

SUMMARY FOR INPUT DATA

Calculation Type: New Build (As Designed)



Property and Energy
Services Ltd.

Property Reference	3567-3	Issued on Date	27/04/2020
Assessment Reference	3567-3	Prop Type Ref	
Property	Plot 3, 209-219 Henley Road, Reading, RG4 6LJ		

SAP Rating	86 B	DER	14.05	TER	14.35
Environmental	87 B	% DER<TER	2.08		
CO ₂ Emissions (t/year)	1.65	DFEE	38.52	TFEE	47.09
General Requirements Compliance	Pass	% DFEE<TFEE	18.21		

Assessor Details	Mr. Ian Lloyd, Property and Energy Services Limited, Tel: 01367240212, ianl@propertyandenergy.co.uk	Assessor ID	H044-0001
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Client	
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Orientation	North
Property Tenure	Unknown
Transaction Type	New dwelling
Terrain Type	Suburban
1.0 Property Type	House, Semi-Detached
2.0 Number of Storeys	3
3.0 Date Built	2020
4.0 Sheltered Sides	2
5.0 Sunlight/Shade	Average or unknown

6.0 Measurements				
		Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	Ground Floor:	19.67 m	39.90 m ²	2.40 m
	1st Storey:	20.51 m	52.01 m ²	2.65 m
	2nd Storey:	20.73 m	48.77 m ²	2.35 m

7.0 Living Area	23.13	m ²
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8.0 Thermal Mass Parameter	Simple calculation - Medium	
Thermal Mass	250.00	kJ/m ² K

9.0 External Walls					
Description	Type	Construction	U-Value (W/m ² K)	Gross Area (m ²)	Nett Area (m ²)
Basement type wall	Solid Wall	Solid wall : dense plaster, 200 mm dense block, insulated externally	0.18	24.79	24.79
Brick cavity	Cavity Wall	Cavity wall : dense plaster, AAC block, filled cavity, any outside structure	0.17	95.03	70.79
Dormer wall	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18	10.19	6.95

9.1 Party Walls				
Description	Type	Construction	U-Value (W/m ² K)	Area (m ²)
Party Wall	Filled Cavity with Edge Sealing	Dense plaster both sides, dense blocks, cavity or cavity fill	0.00	61.76

10.0 External Roofs

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Description	Type	Construction	U-Value (W/m²K)	Gross Area (m²)	Nett Area (m²)
Ceiling	External Plane Roof	Other	0.11	32.36	32.36
Dormer roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.16	5.58	5.58
Skeiling	External Slope Roof	Plasterboard, insulated slope	0.15	10.00	10.00
LG roof	External Flat Roof	Plasterboard, insulated flat roof	0.14	8.80	8.80

11.0 Heat Loss Floors

Description	Type	Construction	U-Value (W/m²K)	Area (m²)
Ground floor	Ground Floor - Solid	Slab on ground, screed over insulation	0.11	61.13

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Argon Filled	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Door -1	Manufacture	Solid Door							1.00
W-1.4	Manufacture	Window	Double Low-E Soft 0.05			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Curtain Type	Overhang Ratio	Wide Overhang	Width (m)	Height (m)	Count	Area (m²)	Curtain Closed
Opening 1	Solid Door	[2] Brick cavity	North							1.96	
Opening 2	Window	[2] Brick cavity	North	Dark-coloured curtain or roller blind	0.00					4.56	100
Opening 3	Window	[2] Brick cavity	North	Dark-coloured curtain or roller blind	0.00					0.57	100
Opening 4	Window	[2] Brick cavity	West	Dark-coloured curtain or roller blind	0.00					1.14	100
Opening 5	Window	[2] Brick cavity	West	Dark-coloured curtain or roller blind	0.00					0.57	100
Opening 6	Window	[2] Brick cavity	West	Dark-coloured curtain or roller blind	0.00					1.37	100
Opening 7	Window	[2] Brick cavity	South	Dark-coloured curtain or roller blind	0.00					9.03	100
Opening 8	Window	[2] Brick cavity	South	Dark-coloured curtain or roller blind	0.00					5.04	100
Opening 9	Window	[3] Dormer wall	South	Dark-coloured curtain or roller blind	0.00					3.24	100

14.0 Conservatory

None

15.0 Draught Proofing

100 %

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16.0 Draught Lobby

No

17.0 Thermal Bridging

Calculate Bridges

17.1 List of Bridges

Source Type	Bridge Type	Length	Psi	Imported
Independently assessed	E1 Steel lintel with perforated steel base plate	18.78	0.259	Yes
Independently assessed	E3 Sill	17.85	0.014	Yes
Independently assessed	E4 Jamb	37.90	0.014	Yes
Independently assessed	E5 Ground floor (normal)	19.67	0.037	Yes
Table K1 - Default	E22 Basement floor	7.50	0.070	No
Independently assessed	E6 Intermediate floor within a dwelling	41.24	0.000	Yes
Independently assessed	E10 Eaves (insulation at ceiling level)	3.38	0.034	No
Independently assessed	E11 Eaves (insulation at rafter level)	1.10	0.032	No
Independently assessed	E12 Gable (insulation at ceiling level)	6.86	0.040	No
Independently assessed	E13 Gable (insulation at rafter level)	3.40	0.057	No
Independently assessed	E15 Flat roof with parapet	7.18	0.078	No
Independently assessed	E16 Corner (normal)	13.70	0.038	No
Independently assessed	E17 Corner (inverted – internal area greater than external area)	2.40	-0.063	No
Independently assessed	E18 Party wall between dwellings	11.30	0.021	No
Table K1 - Approved	E18 Party wall between dwellings	15.20	0.060	Yes
Table K1 - Default	P1 Party wall - Ground floor	7.17	0.160	No
Table K1 - Default	P2 Party wall - Intermediate floor within a dwelling	18.50	0.000	No
Table K1 - Default	P4 Party wall - Roof (insulation at ceiling level)	6.86	0.240	No
Table K1 - Default	P5 Party wall - Roof (insulation at rafter level)	3.40	0.080	No
Table K1 - Default	R6 Flat ceiling	1.80	0.060	No
Table K1 - Default	R7 Flat ceiling (inverted)	3.38	0.040	No
Table K1 - Default	R8 Roof to wall (rafter)	1.80	0.060	No
Table K1 - Default	R9 Roof to wall (flat ceiling)	3.38	0.040	No

Y-value

0.053

W/m²K

18.0 Pressure Testing

Yes

Designed AP₅₀

5.00

m³/(h.m²) @ 50 Pa

Property Tested ?

As Built AP₅₀

m³/(h.m²) @ 50 Pa

19.0 Mechanical Ventilation

Summer Overheating

Windows open in hot weather

Windows half open

Cross ventilation possible

Yes

Night Ventilation

No

Air change rate

4.00

Mechanical Ventilation

Mechanical Ventilation System Present

No

20.0 Fans, Open Fireplaces, Flues

	MHS	SHS	Other	Total
Number of Chimneys	0		0	0
Number of open flues	0		0	0
Number of intermittent fans				4
Number of passive vents				0
Number of flueless gas fires				0

21.0 Fixed Cooling System

No

22.0 Lighting

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Internal

Total number of light fittings	45	
Total number of L.E.L. fittings	45	
Percentage of L.E.L. fittings	100.00	%

External

External lights fitted	Yes
Light and motion sensor	Yes

23.0 Electricity Tariff	Standard
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24.0 Main Heating 1	Database	
Percentage of Heat	100	%
Database Ref. No.	18706	
Fuel Type	Mains gas	
Main Heating	BGB	
SAP Code	102	
In Winter	90.6	
In Summer	79.9	
Controls	CBI Time and temperature zone control	
PCDF Controls	0	
Delayed Start Stat	Yes	
Sap Code	2110	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in heated space	
Heat Emitter	Radiators and Underfloor	
Underfloor Heating	Yes - Pipes in thin screed	
Flow Temperature	Normal (> 45°C)	

25.0 Main Heating 2	None
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Community Heating	None
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28.0 Water Heating	HWP From main heating 1
Water Heating	Main Heating 1
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
SAP Code	901

29.0 Hot Water Cylinder	Hot Water Cylinder
Cylinder Stat	Yes
Cylinder In Heated Space	Yes
Independent Time Control	Yes

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Insulation Type	Measured Loss	
Cylinder Volume	210.00	L
Loss	1.60	kWh/day
Pipes insulation	Fully insulated primary pipework	
31.0 Thermal Store	None	

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	£4,000 - £6,000	£45	B 88	
	Typical Cost	Typical savings per year	Ratings after improvement	
			SAP rating	Environmental Impact
Solar photovoltaic panels, 2.5 kWp	£3,500 - £5,500	£340	A 95	