Building Regulations England Part L (BREL) Compliance Report

Approved Document L1 2021 Edition, England assessed by Array SAP 10 program, Array

Date: Mon 10 Jun 2024 09:25:51

Project Information			
Assessed By	Demi Beneke	Building Type	House, Semi-detached
OCDEA Registration	EES/027264	Assessment Date	2024-06-10

Dwelling Details			
Assessment Type	As designed	Total Floor Area	84 m^2
Site Reference	Plot 18	Plot Reference	Plot 18
Address			

Client Details	
Name	AJC
Company	AJC
Address	4 Joshuas Vista, Poole, BH14 8HA

This report covers items included within the SAP calculations. It is not a complete report of regulations compliance.

1a Target emission rate and dwelling emission rate		
Fuel for main heating system	Electricity	
Target carbon dioxide emission rate	*11.14 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.86 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*58.14 kWh_{PE}/m^2*	
Dwelling primary energy	45.01 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*36.8 kWh/m^2*	
Dwelling fabric energy efficiency	33.3 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.18	Walls (1) (0.18)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.12	Ground Floor (0.12)	OK
Roofs	*0.16*	0.11	Roof (1) (0.11)	OK
Windows, doors, and roof windows	*1.6*	1.29	W1 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	77.489545	0.18
Party wall: Party Wall (1)	43.06	0 **(!)**
Ground floor: Ground Floor, Ground Floor	42.07	0.12
Exposed roof: Roof (1)	42.07	0.11

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Door	2.15853	North East	N/A	1.2
W1, Windows	0.2806	North East	1.0	1.3
W2, Windows	1.60368	North East	1.0	1.3
W4, Windows	4.2735	South West	1.0	1.3
W5, Windows	3.193225	North East	1.0	1.3
W6, Windows	0.7261	North West	1.0	1.3
W7, Windows	1.602395	South West	1.0	1.3
W8, Windows	0.880225	South West	1.0	1.3
W3, Windows	0.7261	South West	1.0	1.3
W9, Windows	0.7261	North West	1.0	1.3

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))
Building part **1 - Main Dwelling**: Thermal bridging calculated from linear thermal transmittances for each junction

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.02 **(!)**	RCD
External wall	E3: Sill	Calculated by person with suitable expertise	0.023 **(!)**	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.018 **(!)**	RCD
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.031 **(!)**	K
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.001 **(!)**	RCD
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.055	RCD
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.037 **(!)**	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.04	RCD
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.029 **(!)**	Knauf
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.043	RCD
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.033 **(!)**	RCD

3 Air permeability (better than typically expected values are flagged with a subsequent (!))		
Maximum permitted air permeability at 50Pa	*8 m^3/hm^2*	
Dwelling air permeability at 50Pa	5 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Room heaters - Electricity	
Efficiency	100.0%
Emitter type	
Flow temperature	
System type	Panel, convector or radiant heaters
Manufacturer	
Model	
Commissioning	
Main heating system 2: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	0.0%
Emitter type	
Flow temperature	
System type	Heat Pump
Manufacturer	GDC Group Ltd
Model	EDL200UK-630
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	

Waste water heat recovery system 1 - type: N/A	
Efficiency	
Manufacturer	
Model	

6 Controls		
Main heating 1 - type: Programmer and appliance thermostats		
Function		
Ecodesign class		
Manufacturer		
Model		
Main heating 2 - type: Not applicable		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	80 lm/W	**OK**
External lights control	N/A	

8 Mechanical ventilation		
System type: N/A		
Maximum permitted specific fan power	*N/A*	
Specific fan power	N/A	**N/A**
Minimum permitted heat recovery efficiency	*N/A*	
Heat recovery efficiency	N/A	**N/A**
Manufacturer/Model		
Commissioning		

9 Local generation	
Technology type: **Photovoltaic system (1)**	
Peak power	1.75 kWp
Orientation	South West
Pitch	45°
Overshading	None or very little
Manufacturer	
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Summary for Input Data

elmhurst energy

Property Reference	Plot 18	**Issued on Date**	10/06/2024
Assessment Reference	Plot 18	**Prop Type Ref**	
Property			

SAP Rating	84 B	**DER**	3.86	**TER**	11.14
Environmental	97 A	**% DER < TER**			65.35
CO_2 Emissions (t/year)	0.21	**DFEE**	33.33	**TFEE**	36.78
Compliance Check	See BREL	**% DFEE < TFEE**			9.39
% DPER < TPER	22.59	**DPER**	45.01	**TPER**	58.14

Assessor Details	Ms. Demi Beneke	**Assessor ID**	AV37-0001
Client			

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

Orientation	Northeast	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Semi-Detached	
Which Floor	0	
2.0 Number of Storeys	2	
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	Standard	
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:	18.40 m	42.07 m²	2.42 m
1st Storey:	18.40 m	42.07 m²	2.67 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	16.44	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	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18	60.00	93.66	77.49	0.00	None	16.17	Enter Gross Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall	Filled Cavity with Edge Sealing	Single plasterboard on dabs on both sides, dense blocks, cavity or cavity fill	0.00	70.00	43.06	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall	Plasterboard on timber frame	9.00	164.69

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

Plain Ceiling	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	42.07	42.07 (m²)	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	42.07

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	42.07

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	42.07

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Door	Manufacturer	Solid Door			Air Filled	0.00	Wood	0.70	1.20
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05		Air Filled	0.45	Wood	1.00	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
D1	Door	External Wall	North East	2.16	0
W1	Windows	External Wall	North East	0.28	0
W2	Windows	External Wall	North East	1.60	0
W4	Windows	External Wall	South West	4.27	0
W5	Windows	External Wall	North East	3.19	0
W6	Windows	External Wall	North West	0.73	0
W7	Windows	External Wall	South West	1.60	0
W8	Windows	External Wall	South West	0.88	0
W3	Windows	External Wall	South West	0.73	0
W9	Windows	External Wall	North West	0.73	0

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

17.0 Thermal Bridging	Calculate Bridges	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	11.24	0.02	0.02	RCD	No
E3 Sill	Independently assessed	8.18	0.02	0.02	RCD	No
E4 Jamb	Independently assessed	26.28	0.02	0.02	RCD	No
E5 Ground floor (normal)	Independently assessed	18.40	0.03	0.03	K	No
E6 Intermediate floor within a dwelling	Independently assessed	18.40	0.00	0.00	RCD	No
E10 Eaves (insulation at ceiling level)	Independently assessed	9.94	0.06	0.06	RCD	No
E12 Gable (insulation at ceiling level)	Independently assessed	8.46	0.04	0.04	RCD	No
E16 Corner (normal)	Independently assessed	10.18	0.04	0.04	RCD	No
E18 Party wall between dwellings	Independently assessed	10.18	0.03	0.03	Knauf	No
P1 Party wall - Ground floor	Independently assessed	8.46	0.04	0.04	RCD	No
P2 Party wall - Intermediate floor within a dwelling	Table K1 - Default	8.46	0.00	0.00		No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	8.46	0.03	0.03	RCD	No

Y-value	0.02	W/m²K
18.0 Pressure Testing	Yes	
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	80.00	25	2000	10

Summary for Input Data

elmhurst energy

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	336.62	
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	Database	
Percentage of Heat	0.00	%
Database Ref. No.	190006	
Fuel Type	Electricity	
SAP Code	0	
In Winter	0.00	
In Summer	336.62	
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

Summary for Input Data

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
Bath	Combi boiler or unvented hot water system	10.00		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
1.75	South West	45°	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

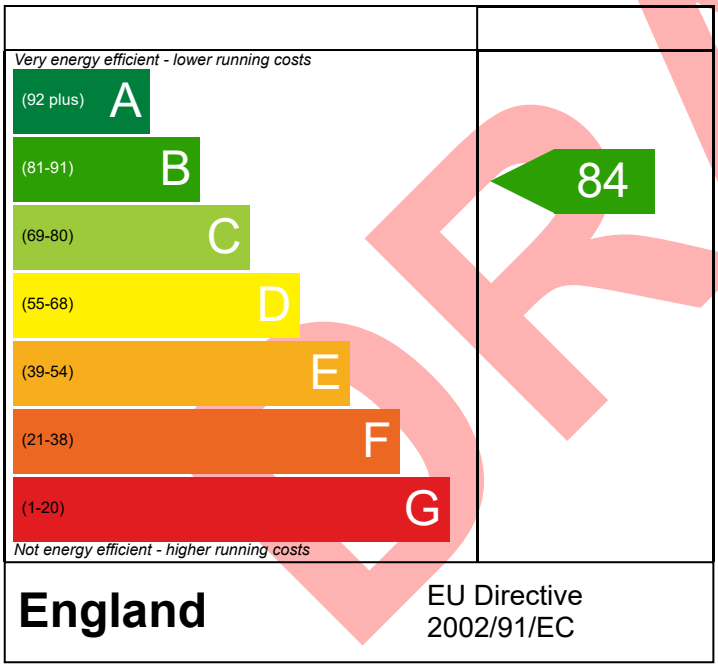
Predicted Energy Assessment

Dwelling type:	House, Semi-Detached
Date of assessment:	10/06/2024
Produced by:	Demi Beneke
Total floor area:	84.14 m²
DRRN:	

This document is a Predicted Energy Assessment for properties marketed when they are incomplete. It includes a predicted energy rating which might not represent the final energy rating of the property on completion. Once the property is completed, this rating will be updated and an official Energy Performance Certificate will be created for the property. This will include more detailed information about the energy performance of the completed property.

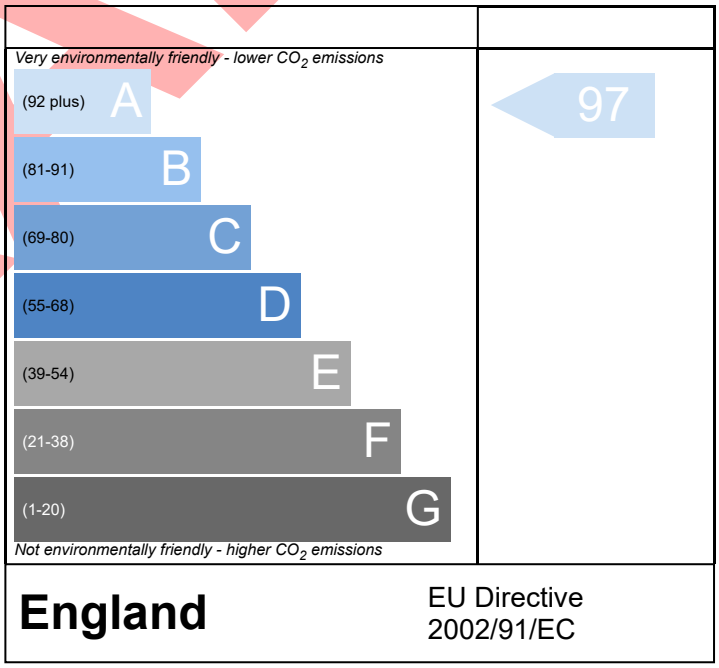
The energy performance has been assessed using the Government approved SAP 10 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO2) emissions.

Energy Efficiency Rating



The energy efficiency rating is a measure of the overall efficiency of a home. The higher the rating the more energy efficient the home is and the lower the fuel bills are likely to be.

Environmental Impact (CO_2) Rating



The environmental impact rating is a measure of a home's impact on the environment in terms of carbon dioxide (CO_2) emissions. The higher the rating the less impact it has on the environment.