

# U-VALUE CALCULATOR REPORT

|                      |                            |                |            |
|----------------------|----------------------------|----------------|------------|
| 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 <sub>2</sub> 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 Render Carrier Board column B - 140mm Repurposed PIR

Wall Type: Standard Wall

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| Layer              | Description   | Thickness (mm) | Conductivity (W/m <sup>2</sup> K) | Resistance (m <sup>2</sup> K/W) | Fraction (%) |
|--------------------|---|----------------|-----------------------------------|---------------------------------|--------------|
| <b>Ext surface</b> |   |                |                                   | 0.2900                          |              |
| <b>Layer 1</b>     | <b>K Rend</b>   |                |                                   |                                 |              |
|                    | Main construction   | 1.8            | 0.8500                            | 0.0000                          | 100.00       |
| <b>Layer 2</b>     | <b>Aquaboard</b>  |                |                                   |                                 |              |
|                    | Main construction   | 12.5           | 0.0600                            | 0.0000                          | 100.00       |
| <b>Layer 3</b>     | <b>horizontal battens</b>   |                |                                   |                                 |              |
|                    | 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) |                |                                   |                                 |              |
| <b>Layer 4</b>     | <b>vertical battens</b>   |                |                                   |                                 |              |
|                    | 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) |                |                                   |                                 |              |
| <b>Layer 5</b>     | <b>Proctor Frameshield 100</b>                                      |                |                                   |                                 |              |
|                    | Main construction   | 0.5            | 0.0000                            | 0.0000                          | 100.00       |
| <b>Layer 6</b>     | <b>Orientated Strand Board</b>                                      |                |                                   |                                 |              |
|                    | Main construction   | 9              | 0.1300                            | 0.0692                          | 100.00       |
| <b>Layer 7</b>     | <b>KR Cladding Repurposed PIR / studs</b>                           |                |                                   |                                 |              |
|                    | Main construction   | 140            | 0.0310                            | 4.5161                          | 85.00        |
|                    | Main construction   | 140            | 0.1300                            | 1.0769                          | 15.00        |
|                    | Corrections - Air Gap: Level 1, Fasteners: None or plastic          |                |                                   |                                 |              |
| <b>Layer 8</b>     | <b>airspace / studs</b>   |                |                                   |                                 |              |
|                    | Main construction   | 5              | 0.0455                            | 0.1100                          | 85.00        |
|                    | Main construction   | 5              | 0.1300                            | 0.0385                          | 15.00        |
|                    | Corrections - Cavity Unventilated, Emissivity: Normal               |                |                                   |                                 |              |
| <b>Layer 9</b>     | <b>Reflectatherm</b>  |                |                                   |                                 |              |
|                    | Main construction   | 0.5            | 0.0000                            | 0.0000                          | 100.00       |
| <b>Layer 10</b>    | <b>service void</b>   |                |                                   |                                 |              |
|                    | Main construction   | 35             | 0.0449                            | 0.7800                          | 92.17        |
|                    | Main construction   | 35             | 0.1300                            | 0.2692                          | 7.83         |
|                    | Corrections - Cavity Unventilated, Emissivity: Normal               |                |                                   |                                 |              |
| <b>Layer 11</b>    | <b>Plasterboard, standard</b>                                       |                |                                   |                                 |              |
|                    | Main construction   | 12.5           | 0.2100                            | 0.0595                          | 100.00       |
| <b>Int surface</b> |   |                |                                   | 0.1300                          |              |

**Total resistance:**    **Upper limit =** 4.875 m<sup>2</sup> K/W            **Lower limit =** 4.367 m<sup>2</sup> K/W            **Average =** 4.621 m<sup>2</sup> K/W  
**Total correction =** 0.0044 m<sup>2</sup> K/W                            **U-value (unrounded) =** 0.22 W/m<sup>2</sup> K

Unheated space: None

**Total thickness: 280 mm**

**U-value: 0.22 W/m<sup>2</sup> K**

**Kappa: n/a**