

U-VALUE CALCULATOR REPORT

Property Reference	Plot 1 7HR	Issued on Date	28/03/2025
Assessment Reference	Plot 1- Gas	Prop Type Ref	LHS Plot
Project	Plot 1, 7 Hawthorne Road, Caversham, READING, RG4 6LY		
Calculation Type	New Build (As Designed)		

Assessor Details	Mr. Dhiraj Karsan, Dhiraj Karsan, Tel: 020 8234 6864, dhiraj@clearstreamprojects.com	Assessor ID	m078-0001
Client			

Building Elements

Roof 000003

Roof Type: Flat Roof standard (no precipitation)

Layer	Description	Thickness (mm)	Conductivity (W/m²K)	Resistance (m²K/W)	Fraction (%)
Ext surface				0.0400	
Layer 1	Felt/bitumen layers				
	Main construction	6	0.2300	0.0261	100.00
Layer 2	Plywood				
	Main construction	18	0.1300	0.1385	100.00
Layer 3	Celotex XR4000				
	Main construction	150	0.0220	6.8182	100.00
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 4	Polythene, 500 gauge				
	Main construction	0.25	0.0000	0.0000	100.00
Layer 5	Plywood				
	Main construction	12	0.1300	0.0923	100.00
Layer 6	Standard cavity				
	Main construction	100	0.6250	0.1600	88.89
	Main construction	100	0.1300	0.7692	11.11
	Corrections - Cavity Unventilated, Emissivity: Normal				
Layer 7	Plasterboard, standard				
	Main construction	12.5	0.2100	0.0595	100.00
Layer 8	Plaster, standard				
	Main construction	3	0.4000	0.0075	100.00
Int surface				0.1000	

Total resistance: Upper limit = 7.505 m² K/W Lower limit = 7.458 m² K/W Average = 7.481 m² K/W
Total correction = 0.0083 m² K/W U-value (unrounded) = 0.14 W/m² K

Unheated space: None

Total thickness: 302 mm

U-value: 0.14 W/m² K

Kappa: n/a

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Building Elements

Roof 000004 - Pitched roof - insulated at ceiling

Roof Type: Pitched Roof, insulated flat ceiling

Layer	Description	Thickness (mm)	Conductivity (W/m ² K)	Resistance (m ² K/W)	Fraction (%)
Ext surface				0.0400	
Layer 1	Roof space				
	Main construction	0	0.0600	0.0600	100.00
Layer 2	Mineral wool quilt				
	Main construction	200	0.0420	4.7619	100.00
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 3	Mineral wool quilt				
	Main construction	200	0.0420	4.7619	87.50
	Main construction	200	0.1300	1.5385	12.50
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 4	Plasterboard, standard				
	Main construction	12.5	0.2100	0.0595	100.00
Int surface				0.1000	

Total resistance: Upper limit = 9.217 m² K/W Lower limit = 8.795 m² K/W Average = 9.006 m² K/W
Total correction = 0.0046 m² K/W U-value (unrounded) = 0.12 W/m² K

Unheated space: None

Total thickness: 413 mm

U-value: 0.12 W/m² K

Kappa: n/a

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Building Elements

Roof 000005

Roof Type: Pitched Roof, insulated sloping ceiling

Layer	Description	Thickness (mm)	Conductivity (W/m²K)	Resistance (m²K/W)	Fraction (%)
Ext surface				0.0400	
Layer 1	Tiling, concrete				
	Main construction	100	1.5000	0.0667	100.00
Layer 2	airspace/timber battens				
	Main construction	22	0.1222	0.1800	89.63
	Main construction	22	0.1375	0.1600	10.37
	Corrections - Cavity Unventilated, Emissivity: Normal				
Layer 3	Nilvent Breathable Membrane				
	Main construction	0.47	0.0000	0.0000	100.00
Layer 4	Standard cavity				
	Main construction	50	0.3125	0.1600	90.00
	Main construction	50	0.1300	0.3846	10.00
	Corrections - Cavity Unventilated, Emissivity: Normal				
Layer 5	Celotex XR4000				
	Main construction	120	0.0220	5.4545	90.00
	Main construction	120	0.1300	0.9231	10.00
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 6	Celotex GA4000				
	Main construction	60	0.0220	2.7273	100.00
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 7	Plasterboard, standard				
	Main construction	12.5	0.2100	0.0595	100.00
Layer 8	Plaster, standard				
	Main construction	3	0.4000	0.0075	100.00
Int surface				0.1000	

Total resistance: Upper limit = 7.972 m² K/W Lower limit = 7.007 m² K/W Average = 7.490 m² K/W
Total correction = 0.0037 m² K/W U-value (unrounded) = 0.13 W/m² K

Unheated space: None

Total thickness: 368 mm

U-value: 0.13 W/m² K

Kappa: n/a

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Building Elements

Wall 000001

Wall Type: Standard Wall

Layer	Description	Thickness (mm)	Conductivity (W/m²K)	Resistance (m²K/W)	Fraction (%)
Ext surface				0.0400	
Layer 1	Brick, outer leaf				
	Main construction	100	0.7700	0.1299	82.81
	Main construction	100	0.9407	0.1063	17.19
Layer 2	Standard cavity				
	Main construction	10	0.0667	0.1500	100.00
	Corrections - Cavity Unventilated, Emissivity: Normal				
Layer 3	Kooltherm K8 Cavity Board (45mm +)				
	Main construction	90	0.0200	4.5000	100.00
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 4	Celcon Solar - Plus - Trad joint 10mm				
	Main construction	100	0.1100	0.9091	93.79
	Main construction	100	0.8803	0.1136	6.21
Layer 5	airspace/plaster dabs				
	Main construction	15	0.0882	0.1700	80.00
	Main construction	15	0.0882	0.1700	20.00
	Corrections - Cavity Unventilated, Emissivity: Normal				
Layer 6	Plasterboard, standard				
	Main construction	12.5	0.2100	0.0595	100.00
Int surface				0.1300	

Total resistance:	Upper limit = 6.028 m² K/W	Lower limit = 5.808 m² K/W	Average = 5.918 m² K/W
	Total correction = 0.0058 m² K/W	U-value (unrounded) = 0.18 W/m² K	

Unheated space: None

Total thickness: 328 mm

U-value: 0.18 W/m² K

Kappa: n/a

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Building Elements

Wall 000002 - Timber framed insulation between studs

Wall Type: Standard Wall

Layer	Description	Thickness (mm)	Conductivity (W/m ² K)	Resistance (m ² K/W)	Fraction (%)
Ext surface				0.0400	
Layer 1	Plaster, standard				
	Main construction	4	0.4000	0.0100	100.00
Layer 2	Mineral wool quilt				
	Main construction	200	0.0420	4.7619	100.00
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 3	Mineral wool quilt				
	Main construction	200	0.0420	4.7619	88.89
	Main construction	200	0.1300	1.5385	11.11
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 4	Plasterboard, standard				
	Main construction	12.5	0.2100	0.0595	100.00
Layer 5	Plaster, standard				
	Main construction	4	0.4000	0.0100	100.00
Int surface				0.1300	

Total resistance:	Upper limit = 9.267 m ² K/W	Lower limit = 8.874 m ² K/W	Average = 9.070 m ² K/W
	Total correction = 0.0046 m ² K/W	U-value (unrounded) = 0.12 W/m ² K	

Unheated space: None

Total thickness: 421 mm

U-value: 0.12 W/m² K

Kappa: n/a

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Building Elements

Floor 000006 - floor - slab-on-ground floor

Floor Type: Slab On Ground Floor

Area = 89.70 m², Perimeter = 28.10 m, Wall thickness = 300.00 mm, Soil: Clay

Horizontal edge insulation: none

Vertical edge insulation: none

Layer	Description	Thickness (mm)	Conductivity (W/m ² K)	Resistance (m ² K/W)	Fraction (%)
Ext surface				0.0400	
Layer 1	Concrete, reinforced (2% steel)				
	Main construction	300	2.5000	0.1200	100.00
Layer 2	1200g Visqueen DPM				
	Main construction	1	0.0000	0.0000	100.00
Layer 3	Celotex XR4000				
	Main construction	150	0.0220	6.8182	100.00
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 4	1000g VCL				
	Main construction	1	0.0000	0.0000	100.00
Layer 5	Screed				
	Main construction	75	1.1500	0.0652	100.00
Int surface				0.1700	

Total resistance: Upper limit = 7.003 m² K/W Lower limit = 7.003 m² K/W Average = 7.003 m² K/W

Total correction = 0.0095 m² K/W U-value (unrounded) = 0.11 W/m² K

Unheated space: None

Total thickness: 527 mm

U-value: 0.11 W/m² K

Kappa: n/a