

# U-VALUE CALCULATOR REPORT

|                                    |                                                                                                  |               |                |             |           |
|------------------------------------|--------------------------------------------------------------------------------------------------|---------------|----------------|-------------|-----------|
| Property Reference                 | S34875                                                                                           |               | Issued on Date | 28/03/2025  |           |
| Assessment Reference               |                                                                                                  | Prop Type Ref |                |             |           |
| Project                            |                                                                                                  |               |                |             |           |
| Calculation Type                   | New Build (As Built)                                                                             |               |                |             |           |
| SAP Rating                         |                                                                                                  | DER           |                | TER         |           |
| Environmental                      |                                                                                                  | % DER<TER     |                |             |           |
| CO <sub>2</sub> Emissions (t/year) |                                                                                                  | DFEE          |                | TFEE        |           |
| General Requirements Compliance    |                                                                                                  | % DFEE<TFEE   |                |             |           |
| Assessor Details                   | Mr. Oliver Summerfield, Oliver Summerfield, Tel: 03456465454, oliver.summerfield@atspacelttd.com |               |                | Assessor ID | BD24-0001 |
| Client                             |                                                                                                  |               |                |             |           |

## Building Elements

### Wall Upgraded Existing Wall - Masonry solid wall

#### Wall Type: Standard Wall

| Layer       | Description                                                | Thickness (mm) | Conductivity (W/m <sup>2</sup> K) | Resistance (m <sup>2</sup> K/W) | Fraction (%) |
|-------------|------------------------------------------------------------|----------------|-----------------------------------|---------------------------------|--------------|
| Ext surface |                                                            |                |                                   | 0.0400                          |              |
| Layer 1     | Brick, outer leaf                                          |                |                                   |                                 |              |
|             | Main construction                                          | 210            | 0.7700                            | 0.2727                          | 82.81        |
|             | Main construction                                          | 210            | 0.9407                            | 0.2232                          | 17.19        |
| Layer 2     | Standard cavity                                            |                |                                   |                                 |              |
|             | Main construction                                          | 50             | 0.2778                            | 0.1800                          | 100.00       |
|             | Corrections - Cavity Unventilated, Emissivity: Normal      |                |                                   |                                 |              |
| Layer 3     | PIR/Timber Frame                                           |                |                                   |                                 |              |
|             | Main construction                                          | 100            | 0.0220                            | 4.5455                          | 90.91        |
|             | Main construction                                          | 100            | 0.1300                            | 0.7692                          | 9.09         |
|             | Corrections - Air Gap: Level 1, Fasteners: None or plastic |                |                                   |                                 |              |
| Layer 4     | PIR                                                        |                |                                   |                                 |              |
|             | Main construction                                          | 30             | 0.0220                            | 1.3636                          | 100.00       |
|             | Corrections - Air Gap: Level 1, Fasteners: None or plastic |                |                                   |                                 |              |
| Layer 5     | Plasterboard, standard                                     |                |                                   |                                 |              |
|             | Main construction                                          | 12.5           | 0.2100                            | 0.0595                          | 100.00       |
| Layer 6     | Plaster, standard                                          |                |                                   |                                 |              |
|             | Main construction                                          | 3              | 0.4000                            | 0.0075                          | 100.00       |
| Int surface |                                                            |                |                                   | 0.1300                          |              |

Total resistance: Upper limit = 5.874 m<sup>2</sup> K/W Lower limit = 5.186 m<sup>2</sup> K/W Average = 5.530 m<sup>2</sup> K/W  
Total correction = 0.0038 m<sup>2</sup> K/W U-value (unrounded) = 0.18 W/m<sup>2</sup> K

Unheated space: None

Total thickness: 406 mm

U-value: 0.18 W/m<sup>2</sup> K

Kappa: n/a

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| Assessment Reference |                      | Prop Type Ref  |            |
| Project              |                      |                |            |
| Calculation Type     | New Build (As Built) |                |            |

|                                    |  |             |  |      |  |
|------------------------------------|--|-------------|--|------|--|
| SAP Rating                         |  | DER         |  | TER  |  |
| Environmental                      |  | % DER<TER   |  |      |  |
| CO <sub>2</sub> Emissions (t/year) |  | DFEE        |  | TFEE |  |
| General Requirements Compliance    |  | % DFEE<TFEE |  |      |  |

|                  |                                                                                                 |             |           |
|------------------|-------------------------------------------------------------------------------------------------|-------------|-----------|
| Assessor Details | Mr. Oliver Summerfield, Oliver Summerfield, Tel: 03456465454, oliver.summerfield@atspaceltd.com | Assessor ID | BD24-0001 |
|------------------|-------------------------------------------------------------------------------------------------|-------------|-----------|

|        |  |
|--------|--|
| Client |  |
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## Building Elements

### Floor New GF Slab - floor - slab-on-ground floor

Floor Type: Slab On Ground Floor

Area = 0.00 m<sup>2</sup>, Perimeter = 0.00 m, Wall thickness = 300.00 mm, Soil: Clay

Horizontal edge insulation: none

Vertical edge insulation: none

| Layer       | Description                                                | Thickness (mm) | Conductivity (W/m <sup>2</sup> K) | Resistance (m <sup>2</sup> K/W) | Fraction (%) |
|-------------|------------------------------------------------------------|----------------|-----------------------------------|---------------------------------|--------------|
| Ext surface |                                                            |                |                                   | 0.0400                          |              |
| Layer 1     | <b>Concrete, reinforced (2% steel)</b>                     |                |                                   |                                 |              |
|             | Main construction                                          | 200            | 2.5000                            | 0.0800                          | 100.00       |
| Layer 2     | <b>1200g Visqueen DPM</b>                                  |                |                                   |                                 |              |
|             | Main construction                                          | 1              | 0.0000                            | 0.0000                          | 100.00       |
| Layer 3     | <b>PIR Insulation</b>                                      |                |                                   |                                 |              |
|             | Main construction                                          | 110            | 0.0220                            | 5.0000                          | 100.00       |
|             | Corrections - Air Gap: Level 1, Fasteners: None or plastic |                |                                   |                                 |              |
| Layer 4     | <b>1000g VCL</b>                                           |                |                                   |                                 |              |
|             | Main construction                                          | 1              | 0.0000                            | 0.0000                          | 100.00       |
| Layer 5     | <b>Screed</b>                                              |                |                                   |                                 |              |
|             | Main construction                                          | 75             | 1.1500                            | 0.0652                          | 100.00       |
| Int surface |                                                            |                |                                   | 0.1700                          |              |

Total resistance: Upper limit = 5.145 m<sup>2</sup> K/W Lower limit = 5.145 m<sup>2</sup> K/W Average = 5.145 m<sup>2</sup> K/W

Total correction = 0.0094 m<sup>2</sup> K/W

U-value (unrounded) = 0.18 W/m<sup>2</sup> K

Unheated space: None

Total thickness: 387 mm

U-value: 0.18 W/m<sup>2</sup> K

Kappa: n/a

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| Project                            |                                                                                                 |             |                |             |           |
| Calculation Type                   | New Build (As Built)                                                                            |             |                |             |           |
| SAP Rating                         |                                                                                                 | DER         |                | TER         |           |
| Environmental                      |                                                                                                 | % DER<TER   |                |             |           |
| CO <sub>2</sub> Emissions (t/year) |                                                                                                 | DFEE        |                | TFEE        |           |
| General Requirements Compliance    |                                                                                                 | % DFEE<TFEE |                |             |           |
| Assessor Details                   | Mr. Oliver Summerfield, Oliver Summerfield, Tel: 03456465454, oliver.summerfield@atspaceltd.com |             |                | Assessor ID | BD24-0001 |
| Client                             |                                                                                                 |             |                |             |           |

## Building Elements

### Roof New/Upgraded Sloped Roof - pitched roof - insulated slope, sloping

#### Roof Type: Pitched Roof, insulated sloping ceiling

| Layer       | Description                                                | Thickness (mm) | Conductivity (W/m <sup>2</sup> K) | Resistance (m <sup>2</sup> K/W) | Fraction (%) |
|-------------|------------------------------------------------------------|----------------|-----------------------------------|---------------------------------|--------------|
| Ext surface |                                                            |                |                                   | 0.1000                          |              |
| Layer 1     | <b>Air layer ventilated</b>                                |                |                                   |                                 |              |
|             | Main construction                                          | 50             | 0.0000                            | 0.0000                          | 87.50        |
|             | Main construction                                          | 50             | 0.1300                            | 0.0000                          | 12.50        |
|             | Corrections - Cavity Ventilated, Emissivity: Normal        |                |                                   |                                 |              |
| Layer 2     | <b>Insulation Board / Rafters</b>                          |                |                                   |                                 |              |
|             | Main construction                                          | 150            | 0.0220                            | 6.8182                          | 87.50        |
|             | Main construction                                          | 150            | 0.1300                            | 1.1538                          | 12.50        |
|             | Corrections - Air Gap: Level 0, Fasteners: None or plastic |                |                                   |                                 |              |
| Layer 3     | <b>Polyisocyanurate</b>                                    |                |                                   |                                 |              |
|             | Main construction                                          | 80             | 0.0220                            | 3.6364                          | 100.00       |
|             | Corrections - Air Gap: Level 1, Fasteners: None or plastic |                |                                   |                                 |              |
| Layer 4     | <b>Plasterboard, standard</b>                              |                |                                   |                                 |              |
|             | Main construction                                          | 12.5           | 0.2100                            | 0.0595                          | 100.00       |
| Layer 5     | <b>Plaster, standard</b>                                   |                |                                   |                                 |              |
|             | Main construction                                          | 3              | 0.4000                            | 0.0075                          | 100.00       |
| Int surface |                                                            |                |                                   | 0.1000                          |              |

Total resistance: Upper limit = 9.405 m<sup>2</sup> K/W Lower limit = 8.129 m<sup>2</sup> K/W Average = 8.767 m<sup>2</sup> K/W  
Total correction = 0.0017 m<sup>2</sup> K/W U-value (unrounded) = 0.11 W/m<sup>2</sup> K

Unheated space: None

Total thickness: 296 mm

U-value: 0.11 W/m<sup>2</sup> K

Kappa: n/a

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| Assessment Reference               |                                                                                                    | Prop Type Ref  |             |
| Project                            |                                                                                                    |                |             |
| Calculation Type                   | New Build (As Built)                                                                               |                |             |
| SAP Rating                         |                                                                                                    | DER            | TER         |
| Environmental                      |                                                                                                    | % DER<TER      |             |
| CO <sub>2</sub> Emissions (t/year) |                                                                                                    | DFEE           | TFEE        |
| General Requirements Compliance    |                                                                                                    | % DFEE<TFEE    |             |
| Assessor Details                   | Mr. Oliver Summerfield, Oliver Summerfield, Tel: 03456465454,<br>oliver.summerfield@atspaceltd.com |                | Assessor ID |
|                                    |                                                                                                    |                | BD24-0001   |
| Client                             |                                                                                                    |                |             |

## Building Elements

### Wall New Timber Frame Wall - Timber framed insulation between studs

#### Wall Type: Standard Wall

| Layer       | Description                                                   | Thickness<br>(mm) | Conductivity<br>(W/m <sup>2</sup> K) | Resistance<br>(m <sup>2</sup> K/W) | Fraction<br>(%) |
|-------------|---------------------------------------------------------------|-------------------|--------------------------------------|------------------------------------|-----------------|
| Ext surface |                                                               |                   |                                      | 0.0400                             |                 |
| Layer 1     | <b>Chipboard</b>                                              |                   |                                      |                                    |                 |
|             | Main construction                                             | 15                | 0.1300                               | 0.1154                             | 100.00          |
| Layer 2     | <b>airspace/timber battens</b>                                |                   |                                      |                                    |                 |
|             | Main construction                                             | 22                | 0.1222                               | 0.1800                             | 89.63           |
|             | Main construction                                             | 22                | 0.1243                               | 0.1770                             | 10.37           |
|             | Corrections - Cavity Unventilated, Emissivity:<br>Normal      |                   |                                      |                                    |                 |
| Layer 3     | <b>Standard cavity</b>                                        |                   |                                      |                                    |                 |
|             | Main construction                                             | 50                | 0.0649                               | 0.7700                             | 100.00          |
|             | Corrections - Cavity Unventilated, Emissivity:<br>Normal      |                   |                                      |                                    |                 |
| Layer 4     | <b>Breather membrane</b>                                      |                   |                                      |                                    |                 |
|             | Main construction                                             | 1                 | 0.0000                               | 0.0000                             | 100.00          |
| Layer 5     | <b>Plywood</b>                                                |                   |                                      |                                    |                 |
|             | Main construction                                             | 12                | 0.1300                               | 0.0923                             | 100.00          |
| Layer 6     | <b>PIR/timber frame</b>                                       |                   |                                      |                                    |                 |
|             | Main construction                                             | 100               | 0.0220                               | 4.5455                             | 87.50           |
|             | Main construction                                             | 100               | 0.1200                               | 0.8333                             | 12.50           |
|             | Corrections - Air Gap: Level 0, Fasteners: None or<br>plastic |                   |                                      |                                    |                 |
| Layer 7     | <b>Vapour control layer</b>                                   |                   |                                      |                                    |                 |
|             | Main construction                                             | 1                 | 0.0000                               | 0.0000                             | 100.00          |
| Layer 8     | <b>PIR</b>                                                    |                   |                                      |                                    |                 |
|             | Main construction                                             | 20                | 0.0220                               | 0.9091                             | 100.00          |
|             | Corrections - Air Gap: Level 1, Fasteners: None or<br>plastic |                   |                                      |                                    |                 |
| Layer 9     | <b>Plasterboard, standard</b>                                 |                   |                                      |                                    |                 |
|             | Main construction                                             | 12.5              | 0.2100                               | 0.0595                             | 100.00          |
| Layer 10    | <b>Plaster, standard</b>                                      |                   |                                      |                                    |                 |
|             | Main construction                                             | 3                 | 0.4000                               | 0.0075                             | 100.00          |
| Int surface |                                                               |                   |                                      | 0.1300                             |                 |

Total resistance: Upper limit = 5.966 m<sup>2</sup> K/W Lower limit = 5.223 m<sup>2</sup> K/W Average = 5.595 m<sup>2</sup> K/W  
Total correction = 0.0003 m<sup>2</sup> K/W U-value (unrounded) = 0.18 W/m<sup>2</sup> K

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Unheated space: None

Total thickness: 237 mm

U-value: 0.18 W/m<sup>2</sup> K

Kappa: n/a