U-VALUE CALCULATOR REPORT

Design SAP
elmhurst energy

Property Reference	21124	**Issued on Date**	20/12/2021
Assessment Reference		**Prop Type Ref**	u-values
Project	Re-Purposed PIR Insulation		
Calculation Type	Conversion (As Designed)		

SAP Rating		**DER**		**TER**	
Environmental		**% DER<TER**			
CO_2 Emissions (t/year)		**DFEE**		**TFEE**	
General Requirements Compliance		**% DFEE<TFEE**			

Assessor Details	Mrs. Susan Fox, SF Energy Limited, Tel: 07825 631518, suzi@sfenergy.co.uk	**Assessor ID**	C358-0001
Client	MAC Architects, M151		

Building Elements

Wall Timber Clad Wall column A - 120mm + 50mm Repurposed PIR

Wall Type: Standard Wall

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Layer	Description	Thickness (mm)	Conductivity (W/m²K)	Resistance (m²K/W)	Fraction (%)
Ext surface				0.2900	
Layer 1	**Timber Cladding**				
	Main construction	22	0.1800	0.0000	100.00
Layer 2	**horizontal battens**				
	Main construction	38	0.0000	0.0000	87.50
	Main construction	38	0.1300	0.0000	12.50
	Corrections - Cavity Ventilated, Emissivity: Low Emissivity (BR443)				
Layer 3	**vertical battens**				
	Main construction	25	0.0000	0.0000	91.67
	Main construction	25	0.1300	0.0000	8.33
	Corrections - Cavity Ventilated, Emissivity: Low Emissivity (BR443)				
Layer 4	**Proctor Frameshield 100**				
	Main construction	0.5	0.0000	0.0000	100.00
Layer 5	**Orientated Strand Board**				
	Main construction	9	0.1300	0.0692	100.00
Layer 6	**KR Cladding Repurposed PIR / studs**				
	Main construction	120	0.0310	3.8710	85.00
	Main construction	120	0.1300	0.9231	15.00
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 7	**airspace / studs**				
	Main construction	25	0.2273	0.1100	85.00
	Main construction	25	0.1300	0.1923	15.00
	Corrections - Cavity Unventilated, Emissivity: Normal				
Layer 8	**KR Cladding Repurposed PIR**				
	Main construction	50	0.0310	1.6129	100.00
	Corrections - Air Gap: Level 0, Fasteners: None or plastic				
Layer 9	**Reflectatherm**				
	Main construction	0.5	0.0000	0.0000	100.00
Layer 10	**service void**				
	Main construction	35	0.0449	0.7800	92.17
	Main construction	35	0.1300	0.2692	7.83
	Corrections - Cavity Unventilated, Emissivity: Normal				
Layer 11	**Plasterboard, standard**				
	Main construction	12.5	0.2100	0.0595	100.00
Int surface				0.1300	

Total resistance: **Upper limit =** 6.196 m² K/W **Lower limit =** 5.576 m² K/W **Average =** 5.886 m² K/W

Total correction = 0.0020 m² K/W **U-value (unrounded) =** 0.17 W/m² K

Unheated space: None

Total thickness: 338 mm **U-value: 0.17 W/m² K** **Kappa: n/a**