# PREDICTED ENERGY ASSESSMENT

Design SAP
elmhurst energy

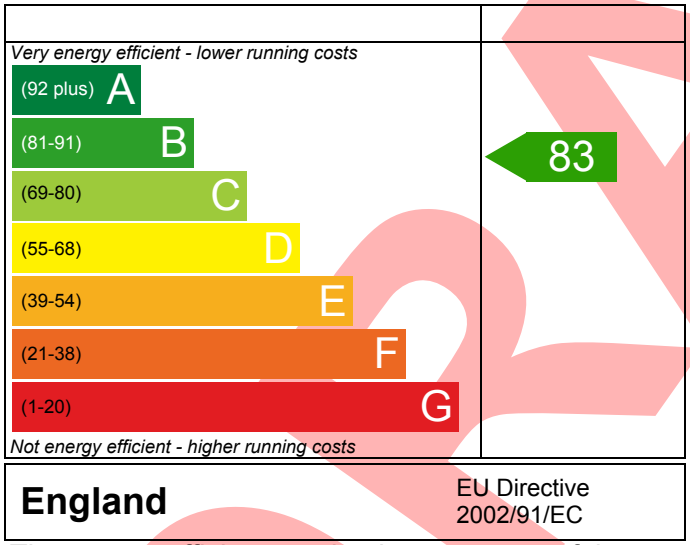
3 bed,
2 bath

| | |
|---|---|
| Dwelling type: | House, End-Terrace |
| Date of assessment: | 30/05/2019 |
| Produced by: | Michael Brogden |
| Total floor area: | 76.86 m² |

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 ($CO_2$) emissions.

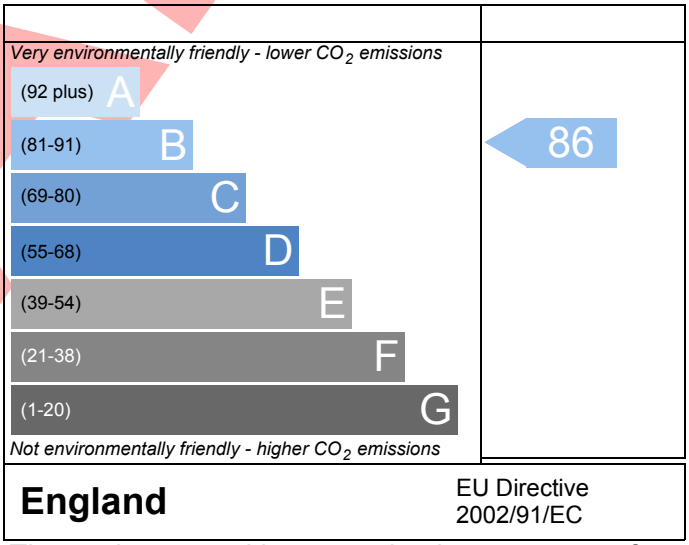
## Energy Efficiency Rating




**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 ($CO_2$) 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 ($CO_2$) emissions. The higher the rating the less impact it has on the environment.



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# BUILDING REGULATION COMPLIANCE
## Calculation Type: New Build (As Designed)

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| | | | |
|---|---|---|---|
| **Property Reference** | Plot 059 OP | **Issued on Date** | 30/05/2019 |
| **Assessment Reference** | Plot 059 OP | **Prop Type Ref** | Type 51 Hipped 1FW 2SW END |
| **Property** | 3 bed, 2 bath | | |

| | | | | | |
|---|---|---|---|---|---|
| **SAP Rating** | 83 B | **DER** | 18.49 | **TER** | 19.18 |
| **Environmental** | 86 B | **% DER<TER** | 3.60 | | |
| **$CO_2$ Emissions (t/year)** | 1.21 | **DFEE** | 49.60 | **TFEE** | 53.72 |
| **General Requirements Compliance** | Pass | **% DFEE<TFEE** | 7.67 | | |

| | | | |
|---|---|---|---|
| **Assessor Details** | Mr. Michael Brogden, Michael Brogden, Tel: 0333 5777 577, michael@darren-evans.co.uk | **Assessor ID** | R034-0001 |
| **Client** | | | |

## SUMARY FOR INPUT DATA FOR New Build (As Designed)

### Criterion 1 – Achieving the TER and TFEE rate

**1a TER and DER**

| | | | |
|---|---|---|---|
| Fuel for main heating | Mains gas | | |
| Fuel factor | 1.00 (mains gas) | | |
| Target Carbon Dioxide Emission Rate (TER) | 19.18 | $kgCO_2/m^2$ | |
| Dwelling Carbon Dioxide Emission Rate (DER) | 18.49 | $kgCO_2/m^2$ | Pass |
| | -0.69 (-3.6%) | $kgCO_2/m^2$ | |

**1b TFEE and DFEE**

| | | | |
|---|---|---|---|
| Target Fabric Energy Efficiency (TFEE) | 53.72 | $kWh/m^2/yr$ | |
| Dwelling Fabric Energy Efficiency (DFEE) | 49.60 | $kWh/m^2/yr$ | |
| | -4.1 (-7.6%) | $kWh/m^2/yr$ | Pass |

### Criterion 2 – Limits on design flexibility

#### Limiting Fabric Standards

**2 Fabric U-values**

| Element | Average | Highest | |
|---|---|---|---|
| External wall | 0.27 (max. 0.30) | 0.27 (max. 0.70) | Pass |
| Party wall | 0.00 (max. 0.20) | - | Pass |
| Floor | 0.15 (max. 0.25) | 0.15 (max. 0.70) | Pass |
| Roof | 0.10 (max. 0.20) | 0.10 (max. 0.35) | Pass |
| Openings | 1.39 (max. 2.00) | 1.50 (max. 3.30) | Pass |

**2a Thermal bridging**

Thermal bridging calculated from linear thermal transmittances for each junction

**3 Air permeability**

| | | | |
|---|---|---|---|
| Air permeability at 50 pascals | 5.00 (design value) | $m^3/(h.m^2)$ @ 50 Pa | |
| Maximum | 10.0 | $m^3/(h.m^2)$ @ 50 Pa | Pass |

#### Limiting System Efficiencies

**4 Heating efficiency**



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

| | | | |
|---|---|---|---|
| Main heating system | Boiler system with radiators or underfloor - Mains gas<br>Data from database<br>Ideal LOGIC COMBI ESP1 35<br>Combi boiler<br>Efficiency: 89.6% SEDBUK2009<br>Minimum: 88.0% | | Pass |
| Secondary heating system | None | | |

**5 Cylinder insulation**

| | | | |
|---|---|---|---|
| Hot water storage | No cylinder | | |

**6 Controls**

| | | | |
|---|---|---|---|
| Space heating controls | Time and temperature zone control | | Pass |
| Hot water controls | No cylinder | | |
| Boiler interlock | Yes | | Pass |

**7 Low energy lights**

| | | | |
|---|---|---|---|
| Percentage of fixed lights with low-energy fittings | 100 | % | |
| Minimum | 75 | % | Pass |

**8 Mechanical ventilation**

Not applicable

## Criterion 3 – Limiting the effects of heat gains in summer

**9 Summertime temperature**

| | | |
|---|---|---|
| Overheating risk (Severn Valley) | Not significant | Pass |

Based on:

| | |
|---|---|
| Overshading | Average |
| Windows facing North<br>Windows facing East<br>Windows facing West | 1.32 m², No overhang<br>4.89 m², No overhang<br>4.07 m², No overhang |
| Air change rate | 4.00 ach |
| Blinds/curtains | Dark-coloured curtain or roller blind, closed 100% of daylight hours |

## Criterion 4 – Building performance consistent with DER and DFEE rate

### Party Walls

| Type | U-value | | |
|---|---|---|---|
| Filled Cavity with Edge Sealing | 0.00 | W/m²K | Pass |

### Air permeability and pressure testing

**3 Air permeability**

| | | | |
|---|---|---|---|
| Air permeability at 50 pascals | 5.00 (design value) | m³/(h.m²) @ 50 Pa | |
| Maximum | 10.0 | m³/(h.m²) @ 50 Pa | Pass |

**10 Key features**

| | | |
|---|---|---|
| Party wall U-value | 0.00 | W/m²K |
| Roof U-value | 0.10 | W/m²K |



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# RECOMMENDATIONS

Design SAP
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| | Typical cost | Typical savings per year | Energy efficiency | Environmental impact | Result |
|---|---|---|---|---|---|
| Low energy lights | | | 0 | 0 | Already installed |
| Solar water heating | £4,000 - £6,000 | £29 | B 85 | B 88 | Recommended |
| Photovoltaic | £3,500 - £5,500 | £309 | A 96 | A 98 | Recommended |
| Wind turbine | | | 0 | 0 | Not applicable |
| **Totals** | **£7,500 - £11,500** | **£338** | **A 96** | **A 98** | |



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# THERMAL BRIDGING
# Calculation Type: New Build (As Designed)

Design SAP
elmhurst energy

| | | | |
|---|---|---|---|
| **Property Reference** | Plot 059 OP | **Issued on Date** | 30/05/2019 |
| **Assessment Reference** | Plot 059 OP | **Prop Type Ref** | Type 51 Hipped 1FW 2SW END |
| **Property** | 3 bed, 2 bath | | |

| | | | | | |
|---|---|---|---|---|---|
| **SAP Rating** | 83 B | **DER** | 18.49 | **TER** | 19.18 |
| **Environmental** | 86 B | **% DER<TER** | 3.60 | | |
| **$CO_2$ Emissions (t/year)** | 1.21 | **DFEE** | 49.60 | **TFEE** | 53.72 |
| **General Requirements Compliance** | Pass | **% DFEE<TFEE** | 7.67 | | |

| | | | |
|---|---|---|---|
| **Assessor Details** | Mr. Michael Brogden, Michael Brogden, Tel: 0333 5777 577, michael@darren-evans.co.uk | **Assessor ID** | R034-0001 |
| **Client** | | | |

| | Junction detail | Source Type | Psi (W/mK) | Length (m) | Result | Reference |
|---|---|---|---|---|---|---|
| External wall | E2 Other lintels (including other steel lintels) | Independently assessed | 0.211 | 10.52 | 2.22 | CATNIC |
| External wall | E3 Sill | Table K1 - Approved | 0.040 | 8.50 | 0.34 | |
| External wall | E4 Jamb | Table K1 - Approved | 0.050 | 22.50 | 1.13 | |
| External wall | E5 Ground floor (normal) | Independently assessed | 0.038 | 17.54 | 0.67 | E05-CXBR-CW4040_100 mm-01-150B& |
| External wall | E6 Intermediate floor within a dwelling | Independently assessed | 0.004 | 17.54 | 0.07 | E06-CXBR-CW4040_100 mm-01 |
| External wall | E10 Eaves (insulation at ceiling level) | Table K1 - Approved | 0.060 | 17.54 | 1.05 | |
| External wall | E16 Corner (normal) | Independently assessed | 0.042 | 9.74 | 0.41 | E16-CXBR-CW4040_100 mm-01 |
| External wall | E18 Party wall between dwellings | Independently assessed | 0.052 | 9.74 | 0.51 | E18-CXBR-CW4040_100 mm-01-RD22 |
| Party wall | P1 Party wall - Ground floor | Independently assessed | 0.010 | 8.55 | 0.09 | P01-CXBR-EWM22-150B&Bperp |
| Party wall | P2 Party wall - Intermediate floor within a dwelling | Table K1 - Default | 0.000 | 8.55 | 0.00 | |
| Party wall | P4 Party wall - Roof (insulation at ceiling level) | Independently assessed | 0.117 | 8.55 | 1.00 | P04-CXBR-EWM22-Spand |

**Total:** 7.48 **W/mK:**

**Y-Value:** 0.047 **W/m²K:**

# BASIC COMPLIANCE REPORT
# Calculation Type: New Build (As Designed)

Design SAP
elmhurst energy

| | | | |
|---|---|---|---|
| **Property Reference** | Plot 059 OP | **Issued on Date** | 30/05/2019 |
| **Assessment Reference** | Plot 059 OP | **Prop Type Ref** | Type 51 Hipped 1FW 2SW END |
| **Property** | 3 bed, 2 bath | | |

| | | | | | |
|---|---|---|---|---|---|
| **SAP Rating** | 83 B | **DER** | 18.49 | **TER** | 19.18 |
| **Environmental** | 86 B | **% DER<TER** | 3.60 | | |
| **$CO_2$ Emissions (t/year)** | 1.21 | **DFEE** | 49.60 | **TFEE** | 53.72 |
| **General Requirements Compliance** | Pass | **% DFEE<TFEE** | 7.67 | | |

| | | | |
|---|---|---|---|
| **Assessor Details** | Mr. Michael Brogden, Michael Brogden, Tel: 0333 5777 577, michael@darren-evans.co.uk | **Assessor ID** | R034-0001 |
| **Client** | | | |

## SUMARY FOR INPUT DATA FOR New Build (As Designed)

### Criterion 1 – Achieving the TER and TFEE rate

**1a TER and DER**

| | | | |
|---|---|---|---|
| Fuel for main heating | Mains gas | | |
| Fuel factor | 1.00 (mains gas) | | |
| Target Carbon Dioxide Emission Rate (TER) | 19.18 | $kgCO_2/m^2$ | |
| Dwelling Carbon Dioxide Emission Rate (DER) | 18.49 | $kgCO_2/m^2$ | Pass |
| | -0.69 (-3.6%) | $kgCO_2/m^2$ | |

**1b TFEE and DFEE**

| | | | |
|---|---|---|---|
| Target Fabric Energy Efficiency (TFEE) | 53.72 | $kWh/m^2/yr$ | |
| Dwelling Fabric Energy Efficiency (DFEE) | 49.60 | $kWh/m^2/yr$ | |
| | -4.1 (-7.6%) | $kWh/m^2/yr$ | Pass |

### Criterion 2 – Limits on design flexibility

#### Limiting Fabric Standards

**2 Fabric U-values**

| Element | Average | Highest | |
|---|---|---|---|
| External wall | 0.27 (max. 0.30) | 0.27 (max. 0.70) | Pass |
| Party wall | 0.00 (max. 0.20) | - | Pass |
| Floor | 0.15 (max. 0.25) | 0.15 (max. 0.70) | Pass |
| Roof | 0.10 (max. 0.20) | 0.10 (max. 0.35) | Pass |
| Openings | 1.39 (max. 2.00) | 1.50 (max. 3.30) | Pass |

**2a Thermal bridging**

Thermal bridging calculated from linear thermal transmittances for each junction

**3 Air permeability**

| | | |
|---|---|---|
| Air permeability at 50 pascals | 5.00 (design value) | |
| Maximum | 10.0 | Pass |

#### Limiting System Efficiencies

**4 Heating efficiency**

| | | |
|---|---|---|
| Main heating system | Boiler system with radiators or underfloor - Mains gas<br>Data from database<br>Ideal LOGIC COMBI ESP1 35<br>Combi boiler<br>Efficiency: 89.6% SEDBUK2009<br>Minimum: 88.0% | Pass |
| Secondary heating system | None | |

**5 Cylinder insulation**

| | | |
|---|---|---|
| Hot water storage | No cylinder | |

**6 Controls**

| | | |
|---|---|---|
| Space heating controls | Time and temperature zone control | Pass |
| Hot water controls | No cylinder | |
| Boiler interlock | Yes | Pass |

**7 Low energy lights**

| | | | |
|---|---|---|---|
| Percentage of fixed lights with low-energy fittings | 100 | % | |
| Minimum | 75 | % | Pass |

**8 Mechanical ventilation**

Not applicable

## Criterion 3 – Limiting the effects of heat gains in summer

**9 Summertime temperature**

| | | |
|---|---|---|
| Overheating risk (Severn Valley) | Not significant | Pass |

Based on:

| | |
|---|---|
| Overshading | Average |
| Windows facing North | 1.32 m², No overhang |
| Windows facing East | 4.89 m², No overhang |
| Windows facing West | 4.07 m², No overhang |
| Air change rate | 4.00 ach |
| Blinds/curtains | Dark-coloured curtain or roller blind, closed 100% of daylight hours |

## Criterion 4 – Building performance consistent with DER and DFEE rate

### Party Walls

| Type | U-value | | |
|---|---|---|---|
| Filled Cavity with Edge Sealing | 0.00 | W/m²K | Pass |

### Air permeability and pressure testing

**3 Air permeability**

| | | |
|---|---|---|
| Air permeability at 50 pascals | 5.00 (design value) | |
| Maximum | 10.0 | Pass |

**10 Key features**

| | | |
|---|---|---|
| Party wall U-value | 0.00 | W/m²K |
| Roof U-value | 0.10 | W/m²K |

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# SUMMARY FOR INPUT DATA
# Calculation Type: New Build (As Designed)

Design SAP
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| | | | |
|---|---|---|---|
| **Property Reference** | Plot 059 OP | **Issued on Date** | 30/05/2019 |
| **Assessment Reference** | Plot 059 OP | **Prop Type Ref** | Type 51 Hipped 1FW 2SW END |
| **Property** | 3 bed, 2 bath | | |

| | | | | | |
|---|---|---|---|---|---|
| **SAP Rating** | 83 B | **DER** | 18.49 | **TER** | 19.18 |
| **Environmental** | 86 B | **% DER<TER** | 3.60 | | |
| **$CO_2$ Emissions (t/year)** | 1.21 | **DFEE** | 49.60 | **TFEE** | 53.72 |
| **General Requirements Compliance** | Pass | **% DFEE<TFEE** | 7.67 | | |

| | | | |
|---|---|---|---|
| **Assessor Details** | Mr. Michael Brogden, Michael Brogden, Tel: 0333 5777 577, michael@darren-evans.co.uk | **Assessor ID** | R034-0001 |
| **Client** | | | |

## SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

| | |
|---|---|
| **Orientation** | East |
| **Property Tenure** | Unknown |
| **Transaction Type** | New dwelling |
| **Terrain Type** | Urban |
| **1.0 Property Type** | House, End-Terrace |
| **2.0 Number of Storeys** | 2 |
| **3.0 Date Built** | 2017 |
| **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:** | 17.54 m | 38.43 m² | 2.31 m |
| **1st Storey:** | 17.54 m | 38.43 m² | 2.56 m |

| | | |
|---|---|---|
| **7.0 Living Area** | 31.02 | m² |
| **8.0 Thermal Mass Parameter** | Precise calculation | |
| Thermal Mass | 205.97 | kJ/m²K |

**9.0 External Walls**

| Description | Type | Construction | U-Value (W/m²K) | Kappa (kJ/m²K) | Gross Area (m²) | Nett Area (m²) |
|---|---|---|---|---|---|---|
| External Wall 1 | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.27 | 60.00 | 85.42 | 70.90 |

**9.1 Party Walls**

| Description | Type | Construction | U-Value (W/m²K) | Kappa (kJ/m²K) | Area (m²) |
|---|---|---|---|---|---|
| Party Wall 1 | Filled Cavity with Edge Sealing | Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill | 0.00 | 110.00 | 41.61 |

**9.2 Internal Walls**

| Description | Construction | Kappa (kJ/m²K) | Area (m²) |
|---|---|---|---|
| Internal Wall 1 | Plasterboard on timber frame | 9.00 | 119.90 |

**10.0 External Roofs**

| Description | Type | Construction | U-Value (W/m²K) | Kappa (kJ/m²K) | Gross Area (m²) | Nett Area (m²) |
|---|---|---|---|---|---|---|
| External Roof 1 | External Plane Roof | Plasterboard, insulated at ceiling level | 0.10 | 9.00 | 34.43 | 34.43 |

**10.2 Internal Ceilings**

| Description | Construction | Kappa (kJ/m²K) | Area (m²) |
|---|---|---|---|
| Internal Ceiling 1 | Plasterboard ceiling, carpeted chipboard floor | 9.00 | 38.43 |

### 11.0 Heat Loss Floors

| Description | Type | Construction | U-Value (W/m²K) | Kappa (kJ/m²K) | Area (m²) |
|---|---|---|---|---|---|
| Heat Loss Floor 1 | Ground Floor - Solid | Slab on ground, screed over insulation | 0.15 | 110.00 | 38.43 |

### 11.2 Internal Floors

| Description | Construction | Kappa (kJ/m²K) | Area (m²) |
|---|---|---|---|
| floor | Plasterboard ceiling, carpeted chipboard floor | 18.00 | 38.43 |

### 12.0 Opening Types

| Description | Data Source | Type | Glazing | Glazing Gap | Argon Filled | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---|---|---|---|---|---|---|---|---|---|
| French Door | Manufacturer | Window | Double glazed | | | 0.71 | | 0.70 | 1.41 |
| Window | Manufacturer | Window | Double glazed | | | 0.71 | | 0.70 | 1.41 |
| Solid door tall window | Manufacturer | Solid Door | | | | | | | 1.20 |
| half glazed | Manufacturer | Half Glazed Door | Double Low-E Soft 0.05 | | | 0.63 | | 0.70 | 1.50 |

### 13.0 Openings

| Name | Opening Type | Location | Orientation | Curtain Type | Overhang Ratio | Wide Overhang | Width (m) | Height (m) | Count | Area (m²) | Curtain Closed |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Front door | Solid Door | [1] External Wall 1 | East | | | | | | | 2.12 | |
| front windows | Window | [1] External Wall 1 | East | Dark-coloured curtain or roller blind | 0.00 | | | | | 4.89 | 100 |
| rear door | Half Glazed Door | [1] External Wall 1 | West | | | | | | | 2.12 | 100 |
| rear windows | Window | [1] External Wall 1 | West | Dark-coloured curtain or roller blind | 0.00 | | | | | 4.07 | 100 |
| LHS windows | Window | [1] External Wall 1 | North | Dark-coloured curtain or roller blind | 0.00 | | | | | 1.32 | 100 |

| | | |
|---|---|---|
| **14.0 Conservatory** | None | |
| **15.0 Draught Proofing** | 100 | % |
| **16.0 Draught Lobby** | No | |
| **17.0 Thermal Bridging** | Calculate Bridges | |

**17.1 List of Bridges**

# SUMMARY FOR INPUT DATA
# Calculation Type: New Build (As Designed)

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| Source Type | Bridge Type | Length | Psi | Imported | Reference: |
|---|---|---|---|---|---|
| Independently assessed | E2 Other lintels (including other steel lintels) | 10.52 | 0.211 | No | CATNIC |
| Table K1 - Approved | E3 Sill | 8.50 | 0.040 | No | |
| Table K1 - Approved | E4 Jamb | 22.50 | 0.050 | No | |
| Independently assessed | E5 Ground floor (normal) | 17.54 | 0.038 | No | E05-CXBR-CW4040_100mm-01-150B& |
| Independently assessed | E6 Intermediate floor within a dwelling | 17.54 | 0.004 | No | E06-CXBR-CW4040_100mm-01 |
| Table K1 - Approved | E10 Eaves (insulation at ceiling level) | 17.54 | 0.060 | No | |
| Independently assessed | E16 Corner (normal) | 9.74 | 0.042 | No | E16-CXBR-CW4040_100mm-01 |
| Independently assessed | E18 Party wall between dwellings | 9.74 | 0.052 | No | E18-CXBR-CW4040_100mm-01-RD22 |
| Independently assessed | P1 Party wall - Ground floor | 8.55 | 0.010 | No | P01-CXBR-EWM22-150B&Bperp |
| Table K1 - Default | P2 Party wall - Intermediate floor within a dwelling | 8.55 | 0.000 | No | |
| Independently assessed | P4 Party wall - Roof (insulation at ceiling level) | 8.55 | 0.117 | No | P04-CXBR-EWM22-Spand |

| | | |
|---|---|---|
| Y-value | 0.047 | W/m²K |

| | | |
|---|---|---|
| **18.0 Pressure Testing** | Yes | |
| Designed $AP_{50}$ | 5.00 | m³/(h.m²) @ 50 Pa |
| Property Tested ? | | |
| As Built $AP_{50}$ | | m³/(h.m²) @ 50 Pa |

**19.0 Mechanical Ventilation**

**Summer Overheating**

| | |
|---|---|
| Windows open in hot weather | Windows half open |
| Cross ventilation possible | Yes |
| Night Ventilation | No |
| Air change rate | 4.00 |

**Mechanical Ventilation**

| | |
|---|---|
| Mechanical Ventilation System Present | No |

**20.0 Fans, Open Fireplaces, Flues**

| | MHS | SHS | Other | Total |
|---|---|---|---|---|
| Number of Chimneys | 0 | | 0 | 0 |
| Number of open flues | 0 | | 0 | 0 |
| Number of intermittent fans | | | | 3 |
| Number of passive vents | | | | 0 |
| Number of flueless gas fires | | | | 0 |

| | | |
|---|---|---|
| **21.0 Fixed Cooling System** | No | |

**22.0 Lighting**

**Internal**

| | | |
|---|---|---|
| Total number of light fittings | 15 | |
| Total number of L.E.L. fittings | 15 | |
| Percentage of L.E.L. fittings | 100.00 | % |

**External**

| | | |
|---|---|---|
| External lights fitted | No | |

| | | |
|---|---|---|
| **23.0 Electricity Tariff** | Standard | |

| | | |
|---|---|---|
| **24.0 Main Heating 1** | Database | |
| Percentage of Heat | 100 | % |
| Database Ref. No. | 17929 | |
| Fuel Type | Mains gas | |
| Main Heating | BGW | |
| SAP Code | 104 | |

| | |
|---|---|
| In Winter | 90.5 |
| In Summer | 87.3 |
| Controls | CBI Time and temperature zone control |
| PCDF Controls | 0 |
| Delayed Start Stat | Yes |
| Sap Code | 2110 |
| Flue Type | Balanced |
| Fan Assisted Flue | Yes |
| Is MHS Pumped | Pump in heated space |
| Heat Emitter | Radiators |
| Flow Temperature | Normal (> 45°C) |
| Combi boiler type | Standard Combi |
| Combi keep hot type | None |
| **25.0 Main Heating 2** | None |
| Community Heating | None |
| **28.0 Water Heating** | HWP From main heating 1 |
| Water Heating | Main Heating 1 |
| Flue Gas Heat Recovery System | No |
| Waste Water Heat Recovery Instantaneous System 1 | No |
| Waste Water Heat Recovery Instantaneous System 2 | No |
| Waste Water Heat Recovery Storage System | No |
| Solar Panel | No |
| Water use <= 125 litres/person/day | Yes |
| SAP Code | 901 |
| **29.0 Hot Water Cylinder** | 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 | £29 | B 85 | |
| | **Typical Cost** | **Typical savings per year** | **Ratings after improvement SAP rating** | **Environmental Impact** |
| Solar photovoltaic panels, 2.5 kWp | £3,500 - £5,500 | £309 | A 96 | |