat	Top-floor flat	
Which Floor	3	
2.0 Number of Storeys	1	
3.0 Date Built	2024	
3.0 Property Age Band	L	
4.0 Sheltered Sides	1	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	N/A	kJ/m²K
7.0 Electricity Tariff	7 Hour Off Peak	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	9.20 m	49.16 m²	2.76 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	22.94	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 1	Cavity Wall	Other	0.33	0.00	25.39	22.51	0.00	None	2.88	Calculate Wall 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	Other	0.00	0.00	47.99	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Other	0.00	47.62

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area	Shelter Code	Shelter Factor	Calculation Type	Openings

Summary for Input Data

							(m²)				
External Roof 1	External Flat Roof	Other		0.16	0.00	49.16	49.16	None	0.00	Calculate Wall Area	0.00

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Other	0.00	49.16

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Opening Type 1	Manufacturer	Window	Double Low-E Soft 0.05		Air Filled	0.63	Wood	0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Opening	Opening Type 1	External Wall 1	South	2.88	0

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	
17.0 Thermal Bridging	Default	
Y-value	0.20	W/m²K
18.0 Pressure Testing	No	
Property Tested?	Yes	
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
Lighting 1	100.00	5	500	4

24.0 Main Heating 1	SAP table	
Percentage of Heat	100.00	%
Database Ref. No.	0	
Fuel Type	Electricity	
SAP Code	409	
In Winter	100.00	
In Summer	349.41	
Controls SAP Code	2404	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
Fan Assisted Flue	No	
Boiler Interlock	No	

Number Of Heaters	PCDF Index
2	230002 m

25.0 Main Heating 2	Database	
Percentage of Heat	0.00	%
Database Ref. No.	190006	
Fuel Type	Electricity	

Summary for Input Data

SAP Code	0	
In Winter	0.00	
In Summer	349.41	
Model Name	EDL200UK-630	
Manufacturer	GDC Group Ltd	
Controls	2100	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
FI Case	0.00	
Flue Type	None or Unknown	
Fan Assisted Flue	No	
Flow Temperature	Enter value	
26.0 Heat Networks	None	
28.0 Water Heating		
Water Heating	Main Heating 2	
SAP Code	914	
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	
Summer Immersion	No	
Cold Water Source	From mains	
Bath Count	1	
Supplementary Immersion	No	
Immersion Only Heating Hot Water	No	
28.3 Waste Water Heat Recovery System		
29.0 Hot Water Cylinder	Internal Store	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	201.00	L
Loss	1.61	kWh/day
In Airing Cupboard	No	
31.0 Thermal Store	None	

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Property Reference	Plot 6 SF	**Issued on Date**	17/05/2024
Assessment Reference	Conversion_Green	**Prop Type Ref**	Storage heater
Property	Flat 6, 2, London Road, Twickenham, TW1 3RY		

SAP Rating	80 C	**DER**	9.59	**TER**	13.39
Environmental	94 A	**% DER < TER**			28.38
CO_2 Emissions (t/year)	0.31	**DFEE**	63.81	**TFEE**	23.44
Compliance Check	See BREL	**% DFEE < TFEE**			-172.28
% DPER < TPER	-50.96	**DPER**	108.99	**TPER**	72.20

Assessor Details	Mr. Thomas Pope	**Assessor ID**	F764-0001
Client			

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

Orientation	North	
Property Tenture	1	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, Mid-Terrace	
Position of Flat	Top-floor flat	
Which Floor	3	
2.0 Number of Storeys	1	
3.0 Date Built	2024	
3.0 Property Age Band	L	
4.0 Sheltered Sides	1	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	250.00	kJ/m²K
7.0 Electricity Tariff	7 Hour Off Peak	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	9.20 m	49.16 m²	2.76 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	22.94	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 1	Cavity Wall	Other	0.33	0.00	25.39	22.51	0.00	None	2.88	Calculate Wall 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	Other	0.00	0.00	47.99	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Other	0.00	47.62

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area	Shelter Code	Shelter Factor	Calculation Type	Openings

Summary for Input Data

							(m²)				
External Roof 1	External Flat Roof	Other		0.16	0.00	49.16	49.16	None	0.00	Calculate Wall Area	0.00

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Other	0.00	49.16

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Opening Type 1	Manufacturer	Window	Double Low-E Soft 0.05		Air Filled	0.63	Wood	0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Opening	Opening Type 1	External Wall 1	South	2.88	0

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	
17.0 Thermal Bridging	Default	
Y-value	0.20	W/m²K
18.0 Pressure Testing	No	
Property Tested?	Yes	
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
Lighting 1	100.00	5	500	4

24.0 Main Heating 1	SAP table	
Percentage of Heat	100.00	%
Database Ref. No.	0	
Fuel Type	Electricity	
SAP Code	409	
In Winter	100.00	
In Summer	349.41	
Controls SAP Code	2404	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
Fan Assisted Flue	No	
Boiler Interlock	No	

Number Of Heaters	PCDF Index
2	230002 m

25.0 Main Heating 2	Database	
Percentage of Heat	0.00	%
Database Ref. No.	190006	
Fuel Type	Electricity	

Summary for Input Data

SAP Code	0	
In Winter	0.00	
In Summer	349.41	
Model Name	EDL200UK-630	
Manufacturer	GDC Group Ltd	
Controls	2100	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
FI Case	0.00	
Flue Type	None or Unknown	
Fan Assisted Flue	No	
Flow Temperature	Enter value	
26.0 Heat Networks	None	
28.0 Water Heating		
Water Heating	Main Heating 2	
SAP Code	914	
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	
Summer Immersion	No	
Cold Water Source	From mains	
Bath Count	1	
Supplementary Immersion	No	
Immersion Only Heating Hot Water	No	
28.3 Waste Water Heat Recovery System		
29.0 Hot Water Cylinder	Internal Store	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	201.00	L
Loss	1.61	kWh/day
In Airing Cupboard	No	
31.0 Thermal Store	None	
32.0 Photovoltaic Unit	One Dwelling	
Export Capable Meter?	Yes	
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
0.50	South	30°	None Or Little	No	No	1.00		

34.0 Small-scale Hydro	None

Summary for Input Data

Electricity Generated	0.00	
Apportioned	0.00	kWh/Year
Connected to dwelling's electricity meter	Yes	
Electricity Generation	Annual	

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Property Reference	Plot 6 SF	**Issued on Date**	17/05/2024
Assessment Reference	Conversion_Lean	**Prop Type Ref**	Storage heater
Property	Flat 6, 2, London Road, Twickenham, TW1 3RY		

SAP Rating	76 C	**DER**	10.76	**TER**	13.39
Environmental	93 A	**% DER < TER**			19.64
CO_2 Emissions (t/year)	0.37	**DFEE**	63.81	**TFEE**	23.44
Compliance Check	See BREL	**% DFEE < TFEE**			-172.28
% DPER < TPER	-64.16	**DPER**	118.52	**TPER**	72.20

Assessor Details	Mr. Thomas Pope	**Assessor ID**	F764-0001
Client			

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

Orientation	North	
Property Tenture	1	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, Mid-Terrace	
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Which Floor	3	
2.0 Number of Storeys	1	
3.0 Date Built	2024	
3.0 Property Age Band	L	
4.0 Sheltered Sides	1	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	250.00	kJ/m²K
7.0 Electricity Tariff	7 Hour Off Peak	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	9.20 m	49.16 m²	2.76 m
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5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	22.94	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 1	Cavity Wall	Other	0.33	0.00	25.39	22.51	0.00	None	2.88	Calculate Wall 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	Other	0.00	0.00	47.99	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Other	0.00	47.62

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area	Shelter Code	Shelter Factor	Calculation Type	Openings

Summary for Input Data

							(m²)				
External Roof 1	External Flat Roof	Other		0.16	0.00	49.16	49.16	None	0.00	Calculate Wall Area	0.00

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Other	0.00	49.16

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Opening Type 1	Manufacturer	Window	Double glazed		Air Filled	0.63	Wood	0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Opening	Opening Type 1	External Wall 1	South	2.88	0

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	
17.0 Thermal Bridging	Default	
Y-value	0.20	W/m²K
18.0 Pressure Testing	No	
Property Tested?	Yes	
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
Lighting 1	100.00	5	500	4

24.0 Main Heating 1	SAP table	
Percentage of Heat	100.00	%
Database Ref. No.	0	
Fuel Type	Electricity	
SAP Code	409	
In Winter	100.00	
In Summer	349.41	
Controls SAP Code	2404	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
Fan Assisted Flue	No	
Boiler Interlock	No	

Number Of Heaters	PCDF Index
2	230002 m

25.0 Main Heating 2	Database	
Percentage of Heat	0.00	%
Database Ref. No.	190006	
Fuel Type	Electricity	

Summary for Input Data

SAP Code	0	
In Winter	0.00	
In Summer	349.41	
Model Name	EDL200UK-630	
Manufacturer	GDC Group Ltd	
Controls	2100	
Delayed Start Stat	No	
HETAS approved System	No	
Oil Pump Inside	No	
FI Case	0.00	
Flue Type	None or Unknown	
Fan Assisted Flue	No	
Flow Temperature	Enter value	
26.0 Heat Networks	None	
28.0 Water Heating		
Water Heating	Main Heating 2	
SAP Code	914	
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	
Summer Immersion	No	
Cold Water Source	From mains	
Bath Count	1	
Supplementary Immersion	No	
Immersion Only Heating Hot Water	No	
28.3 Waste Water Heat Recovery System		
29.0 Hot Water Cylinder	Internal Store	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	201.00	L
Loss	1.61	kWh/day
In Airing Cupboard	No	
31.0 Thermal Store	None	

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None