Covering Letter 23718 – 116 Amyand Park Road



Wednesday, 07 August 2024

RE: Update to Energy Statement dated 4th November 2022

To whom it may concern,

We, at JosTec, have been tasked with producing SAP calculations to demonstrate compliance with Part L of the Building Regulations 2021. These calculations are also required to meet a 35% reduction in CO² emissions following policy LP22.

The energy statement dated 4th November 2022 has been calculated using solar PV to meet the Be Green aspect of the energy hierarchy. After careful consideration, it has been deemed more appropriate to incorporate air-source heat pumps for the dwellings.

This letter informs you of this change and reassures you that the CO² reduction has been met. Currently, the dwelling is achieving a higher reduction of 62.28% over the target emission Rate.

I have attached the updated SAP calculations along with a block compliance report, which gives you the average for both semi-detached houses.

Should any questions be raised by the contents of this letter, I urge you to contact the Energy Team at JosTec, who will be able to give you any additional information you require and answer any questions you may have.

Yours sincerely,

Jon Stone

Energy Team Manager JosTec

Block Compliance



Block Reference	23718 - Amyand Park Road	Issued on Date 07/08/2024
Block Name		
Calculation Type	New Build (As Designed)	
Assessor Details	Mr. Jonathon Stone	Assessor ID Y315-0001
Client	The Keen Partnership, Chris Keen, -, -, -	

Block Compliance Report - DER				
Block Reference: 23718 - Amyand Park Road	Block Name:			
Property-Assessment Reference	Floor area (m ²)	DER (kgCO ₂ /m ²)	TER (kgCO ₂ /m²)	% DER/TER
23718 - 116A - AS DESIGNED	223.58	3.30	8.76	62.33 %
23718 - 116B - AS DESIGNED	223.58	3.26	8.63	62.22 %
Totals:	447.16	6.56	17.39	
Average DER = 3.28 kgCO ₂ /m ²	% DER/TER		PASS	
Average TER = 8.70 kgCO ₂ /m ²	62.28 %		rass	

Block Compliance Report - DFEE				
Block Reference: 23718 - Amyand Park Road	Block Nam	e:		
Property-Assessment Reference	Floor area (m ²)	DFEE (kWh/m ² /yr)	TFEE (kWh/m ² /yr)	% DFEE/TFEE
23718 - 116A - AS DESIGNED	223.58	34.72	37.87	8.32 %
23718 - 116B - AS DESIGNED	223.58	34.10	37.31	8.61 %
Totals:	447.16	68.82	75.18	
Average DFEE = 34.41 kgCO ₂ /m ²	% DFEE/TFEE		PASS	
Average TFEE = 37.59 kgCO ₂ /m ²	8.46 %		1 700	

Block Compliance Report - DPER				
Block Reference: 23718 - Amyand Park Road	Block Name:			
Property-Assessment Reference	Floor area (m²)	DPER (kWh/m²/yr)	TPER (kWh/m²/yr)	% DPER/TPER
23718 - 116A - AS DESIGNED	223.58	34.29	45.94	25.36 %
23718 - 116B - AS DESIGNED	223.58	33.91	45.24	25.04 %
Totals:	447.16	68.20	91.18	
Average DPER = 34.10 kgCO ₂ /m ²	% DPER/TPER		PASS	
Average TPER = 45.59 kgCO ₂ /m ²	25.20 %		FASS	

SAP 10 Online 2.14.29 Page 1 of 1



Property Reference	2	23718 - 116 <i>A</i>	A							Issued	on Date	07/0	8/2024	1
Assessment Reference	A	AS DESIGNE	ΞD				Prop	о Туре	Ref	NEW BL	IILD			
Property														
SAP Rating				83 B	DE	≣R		3.30)	1	ER	8	.76	
Environmental				96 A	%	DER	< TER						2.33	
CO ₂ Emissions (t/year)				0.66	DF	EE		34.7	72		FEE	3	7.87	
Compliance Check				See BREL	%	DFE	E < TFEI						.32	
% DPER < TPER				25.36	DF	PER		34.2	29	1	PER	4	5.94	
Assessor Details	Mr. Jo	onathon Stor	ne							A	Assesso	r ID Y	′315-0	001
Client														
SUMMARY FOR INPL	JT DATA	FOR: Ne	w Build (A	As Designed)										
Orientation				Northwest										
Property Tenture				ND										
Transaction Type				6										
Terrain Type				Suburban										
1.0 Property Type				House, Semi-Deta	ched									
Which Floor				0										
2.0 Number of Storeys				3										
3.0 Date Built				2023										
3.0 Property Age Band				L										
4.0 Sheltered Sides				2										
5.0 Sunlight/Shade				Average or unknow	vn									
6.0 Thermal Mass Parame	eter			Precise calculation										
Thermal Mass				N/A						k	J/m²K			
7.0 Electricity Tariff				Standard										
Smart electricity meter	fitted			No										
Smart gas meter fitted	iittea			No										
				INO										
7.0 Measurements				Basem Ground fl 1st Sto 2nd Sto 3rd Sto 4th Sto 5th Sto 7th Sto	ent: cor: rey: rey: rey: rey: rey:	Heat	0.00 n 27.70 r 26.55 r 25.45 r 0.00 n 0.00 n 0.00 n 0.00 n	n m m m n n	r In	ternal Flo 0.00 n 80.57 r 83.79 r 59.22 r 0.00 n 0.00 n 0.00 n	n² m² m² m² n² n² n²	Averag	0.00 2.56 2.85 2.78 0.00 0.00 0.00 0.00	m m m m m m
8.0 Living Area				23.57						m	2			
9.0 External Walls Description	Туре	Const	ruction			Value	Kappa		Nett Area		Shelter	Openin	gs Are	a Calculatio
EXTERNAL CAVITY	Cavity Wall			aster, lightweight aggrega y outside structure		/ /m²K) 0.20	(kJ/m²K) 140.00	Area(m²) 150.28	(m²) 123.15	Res 0.00	None	27.13	Ente	Type er Gross Are
Ashlar Wall DORMER CHEEKS	Timber Frai Timber Frai	me Timbe	r framed wall (one layer of plasterboard one layer of plasterboard	0).12).17	9.00 9.00	38.85 11.50	38.85 11.50	0.00 0.00	None None	0.00 0.00		er Gross Are er Gross Are
9.1 Party Walls Description	Туре)	Construc	etion						Карра	Area	Shelter	s	helter
Party Wall 1		d Cavity with Sealing	Dense pla	aster both sides, der	se bloo	cks, c	avity or	cavity	(W/m²K) 0.00	(kJ/m²K) 180.00	(m²) 88.41	Res 0.00		None
9.2 Internal Walls Description Internal Wall 1	3	<u> </u>	Construct	ion ck, plasterboard on c	ahe							(kJ	nppa /m²K) 5.00	Area (m
Internal Wall 2 10.0 External Roofs				rd on timber frame	ans								.00	244.10

SAP 10 Online 2.14.29 Page 1 of 4



3 3	<i>y</i> . •									CH	lery	У	
Description	Туре	Construc	tion		U-Value (W/m²K)(I	Kappa G kJ/m²K)Ar	ross ea(m²)	Nett Area	Shelter Code	Shelter Factor	Calcula Typ		Openings
Flat Roof	External Flat	Plasterbo	ard, ii	nsulated flat roof	0.10	9.00 1	7.74	(m²) 17.74	None	0.00	Enter G		0.00
Insulation in Rafters	Roof External Slope	Plasterbo	ard, ii	nsulated slope	0.16	9.00 5	1.55	49.66	None	0.00	Area Enter G	ross	1.89
Ashlar Ceiling	Roof External Plane Roof	Plasterbo	ard, ii	nsulated at ceiling level	0.12	9.00 2	1.41	21.41	None	0.00	Area Enter G Area	ross	0.00
10.2 Internal Ceilings													
Description Internal Ceiling 1 Internal Ceiling 2		torey owest occu 1	pied	Construction Plasterboard ceiling, can Plasterboard ceiling, can								Area 80. 59.	
11.0 Heat Loss Floors Description	Туре	Storey Index	1	Construction		U-Va		She	Iter Code			Cappa	
Ground Floor Exposed Floor	Ground Floor - Solid Exposed Floor - Timber	Lowest occup +1	oied	Suspended concrete floor, carp Timber exposed floor, insulation		(W/m 0.1 0.1	0 ′		None None		0.00	J/m²K 75.00 20.00	77.35 3.22
11.2 Internal Floors													
Description		Storey Index	Con	struction							Kap _l (kJ/m		Area (m²)
Internal Floor 1 Internal Floor 2				terboard ceiling, carpeted terboard ceiling, carpeted							9.0 9.0	o ´	59.22 80.57
12.0 Opening Types		_		. .		.		_		_	_		
Description	Data Source	Туре		Glazing		Glazing Gap	Fillir Typ	e	i-value	Frame Type	Fran Fact	or	U Value (W/m²K)
WINDOWS	BFRC, BSI or CERTASS data	Window		Double Low-E Soft (0.05		Non	ie	0.63	Wood	1.0	0	1.20
Door ROOFLIGHT	Manufacturer Manufacturer	Solid Doo Roof Wind		Double Low-E Soft (0.05		Non Non		0.00 0.63	Wood Wood	0.7 0.7		1.20 1.20
13.0 Openings													
Name FRONT	Opening Type WINDOWS	pe		Location EXTERNAL CAVITY		Orient North			Area (3.50			Pito 0	h
SIDE	WINDOWS			EXTERNAL CAVITY		North	East		1.25	5		0	
REAR BAY WINDOW	WINDOWS WINDOWS			EXTERNAL CAVITY EXTERNAL CAVITY		South No			17.8 2.27			0	
BAY WINDOW FRONT ROOFLIGHT	WINDOWS ROOFLIGHT	г		EXTERNAL CAVITY Insulation in Rafters		We North			2.27 0.85			0 40	ı
SIDE ROOFLIGHHT	ROOFLIGHT			Insulation in Rafters		North			1.04			40	
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 E2 Other lintels (includin	g other steel lintel	s)		rce Type pendently assessed	Length 16.72	Psi 0.01	Adjus 0.0		ference: f-150-e2- nc		endent-		Imported No
E3 Sill E4 Jamb				pendently assessed pendently assessed	15.70 41.34	0.02 0.02	0.02		f-150-e3- f-150-e4-			r	No No
E5 Ground floor (normal			Inde	pendently assessed	27.70	0.17	0.1	7 mf	f-150-e5-			loo	No
E20 Exposed floor (norm E21 Exposed floor (inver				e K1 - Default e K1 - Default	2.80 3.95	0.32 0.32	0.32 0.32						No No
E6 Intermediate floor wit E24 Eaves (insulation at		erted)		pendently assessed e K1 - Default	45.55 3.77	0.00 0.15	0.00 0.1		f-150-e6-	01-intern	nediate-	flo	No No
E11 Eaves (insulation at		ortou)	Inde	pendently assessed	22.44	0.02	0.0	2 mf	f-150-e11	-01-eave	es-insula	itio	No
E14 Flat roof E16 Corner (normal)				e K1 - Default pendently assessed	4.81 8.24	0.16 0.05	0.10 0.0		f-150-e16	6-01-corn	ner-norm	al	No No
E17 Corner (inverted – in external area)	nternal area great	er than	Inde	pendently assessed	13.38	-0.09	-0.0		f-150-e17				No
E18 Party wall between P1 Party wall - Ground fl				pendently assessed pendently assessed	13.24 10.40	0.04 0.17	0.0 ₄ 0.1	7 mf	f-150-e18 f-150-mp ock-			etw	No No
P2 Party wall - Intermedi P7 Party Wall - Exposed P4 Party wall - Roof (ins	floor (normal)		Tabl	e K1 - Default e K1 - Default pendently assessed	19.88 1.15 4.80	0.00 0.48 0.19	0.00 0.48 0.19	0 8 9 mf	f-150-mp	w-p4-01-	-separati	ng-	No No No
P5 Party wall - Roof (ins	ulation at rafter lev	vel)	Inde	pendently assessed	10.18	0.05	0.0		f-150-mp	w-p5-01-	-separati	ng-	No
R1 Head of roof window				e K1 - Default	2.71	0.24	0.2						No
R2 Sill of roof window R3 Jamb of roof window				e K1 - Default e K1 - Default	2.71 5.36	0.24 0.24	0.24 0.24						No No
R4 Ridge (vaulted ceiling			Tabl	e K1 - Default	4.80	0.12	0.12 0.12	2					No
R6 Flat ceiling R7 Flat ceiling (inverted)			Tabl	e K1 - Default e K1 - Default	7.79 12.23	0.12 0.12	0.12	2					No No
R9 Roof to wall (flat ceili	ng)		Tabl	e K1 - Default	13.04	0.32	0.3	2					No

SAP 10 Online 2.14.29 Page 2 of 4



Y-value	0.06		W/m²K	
18.0 Pressure Testing	Yes		 1	
Designed APso	5.00		m³/(h.m²) @ 50 Pa	
	Yes] III /(II.III) @ 50 Fa]	
Property Tested? Test Method	Blower Door] 1	
]3//h2\ @ 50 D-	
As Built APso	15.00		m³/(h.m²) @ 50 Pa	
19.0 Mechanical Ventilation				
Mechanical Ventilation Mechanical Ventilation System Present	No		1	
<u> </u>	[NO]	
20.0 Fans, Open Fireplaces, Flues			1	
21.0 Fixed Cooling System	No]	
22.0 Lighting			1	
No Fixed Lighting	No Efficacy	Dower	Consoity	Count
	Name Efficacy Low energy Lighting 80.00	Power 10.00	Capacity 800.00	20
24.0 Main Heating 1	Database]	
Percentage of Heat	100.00] %	
Database Ref. No.	105672		1	
Fuel Type	Electricity]	
SAP Code	0]	
In Winter	270.60]	
In Summer	178.14]	
Model Name	WH-MDC12H6E5]	
Manufacturer	Panasonic HVAC UK Ltd]	
] 1	
System Type Controls SAP Code	Heat Pump] 1	
	2207] 1	
PCDF Controls	0] 1	
Delayed Start Stat	No]	
HETAS approved System	No]	
Oil Pump Inside	No]	
FI Case	0.00			
FI Water	0.00			
Flue Type	None or Unknown			
Smoke Control Area	Unknown			
Fan Assisted Flue	No			
Is MHS Pumped	Pump in heated space			
Heating Pump Age	2013 or later			
Heat Emitter	Radiators			
Underfloor Heating	Yes - Pipes in thin screed			
Flow Temperature	Enter value			
Flow Temperature Value	55.00]	
Boiler Interlock	No]	
Electric CPSU Temperature	0.00]	
25.0 Main Heating 2	None]	
26.0 Heat Networks	None]	
	ing Use Efficiency Percentage Of Heat	Heat Ele	ctrical Fuel Factor	Efficiency ty

SAP 10 Online 2.14.29 Page 3 of 4



Heat source 1 None Heat source 2 None Heat source 3 None Heat source 4 None Heat source 5 None	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00
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				
Summer Immersion	No				
Cold Water Source	From mains				
Bath Count	1				
Baths connected to WWHRS	0				
Supplementary Immersion	No				
Immersion Only Heating Hot Water	No				
28.1 Showers					
28.1 Showers Description Shower Typ	e or unvented hot wa		Flow Rate I [I/min] 11.00	Rated Power [kW]	Connected Connected To
28.1 Showers Description Shower Typ			[l/min]		
28.1 Showers Description Shower Typ Shower Combi boiler		ater system	[l/min]		
28.1 Showers Description Shower Typ Shower Combi boiler 28.3 Waste Water Heat Recovery System	or unvented hot wa	ater system	[l/min]		
28.1 Showers Description Shower Typ Shower Combi boiler 28.3 Waste Water Heat Recovery System 29.0 Hot Water Cylinder	or unvented hot wa	ater system	[l/min]		
28.1 Showers Description Shower Typ Shower Combi boiler 28.3 Waste Water Heat Recovery System 29.0 Hot Water Cylinder Cylinder Stat	Hot Water Cylind Yes	ater system	[l/min]		
28.1 Showers Description Shower Typ Shower Combi boiler 28.3 Waste Water Heat Recovery System 29.0 Hot Water Cylinder Cylinder Stat Cylinder In Heated Space	or unvented hot water Cylind Yes Yes	ater system	[l/min]		
28.1 Showers Description Shower Typ Shower Combi boiler 28.3 Waste Water Heat Recovery System 29.0 Hot Water Cylinder Cylinder Stat Cylinder In Heated Space Independent Time Control	Hot Water Cylind Yes Yes Yes	ater system	[l/min]		
28.1 Showers Description Shower Typ Shower Combi boiler 28.3 Waste Water Heat Recovery System 29.0 Hot Water Cylinder Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type	Hot Water Cylind Yes Yes Measured Loss	ater system	[l/min]		
28.1 Showers Description Shower Typ Shower Combi boiler 28.3 Waste Water Heat Recovery System 29.0 Hot Water Cylinder Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type Insulation Thickness Type	Hot Water Cylind Yes Yes Yes Measured Loss 50 mm	ater system	[l/min]		
28.1 Showers Description Shower Typ Shower Combi boiler 28.3 Waste Water Heat Recovery System 29.0 Hot Water Cylinder Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type Insulation Thickness Type Insulation Thickness	Hot Water Cylind Yes Yes Yes Measured Loss 50 mm	ater system	[l/min]		No
28.1 Showers Description Shower Typ Shower Combi boiler 28.3 Waste Water Heat Recovery System 29.0 Hot Water Cylinder Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type Insulation Thickness Type Insulation Thickness Cylinder Volume	Hot Water Cylind Yes Yes Yes Measured Loss 50 mm 50 270.00	er	[l/min] 11.00		No
28.1 Showers Description Shower Typ Shower Combi boiler 28.3 Waste Water Heat Recovery System 29.0 Hot Water Cylinder Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type Insulation Thickness Type Insulation Thickness Cylinder Volume Loss	Hot Water Cylind Yes Yes Measured Loss 50 mm 50 270.00 2.50	er	[l/min] 11.00		No
28.1 Showers Description Shower Typ Shower Combi boiler 28.3 Waste Water Heat Recovery System 29.0 Hot Water Cylinder Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type Insulation Thickness Type Insulation Thickness Cylinder Volume Loss Pipes insulation In Airing Cupboard	Hot Water Cylind Yes Yes Measured Loss 50 mm 50 270.00 2.50 Fully insulated pr	er	[l/min] 11.00		No
28.1 Showers Description Shower Typ Shower Combi boiler 28.3 Waste Water Heat Recovery System 29.0 Hot Water Cylinder Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type Insulation Thickness Type Insulation Thickness Cylinder Volume Loss Pipes insulation	Hot Water Cylind Yes Yes Measured Loss 50 mm 50 270.00 2.50 Fully insulated pr	er imary pipework	[l/min] 11.00		No
28.1 Showers Description Shower Typ Shower Combi boiler 28.3 Waste Water Heat Recovery System 29.0 Hot Water Cylinder Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type Insulation Thickness Type Insulation Thickness Cylinder Volume Loss Pipes insulation In Airing Cupboard 31.0 Thermal Store Thermal Store Pipework	Hot Water Cylind Yes Yes Yes Measured Loss 50 mm 50 270.00 2.50 Fully insulated pr No None within a single ca	er imary pipework	[l/min] 11.00		No
28.1 Showers Description Shower Typ Shower Combi boiler 28.3 Waste Water Heat Recovery System 29.0 Hot Water Cylinder Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type Insulation Thickness Type Insulation Thickness Cylinder Volume Loss Pipes insulation In Airing Cupboard 31.0 Thermal Store Thermal Store Pipework	Hot Water Cylind Yes Yes Yes Measured Loss 50 mm 50 270.00 2.50 Fully insulated pr No None within a single ca	er imary pipework	[l/min] 11.00		No
28.1 Showers Description Shower Combi boiler 28.3 Waste Water Heat Recovery System 29.0 Hot Water Cylinder Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type Insulation Thickness Type Insulation Thickness Cylinder Volume Loss Pipes insulation In Airing Cupboard 31.0 Thermal Store Thermal Store Pipework 34.0 Small-scale Hydro Electricity Generated	Hot Water Cylind Yes Yes Yes Measured Loss 50 mm 50 270.00 2.50 Fully insulated pr No None within a single ca	er imary pipework	[l/min] 11.00		No L kWh/day
28.1 Showers Description Shower Typ Shower Combi boiler 28.3 Waste Water Heat Recovery System 29.0 Hot Water Cylinder Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type Insulation Thickness Type Insulation Thickness Cylinder Volume Loss Pipes insulation In Airing Cupboard 31.0 Thermal Store Thermal Store Pipework 34.0 Small-scale Hydro Electricity Generated Apportioned	Hot Water Cylind Yes Yes Yes Measured Loss 50 mm 50 270.00 2.50 Fully insulated pr No None within a single ca None 0.00	er imary pipework	[l/min] 11.00		No
28.1 Showers Description Shower Typ Shower 28.3 Waste Water Heat Recovery System 29.0 Hot Water Cylinder Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type Insulation Thickness Type Insulation Thickness Cylinder Volume Loss Pipes insulation In Airing Cupboard 31.0 Thermal Store Thermal Store Pipework 34.0 Small-scale Hydro Electricity Generated	Hot Water Cylind Yes Yes Yes Measured Loss 50 mm 50 270.00 2.50 Fully insulated pr No None within a single ca	er imary pipework	[l/min] 11.00		No L kWh/day

Recommendations

Lower cost measures

None
Further measures to achieve even higher standards
None

SAP 10 Online 2.14.29 Page 4 of 4



Property Reference	23718	3 - 116B						Issued	on Date	07/0	8/2024	
Assessment Reference	AS DI	ESIGNED			Prop	Туре	Ref	NEW BU	IILD			
Property												
SAP Rating			83 B	DER		3.26	 }		ER	8	63	
Environmental			96 A	% DER	< TER	0.20					2.22	
CO ₂ Emissions (t/year)			0.65	DFEE		34.1	0	1 1	FEE		7.31	
Compliance Check			See BREL		E < TFEE						61	
% DPER < TPER			25.04	DPER		33.9)1	1	PER		5.24	
Assessor Details	Mr. Jonath	on Stone							Assesso	r ID Y	315-000	1
Client												
SUMMARY FOR INPUT	DATA FO	R: New Build (A	As Designed)									
Orientation			Northwest									
Property Tenture			ND									
Transaction Type			6									
Terrain Type			Suburban									
1.0 Property Type			House, Semi-Detach	ed								
Which Floor			0									
2.0 Number of Storeys			3									
3.0 Date Built			2023									
3.0 Property Age Band			L									
4.0 Sheltered Sides			2									
5.0 Sunlight/Shade			Average or unknown									
6.0 Thermal Mass Paramete	er		Precise calculation									
Thermal Mass			N/A					k	J/m²K			
7.0 Electricity Tariff			Standard									
Smart electricity meter fitt	ed		No									
Smart gas meter fitted			No									
7.0 Measurements												
			Basemer Ground floo 1st Store 2nd Store 3rd Store 4th Store 5th Store 7th Store	at: or: y: y: y: y: y: y:	25.45 m 0.00 m 27.70 m 26.55 m 25.45 m 0.00 m 0.00 m 0.00 m 0.00 m	1 1	r In	ternal Floo 0.00 m 80.57 r 83.79 r 59.22 r 0.00 m 0.00 m 0.00 m 0.00 m	n² m² m² m² n² n² n²	Averag	0.00 m 2.56 m 2.85 m 2.78 m 0.00 m 0.00 m 0.00 m 0.00 m 0.00 m	Height
8.0 Living Area			23.57					m	2			
9.0 External Walls Description T	ype	Construction		U-Value	Kappa (kJ/m²K) A		Nett Area	Shelter Res	Shelter	Opening	js Area C	
EXTERNAL CAVITY C	avity Wall	Cavity wall; dense pla	aster, lightweight aggregate	(W/m²K) 0.20		150.28	(m²) 123.15	0.00	None	27.13	Enter G	Type Gross Area
	imber Frame imber Frame	Timber framed wall (one layer of plasterboard) one layer of plasterboard)	0.12 0.17	9.00 9.00	38.85 11.50	38.85 11.50	0.00 0.00	None None	0.00 0.00		Gross Area Gross Area
9.1 Party Walls Description	Туре	Construc	tion					Карра	Area	Shelter	She	lter
Party Wall 1	Filled Cav Edge Sea		aster both sides, dense	blocks, o	cavity or c	avity	(W/m²K) 0.00	(kJ/m²K) 180.00	(m²) 88.41	Res 0.00	No	ne
9.2 Internal Walls Description Internal Wall 1		Construct	i on k, plasterboard on da	os						(kJ/	m²K)	srea (m² 513.63
Internal Wall 2 10.0 External Roofs			rd on timber frame									244.10

SAP 10 Online 2.14.29 Page 1 of 4



	<i>y</i>									<u> </u>	ICIÓ	ЭУ	
Description	Туре	Construc	ction		U-Value (W/m²K)(I		Gross rea(m²)	Nett Area (m²)	Shelter Code	Shelte Factor		lation pe	Openings
Flat Roof	External Flat	Plasterbo	ard, ir	sulated flat roof	0.10	9.00	17.74	17.74	None	0.00	Enter		0.00
Insulation in Rafters	Roof External Slope	Plasterbo	ard, ir	sulated slope	0.16	9.00	51.55	49.66	None	0.00	Ar Enter	Gross	1.89
Ashlar Ceiling	Roof External Plane Roof	Plasterbo	ard, ir	sulated at ceiling level	0.12	9.00	21.41	21.41	None	0.00	Enter	ea Gross ea	0.00
10.2 Internal Ceilings													
Description Internal Ceiling 1 Internal Ceiling 2	L	Storey owest occu	ıpied	Construction Plasterboard ceiling, ca Plasterboard ceiling, ca								80.	a (m²) .57 .22
11.0 Heat Loss Floors Description	Туре	Storey Index	x	Construction		U-V		She	Iter Code		Shelter	Kappa	
Ground Floor Exposed Floor	Ground Floor - Solid Exposed Floor - Timber	Lowest occup	pied	Suspended concrete floor, car Timber exposed floor, insulation			10 ´		None None	!	Factor 0.00 0.00	(kJ/m²K 75.00 20.00	77.35
11.2 Internal Floors													
Description		Storey Index	Con	struction								ppa / m²K)	Area (m²
Internal Floor 1 Internal Floor 2				erboard ceiling, carpeted erboard ceiling, carpeted							` 9.	00 00	59.22 80.57
12.0 Opening Types													
Description	Data Source	Туре		Glazing		Glazing Gap	Fillin Typ		i-value	Frame Type		me ctor	U Value (W/m²K)
WINDOWS	BFRC, BSI or CERTASS data	Window		Double Low-E Soft	0.05		Non		0.63	Wood	1.	00	1.20
Door ROOFLIGHT	Manufacturer Manufacturer	Solid Doo Roof Wind		Double Low-E Soft	0.05		Non Non		0.00 0.63	Wood Wood		70 70	1.20 1.20
13.0 Openings													
Name FRONT	Opening Ty WINDOWS	pe		Location EXTERNAL CAVITY			tation West		Area (3.50			Pito 0	
SIDE	WINDOWS			EXTERNAL CAVITY			West		1.2			0	
REAR BAY WINDOW	WINDOWS WINDOWS			EXTERNAL CAVITY EXTERNAL CAVITY			n East est		17.8 2.2			0	
BAY WINDOW	WINDOWS			EXTERNAL CAVITY			esi orth		2.2			0	
FRONT ROOFLIGHT SIDE ROOFLIGHHT	ROOFLIGHT ROOFLIGHT			Insulation in Rafters Insulation in Rafters			West West		0.85 1.04			40 40	
14.0 Conservatory			[None									
15.0 Draught Proofing			[100					%				
16.0 Draught Lobby			[No									
17.0 Thormal Bridging				Calculate Bridges									
17.0 Thermal Bridging 17.1 List of Bridges			L	Calculate Bridges									
Bridge Type E2 Other lintels (includin	g other steel lintel	ls)		ce Type pendently assessed	Length 16.72	Psi 0.01	Adjus 0.0		ference: f-150-e2-		oenden		Imported No
E3 Sill				pendently assessed	15.70	0.02	0.02	2 mf	f-150-e3-				No
E4 Jamb E5 Ground floor (normal)			pendently assessed pendently assessed	41.34 27.70	0.02 0.17	0.02 0.17		f-150-e4- f-150-e5-				No No
E20 Exposed floor (norm	nal)		Table	: K1 - Default	2.80	0.32	0.32	2	55 55-		. 2.501		No
E21 Exposed floor (inver E6 Intermediate floor wit				K1 - Default	3.95 45.55	0.32 0.00	0.32		f 150 o6	01 intor	modiate	, flo	No No
E24 Eaves (insulation at		erted)		pendently assessed e K1 - Default	3.77	0.00	0.15		f-150-e6-	o i-iiileii	neulate	:-110	No
E11 Eaves (insulation at		,		pendently assessed	22.44	0.02	0.02		f-150-e11	-01-eav	es-insu	latio	No
E14 Flat roof E16 Corner (normal)				e K1 - Default bendently assessed	4.81 8.24	0.16 0.05	0.16 0.05		f-150-e16	6-01-cori	ner-nor	mal	No No
E17 Corner (inverted – in external area)	nternal area great	er than		pendently assessed	13.38	-0.09	-0.0		f-150-e17				No
E18 Party wall between on P1 Party wall - Ground fl				pendently assessed pendently assessed	13.24 10.40	0.04 0.17	0.04 0.17	7 mf	f-150-e18 f-150-mp ock-				No No
P2 Party wall - Intermedi P7 Party Wall - Exposed		dwelling		e K1 - Default e K1 - Default	19.88 1.15	0.00 0.48	0.00 0.48)					No No
P4 Party wall - Roof (ins		evel)		pendently assessed	4.80	0.19	0.19		f-150-mp	w-p4-01	-separa	iting-	No
P5 Party wall - Roof (ins	ulation at rafter le	vel)	Inde	pendently assessed	10.18	0.05	0.05		f-150-mp	w-p5-01	-separa	iting-	No
R1 Head of roof window R2 Sill of roof window				e K1 - Default e K1 - Default	2.71 2.71	0.24 0.24	0.24 0.24						No No
				: K1 - Delault : K1 - Default	5.36	0.24	0.24						No
R3 Jamb of roof window							~ 4	`					No
R4 Ridge (vaulted ceiling				K1 - Default	4.80	0.12	0.12						
	g)		Table	e K1 - Default e K1 - Default e K1 - Default	4.80 7.79 12.23	0.12 0.12 0.12	0.12 0.12 0.12	2					No No

SAP 10 Online 2.14.29 Page 2 of 4



Y-value	0.06		W/m²K	
18.0 Pressure Testing	Yes		 1	
Designed APso	5.00		m³/(h.m²) @ 50 Pa	
	Yes] III /(II.III) @ 50 Fa]	
Property Tested? Test Method	Blower Door] 1	
]3//h2\ @ 50 D-	
As Built APso	15.00		m³/(h.m²) @ 50 Pa	
19.0 Mechanical Ventilation				
Mechanical Ventilation Mechanical Ventilation System Present	No		1	
<u> </u>	[NO]	
20.0 Fans, Open Fireplaces, Flues			1	
21.0 Fixed Cooling System	No]	
22.0 Lighting			1	
No Fixed Lighting	No Efficacy	Dower	Consoity	Count
	Name Efficacy Low energy Lighting 80.00	Power 10.00	Capacity 800.00	20
24.0 Main Heating 1	Database]	
Percentage of Heat	100.00] %	
Database Ref. No.	105672		1	
Fuel Type	Electricity]	
SAP Code	0]	
In Winter	270.60]	
In Summer	178.14]	
Model Name	WH-MDC12H6E5]	
Manufacturer	Panasonic HVAC UK Ltd]	
] 1	
System Type Controls SAP Code	Heat Pump] 1	
	2207] 1	
PCDF Controls	0] 1	
Delayed Start Stat	No]	
HETAS approved System	No]	
Oil Pump Inside	No]	
FI Case	0.00			
FI Water	0.00			
Flue Type	None or Unknown			
Smoke Control Area	Unknown			
Fan Assisted Flue	No			
Is MHS Pumped	Pump in heated space			
Heating Pump Age	2013 or later			
Heat Emitter	Radiators			
Underfloor Heating	Yes - Pipes in thin screed			
Flow Temperature	Enter value			
Flow Temperature Value	55.00]	
Boiler Interlock	No]	
Electric CPSU Temperature	0.00]	
25.0 Main Heating 2	None]	
26.0 Heat Networks	None]	
	ing Use Efficiency Percentage Of Heat	Heat Ele	ctrical Fuel Factor	Efficiency ty

SAP 10 Online 2.14.29 Page 3 of 4



Heat source 1 None Heat source 2 None Heat source 3 None Heat source 4 None Heat source 5 None	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00
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				
Summer Immersion	No				
Cold Water Source	From mains				
Bath Count	1				
Baths connected to WWHRS	0				
Supplementary Immersion	No				
Immersion Only Heating Hot Water	No				
Shower Type Shower Combi boiler 28.3 Waste Water Heat Recovery System	e or unvented hot wa		low Rate [I/min] 11.00	Rated Power [kW]	Connected Connected To No
29.0 Hot Water Cylinder	Hot Water Cylinde	er			
29.0 Hot Water Cylinder Cylinder Stat	Hot Water Cylinde	er			
29.0 Hot Water Cylinder Cylinder Stat Cylinder In Heated Space		ЭГ			
Cylinder Stat Cylinder In Heated Space	Yes	er			
Cylinder Stat	Yes Yes	er			
Cylinder Stat Cylinder In Heated Space Independent Time Control	Yes Yes Yes	Pr			
Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type	Yes Yes Yes Measured Loss	er			
Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type Insulation Thickness	Yes Yes Yes Measured Loss	er e			L kWh/day
Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type Insulation Thickness Cylinder Volume	Yes Yes Yes Measured Loss 50 270.00				\exists
Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type Insulation Thickness Cylinder Volume Loss	Yes Yes Yes Measured Loss 50 270.00 2.50				\exists
Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type Insulation Thickness Cylinder Volume Loss Pipes insulation In Airing Cupboard	Yes Yes Measured Loss 50 270.00 2.50 Fully insulated pri				\exists
Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type Insulation Thickness Cylinder Volume Loss Pipes insulation In Airing Cupboard	Yes Yes Yes Measured Loss 50 270.00 2.50 Fully insulated pri No	mary pipework			\exists
Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type Insulation Thickness Cylinder Volume Loss Pipes insulation In Airing Cupboard	Yes Yes Measured Loss 50 270.00 2.50 Fully insulated pri	mary pipework			\exists
Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type Insulation Thickness Cylinder Volume Loss Pipes insulation In Airing Cupboard	Yes Yes Yes Measured Loss 50 270.00 2.50 Fully insulated pri No	mary pipework			\exists
Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type Insulation Thickness Cylinder Volume Loss Pipes insulation In Airing Cupboard 31.0 Thermal Store Thermal Store Pipework	Yes Yes Yes Measured Loss 50 270.00 2.50 Fully insulated pri No None within a single car	mary pipework			\exists
Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type Insulation Thickness Cylinder Volume Loss Pipes insulation In Airing Cupboard 31.0 Thermal Store Thermal Store Pipework	Yes Yes Yes Measured Loss 50 270.00 2.50 Fully insulated pri No None within a single cas	mary pipework			\exists
Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type Insulation Thickness Cylinder Volume Loss Pipes insulation In Airing Cupboard 31.0 Thermal Store Thermal Store Pipework 34.0 Small-scale Hydro Electricity Generated	Yes Yes Yes Measured Loss 50 270.00 2.50 Fully insulated pri No None within a single cas	mary pipework			kWh/day
Cylinder Stat Cylinder In Heated Space Independent Time Control Insulation Type Insulation Thickness Cylinder Volume Loss Pipes insulation In Airing Cupboard 31.0 Thermal Store Thermal Store Pipework 34.0 Small-scale Hydro Electricity Generated Apportioned	Yes Yes Yes Measured Loss 50 270.00 2.50 Fully insulated pri No None within a single cas None 0.00	mary pipework			kWh/day

Recommendations

Lower cost measures
None
Further measures to achieve even higher standards
None

SAP 10 Online 2.14.29 Page 4 of 4