elmhurst energy

# SAP Report Submission for Building Regulations Compliance

Client: Chris Walker MCIAT ICOB

Project: Unit 5, 109-113 , Hubert Road
Selly Oak, B296ET

Contact: Paul Wright
Greenhouse Energy Ratings
greenhouse.energyratings@yahoo.co.uk

Report Issue Date:

EXCELLENCE IN ENERGY ASSESSMENT

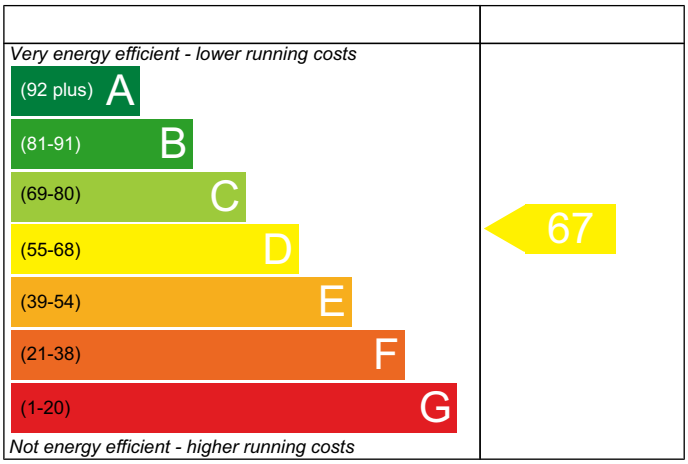
Unit 5, 109-113 , Hubert Road,
Selly Oak,
B296ET

| | |
|---|---|
| Dwelling type: | Flat, End-Terrace |
| Date of assessment: | |
| Produced by: | Greenhouse Energy Ratings |
| Total floor area: | 26 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.

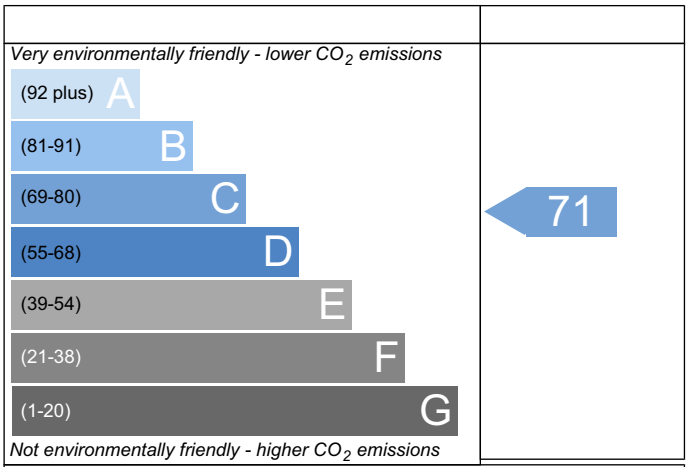
## Energy Efficiency Rating




**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.

# U-VALUE CALCULATOR REPORT

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| | | | |
|---|---|---|---|
| **Property Reference** | GER/17/103/U5 | **Issued on Date** | |
| **Survey Reference** | 001 | **Prop Type Ref** | |
| **Project** | Unit 5, 109-113 , Hubert Road, Selly Oak, B296ET | | |
| **Calculation Type** | Conversion - new dwelling | | |

| | | | | | |
|---|---|---|---|---|---|
| **SAP Rating** | 67 D | **DER** | N/A | **TER** | N/A |
| **Environmental** | 71 C | **% DER<TER** | N/A | | |
| **$CO_2$ Emissions (t/year)** | 1.45 | **DFEE** | N/A | **TFEE** | N/A |
| **General Requirements Compilance** | N/A | **% DFEE<TFEE** | N/A | | |

| | | | |
|---|---|---|---|
| **Surveyor** | Paul Wright, Tel: 07964217667 | **Surveyor ID** | 7067-0001 |
| **Client** | Chris Walker MCIAT ICOB, CID/32 | | |

## Building Elements

### Wall 000001 - Masonry solid wall

**Wall Type: Standard Wall**

| Layer | Description | Thickness (mm) | Conductivity (W/m²K) | Resistance (m²K/W) | Fraction (%) |
|---|---|---|---|---|---|
| **Ext surface** | | | | 0.0400 | |
| **Layer 1** | **Brick, outer leaf** | | | | |
| | Main construction | 220 | 0.7700 | 0.2857 | 100.00 |
| **Layer 2** | **airspace/plaster dabs** | | | | |
| | Main construction | 15 | 0.0882 | 0.1700 | 80.00 |
| | Main construction | 15 | 0.0882 | 0.1700 | 20.00 |
| | Corrections - Cavity Unventilated, Emissivity: Normal | | | | |
| **Layer 3** | **Thermaline Plus (48mm)** | | | | |
| | Main construction | 48 | 0.0384 | 1.2500 | 100.00 |
| | Corrections - Air Gap: Level 1, Fasteners: None or plastic | | | | |
| **Layer 4** | **Plaster** | | | | |
| | Main construction | 13 | 0.5700 | 0.0228 | 100.00 |
| **Int surface** | | | | 0.1300 | |

**Total resistance:** **Upper limit =** 1.899 m² K/W **Lower limit =** 1.899 m² K/W **Average =** 1.899 m² K/W

**Total correction =** 0.0043 m² K/W **U-value (unrounded) =** 0.53 W/m² K

**Unheated space:** None

**Total thickness:** **296 mm** **U-value: 0.53 W/m² K** **Kappa: n/a**

# U-VALUE CALCULATOR REPORT

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| **General Requirements Compilance** | N/A | **% DFEE<TFEE** | N/A | | |

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## Building Elements

### Floor 000002 - floor - slab-on-ground floor

**Floor Type: Slab On Ground Floor**
**Area = 26.00 m², Perimeter = 11.00 m, Wall thickness = 300.00 mm, Soil: Clay**
**Horizontal edge insulation: none**
**Vertical edge insulation: none**

| Layer | Description | Thickness (mm) | Conductivity (W/m²K) | Resistance (m²K/W) | Fraction (%) |
|---|---|---|---|---|---|
| **Ext surface** | | | | 0.0400 | |
| **Layer 1** | **Compacted Hardcore** | | | | |
| | Main construction | 150 | 1.3000 | 0.1154 | 100.00 |
| **Layer 2** | **Sand** | | | | |
| | Main construction | 25 | 2.3000 | 0.0109 | 100.00 |
| **Layer 3** | **Polythene,1200 gauge** | | | | |
| | Main construction | 1 | 0.0000 | 0.0000 | 100.00 |
| **Layer 4** | **Kooltherm K3 Floorboard (45mm +)** | | | | |
| | Main construction | 75 | 0.0200 | 3.7500 | 100.00 |
| | Corrections - Air Gap: Level 1, Fasteners: None or plastic | | | | |
| **Layer 5** | **Concrete, medium density** | | | | |
| | Main construction | 100 | 1.3500 | 0.0741 | 100.00 |
| **Layer 6** | **Screed** | | | | |
| | Main construction | 50 | 1.1500 | 0.0435 | 100.00 |
| **Int surface** | | | | 0.1700 | |

**Total resistance:** **Upper limit =** 3.994 m² K/W **Lower limit =** 3.994 m² K/W **Average =** 3.994 m² K/W

**Total correction =** 0.0088 m² K/W **U-value (unrounded) =** 0.17 W/m² K

**Unheated space:** None

**Total thickness:** **401 mm** **U-value: 0.17 W/m² K** **Kappa: n/a**

# SUMMARY FOR INPUT DATA
# Calculation Type: Conversion - new dwelling

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| | | | |
|---|---|---|---|
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| **Environmental** | 71 C | **% DER<TER** | N/A | | |
| **$CO_2$ Emissions (t/year)** | 1.45 | **DFEE** | N/A | **TFEE** | N/A |
| **General Requirements Compilance** | N/A | **% DFEE<TFEE** | N/A | | |

| | | | |
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| **Surveyor** | Paul Wright, Tel: 07964217667 | **Surveyor ID** | 7067-0001 |
| **Client** | Chris Walker MCIAT ICOB, CID/32 | | |

## SUMMARY FOR INPUT DATA FOR: Conversion - new dwelling

| | |
|---|---|
| **Orientation** | South East |
| **Property Tenure** | Rented (private) |
| **Transaction Type** | Rental |
| **1.0 Property Type** | Flat, End-Terrace |
| **2.0 Number of Storeys** | 1 |
| **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:** | 8.20 m | 26.00 m² | 2.60 m |

| | | |
|---|---|---|
| **7.0 Living Area** | 14.00 | m² |
| **8.0 Thermal Mass Parameter** | Simple calculation - Medium | |
| Thermal Mass | 250.00 | kJ/m²K |

**9.0 External Walls**

| Description | Type | Construction | U-Value (W/m²K) | Gross Area (m²) | Nett Area (m²) |
|---|---|---|---|---|---|
| External Wall 1 | Solid Wall | Other | 0.53 | 21.32 | 18.68 |

**9.1 Party Walls**

| Description | Type | Construction | U-Value (W/m²K) | Area (m²) |
|---|---|---|---|---|
| Party Wall 1 | Solid Wall | Single plasterboard on dabs on both sides, dense blocks, cavity or cavity fill | 0.00 | 35.00 |

**10.1 Party Ceilings**

| Description | Construction | Area (m²) |
|---|---|---|
| Party Ceilings 1 | Timber I-joists, carpeted | 26.00 |

**11.0 Heat Loss Floors**

| Description | Type | Construction | U-Value (W/m²K) | Area (m²) |
|---|---|---|---|---|
| Heat Loss Floor 1 | Ground Floor - Solid | Slab on ground, screed over insulation | 0.17 | 26.00 |

**12.0 Opening Types**

| Description | Data Source | Type | Glazing | Glazing Gap | Argon Filled | Solar Trans | Frame Type | Frame Factor | U Value (W/m²K) |
|---|---|---|---|---|---|---|---|---|---|
| Front | Manufacturer | Window | Double Low-E Soft 0.05 | | | 0.63 | | 0.70 | 1.60 |

**13.0 Openings**

# SUMMARY FOR INPUT DATA
# Calculation Type: Conversion - new dwelling

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| Name | Opening Type | Location | Orientation | Curtain Type | Overhang Ratio | Wide Overhang | Width (m) | Height (m) | Count | Area (m²) | Curtain Closed |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Front | Window | [1] External Wall 1 | North West | None | 0.00 | | | | | 2.64 | |

| | | |
|---|---|---|
| **14.0 Conservatory** | None | |
| **15.0 Draught Proofing** | 100 | % |
| **16.0 Draught Lobby** | Yes | |
| **17.0 Thermal Bridging** | Default | |
| Y-value | 0.150 | W/m²K |
| **18.0 Pressure Testing** | No | |
| **19.0 Mechanical Ventilation** | | |
| **Summer Overheating** | | |
| Windows open in hot weather | Trickle vents only | |
| Cross ventilation possible | No | |
| Night Ventilation | Yes | |
| Air change rate | 0.10 | |
| **Mechanical Ventilation** | | |
| Mechanical Ventilation System Present | No | |

**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 | | | | 2 |
| 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 | 4 | |
| Total number of L.E.L. fittings | 4 | |
| Percentage of L.E.L. fittings | 100.00 | % |
| **External** | | |
| External lights fitted | No | |
| **23.0 Electricity Tariff** | Standard | |
| **24.0 Main Heating 1** | Manufacturer | |
| Description | TBC | |
| Percentage of Heat | 100 | % |
| Main Heating | SEB | |
| SAP Code | 402 | |
| Efficiency (Manufacturer) | 100.0 | % |
| Model Name | TBC | |
| Manufacturer | TBC | |
| Controls | CSB Automatic charge control | |
| Sap Code | 2402 | |
| **25.0 Main Heating 2** | None | |

| | | |
|---|---|---|
| **27.0 Secondary Heating** | REA | |
| Secondary Heating | SAP table | |
| Description | Electricity REA Panel, convector or radiant heaters | |
| SHS efficiency | 100.00 | % |
| SAP Code | 691 | |
| **28.0 Water Heating** | HES Instantaneous at point of use | |
| Water Heating | Independent | |
| 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 | 909 | |
| **29.0 Hot Water Cylinder** | None | |

**Recommendations**

**Lower cost measures**

**None**

**Further measures to achieve even higher standards**

**None**