

Summary for Input Data



Plot Reference	BW Penland P2			Issued on Date	26/11/2025					
Assessment Reference	Design Stage - PV		Plot Type Ref	Design Stage						
Plot Address	P2, Penland Farm, Penland Green, Haywards Heath, West Sussex, RH17 5HR			SAP Version	10.2					
SAP Rating	92 A	DER	1.32	TER	8.77					
Environmental	99 A	% DER < TER			84.95					
CO ₂ Emissions (t/year)	0.19	DFEE	39.50	TFEE	40.88					
Compliance Check	See BREL	% DFEE < TFEE			3.37					
% DPER < TPER	60.95	DPER	17.93	TPER	45.92					
Assessor Details	Mrs. Faye Mitchell			Assessor ID	V981-0001					
Client	Penland Farm Project, Simon Davies									
SUMMARY FOR INPUT DATA FOR: New Build (As Designed)										
Orientation	Southeast									
Property Tenure	ND									
Transaction Type	6									
Terrain Type	Suburban									
1.0 Property Type	House, Detached									
2.0 Number of Storeys	3									
3.0 Date Built	2025									
4.0 Sheltered Sides	2									
5.0 Sunlight/Shade	Average or unknown									
6.0 Thermal Mass Parameter	Precise calculation									
Thermal Mass	66.58 kJ/m ² K									
7.0 Electricity Tariff	Standard									
Smart electricity meter fitted	No									
Smart gas meter fitted	No									
7.0 Measurements	Heat Loss Perimeter		Internal Floor Area	Unheated Space Floor Area	Average Storey Height					
	Ground floor:	37.56 m	61.97 m ²	18.08 m ²	2.50 m					
	1st Storey:	39.28 m	74.75 m ²		2.76 m					
	2nd Storey:	40.11 m	65.92 m ²		2.45 m					
8.0 Living Area	16.29 m ²									
9.0 External Walls										
Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Other	0.15	0.00	282.95	249.18	0.00	None	33.77	Enter Gross Area
Sheltered Dorner Cheeks	Cavity Wall	Other	0.15	0.00	18.02	18.02	0.00	None	0.00	Enter Gross Area
	Timber Frame	Other	0.18	0.00	19.52	15.31	0.00	None	4.21	Enter Gross Area
9.2 Internal Walls									Kappa (kJ/m ² K)	Area (m ²)
Description	Construction									
Internal Wall 1	Plasterboard on timber frame								9.00	382.99
10.0 External Roofs										
Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Code	Shelter Factor	Openings	Calculation Type
External Roof Flat Main Roof	External Plane	Plasterboard, insulated at ceiling level	0.11	9.00	28.28	28.28	None	0.00	Enter Gross Area	0.00
External Roof Rafter	External Slope	Plasterboard, insulated slope	0.15	9.00	42.41	40.37	None	0.00	Enter Gross Area	2.04
External Roof Dormer Flat Roof	External Flat	Plasterboard, insulated flat roof	0.11	9.00	7.31	7.31	None	0.00	Enter Gross Area	0.00
External Roof Rafter Dining	External Slope	Plasterboard, insulated slope	0.15	9.00	7.53	6.31	None	0.00	Enter Gross Area	1.22
10.2 Internal Ceilings										
Description	Storey	Construction							Kappa	Area (m ²)
Internal Ceiling 1	Lowest occupied +1	Plasterboard ceiling, carpeted chipboard floor							9.00	21.20
Internal Ceiling 2		Plasterboard ceiling, carpeted chipboard floor							9.00	65.92

Summary for Input Data

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Slab on ground, screed over insulation	0.14	None	0.00	110.00	61.97
Heatloss Floor Over Garage	Exposed Floor - Solid	+1	Other	0.16	None	0.00	0.00	20.31

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor	18.00	54.55
Internal Floor 2	+2	Plasterboard ceiling, carpeted chipboard floor	18.00	40.11

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Solid Door	Manufacturer	Solid Door				0.00			1.20
Window	Manufacturer	Window	Double glazed			0.70			1.20
Glazed Door	Manufacturer	Window	Double glazed			0.70			1.20
Velux	Manufacturer	Roof Window	Double glazed			0.40			1.20
Dormer Window	Manufacturer	Window	Double glazed			0.40			1.20
Half Glazed Door	Manufacturer	Half Glazed Door	Double glazed			0.70			1.20
Roof Light	Manufacturer	Roof Light	Double glazed			0.40			1.20

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Solid Door	External Wall 1	South East	1.98	
W1	Window	External Wall 1	South East	1.34	
W2	Window	External Wall 1	South East	4.10	
W3	Window	External Wall 1	South East	2.50	
W4	Window	External Wall 1	South East	2.05	
W5	Window	External Wall 1	South East	2.63	
V1-4	Velux	External Roof Rafter	South East	2.04	35
W6	Window	External Wall 1	North West	1.08	
W7	Glazed Door	External Wall 1	North West	9.94	
W8	Window	External Wall 1	North West	1.08	
RL 1-2	Roof Light	External Roof Rafter Dining	North West	1.22	35
W9	Window	External Wall 1	North West	1.84	
W10	Window	External Wall 1	North West	1.12	
W11	Window	External Wall 1	North West	1.11	
W12-13	Dormer Window	Dormer Cheeks	North West	4.21	
W14	Window	External Wall 1	North East	0.70	
GD 1	Half Glazed Door	External Wall 1	North East	2.30	

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)	Non Gov Approved Schemes	24.40	0.01	610106	Yes
E3 Sill	Non Gov Approved Schemes	22.49	0.02	610109	Yes
E4 Jamb	Non Gov Approved Schemes	47.58	0.01	610108	Yes
E5 Ground floor (normal)	Non Gov Approved Schemes	37.56	0.09	610076	Yes
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	39.28	0.01	FALC4	Yes
E16 Corner (normal)	Non Gov Approved Schemes	32.00	0.04	610110	No
R1 Head of roof window	Non Gov Approved Schemes	2.24	0.11	610438	Yes
R2 Sill of roof window	Non Gov Approved Schemes	2.24	0.12	610437	Yes
R3 Jamb of roof window	Non Gov Approved Schemes	7.28	0.88	610439	Yes
R11 Upstands or kerbs of rooflights	Table K1 - Default	6.24	0.24	0.24	Yes

Y-value

0.03

W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present

No

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys

0

Number of open flues

0

Number of chimneys/flues attached to closed fire

0

Number of flues attached to solid fuel boiler

0

Number of flues attached to other heater

0

Number of blocked chimneys

0

Number of intermittent extract fans

0

Number of passive vents

0

Summary for Input Data

Number of flueless gas fires	0											
21.0 Fixed Cooling System	No											
22.0 Pressure Testing	Yes											
Designed AP ₅₀	4.90	m ³ /(h.m ²) @ 50 Pa										
Test Method	Blower Door											
22.0 Lighting												
No Fixed Lighting	<table border="1"> <tr> <td>No</td> </tr> <tr> <td>Name</td> <td>Efficacy</td> <td>Power</td> <td>Capacity</td> <td>Count</td> </tr> <tr> <td>Lighting 1</td> <td>80.00</td> <td>6.00</td> <td>480.00</td> <td>24</td> </tr> </table>	No	Name	Efficacy	Power	Capacity	Count	Lighting 1	80.00	6.00	480.00	24
No												
Name	Efficacy	Power	Capacity	Count								
Lighting 1	80.00	6.00	480.00	24								
24.0 Main Heating 1	Database											
Description	ASHP											
Percentage of Heat	100.00	%										
Database Ref. No.	106392											
Fuel Type	Electricity											
In Winter	307.82											
In Summer	282.02											
Model Name	Ecodan 8.5kW											
Manufacturer	Mitsubishi Electric Europe B.V.											
System Type	Heat Pump											
Controls SAP Code	2207											
Controls description	Time and temperature zone control by arrangement											
Is MHS Pumped	Pump in unheated space											
Heating Pump Age	2013 or later											
Heat Emitter	Underfloor											
Underfloor Heating	Yes - Pipes in thin screed											
Flow Temperature	Enter value											
Flow Temperature Value	45.00											
25.0 Main Heating 2	None											
26.0 Heat Networks	None											
27.0 Secondary Heating	None											
28.0 Water Heating												
Water Heating	Main Heating 1											
SAP Code	901											
Flue Gas Heat Recovery System	No											
Waste Water Heat Recovery Instantaneous System 1	No											
Waste Water Heat Recovery Instantaneous System 2	No											
Waste Water Heat Recovery Storage System	No											
Solar Panel	No											
Water use <= 125 litres/person/day	Yes											
Cold Water Source	From mains											
Bath Count	1											
Immersion Only Heating Hot Water	No											
28.1 Showers												
Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To							
SHOWER 1	Combi boiler or unvented hot water system	7.00		No								
SHOWER 2	Combi boiler or unvented hot water system	7.00		No								
SHOWER 3	Combi boiler or unvented hot water system	7.00		No								
SHOWER 4	Combi boiler or unvented hot water system	7.00		No								

Summary for Input Data

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder
Cylinder Stat	Yes
Cylinder In Heated Space	Yes
Independent Time Control	Yes
Insulation Type	Measured Loss
Cylinder Volume	200.00
Loss	1.97
Pipes insulation	Fully insulated primary pipework

31.0 Thermal Store	None
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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
3.00	South East	30°	None Or Little		No	1.00		

34.0 Small-scale Hydro	None										
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement	
			SAP rating	Environmental Impact
Solar water heating			A 92	A 99
Photovoltaic			0	0
Wind turbine			0	0