



elmhurst  
energy



## SAP Report Submission for Building Regulations Compliance

Client: SB110-Barn 3 - RS

Project: Barn 3, Longville Farm  
Longville-in-the Dale, TF13 6DS

Contact: Energyfirst  
energyfirst27@gmail.com  
07805668556

Report Issue Date: 14/11/2022

EXCELLENCE  
IN ENERGY  
ASSESSMENT

# PREDICTED ENERGY ASSESSMENT

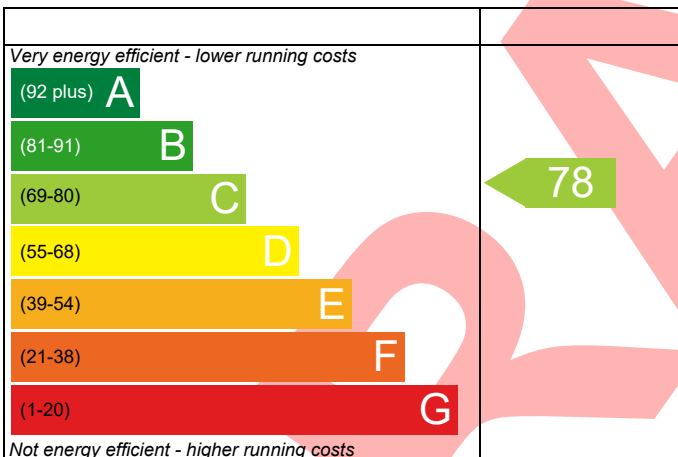
Barn 3, Longville Farm,  
Longville-in-the Dale,  
TF13 6DS

Dwelling type: House, Mid-Terrace  
Date of assessment: 14/11/2022  
Produced by: Energyfirst  
Total floor area: 171.54 m<sup>2</sup>

This document is a Predicted Energy Assessment for properties marketed when they are incomplete. It includes a predicted energy rating which might not represent the final energy rating of the property on completion. Once the property is completed, this rating will be updated and an official Energy Performance Certificate will be created for the property. This will include more detailed information about the energy performance of the completed property.

The energy performance has been assessed using the Government approved SAP2012 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO<sub>2</sub>) emissions.

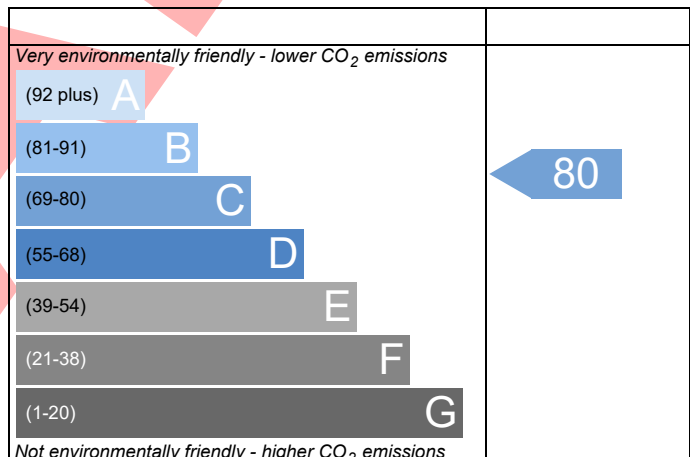
## Energy Efficiency Rating



**England** EU Directive 2002/91/EC

The energy efficiency rating is a measure of the overall efficiency of a home. The higher the rating the more energy efficient the home is and the lower the fuel bills are likely to be.

## Environmental Impact (CO<sub>2</sub>) Rating



**England** EU Directive 2002/91/EC

The environmental impact rating is a measure of a home's impact on the environment in terms of carbon dioxide (CO<sub>2</sub>) emissions. The higher the rating the less impact it has on the environment.

This report has not been submitted through the Elmhurst Energy members' portal, therefore results are subject to change when the dwelling is completed.

# U-VALUE CALCULATOR REPORT

|                      |   |               |                 |            |  |
|----------------------|---|---------------|-----------------|------------|--|
| Property Reference   | SB110-2814 - Barn 3                                     |               | Issued on Date  | 14/11/2022 |  |
| Assessment Reference | SB110-Barn 3 - RS                                       | Prop Type Ref | Barn Conversion |            |  |
| Project              | Barn 3, Longville Farm, Longville-in-the Dale, TF13 6DS |               |                 |            |  |
| Calculation Type     | Conversion (As Designed)                                |               |                 |            |  |

|                                    |      |             |     |      |     |
|------------------------------------|------|-------------|-----|------|-----|
| SAP Rating                         | 78 C | DER         | N/A | TER  | N/A |
| Environmental                      | 80 C | % DER<TER   | N/A |      |     |
| CO <sub>2</sub> Emissions (t/year) | 3.21 | DFEE        | N/A | TFEE | N/A |
| General Requirements Compliance    | N/A  | % DFEE<TFEE | N/A |      |     |

|                  |   |  |             |           |  |
|------------------|---|--|-------------|-----------|--|
| Assessor Details | admin Admin, Energyfirst, Tel: 07805668556, energyfirst27@gmail.com |  | Assessor ID | J971-0001 |  |
| Client           |   |  |             |           |  |

## Building Elements

### Roof 000002 - pitched roof - insulated slope, sloping

Roof Type: Pitched Roof, insulated sloping ceiling

# U-VALUE CALCULATOR REPORT

| Layer              | Description  | Thickness (mm) | Conductivity (W/m <sup>2</sup> K) | Resistance (m <sup>2</sup> K/W) | Fraction (%) |
|--------------------|--|----------------|-----------------------------------|---------------------------------|--------------|
| <b>Ext surface</b> |  |                |                                   | 0.0400                          |              |
| <b>Layer 1</b>     | <b>Tiles, clay</b>   |                |                                   |                                 |              |
|                    | Main construction  | 15             | 1.0000                            | 0.0150                          | 100.00       |
| <b>Layer 2</b>     | <b>Air layer ventilated</b>                                |                |                                   |                                 |              |
|                    | Main construction  | 25             | 0.2500                            | 0.1000                          | 100.00       |
|                    | Corrections - Cavity Unventilated, Emissivity: Normal      |                |                                   |                                 |              |
| <b>Layer 3</b>     | <b>airspace/timber battens</b>                             |                |                                   |                                 |              |
|                    | Main construction  | 22             | 0.1222                            | 0.1800                          | 89.63        |
|                    | Main construction  | 22             | 0.1375                            | 0.1600                          | 10.37        |
|                    | Corrections - Cavity Unventilated, Emissivity: Normal      |                |                                   |                                 |              |
| <b>Layer 4</b>     | <b>Boost'R Hybrid</b>                                      |                |                                   |                                 |              |
|                    | Main construction  | 35             | 0.0259                            | 1.3500                          | 100.00       |
| <b>Layer 5</b>     | <b>Air layer ventilated</b>                                |                |                                   |                                 |              |
|                    | Main construction  | 50             | 0.5000                            | 0.1000                          | 91.67        |
|                    | Main construction  | 50             | 0.1300                            | 0.3846                          | 8.33         |
|                    | Corrections - Cavity Unventilated, Emissivity: Normal      |                |                                   |                                 |              |
| <b>Layer 6</b>     | <b>Hybris</b>  |                |                                   |                                 |              |
|                    | Main construction  | 90             | 0.0330                            | 2.7273                          | 91.67        |
|                    | Main construction  | 90             | 0.1300                            | 0.6923                          | 8.33         |
|                    | Corrections - Air Gap: Level 1, Fasteners: None or plastic |                |                                   |                                 |              |
| <b>Layer 7</b>     | <b>Hcontrol Hybrid</b>                                     |                |                                   |                                 |              |
|                    | Main construction  | 45             | 0.0237                            | 1.9000                          | 100.00       |
| <b>Layer 8</b>     | <b>airspace/timber battens</b>                             |                |                                   |                                 |              |
|                    | Main construction  | 22             | 0.1222                            | 0.1800                          | 89.63        |
|                    | Main construction  | 22             | 0.1375                            | 0.1600                          | 10.37        |
|                    | Corrections - Cavity Unventilated, Emissivity: Normal      |                |                                   |                                 |              |
| <b>Layer 9</b>     | <b>airspace/timber battens</b>                             |                |                                   |                                 |              |
|                    | Main construction  | 22             | 0.1222                            | 0.1800                          | 89.63        |
|                    | Main construction  | 22             | 0.1375                            | 0.1600                          | 10.37        |
|                    | Corrections - Cavity Unventilated, Emissivity: Normal      |                |                                   |                                 |              |
| <b>Layer 10</b>    | <b>Plasterboard, standard</b>                              |                |                                   |                                 |              |
|                    | Main construction  | 12.5           | 0.2100                            | 0.0595                          | 100.00       |
| <b>Int surface</b> |  |                |                                   | 0.1000                          |              |

**Total resistance:**    **Upper limit =** 6.717 m<sup>2</sup> K/W            **Lower limit =** 6.395 m<sup>2</sup> K/W            **Average =** 6.556 m<sup>2</sup> K/W  
                                  **Total correction =** 0.0011 m<sup>2</sup> K/W    **U-value (unrounded) =** 0.15 W/m<sup>2</sup> K

Unheated space: None

**Total thickness: 339 mm**

**U-value: 0.15 W/m<sup>2</sup> K**

**Kappa: n/a**

# U-VALUE CALCULATOR REPORT

|                      |   |                |                 |
|----------------------|---|----------------|-----------------|
| Property Reference   | SB110-2814 - Barn 3                                     | Issued on Date | 14/11/2022      |
| Assessment Reference | SB110-Barn 3 - RS                                       | Prop Type Ref  | Barn Conversion |
| Project              | Barn 3, Longville Farm, Longville-in-the Dale, TF13 6DS |                |                 |
| Calculation Type     | Conversion (As Designed)                                |                |                 |

|                                    |      |             |     |      |     |
|------------------------------------|------|-------------|-----|------|-----|
| SAP Rating                         | 78 C | DER         | N/A | TER  | N/A |
| Environmental                      | 80 C | % DER<TER   | N/A |      |     |
| CO <sub>2</sub> Emissions (t/year) | 3.21 | DFEE        | N/A | TFEE | N/A |
| General Requirements Compliance    | N/A  | % DFEE<TFEE | N/A |      |     |

|                  |   |             |           |
|------------------|---|-------------|-----------|
| Assessor Details | admin Admin, Energyfirst, Tel: 07805668556, energyfirst27@gmail.com | Assessor ID | J971-0001 |
| Client           |   |             |           |

## Building Elements

### Wall 000001 - 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     | <b>Brick, outer leaf</b>                                   |                |                                   |                                 |              |
|             | Main construction  | 215            | 0.7700                            | 0.2792                          | 82.81        |
|             | Main construction  | 215            | 0.9407                            | 0.2285                          | 17.19        |
| Layer 2     | <b>Standard cavity</b>                                     |                |                                   |                                 |              |
|             | Main construction  | 94             | 0.1416                            | 0.6640                          | 93.00        |
|             | Main construction  | 94             | 0.1300                            | 0.7231                          | 7.00         |
|             | Corrections - Cavity Unventilated, Emissivity: Normal      |                |                                   |                                 |              |
| Layer 3     | <b>Orientated Strand Board</b>                             |                |                                   |                                 |              |
|             | Main construction  | 9              | 0.1300                            | 0.0692                          | 100.00       |
| Layer 4     | <b>Boost'R Hybrid</b>                                      |                |                                   |                                 |              |
|             | Main construction  | 35             | 0.0259                            | 1.3500                          | 100.00       |
| Layer 5     | <b>Hybris</b>  |                |                                   |                                 |              |
|             | Main construction  | 90             | 0.0330                            | 2.7273                          | 84.03        |
|             | Main construction  | 90             | 0.1300                            | 0.6923                          | 15.97        |
|             | Corrections - Air Gap: Level 1, Fasteners: None or plastic |                |                                   |                                 |              |
| Layer 6     | <b>Standard cavity</b>                                     |                |                                   |                                 |              |
|             | Main construction  | 10             | 0.0667                            | 0.1500                          | 84.03        |
|             | Main construction  | 10             | 0.1300                            | 0.0769                          | 15.97        |
|             | Corrections - Cavity Unventilated, Emissivity: Normal      |                |                                   |                                 |              |
| Layer 7     | <b>Polythene, 500 gauge</b>                                |                |                                   |                                 |              |
|             | Main construction  | 1              | 0.0000                            | 0.0000                          | 100.00       |
| Layer 8     | <b>Plasterboard, standard</b>                              |                |                                   |                                 |              |
|             | Main construction  | 12.5           | 0.2100                            | 0.0595                          | 100.00       |
| Int surface |  |                |                                   | 0.1300                          |              |

Total resistance: Upper limit = 4.979 m<sup>2</sup> K/W Lower limit = 4.572 m<sup>2</sup> K/W Average = 4.775 m<sup>2</sup> K/W  
 Total correction = 0.0015 m<sup>2</sup> K/W U-value (unrounded) = 0.21 W/m<sup>2</sup> K

Unheated space: None

Total thickness: 467 mm

U-value: 0.21 W/m<sup>2</sup> K

Kappa: n/a

# U-VALUE CALCULATOR REPORT

|                      |   |               |                 |            |
|----------------------|---|---------------|-----------------|------------|
| Property Reference   | SB110-2814 - Barn 3                                     |               | Issued on Date  | 14/11/2022 |
| Assessment Reference | SB110-Barn 3 - RS                                       | Prop Type Ref | Barn Conversion |            |
| Project              | Barn 3, Longville Farm, Longville-in-the Dale, TF13 6DS |               |                 |            |
| Calculation Type     | Conversion (As Designed)                                |               |                 |            |

|                                    |      |             |     |      |     |
|------------------------------------|------|-------------|-----|------|-----|
| SAP Rating                         | 78 C | DER         | N/A | TER  | N/A |
| Environmental                      | 80 C | % DER<TER   | N/A |      |     |
| CO <sub>2</sub> Emissions (t/year) | 3.21 | DFEE        | N/A | TFEE | N/A |
| General Requirements Compliance    | N/A  | % DFEE<TFEE | N/A |      |     |

|                  |   |             |           |
|------------------|---|-------------|-----------|
| Assessor Details | admin Admin, Energyfirst, Tel: 07805668556, energyfirst27@gmail.com | Assessor ID | J971-0001 |
| Client           |   |             |           |

## Building Elements

### Wall 000005 - Masonry wall full cavity fill-slabs

#### 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     | <b>Brick, outer leaf</b>                                   |                |                                   |                                 |              |
|             | Main construction  | 105            | 0.7700                            | 0.1364                          | 100.00       |
| Layer 2     | <b>Earthwool Dritherm 32 Ultimate</b>                      |                |                                   |                                 |              |
|             | Main construction  | 100            | 0.0320                            | 3.1250                          | 100.00       |
|             | Corrections - Air Gap: Level 1, Fasteners: None or plastic |                |                                   |                                 |              |
| Layer 3     | <b>Besblock</b>  |                |                                   |                                 |              |
|             | Main construction  | 100            | 0.6490                            | 0.1541                          | 93.43        |
|             | Main construction  | 100            | 0.8800                            | 0.1136                          | 6.57         |
|             | Corrections - Air Gap: Level 1, Fasteners: None or plastic |                |                                   |                                 |              |
| Layer 4     | <b>airspace/plaster dabs</b>                               |                |                                   |                                 |              |
|             | Main construction  | 15             | 0.0882                            | 0.1700                          | 80.00        |
|             | Main construction  | 15             | 0.0882                            | 0.1700                          | 20.00        |
|             | Corrections - Cavity Unventilated, Emissivity: Normal      |                |                                   |                                 |              |
| Layer 5     | <b>Plasterboard, standard</b>                              |                |                                   |                                 |              |
|             | Main construction  | 12.5           | 0.2100                            | 0.0595                          | 100.00       |
| Layer 6     | <b>Plaster, standard</b>                                   |                |                                   |                                 |              |
|             | Main construction  | 3              | 0.4000                            | 0.0075                          | 100.00       |
| Int surface |  |                |                                   | 0.1300                          |              |

Total resistance: Upper limit = 3.820 m<sup>2</sup> K/W Lower limit = 3.819 m<sup>2</sup> K/W Average = 3.819 m<sup>2</sup> K/W  
 Total correction = 0.0067 m<sup>2</sup> K/W U-value (unrounded) = 0.26 W/m<sup>2</sup> K

Unheated space: None

Total thickness: 336 mm

U-value: 0.26 W/m<sup>2</sup> K

Kappa: n/a

# U-VALUE CALCULATOR REPORT

|                      |   |                |                 |
|----------------------|---|----------------|-----------------|
| Property Reference   | SB110-2814 - Barn 3                                     | Issued on Date | 14/11/2022      |
| Assessment Reference | SB110-Barn 3 - RS                                       | Prop Type Ref  | Barn Conversion |
| Project              | Barn 3, Longville Farm, Longville-in-the Dale, TF13 6DS |                |                 |
| Calculation Type     | Conversion (As Designed)                                |                |                 |

|                                    |      |             |     |      |     |
|------------------------------------|------|-------------|-----|------|-----|
| SAP Rating                         | 78 C | DER         | N/A | TER  | N/A |
| Environmental                      | 80 C | % DER<TER   | N/A |      |     |
| CO <sub>2</sub> Emissions (t/year) | 3.21 | DFEE        | N/A | TFEE | N/A |
| General Requirements Compliance    | N/A  | % DFEE<TFEE | N/A |      |     |

|                  |   |             |           |
|------------------|---|-------------|-----------|
| Assessor Details | admin Admin, Energyfirst, Tel: 07805668556, energyfirst27@gmail.com | Assessor ID | J971-0001 |
| Client           |   |             |           |

## Building Elements

### Floor 000004 - floor - slab-on-ground floor

Floor Type: Slab On Ground Floor

Area = 53.50 m<sup>2</sup>, Perimeter = 31.03 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  | 300            | 2.5000                            | 0.1200                          | 100.00       |
| Layer 2     | <b>1200g Visqueen DPM</b>                                  |                |                                   |                                 |              |
|             | Main construction  | 1              | 0.0000                            | 0.0000                          | 100.00       |
| Layer 3     | <b>Jabfloor 100</b>  |                |                                   |                                 |              |
|             | Main construction  | 200            | 0.0360                            | 5.5556                          | 100.00       |
|             | Corrections - Air Gap: Level 1, Fasteners: None or plastic |                |                                   |                                 |              |
| Layer 4     | <b>Polythene, 500 gauge</b>                                |                |                                   |                                 |              |
|             | Main construction  | 1              | 0.0000                            | 0.0000                          | 100.00       |
| Layer 5     | <b>Concrete, no fines</b>                                  |                |                                   |                                 |              |
|             | Main construction  | 100            | 1.2000                            | 0.0833                          | 100.00       |
| Int surface |  |                |                                   | 0.1700                          |              |

Total resistance: Upper limit = 5.759 m<sup>2</sup> K/W Lower limit = 5.759 m<sup>2</sup> K/W Average = 5.759 m<sup>2</sup> K/W

Total correction = 0.0093 m<sup>2</sup> K/W

U-value (unrounded) = 0.14 W/m<sup>2</sup> K

Unheated space: None

Total thickness: 602 mm

U-value: 0.14 W/m<sup>2</sup> K

Kappa: n/a

# SUMMARY FOR INPUT DATA

## Calculation Type: Conversion (As Designed)

|                                    |   |               |                 |            |     |
|------------------------------------|---|---------------|-----------------|------------|-----|
| Property Reference                 | SB110-2814 - Barn 3   |               | Issued on Date  | 14/11/2022 |     |
| Assessment Reference               | SB110-Barn 3 - RS   | Prop Type Ref | Barn Conversion |            |     |
| Property                           | Barn 3, Longville Farm, Longville-in-the Dale, TF13 6DS             |               |                 |            |     |
| SAP Rating                         | 78 C  | DER           | N/A             | TER        | N/A |
| Environmental                      | 80 C  | % DER<TER     | N/A             |            |     |
| CO <sub>2</sub> Emissions (t/year) | 3.21  | DFEE          | N/A             | TFEE       | N/A |
| General Requirements Compliance    | N/A   | % DFEE<TFEE   | N/A             |            |     |
| Assessor Details                   | admin Admin, Energyfirst, Tel: 07805668556, energyfirst27@gmail.com |               | Assessor ID     | J971-0001  |     |
| Client                             |   |               |                 |            |     |

### SUMMARY FOR INPUT DATA FOR: Conversion (As Designed)

|                       |                    |
|-----------------------|--------------------|
| Orientation           | North East         |
| Property Tenure       | Owner-occupied     |
| Transaction Type      | New dwelling       |
| Terrain Type          | Suburban           |
| 1.0 Property Type     | House, Mid-Terrace |
| 2.0 Number of Storeys | 2                  |
| 3.0 Date Built        | 2022               |
| 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: | 49.64 m             | 111.35 m <sup>2</sup> | 3.45 m                |
| 1st Storey:   | 32.06 m             | 60.19 m <sup>2</sup>  | 2.27 m                |

7.0 Living Area  m<sup>2</sup>

8.0 Thermal Mass Parameter  
 Thermal Mass   
 kJ/m<sup>2</sup>K

#### 9.0 External Walls

| Description     | Type        | U-Value (W/m <sup>2</sup> K) | Gross Area (m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) |
|-----------------|-------------|------------------------------|------------------------------|-----------------------------|
| Main Wall       | Solid Wall  | 0.21                         | 63.42                        | 50.89                       |
| External Wall 2 | Cavity Wall | 0.26                         | 107.82                       | 94.43                       |

#### 9.1 Party Walls

| Description  | Type                            | Construction | U-Value (W/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------|---------------------------------|--------------|------------------------------|------------------------|
| Party Wall 1 | Filled Cavity with Edge Sealing |              | 0.00                         | 19.25                  |

#### 10.0 External Roofs

| Description     | Type                | U-Value (W/m <sup>2</sup> K) | Gross Area (m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) |
|-----------------|---------------------|------------------------------|------------------------------|-----------------------------|
| Sloping Ceiling | External Slope Roof | 0.15                         | 109.75                       | 100.15                      |

#### 11.0 Heat Loss Floors

| Description  | Type                 | Construction | U-Value (W/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------|----------------------|--------------|------------------------------|------------------------|
| Ground Floor | Ground Floor - Solid |              | 0.14                         | 111.35                 |

#### 12.0 Opening Types

| Description | Type | Construction | U-Value (W/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-------------|------|--------------|------------------------------|------------------------|
|             |      |              |                              |                        |



# SUMMARY FOR INPUT DATA

## Calculation Type: Conversion (As Designed)

| Description         | Data Source  | Type        | Glazing                | Glazing Gap | Argon Filled | G-value | Frame Type | Frame Factor | U Value (W/m <sup>2</sup> K) |
|---------------------|--------------|-------------|------------------------|-------------|--------------|---------|------------|--------------|------------------------------|
| Windows             | Manufacturer | Window      | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.60                         |
| Windows/Glazed Door | Manufacturer | Window      | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.60                         |
| Composite Door      | Manufacturer | Solid Door  |                        |             |              |         |            |              | 1.20                         |
| Roof Lights         | Manufacturer | Roof 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 (m <sup>2</sup> ) | Curtain Closed |
|------------|--------------|---------------------|-------------|--------------|----------------|---------------|-----------|------------|-------|------------------------|----------------|
| Opening 1  | Window       | [1] Main Wall       | South East  | None         | 0.00           |               |           |            |       | 4.32                   |                |
| Opening 2  | Window       | [1] Main Wall       | South East  | None         | 0.00           |               |           |            |       | 1.91                   |                |
| Opening 3  | Roof Window  | [1] Sloping Ceiling | South East  | None         |                |               |           |            |       | 2.88                   |                |
| Opening 4  | Window       | [2] External Wall 2 | North East  | None         | 0.00           |               |           |            |       | 2.94                   |                |
| Opening 5  | Window       | [2] External Wall 2 | North East  | None         | 0.00           |               |           |            |       | 4.70                   |                |
| Opening 6  | Solid Door   | [2] External Wall 2 | North East  |              |                |               |           |            |       | 1.97                   |                |
| Opening 7  | Roof Window  | [1] Sloping Ceiling | North East  | None         |                |               |           |            |       | 5.28                   |                |
| Opening 8  | Roof Window  | [1] Sloping Ceiling | South West  | None         |                |               |           |            |       | 1.44                   |                |
| Opening 9  | Window       | [2] External Wall 2 | South West  | None         | 0.00           |               |           |            |       | 3.78                   |                |
| Opening 10 | Window       | [1] Main Wall       | North West  | None         | 0.00           |               |           |            |       | 3.78                   |                |
| Opening 11 | Window       | [1] Main Wall       | North West  | None         | 0.00           |               |           |            |       | 2.52                   |                |

### 14.0 Conservatory

### 15.0 Draught Proofing

%

### 16.0 Draught Lobby

### 17.0 Thermal Bridging

Y-value

W/m<sup>2</sup>K

### 18.0 Pressure Testing

### 19.0 Mechanical Ventilation

#### Summer Overheating

Windows open in hot weather

Cross ventilation possible

Night Ventilation

Air change rate

#### Mechanical Ventilation

Mechanical Ventilation System Present

### 20.0 Fans, Open Fireplaces, Flues

|                              | MHS | SHS | Other | Total |
|------------------------------|-----|-----|-------|-------|
| Number of Chimneys           | 0   | 0   | 0     | 0     |
| Number of open flues         | 0   | 0   | 0     | 0     |
| Number of intermittent fans  |     |     |       | 5     |
| Number of passive vents      |     |     |       | 0     |
| Number of flueless gas fires |     |     |       | 0     |

### 21.0 Fixed Cooling System

### 22.0 Lighting

#### Internal

Total number of light fittings

Total number of L.E.L. fittings

# SUMMARY FOR INPUT DATA

## Calculation Type: Conversion (As Designed)

|  |  |   |
|--|--|---|
| Percentage of L.E.L. fittings                    | <input type="text" value="100.00"/>                                | % |
| <b>External</b>                                  |  |   |
| External lights fitted                           | <input type="text" value="Yes"/>                                   |   |
| Light and motion sensor                          | <input type="text" value="Yes"/>                                   |   |
| <hr/>  |  |   |
| <b>23.0 Electricity Tariff</b>                   | <input type="text" value="Standard"/>                              |   |
| <hr/>  |  |   |
| <b>24.0 Main Heating 1</b>                       | <input type="text" value="Database"/>                              |   |
| Description                                      | <input type="text" value="ASHP"/>                                  |   |
| Percentage of Heat                               | <input type="text" value="100"/>                                   | % |
| Database Ref. No.                                | <input type="text" value="105248"/>                                |   |
| Fuel Type  | <input type="text" value="Electricity"/>                           |   |
| Main Heating                                     | <input type="text" value="PET"/>                                   |   |
| SAP Code   | <input type="text" value="224"/>                                   |   |
| In Winter  | <input type="text" value="357.3"/>                                 |   |
| In Summer  | <input type="text" value="292.1"/>                                 |   |
| Controls   | <input type="text" value="CHD Time and temperature zone control"/> |   |
| PCDF Controls                                    | <input type="text" value="0"/>                                     |   |
| Sap Code   | <input type="text" value="2207"/>                                  |   |
| Is MHS Pumped                                    | <input type="text" value="Pump in heated space"/>                  |   |
| Heat Emitter                                     | <input type="text" value="Underfloor"/>                            |   |
| Underfloor Heating                               | <input type="text" value="Yes - Pipes in Concrete"/>               |   |
| Flow Temperature                                 | <input type="text" value="36° - 45°C"/>                            |   |
| <hr/>  |  |   |
| <b>25.0 Main Heating 2</b>                       | <input type="text" value="None"/>                                  |   |
| <hr/>  |  |   |
| Community Heating                                | <input type="text" value="None"/>                                  |   |
| <b>27.0 Secondary Heating</b>                    | <input type="text" value="RWM"/>                                   |   |
| Secondary Heating                                | <input type="text" value="Manufacturer"/>                          |   |
| Description                                      | <input type="text" value="Wood Logs RWM Closed room heater"/>      |   |
| SHS efficiency                                   | <input type="text" value="75.00"/>                                 | % |
| SAP Code   | <input type="text" value="633"/>                                   |   |
| HETAS Approved System                            | <input type="text" value="Yes"/>                                   |   |
| Smoke Control Area                               | <input type="text" value="Unknown"/>                               |   |
| Test Method                                      | <input type="text" value="BS EN 1266"/>                            |   |
| Manufacturer                                     | <input type="text" value="TBC"/>                                   |   |
| Model Name                                       | <input type="text" value="TBC"/>                                   |   |
| <hr/>  |  |   |
| <b>28.0 Water Heating</b>                        | <input type="text" value="HWP From main heating 1"/>               |   |
| Water Heating                                    | <input type="text" value="Main Heating 1"/>                        |   |
| Flue Gas Heat Recovery System                    | <input type="text" value="No"/>                                    |   |
| Waste Water Heat Recovery Instantaneous System 1 | <input type="text" value="No"/>                                    |   |
| Waste Water Heat Recovery Instantaneous System 2 | <input type="text" value="No"/>                                    |   |
| Waste Water Heat Recovery Storage System         | <input type="text" value="No"/>                                    |   |
| Solar Panel                                      | <input type="text" value="No"/>                                    |   |
| Water use <= 125 litres/person/day               | <input type="text" value="Yes"/>                                   |   |

# SUMMARY FOR INPUT DATA

## Calculation Type: Conversion (As Designed)

|                                  |                                  |
|----------------------------------|----------------------------------|
| SAP Code                         | 901                              |
| Immersion Only Heating Hot Water | Yes                              |
| <b>29.0 Hot Water Cylinder</b>   | Hot Water Cylinder               |
| Cylinder Stat                    | Yes                              |
| Cylinder In Heated Space         | Yes                              |
| Independent Time Control         | Yes                              |
| Insulation Type                  | Foam                             |
| Insulation Thickness             | 80 mm                            |
| Cylinder Volume                  | 260.00 L                         |
| Pipes insulation                 | Fully insulated primary pipework |
| <b>31.0 Thermal Store</b>        | 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 | £102                     | C 80                      |                      |
|                                    | Typical Cost    | Typical savings per year | Ratings after improvement |                      |
|                                    |                 |                          | SAP rating                | Environmental Impact |
| Solar photovoltaic panels, 2.5 kWp | £3,500 - £5,500 | £364                     | B 86                      |                      |