

Summary for Input Data

Plot Reference	BW Penland P1		Issued on Date	26/11/2025
Assessment Reference	Design Stage -PV	Plot Type Ref	Design Stage	
Plot Address	P1, Penland Farm, Penland Green, Haywards Heath , West Sussex, RH17 5HR		SAP Version	10.2

SAP Rating	92 A	DER	1.32	TER	8.79
Environmental	99 A	% DER < TER			84.98
CO ₂ Emissions (t/year)	0.19	DFEE	39.84	TFEE	41.17
Compliance Check	See BREL	% DFEE < TFEE			3.23
% DPER < TPER	60.98	DPER	17.95	TPER	46.00

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	East	
Property Tenture	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	1	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	66.58	kJ/m²

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
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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	Cavity Wall	Other	0.15	0.00	18.02	18.02	0.00	None	0.00	Enter Gross Area
	Dormer Cheeks	Timber Frame	Other	0.18	0.00	19.52	15.31	0.00	None	4.21	Enter Gross Area

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	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	Calculation Type	Openings
	External Roof Flat Main	External Plane Roof	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 Roof	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 Roof	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 Roof	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	Plasterboard ceiling, carpeted chipboard floor	9.00	21.20
	Internal Ceiling 2	+1	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		0.70	1.20
Glazed Door	Manufacturer	Window	Double glazed			0.70		0.70	1.20
Velux	Manufacturer	Roof Window	Double glazed			0.40		0.70	1.20
Dormer Window	Manufacturer	Window	Double glazed			0.40		0.70	1.20
Half Glazed Door	Manufacturer	Half Glazed Door	Double glazed			0.70		0.70	1.20
Roof Light	Manufacturer	Roof Light	Double glazed			0.40		0.70	1.20

13.0 Openings

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

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

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

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys

Number of open flues

Number of chimneys/flues attached to closed fire

Number of flues attached to solid fuel boiler

Number of flues attached to other heater

Number of blocked chimneys

Number of intermittent extract fans

Number of passive vents

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	m³/(h.m²) @ 50 Pa			
Test Method	Blower Door				
22.0 Lighting	No				
No Fixed Lighting	No				
	Name Lighting 1	Efficacy 80.00	Power 6.00	Capacity 480.00	Count 24
24.0 Main Heating 1	Database				
Description	ASHP				
Percentage of Heat	100.00 %				
Database Ref. No.	106392				
Fuel Type	Electricity				
In Winter	307.83				
In Summer	282.03				
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	Main Heating 1				
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	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	200.00	L
Loss	1.97	kWh/day
Pipes insulation	Fully insulated primary pipework	

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
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
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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