



ASSESSMENT HIVE

# Energy Statement

144 Bury Old Road, Manchester, M8 4HE

Property Type: Conversion

Result: COMPLIANCE MET

Calculation Method SAP 10 Software

Date: 5 December 2025

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# **Executive Summary**

## **Site Description**

This Energy and Sustainability Assessment has been prepared to support the planning application for the conversion of hotel into into 11 residential flats.

## **Strategy**

The strategy highlights how the proposed development will promote sustainability throughout both design and operation and responds to the UK Planning and regulatory framework, National Planning Policy Framework 2021, Manchester City Council's Core Strategy 2012 - 2027 (2012) policies EN4 - EN7 and Principles of The Guide to Development in Manchester SPD , summarising how the relevant targets will be addressed and achieved.

## **Energy Hierarchy**

In accordance with the Energy Hierarchy detailed Manchester City Core Strategy energy this statement outlines an overall commitment to reducing energy consumption under occupancy through the adoption of a 'Fabric First' principle, which will seek to enhance insulation standards and improved heating and lighting efficiencies in comparison to the standard requirements of Approved Document Part L 2021. The viability of district heating will be explored.

## **Energy Efficiency & Carbon Reduction:**

**Be 'Lean':** Passive design principles including a high level of insulation and reduced air permeability to deliver Part L compliant Building in absence of renewable technologies. It will achieve **26%** reduction in carbon emissions over Part L 2021 baseline.

**Be 'Clean':** district heating was deemed not viable for this project,

**Be 'Green':** Air Source Heat Pump Water Heaters have been proposed for the specific scheme and will deliver a further **45%** reduction in regulated carbon emissions over Part L 2021 baseline,

## **Material and Waste Management**

Minimising the use of virgin materials during construction by recycling and reusing where feasible. Low waste benchmark levels will be targeted during construction with requirements identifying that the diversion of waste from landfill is to be achieved by the contractor.

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## **Recommendation and Results**

This report demonstrates that the proposed development can achieve a carbon emission reduction of **71%** over the notional development (see Table 2).

The following tables demonstrate the carbon emissions and savings:

Table 1. Carbon Dioxide emissions after each stage of the Energy Hierarchy

|                                                                         | Carbon Dioxide Emissions for residential buildings<br>(Tonnes CO <sub>2</sub> per annum) |             |
|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------|
|                                                                         | Regulated                                                                                | Unregulated |
| Baseline: Part L 2021 of the Building Regulations Compliant Development | 19.3                                                                                     |             |
| After energy demand reduction (be lean)                                 | 14.3                                                                                     |             |
| After heat network connection (be clean)                                | 14.3                                                                                     |             |
| After renewable energy (be green)                                       | 5.6                                                                                      |             |

Table 2. Carbon Dioxide Savings from each stage of the Energy Hierarchy

|                                               | Regulated residential carbon dioxide savings |            |
|-----------------------------------------------|----------------------------------------------|------------|
|                                               | (Tonnes CO <sub>2</sub> per annum)           | (%)        |
| Be lean: savings from energy demand reduction | 5.1                                          | 26%        |
| Be clean: savings from heat network           | 0.0                                          | 0%         |
| Be green: savings from renewable energy       | 8.7                                          | 45%        |
| <b>Cumulative on site savings</b>             | <b>13.7</b>                                  | <b>71%</b> |

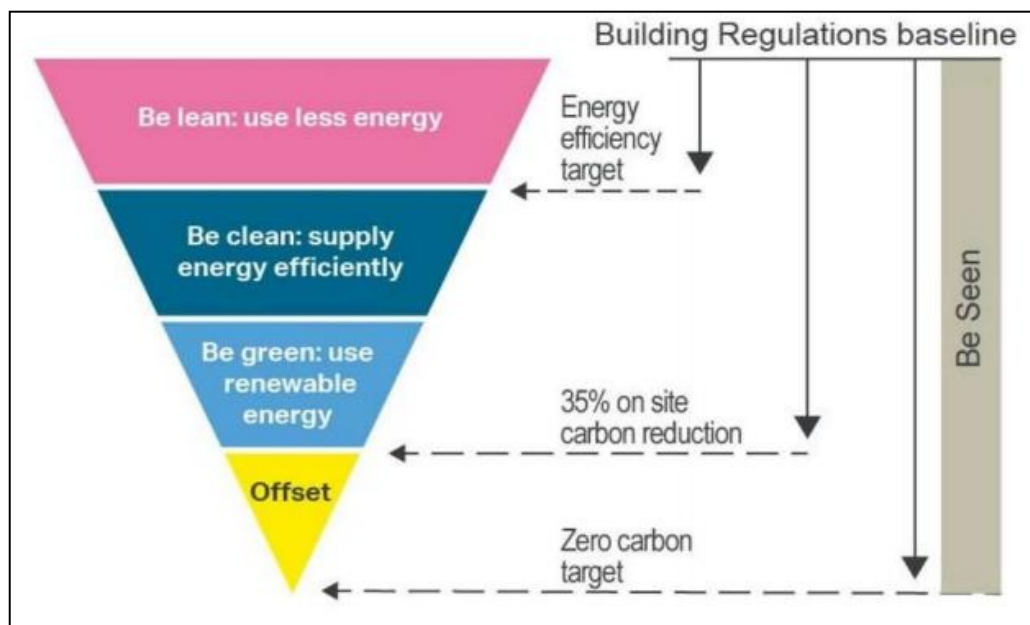
## Methodology

This energy assessment outlines the energy demand from the development together with the associated CO<sub>2</sub> emissions, using Building Regulations Part L 2021 as a baseline. It demonstrates how the emissions from energy use in the development will be reduced through energy efficiency measures.

The proposed scheme is required to achieve carbon emission reduction principles in accordance with the UK Planning and regulatory framework.

The methodology employed to determine the potential CO<sub>2</sub> savings is in accordance with the three-step Energy Hierarchy.

Figure 1: The Energy Hierarchy



**Be 'Lean'** - Improve the energy efficiency of the scheme,

**Be 'Clean'** - Supply as much of the remaining energy requirement with low carbon; technologies such as district heating if available or combined heat and power (CHP); and

**Be 'Green'** - Offset a proportion of the remaining carbon dioxide emissions by using renewable technologies.

**Be 'Seen'** - monitor, verify and report on post-construction energy performance,

The government approved Standard Assessment Procedure (SAP) methodology software has been used to determine the CO<sub>2</sub> emissions and energy requirements. It compares CO<sub>2</sub> emissions from regulated energy use (DER) with those of an equivalent dwelling built to Part L 2021 (TER), a notional dwelling of the same size and shape.

Opportunities for incorporating features into the development that contribute to the objectives of sustainable development were explored during the design process, to ensure that where possible, the proposals achieve best practice.

# **Planning Policy Context**

## **National Planning Policy Framework (NPPF) 2021**

Emphasised the concept of sustainable development by encouraging local authorities to adopt proactive strategies to mitigate and adapt to climate change. It recommends the move to a low carbon future by:

Avoiding increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure; and

Contributing to reduce greenhouse gas emissions, such as through its location, orientation and design. Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards.

To help increase the use and supply of renewable and low carbon energy and heat, plans should:

- provide a positive strategy for energy from these sources, that maximises the potential for suitable development, while ensuring that adverse impacts are addressed satisfactorily (including cumulative landscape and visual impacts);
- consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and
- identify opportunities for development to draw its energy supply from decentralised, renewable or low carbon energy supply systems and for colocating potential heat customers and suppliers.

## **Local Policy**

### **Policy EN4**

All developments must follow the principle of the Energy Hierarchy, being designed:

- to reduce the need for energy through design features that provide passive heating, natural lighting and cooling
  - to reduce the need for energy through energy efficient features such as improved insulation and glazing
  - to meet residual energy requirements through the use of low or zero carbon energy generating technologies
-

Wherever possible new development and retrofit projects, including energy generation plant, must be located and designed in a manner that allows advantage to be taken of opportunities for low and zero carbon energy supplies.

Where possible new development and retrofit projects will be used as a mechanism to help improve energy efficiency and provide low and zero carbon energy supplies to existing buildings.

Where appropriate new development and retrofit projects will be required to connect to and/or make contributions to low or zero carbon energy schemes and/or to incorporate provision to enable future connection to any existing / potential decentralised energy schemes. The use of building materials with low embodied carbon in new development and refurbishment schemes.

#### **Policy EN5**

Within Manchester it is considered that the following strategic areas, indicated on the key diagram, will have a major role to play in achieving an increase in the level of decentralised, low and zero carbon energy supplies available:

- The Regional Centre, which also includes the Oxford Road Corridor and Eastlands
- District Centres and associated major development sites
- Airport Strategic Site
- Strategic housing location
- Strategic employment locations

Within these areas new development, regeneration and retrofit projects, will be expected to take place in the context of more detailed proposals for decentralised low and zero carbon energy infrastructure in the form of energy proposals plans. The Council will work with all relevant stakeholders, which may include developers, landowners, residents, community groups, private sector partners, utilities companies, neighbouring authorities and other public sector bodies, as appropriate, to bring forward such plans.

Where investment or development is being undertaken into or adjacent to a public building/asset or district heating network, full consideration shall be given to the potential role that these can have in providing an anchor load within a decentralised energy network or in creating opportunities for CO2 reduction funded by contributions.

#### **Policy EN6**

Developments smaller than 10 units but involving the erection of a building or substantial improvement to an existing building will be expected to meet the minimum targets for the defined areas below, where viable.

The target framework relates to three broad development locations and their potential for low and zero carbon, decentralised energy. The areas are defined as follows:

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Target 1 Network development areas: Locations where the proximity of new and existing buildings, the mix of uses and density of development provide the right conditions to support district heating (and cooling).

Target 2 Electricity intense areas: Locations where the predominant building type has an all-electric fit-out such as retail units and leisure complexes.

Target 3 Micro-generation areas: Locations where lower densities and a fragmented mix of uses tend to mean that only building scale solutions are practical.

### **Policy EN7**

There will be a general presumption in favour of low and zero carbon decentralised energy schemes, subject to the following considerations:

That any new generating plant capable of producing heat and cooling as well as electricity should be located in a way that facilitates future connection to a local distributed energy system.

- That any energy centre, including generating plant, standby/boiler plant and substations, shall be located and designed to a high quality so as to integrate with and contribute to the townscape.
- Biofuels should be obtained from sustainable sources and processes and in a way that minimises transport impacts, following a sequential approach in order to minimise CO2 emissions – firstly prioritising local and regional sources, followed by national, European and international.
- Consideration should be given to biofuel delivery by rail and waterways where possible. Where large-scale fuel or feedstock delivery is required by road the energy centre must be located in or adjacent to light industrial, industrial or leisure uses with any impact on local residential amenity minimised.
- The cumulative impact of energy schemes will be taken into account when considering applications, to include modelled impacts on air quality and landscape character, with reference to Policy EN16.
- Flood risk, through the Manchester-Salford-Trafford Strategic Flood Risk Assessment.

In determining proposals for development, consideration will be given to the need to safeguard strategic energy sites and network routes, both proposed or existing, where these have been identified as having strategic significance for the delivery of low or zero carbon energy infrastructure or, would be required in order to achieve the successful regeneration of an area in line with targets for reducing carbon emissions.

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## **Supplementary Planning Document and Planning Guidance (2007)**

Part 1 Policy E1.5 encourages high standards of energy efficiency in new development. In the Environmental Standards Statement, developers should show how they have considered the steps necessary to reduce energy demand at the earliest stages of design. Developers should aim to reduce CO2 emissions by at least 25% more than the requirements of the current Building Regulations, which at present are Building Regulations: Approved Document L (2006) – ‘Conservation of Fuel and Power.’ The following design principles will assist developers in achieving energy efficiency targets:

- Minimise reliance on energy-using equipment for heating, cooling, lighting and natural ventilation
- Position trees and soft landscaping on and around the development and within buildings to provide natural shading, insulation and air conditioning
- Integrate energy efficient micro-generation and community heating schemes, such as combined heat and power (CHP)
- Site layout and building design principles should maximise the capture and use of daylight and passive solar energy, whilst avoiding excessive solar gain in summer

### **Specify energy and water efficient appliances and systems**

To reduce energy demand and the harmful impact of using energy from non-renewables, in line with UDP Part 1 Policy E1.5, developers should aim for at least 20% of final site energy demand to be met by on-site renewable energy technologies. Renewable energy targets can be achieved more readily by undertaking the measures suggested above reducing the total energy demand of the building. It is possible to produce developments that use 50% and even 100% energy from renewable sources.

To achieve this, developers should:

- Assess opportunities for integrating small and large scale renewable energy generation systems to improve the energy security of occupants and the neighbourhood, including siting of energy generation businesses on-site and export of surplus energy
- Use a mix of technologies to help generation patterns match demand
- Investigate energy generation opportunities before designing building envelopes or fixing their location, to optimise utilisation of wind, solar and geothermal resources
- Consider final energy demand rather than building energy consumption in the selection and sizing of generation equipment
- Explore opportunities to tackle waste and energy issues collectively through use of anaerobic digesters linked to CHPs (Combined Heat and Power devices)

Consider private wire networks as an alternative to grid connection and availability charges on larger developments.

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## Energy Strategy

The Energy strategy for the proposed development is based on the Building Regulations Part L; it adopts a set of principles to guide design and decisions regarding energy, balanced with the need to optimise environmental and economic benefits. It seeks to incorporate energy efficiency through the approach detailed below.

### Baseline Model

In accordance with local Policy SI 2, a baseline model is run assuming the development complied with Part L 2021 of the Building Regulations. This baseline model is then used in the Energy Strategy process in comparison to the Be 'Lean', Be 'Clean' and Be 'Green' scenarios of the Energy Hierarchy, to establish the regulated CO<sup>2</sup> emissions from the development.

The baseline model used for this project assumed that any heating and hot water supply would be provided by gas boilers and any active cooling would be provided by electrically powered equipment. The comparative Be 'Lean' model assumes the same heating strategy.

### Be 'Lean' – Demand Reduction

In accordance with Local Policy the development must achieve at least a 20% improvement in energy efficiency on Building Regulations Part L 2021 baseline scenario.

The building fabric performance and engineering systems have been optimised in order to use less energy prior to the inclusion or consideration of Low and Zero Carbon (LZC) Technology.

Through passive design measures, efficient building fabric and engineering systems the building is estimated to achieve **26%** reduction in annual regulated CO<sub>2</sub> emissions over Part L benchmark, therefore demonstrating compliance with Building Regulations Through passive means alone without the utilisation of renewable technologies.

### Passive Design Measures

**Fabric Performance** - The fabric performance values aim to reduce unwanted heat loss and heat gains, whilst maintaining a comfortable internal environment.

The heat loss of different building elements is dependent upon their U –value. A building with low U values provides better levels of insulation and reduced heating demand.

The development will incorporate high levels of insulation and efficient glazing; thereby reduce demand for space heating. The table below shows the U values for the development and the associated improvements over Building Regulations.

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Table 3. Energy Efficient Design Specification

| Element               | Building Regulations<br>Baseline Standards 2021 | Specification           |
|-----------------------|-------------------------------------------------|-------------------------|
| Existing Cavity Walls | 0.55 W/m <sup>2</sup> k                         | 0.18 W/m <sup>2</sup> k |
| Existing Solid Walls  | 0.3 W/m <sup>2</sup> k                          | 0.18 W/m <sup>2</sup> k |
| Existing Floors       | 0.25 W/m <sup>2</sup> k                         | 0.18 W/m <sup>2</sup> k |
| Existing Roofs        | 0.16 W/m <sup>2</sup> k                         | 0.11 W/m <sup>2</sup> k |
| Windows & Doors       | 2.6 W/m <sup>2</sup> k                          | 1.2 W/m <sup>2</sup> k  |
| Air Tightness         | 15 W/m <sup>2</sup> k                           | 8 W/m <sup>2</sup> k    |

**Efficient Lighting and Controls** - Throughout the development natural lighting will be optimised. The development will also incorporate low energy light fittings throughout. All light fittings will be specified as low energy lighting and will accommodate LED luminaries only.

**Ventilation** - The use of natural ventilation is proposed.

**Space Heating & Cooling** - Space heating will be provided by Panel Heaters apart from the ground floor flats that will be electric High Heat Storage Heaters

**Domestic Hot Water (DHW) system** - Air Source Heat Pump Water Heater

#### **Be 'Clean' – Supply Energy Efficiently**

The Be Clean step of the energy hierarchy refers to the use of 'Clean energy supply'. This includes, but is not limited to, the use of Combined Heat and Power (CHP) and District Heat Networks. Policy SI 3 seeks for new development to promote the use of CHP and district heating.

#### **Policy SI 1 Improving Air Quality**

Development Plans, through relevant strategic, site-specific and area-based policies, should seek opportunities to identify and deliver further improvements to air quality and should not reduce air quality benefits that result from the Mayor's or boroughs' activities to improve air quality.

To tackle poor air quality, protect health and meet legal obligations the following criteria should be addressed:

Development proposals should not:

- lead to further deterioration of existing poor air quality
- create any new areas that exceed air quality limits, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits

- create unacceptable risk of high levels of exposure to poor air quality.

In order to meet the requirements in Part 1, as a minimum:

- development proposals must be at least Air Quality Neutral
- development proposals should use design solutions to prevent or minimise increased exposure to existing air pollution and make provision to address local problems of air quality in preference to post-design or retro-fitted mitigation measures
- development proposals in Air Quality Focus Areas or that are likely to be used by large numbers of people particularly vulnerable to poor air quality, such as children or older people should demonstrate that design measures have been used to minimise exposure.

Development proposals should ensure that where emissions need to be reduced to meet the requirements of Air Quality Neutral or to make the impact of development on local air quality acceptable, this is done on-site. Where it can be demonstrated that emissions cannot be further reduced by on-site measures, off-site measures to improve local air quality may be acceptable, provided that equivalent air quality benefits can be demonstrated within the area affected by the development.

### **Policy SI 3 Energy Infrastructure**

Boroughs and developers should engage at an early stage with relevant energy companies and bodies to establish the future energy and infrastructure requirements arising from large-scale development proposals such as Opportunity Areas, Town Centres, other growth areas or clusters of significant new development.

Development Plans should:

- identify the need for, and suitable sites for, any necessary energy infrastructure requirements including energy centres, energy storage and upgrades to existing infrastructure
  - identify existing heating and cooling networks, identify proposed locations for future heating and cooling networks and identify opportunities for expanding and inter-connecting existing networks as well as establishing new networks.
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## Site-wide communal system/network and design for district network connection

In light of the small scale of the proposed development and its location; it is apparent that the use of a heat pump fed site-wide network is technically and financially unviable.

### Be 'Green' – Renewable Energy

Once energy demand reduction measures have been applied, methods for generating low and zero carbon energy can be assessed. The following renewable technologies can be considered for the project: Biomass, Water source heat pump, air source heat pump, Wind energy and solar photovoltaic panels.

Table 4. Renewable Technologies Feasibility Table

| Technology                                                                                                                                                                                                                                                                                                                                                                                              | Pros                                                                                                                                  | Cons                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <b>Biomass Heating</b><br>A biomass system designed for wood pellets, which have a high-energy content, would fuel this development.                                                                                                                                                                                                                                                                    | Less volume of storage<br>Less maintenance and produce considerably less ash residue                                                  | Nox Emissions which may impact<br>High Costs<br>Not suitable for the project                        |
| <b>Ground Source Heat Pump</b><br>It circulates a mixture of water and antifreeze around a loop of pipe, called a ground loop, which is buried in the garden. Heat from the ground is absorbed into the fluid and passes through a heat exchanger into the heat pump                                                                                                                                    | Use all through the year                                                                                                              | High Costs<br>Not suitable for this project                                                         |
| <b>Air Source Heat Pump</b><br>They are an efficient and environmentally-friendly way of heating using air drawn freely from the atmosphere. They operate rather like a refrigerator in reverse, absorbing heat from the air into a working fluid which is passed into a compressor where its temperature is increased before it is transferred into the heating and hot water circuits of the building | Can generate less CO <sub>2</sub> than conventional heating systems.<br>Cheaper<br>Provides heating and hot water<br>Less maintenance | Needs electricity<br>Can be noisy                                                                   |
| <b>Wind Turbines</b><br>Wind turbines are available in various sizes from large rotors able to supply whole communities to small roof or wall-mounted units for individual dwellings.                                                                                                                                                                                                                   | Cheaper<br>Less CO <sub>2</sub>                                                                                                       | Local wind speeds in the area are likely to be below the level generally required for investment in |

|                                                                                                                                                                                                                    |                                                                                     |                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                    |                                                                                     | large wind turbines.<br>Noise and signal interference.<br>Detrimental aesthetic impact |
| <b>Solar Photovoltaic Panels (PV)</b><br>Photovoltaic panels extract the energy of the sun to generate electricity. They operate most efficiently when oriented to the south and are inclined to about 35 degrees. | Cheaper<br>Less CO <sub>2</sub><br>No input power in order to generate electricity. |                                                                                        |

### **Renewable Technologies Feasibility Review Conclusion**

The renewable energy sources that have been reviewed for this project are Biomass Heating, Ground Source Heat Pump, Air Source Heat Pump, Air Source Heat Pump Water Heaters, Domestic Wind Turbine and Solar Photovoltaic Panels (PV).

On review of the above technologies, it has been concluded that the use of air source heat pump water heaters will be incorporated in the design to achieve an additional CO<sub>2</sub> percentage reduction of **45%** to contribute to an overall reduction of **71%** in carbon emissions.

## **Conclusion**

The development has been designed to exceed Part L building regulations requirements. In line with the national and local policies, regulated CO<sub>2</sub> emissions from the development will be reduced by **71%** from the notional emissions once energy efficiency measures and lean measures are taken into account.

The use of air source heat pump water heaters will be incorporated in the design to achieve a CO<sub>2</sub> percentage reduction of **45%** to contribute to the overall reduction of **71%** in carbon emissions.

In order to achieve the required carbon emissions reduction, the report proposes the use of energy efficient measures outlined in the section 4 of this report.

An appraisal of the proposed development has been undertaken against key sustainability objectives identified from relevant policy guidance. The framework for the appraisal was guided by the National Plan. This process has ensured that the development responds to the sustainable development objectives that are relevant to the area. Key sustainability initiatives in ecology, waste management, water, health and wellbeing, materials, pollution and Surface water management have been incorporated in the design of the proposed Development.

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# Appendix 1

SAP Calculations - Notional

# Summary for Input Data



|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 2D                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 2D - Notional                              | Plot Type Ref  | Flat 2D    |
| Plot Address         | Flat 2D, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |        |      |     |
|------------------------------------|------|---------------|--------|------|-----|
| SAP Rating                         | 77 C | DER           | 28.42  | TER  |     |
| Environmental                      | 78 C | % DER < TER   |        |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 1.59 | DFEE          | 72.39  | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |        |      |     |
| % DPER < TPER                      |      | DPER          | 156.02 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Top-floor flat      |        |
| Which Floor                    | 3                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 310.17              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area | Average Storey Height |
|------------------|---------------|---------------------|---------------------|-----------------------|
|                  |               | 20.50 m             | 61.00 m²            | 2.50 m                |

|                 |       |    |
|-----------------|-------|----|
| 8.0 Living Area | 16.90 | m² |
|-----------------|-------|----|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m²K) | Kappa (kJ/m²K) | Gross Area(m²) | Nett Area (m²) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|-----------------|----------------|----------------|----------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.30            | 190.00         | 51.25          | 46.69          | 0.00        | None    | 4.56     | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m²K) | Kappa (kJ/m²K) | Area (m²) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|-----------------|----------------|-----------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00            | 180.00         | 33.50     | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m²K) | Area (m²) |
|--------------------|-----------------|------------------------------|----------------|-----------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00           | 114.50    |

| 10.0 External Roofs | Description   | Type                | Construction                             | U-Value (W/m²K) | Kappa (kJ/m²K) | Gross Area(m²) | Nett Area (m²) | Shelter Code | Shelter Factor | Calculation Type | Openings |
|---------------------|---------------|---------------------|------------------------------------------|-----------------|----------------|----------------|----------------|--------------|----------------|------------------|----------|
|                     | External Roof | External Plane Roof | Plasterboard, insulated at ceiling level | 0.15            | 9.00           | 61.00          | 61.00          | None         | 0.00           | Enter Gross Area | 0.00     |

| 11.1 Party Floors | Description | Storey Index | Construction | Kappa (kJ/m²K) | Area (m²) |
|-------------------|-------------|--------------|--------------|----------------|-----------|
|-------------------|-------------|--------------|--------------|----------------|-----------|

# Summary for Input Data



Party Floor 1      Lowest occupied      Precast concrete planks floor, screed, carpeted      40.00      61.00

| 12.0 Opening Types |              |            |                        |             |              |         |            |              |                 |  |
|--------------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|--|
| Description        | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |  |
| Windows - New      | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 2.60            |  |
| Doors - New        | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 3.00            |  |

| 13.0 Openings |               |                |             |           |       |
|---------------|---------------|----------------|-------------|-----------|-------|
| Name          | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
| W1 and W2     | Windows - New | External Walls | North       | 1.68      |       |
| W3-W5         | Windows - New | External Walls | North       | 2.88      |       |

|                       |      |         |
|-----------------------|------|---------|
| 14.0 Conservatory     |      | None    |
| 15.0 Draught Proofing |      | 100 %   |
| 16.0 Draught Lobby    |      | No      |
| 17.0 Thermal Bridging |      | Default |
| Y-value               | 0.20 | W/m²K   |

| 19.0 Mechanical Ventilation           |    |
|---------------------------------------|----|
| Mechanical Ventilation                | No |
| Mechanical Ventilation System Present | No |

| 20.0 Fans, Open Fireplaces, Flues                |   |
|--------------------------------------------------|---|
| Number of open chimneys                          | 0 |
| Number of open flues                             | 0 |
| Number of chimneys/flues attached to closed fire | 0 |
| Number of flues attached to solid fuel boiler    | 0 |
| Number of flues attached to other heater         | 0 |
| Number of blocked chimneys                       | 0 |
| Number of intermittent extract fans              | 2 |
| Number of passive vents                          | 0 |
| Number of flueless gas fires                     | 0 |

|                           |    |
|---------------------------|----|
| 21.0 Fixed Cooling System | No |
| 22.0 Pressure Testing     | No |

| 22.0 Lighting     |            |          |       |          |       |
|-------------------|------------|----------|-------|----------|-------|
| No Fixed Lighting | No         |          |       |          |       |
|                   | Name       | Efficacy | Power | Capacity | Count |
|                   | Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

| 24.0 Main Heating 1  |                                      |
|----------------------|--------------------------------------|
| Description          | SAP table                            |
| Percentage of Heat   | Gas                                  |
| Fuel Type            | 100.00 %                             |
| SAP Code             | Mains gas                            |
| In Winter            | 104                                  |
| In Summer            | 79.00                                |
| Controls SAP Code    | 75.00                                |
| Controls description | 2106                                 |
| Delayed Start Stat   | Programmer, room thermostat and TRVs |
| Flue Type            | No                                   |
| Fan Assisted Flue    | Balanced                             |
| Is MHS Pumped        | Yes                                  |
| Heating Pump Age     | Pump in heated space                 |
| Heat Emitter         | 2013 or later                        |
|                      | Radiators                            |

# Summary for Input Data

|                     |                |
|---------------------|----------------|
| Flow Temperature    | Unknown        |
| Boiler Interlock    | No             |
| Combi boiler type   | Standard Combi |
| Combi keep hot type | None           |

|                            |                                            |   |
|----------------------------|--------------------------------------------|---|
| <b>25.0 Main Heating 2</b> | Database                                   |   |
| Description                | KERS                                       |   |
| Percentage of Heat         | 0.00                                       | % |
| Database Ref. No.          | 104956                                     |   |
| Fuel Type                  | Electricity                                |   |
| In Winter                  | 0.00                                       |   |
| In Summer                  | 75.00                                      |   |
| Model Name                 | KERS MEV-W230                              |   |
| Manufacturer               | KERS Innovations UK Ltd                    |   |
| Controls                   | 2100                                       |   |
| Controls description       | Not applicable (heating provides DHW only) |   |

|                           |      |
|---------------------------|------|
| <b>26.0 Heat Networks</b> | None |
|---------------------------|------|

|                               |      |
|-------------------------------|------|
| <b>27.0 Secondary Heating</b> | None |
|-------------------------------|------|

|                                                  |                |
|--------------------------------------------------|----------------|
| <b>28.0 Water Heating</b>                        |                |
| Water Heating                                    | Main Heating 1 |
| SAP Code                                         | 901            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |

## 28.3 Waste Water Heat Recovery System

|                                |      |
|--------------------------------|------|
| <b>29.0 Hot Water Cylinder</b> | None |
|--------------------------------|------|

|                        |     |     |     |     |      |     |     |     |     |     |     |  |
|------------------------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|--|
| 34.0 Small-scale Hydro |     |     |     |     | None |     |     |     |     |     |     |  |
| Jan                    | Feb | Mar | Apr | May | Jun  | Jul | Aug | Sep | Oct | Nov | Dec |  |

|                                                          |  |
|----------------------------------------------------------|--|
| <b>Recommendations</b>                                   |  |
| <b>Lower cost measures</b>                               |  |
| None                                                     |  |
| <b>Further measures to achieve even higher standards</b> |  |
| None                                                     |  |

# Summary for Input Data

|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 2C                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 2C - Notional                              | Plot Type Ref  | Flat 2C    |
| Plot Address         | Flat 2C, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |        |      |     |
|------------------------------------|------|---------------|--------|------|-----|
| SAP Rating                         | 78 C | DER           | 25.76  | TER  |     |
| Environmental                      | 80 C | % DER < TER   |        |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 1.44 | DFEE          | 62.19  | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |        |      |     |
| % DPER < TPER                      |      | DPER          | 141.72 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Top-floor flat      |        |
| Which Floor                    | 3                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 266.96              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 15.70 m             | 61.00 m <sup>2</sup> | 2.50 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 19.60 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.30                         | 190.00                      | 39.25                       | 35.09                       | 0.00        | None    | 4.16     | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 30.75                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 121.50                 |

| 10.0 External Roofs | Description   | Type                | Construction                             | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Code | Shelter Factor | Calculation Type | Openings |
|---------------------|---------------|---------------------|------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------|----------------|------------------|----------|
|                     | External Roof | External Plane Roof | Plasterboard, insulated at ceiling level | 0.15                         | 9.00                        | 61.00                       | 61.00                       | None         | 0.00           | Enter Gross Area | 0.00     |

| 11.1 Party Floors | Description | Storey Index | Construction | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-------------------|-------------|--------------|--------------|-----------------------------|------------------------|
|-------------------|-------------|--------------|--------------|-----------------------------|------------------------|

# Summary for Input Data

Party Floor 1      Lowest occupied      Precast concrete planks floor, screed, carpeted      40.00      61.00

## 12.0 Opening Types

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 2.60            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 3.00            |

## 13.0 Openings

| Name | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|------|---------------|----------------|-------------|-----------|-------|
| W1   | Windows - New | External Walls | South       | 1.12      |       |
| W2   | Windows - New | External Walls | South       | 0.96      |       |
| W3   | Windows - New | External Walls | South       | 0.96      |       |
| W4   | Windows - New | External Walls | East        | 1.12      |       |

## 14.0 Conservatory

None

## 15.0 Draught Proofing

100 %

## 16.0 Draught Lobby

No

## 17.0 Thermal Bridging

Default

Y-value

0.20 W/m²K

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

No

## 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys 0

Number of open flues 0

Number of chimneys/flues attached to closed fire 0

Number of flues attached to solid fuel boiler 0

Number of flues attached to other heater 0

Number of blocked chimneys 0

Number of intermittent extract fans 2

Number of passive vents 0

Number of flueless gas fires 0

## 21.0 Fixed Cooling System

No

## 22.0 Pressure Testing

No

## 22.0 Lighting

No Fixed Lighting

No

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

## 24.0 Main Heating 1

Description SAP table

Percentage of Heat Gas 100.00 %

Fuel Type Mains gas

SAP Code 104

In Winter 79.00

In Summer 75.00

Controls SAP Code 2106

Controls description Programmer, room thermostat and TRVs

Delayed Start Stat No

Flue Type Balanced

Fan Assisted Flue Yes

Is MHS Pumped Pump in heated space

Heating Pump Age 2013 or later

# Summary for Input Data

|                     |                                             |
|---------------------|---------------------------------------------|
| Heat Emitter        | <input type="text" value="Radiators"/>      |
| Flow Temperature    | <input type="text" value="Unknown"/>        |
| Boiler Interlock    | <input type="text" value="No"/>             |
| Combi boiler type   | <input type="text" value="Standard Combi"/> |
| Combi keep hot type | <input type="text" value="None"/>           |

## 25.0 Main Heating 2

|                      |                                                                         |   |
|----------------------|-------------------------------------------------------------------------|---|
|                      | <input type="text" value="Database"/>                                   |   |
| Description          | <input type="text" value="KERS"/>                                       |   |
| Percentage of Heat   | <input type="text" value="0.00"/>                                       | % |
| Database Ref. No.    | <input type="text" value="104956"/>                                     |   |
| Fuel Type            | <input type="text" value="Electricity"/>                                |   |
| In Winter            | <input type="text" value="0.00"/>                                       |   |
| In Summer            | <input type="text" value="75.00"/>                                      |   |
| Model Name           | <input type="text" value="KERS MEV-W230"/>                              |   |
| Manufacturer         | <input type="text" value="KERS Innovations UK Ltd"/>                    |   |
| Controls             | <input type="text" value="2100"/>                                       |   |
| Controls description | <input type="text" value="Not applicable (heating provides DHW only)"/> |   |

## 26.0 Heat Networks

## 27.0 Secondary Heating

## 28.0 Water Heating

|                                                  |                                             |
|--------------------------------------------------|---------------------------------------------|
| Water Heating                                    | <input type="text" value="Main Heating 1"/> |
| SAP Code                                         | <input type="text" value="901"/>            |
| 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="No"/>             |
| Cold Water Source                                | <input type="text" value="From mains"/>     |
| Bath Count                                       | <input type="text" value="0"/>              |

## 28.3 Waste Water Heat Recovery System

## 29.0 Hot Water Cylinder

## 34.0 Small-scale Hydro

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

## Recommendations

### Lower cost measures

None

### Further measures to achieve even higher standards

None

# Summary for Input Data



|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 2B                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 2B - Notional                              | Plot Type Ref  | Flat 2B    |
| Plot Address         | Flat 2B, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |        |      |     |
|------------------------------------|------|---------------|--------|------|-----|
| SAP Rating                         | 77 C | DER           | 27.48  | TER  |     |
| Environmental                      | 79 C | % DER < TER   |        |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 1.53 | DFEE          | 68.90  | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |        |      |     |
| % DPER < TPER                      |      | DPER          | 150.88 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Top-floor flat      |        |
| Which Floor                    | 3                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 275.34              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 14.60 m             | 61.00 m <sup>2</sup> | 2.50 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 29.40 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.30                         | 190.00                      | 36.50                       | 30.80                       | 0.00        | None    | 5.70     | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 44.25                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 70.00                  |

| 10.0 External Roofs | Description   | Type                | Construction                             | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Code | Shelter Factor | Calculation Type | Openings |
|---------------------|---------------|---------------------|------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------|----------------|------------------|----------|
|                     | External Roof | External Plane Roof | Plasterboard, insulated at ceiling level | 0.15                         | 9.00                        | 61.00                       | 61.00                       | None         | 0.00           | Enter Gross Area | 0.00     |

| 11.1 Party Floors | Description | Storey Index | Construction | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-------------------|-------------|--------------|--------------|-----------------------------|------------------------|
|-------------------|-------------|--------------|--------------|-----------------------------|------------------------|

# Summary for Input Data

Party Floor 1      Lowest occupied      Precast concrete planks floor, screed, carpeted      40.00      45.00

## 12.0 Opening Types

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 2.60            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 3.00            |

## 13.0 Openings

| Name      | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|-----------|---------------|----------------|-------------|-----------|-------|
| W1        | Windows - New | External Walls | North       | 1.20      |       |
| W2        | Windows - New | External Walls | North       | 1.00      |       |
| W3 and W4 | Windows - New | External Walls | North       | 1.96      |       |
| W5        | Windows - New | External Walls | North       | 1.54      |       |

## 14.0 Conservatory

None

## 15.0 Draught Proofing

100 %

## 16.0 Draught Lobby

No

## 17.0 Thermal Bridging

Default

Y-value

0.20 W/m²K

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

No

## 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys 0

Number of open flues 0

Number of chimneys/flues attached to closed fire 0

Number of flues attached to solid fuel boiler 0

Number of flues attached to other heater 0

Number of blocked chimneys 0

Number of intermittent extract fans 2

Number of passive vents 0

Number of flueless gas fires 0

## 21.0 Fixed Cooling System

No

## 22.0 Pressure Testing

No

## 22.0 Lighting

No Fixed Lighting No

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

## 24.0 Main Heating 1

Description SAP table

Percentage of Heat Gas 100.00 %

Fuel Type Mains gas

SAP Code 104

In Winter 79.00

In Summer 75.00

Controls SAP Code 2106

Controls description Programmer, room thermostat and TRVs

Delayed Start Stat No

Flue Type Balanced

Fan Assisted Flue Yes

Is MHS Pumped Pump in heated space

Heating Pump Age 2013 or later

# Summary for Input Data

|                     |                                             |
|---------------------|---------------------------------------------|
| Heat Emitter        | <input type="text" value="Radiators"/>      |
| Flow Temperature    | <input type="text" value="Unknown"/>        |
| Boiler Interlock    | <input type="text" value="No"/>             |
| Combi boiler type   | <input type="text" value="Standard Combi"/> |
| Combi keep hot type | <input type="text" value="None"/>           |

## 25.0 Main Heating 2

|                      |                                                                         |   |
|----------------------|-------------------------------------------------------------------------|---|
|                      | <input type="text" value="Database"/>                                   |   |
| Description          | <input type="text" value="KERS"/>                                       |   |
| Percentage of Heat   | <input type="text" value="0.00"/>                                       | % |
| Database Ref. No.    | <input type="text" value="104956"/>                                     |   |
| Fuel Type            | <input type="text" value="Electricity"/>                                |   |
| In Winter            | <input type="text" value="0.00"/>                                       |   |
| In Summer            | <input type="text" value="75.00"/>                                      |   |
| Model Name           | <input type="text" value="KERS MEV-W230"/>                              |   |
| Manufacturer         | <input type="text" value="KERS Innovations UK Ltd"/>                    |   |
| Controls             | <input type="text" value="2100"/>                                       |   |
| Controls description | <input type="text" value="Not applicable (heating provides DHW only)"/> |   |

## 26.0 Heat Networks

## 27.0 Secondary Heating

## 28.0 Water Heating

|                                                  |                                             |
|--------------------------------------------------|---------------------------------------------|
| Water Heating                                    | <input type="text" value="Main Heating 1"/> |
| SAP Code                                         | <input type="text" value="901"/>            |
| 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="No"/>             |
| Cold Water Source                                | <input type="text" value="From mains"/>     |
| Bath Count                                       | <input type="text" value="0"/>              |

## 28.3 Waste Water Heat Recovery System

## 29.0 Hot Water Cylinder

## 34.0 Small-scale Hydro

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

## Recommendations

### Lower cost measures

None

### Further measures to achieve even higher standards

None

# Summary for Input Data

|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 2A                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 2A - Notional                              | Plot Type Ref  | Flat 2A    |
| Plot Address         | Flat 2A, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |        |      |     |
|------------------------------------|------|---------------|--------|------|-----|
| SAP Rating                         | 78 C | DER           | 28.37  | TER  |     |
| Environmental                      | 81 B | % DER < TER   |        |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 1.17 | DFEE          | 65.87  | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |        |      |     |
| % DPER < TPER                      |      | DPER          | 156.18 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Top-floor flat      |        |
| Which Floor                    | 3                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 275.42              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 13.20 m             | 45.00 m <sup>2</sup> | 2.50 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 17.20 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.30                         | 190.00                      | 33.00                       | 29.54                       | 0.00        | None    | 3.46     | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 23.25                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 43.50                  |

| 10.0 External Roofs | Description   | Type                | Construction                             | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Code | Shelter Factor | Calculation Type | Openings |
|---------------------|---------------|---------------------|------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------|----------------|------------------|----------|
|                     | External Roof | External Plane Roof | Plasterboard, insulated at ceiling level | 0.15                         | 9.00                        | 45.00                       | 45.00                       | None         | 0.00           | Enter Gross Area | 0.00     |

| 11.1 Party Floors | Description | Storey Index | Construction | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-------------------|-------------|--------------|--------------|-----------------------------|------------------------|
|-------------------|-------------|--------------|--------------|-----------------------------|------------------------|

# Summary for Input Data

Party Floor 1      Lowest occupied      Precast concrete planks floor, screed, carpeted      40.00      45.00

| 12.0 Opening Types |              |            |                        |             |              |         |            |              |                 |
|--------------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Description        | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
| Windows - New      | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 2.60            |
| Doors - New        | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 3.00            |

| 13.0 Openings |               |                |             |           |       |
|---------------|---------------|----------------|-------------|-----------|-------|
| Name          | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
| W1            | Windows - New | External Walls | South West  | 0.84      |       |
| W2            | Windows - New | External Walls | South East  | 0.84      |       |
| W3            | Windows - New | External Walls | South East  | 1.28      |       |
| W4 and W5     | Windows - New | External Walls | South       | 0.50      |       |

|                       |                                      |       |
|-----------------------|--------------------------------------|-------|
| 14.0 Conservatory     | <input type="text" value="None"/>    |       |
| 15.0 Draught Proofing | <input type="text" value="100"/>     | %     |
| 16.0 Draught Lobby    | <input type="text" value="No"/>      |       |
| 17.0 Thermal Bridging | <input type="text" value="Default"/> |       |
| Y-value               | <input type="text" value="0.20"/>    | W/m²K |

| 19.0 Mechanical Ventilation           |                                 |
|---------------------------------------|---------------------------------|
| Mechanical Ventilation                |                                 |
| Mechanical Ventilation System Present | <input type="text" value="No"/> |

|                                                  |                                |
|--------------------------------------------------|--------------------------------|
| 20.0 Fans, Open Fireplaces, Flues                |                                |
| Number of open chimneys                          | <input type="text" value="0"/> |
| Number of open flues                             | <input type="text" value="0"/> |
| Number of chimneys/flues attached to closed fire | <input type="text" value="0"/> |
| Number of flues attached to solid fuel boiler    | <input type="text" value="0"/> |
| Number of flues attached to other heater         | <input type="text" value="0"/> |
| Number of blocked chimneys                       | <input type="text" value="0"/> |
| Number of intermittent extract fans              | <input type="text" value="2"/> |
| Number of passive vents                          | <input type="text" value="0"/> |
| Number of flueless gas fires                     | <input type="text" value="0"/> |

|                           |                                 |
|---------------------------|---------------------------------|
| 21.0 Fixed Cooling System | <input type="text" value="No"/> |
|---------------------------|---------------------------------|

|                       |                                 |
|-----------------------|---------------------------------|
| 22.0 Pressure Testing | <input type="text" value="No"/> |
|-----------------------|---------------------------------|

22.0 Lighting

No Fixed Lighting

No

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

|                      |                                      |   |
|----------------------|--------------------------------------|---|
| 24.0 Main Heating 1  | SAP table                            |   |
| Description          | Gas                                  |   |
| Percentage of Heat   | 100.00                               | % |
| Fuel Type            | Mains gas                            |   |
| SAP Code             | 104                                  |   |
| In Winter            | 79.00                                |   |
| In Summer            | 75.00                                |   |
| Controls SAP Code    | 2106                                 |   |
| Controls description | Programmer, room thermostat and TRVs |   |
| Delayed Start Stat   | No                                   |   |
| Flue Type            | Balanced                             |   |
| Fan Assisted Flue    | Yes                                  |   |
| Is MHS Pumped        | Pump in heated space                 |   |
| Heating Pump Age     | 2013 or later                        |   |

# Summary for Input Data

|                     |                                             |
|---------------------|---------------------------------------------|
| Heat Emitter        | <input type="text" value="Radiators"/>      |
| Flow Temperature    | <input type="text" value="Unknown"/>        |
| Boiler Interlock    | <input type="text" value="No"/>             |
| Combi boiler type   | <input type="text" value="Standard Combi"/> |
| Combi keep hot type | <input type="text" value="None"/>           |

## 25.0 Main Heating 2

|                      |                                                                         |   |
|----------------------|-------------------------------------------------------------------------|---|
|                      | <input type="text" value="Database"/>                                   |   |
| Description          | <input type="text" value="KERS"/>                                       |   |
| Percentage of Heat   | <input type="text" value="0.00"/>                                       | % |
| Database Ref. No.    | <input type="text" value="104956"/>                                     |   |
| Fuel Type            | <input type="text" value="Electricity"/>                                |   |
| In Winter            | <input type="text" value="0.00"/>                                       |   |
| In Summer            | <input type="text" value="75.00"/>                                      |   |
| Model Name           | <input type="text" value="KERS MEV-W230"/>                              |   |
| Manufacturer         | <input type="text" value="KERS Innovations UK Ltd"/>                    |   |
| Controls             | <input type="text" value="2100"/>                                       |   |
| Controls description | <input type="text" value="Not applicable (heating provides DHW only)"/> |   |

## 26.0 Heat Networks

## 27.0 Secondary Heating

## 28.0 Water Heating

|                                                  |                                             |
|--------------------------------------------------|---------------------------------------------|
| Water Heating                                    | <input type="text" value="Main Heating 1"/> |
| SAP Code                                         | <input type="text" value="901"/>            |
| 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="No"/>             |
| Cold Water Source                                | <input type="text" value="From mains"/>     |
| Bath Count                                       | <input type="text" value="0"/>              |

## 28.3 Waste Water Heat Recovery System

## 29.0 Hot Water Cylinder

## 34.0 Small-scale Hydro

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

## Recommendations

### Lower cost measures

None

### Further measures to achieve even higher standards

None

# Summary for Input Data

|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 1D                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 1D - Notional                              | Plot Type Ref  | Flat 1D    |
| Plot Address         | Flat 1D, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |        |      |     |
|------------------------------------|------|---------------|--------|------|-----|
| SAP Rating                         | 77 C | DER           | 27.81  | TER  |     |
| Environmental                      | 79 C | % DER < TER   |        |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 1.58 | DFEE          | 71.05  | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |        |      |     |
| % DPER < TPER                      |      | DPER          | 152.47 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Mid-floor flat      |        |
| Which Floor                    | 2                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 360.49              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 20.30 m             | 63.00 m <sup>2</sup> | 3.10 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 15.80 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.30                         | 190.00                      | 62.93                       | 54.41                       | 0.00        | None    | 8.52     | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 36.89                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 146.94                 |

| 10.1 Party Ceilings | Description     | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|---------------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                     | Party Ceiling 1 | Precast concrete planks floor, screed, carpeted | 30.00                       | 63.00                  |

| 11.1 Party Floors | Description   | Storey Index    | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-------------------|---------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                   | Party Floor 1 | Lowest occupied | Precast concrete planks floor, screed, carpeted | 40.00                       | 63.00                  |

# Summary for Input Data



## 12.0 Opening Types

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 2.60            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 3.00            |

## 13.0 Openings

| Name  | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|-------|---------------|----------------|-------------|-----------|-------|
| W1    | Windows - New | External Walls | North       | 0.16      |       |
| W2    | Windows - New | External Walls | North       | 1.28      |       |
| W3    | Windows - New | External Walls | North       | 1.28      |       |
| W4-W6 | Windows - New | External Walls | North       | 4.80      |       |
| W7    | Windows - New | External Walls | South       | 1.00      |       |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

Y-value

 W/m²K

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

## 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys

Number of open flues

Number of chimneys/flues attached to closed fire

Number of flues attached to solid fuel boiler

Number of flues attached to other heater

Number of blocked chimneys

Number of intermittent extract fans

Number of passive vents

Number of flueless gas fires

## 21.0 Fixed Cooling System

## 22.0 Pressure Testing

## 22.0 Lighting

No Fixed Lighting

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

## 24.0 Main Heating 1

Description

Percentage of Heat  %

Fuel Type

SAP Code

In Winter

In Summer

Controls SAP Code

Controls description

Delayed Start Stat

Flue Type

Fan Assisted Flue

Is MHS Pumped

Heating Pump Age

Heat Emitter

# Summary for Input Data

|                     |                |
|---------------------|----------------|
| Flow Temperature    | Unknown        |
| Boiler Interlock    | No             |
| Combi boiler type   | Standard Combi |
| Combi keep hot type | None           |

|                            |                                            |   |
|----------------------------|--------------------------------------------|---|
| <b>25.0 Main Heating 2</b> | Database                                   |   |
| Description                | KERS                                       |   |
| Percentage of Heat         | 0.00                                       | % |
| Database Ref. No.          | 104956                                     |   |
| Fuel Type                  | Electricity                                |   |
| In Winter                  | 0.00                                       |   |
| In Summer                  | 75.00                                      |   |
| Model Name                 | KERS MEV-W230                              |   |
| Manufacturer               | KERS Innovations UK Ltd                    |   |
| Controls                   | 2100                                       |   |
| Controls description       | Not applicable (heating provides DHW only) |   |

|                           |      |
|---------------------------|------|
| <b>26.0 Heat Networks</b> | None |
|---------------------------|------|

|                               |      |
|-------------------------------|------|
| <b>27.0 Secondary Heating</b> | None |
|-------------------------------|------|

|                                                  |                |
|--------------------------------------------------|----------------|
| <b>28.0 Water Heating</b>                        |                |
| Water Heating                                    | Main Heating 1 |
| SAP Code                                         | 901            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |

## 28.3 Waste Water Heat Recovery System

|                                |      |
|--------------------------------|------|
| <b>29.0 Hot Water Cylinder</b> | None |
|--------------------------------|------|

|                               |      |     |     |     |     |     |     |     |     |     |     |     |
|-------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>34.0 Small-scale Hydro</b> | None |     |     |     |     |     |     |     |     |     |     |     |
|                               | Jan  | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |

|                                                          |  |
|----------------------------------------------------------|--|
| <b>Recommendations</b>                                   |  |
| <b>Lower cost measures</b>                               |  |
| None                                                     |  |
| <b>Further measures to achieve even higher standards</b> |  |
| None                                                     |  |

# Summary for Input Data



|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 1C                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 1C - Notional                              | Plot Type Ref  | Flat 1C    |
| Plot Address         | Flat 1C, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |        |      |     |
|------------------------------------|------|---------------|--------|------|-----|
| SAP Rating                         | 79 C | DER           | 24.72  | TER  |     |
| Environmental                      | 81 B | % DER < TER   |        |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 1.38 | DFEE          | 59.10  | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |        |      |     |
| % DPER < TPER                      |      | DPER          | 135.87 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Mid-floor flat      |        |
| Which Floor                    | 2                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 313.16              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 15.90 m             | 62.00 m <sup>2</sup> | 3.10 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 24.60 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.30                         | 190.00                      | 49.29                       | 41.49                       | 0.00        | None    | 7.80     | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 32.55                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 148.18                 |

| 10.1 Party Ceilings | Description     | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|---------------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                     | Party Ceiling 1 | Precast concrete planks floor, screed, carpeted | 30.00                       | 62.00                  |

| 11.1 Party Floors | Description   | Storey Index    | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-------------------|---------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                   | Party Floor 1 | Lowest occupied | Precast concrete planks floor, screed, carpeted | 40.00                       | 62.00                  |

# Summary for Input Data

## 12.0 Opening Types

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 2.60            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 3.00            |

## 13.0 Openings

| Name | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|------|---------------|----------------|-------------|-----------|-------|
| W1   | Windows - New | External Walls | South       | 1.80      |       |
| W2   | Windows - New | External Walls | South West  | 2.00      |       |
| W3   | Windows - New | External Walls | South       | 2.00      |       |
| W4   | Windows - New | External Walls | South East  | 2.00      |       |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

## Y-value

 W/m²K

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

## 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys

Number of open flues

Number of chimneys/flues attached to closed fire

Number of flues attached to solid fuel boiler

Number of flues attached to other heater

Number of blocked chimneys

Number of intermittent extract fans

Number of passive vents

Number of flueless gas fires

## 21.0 Fixed Cooling System

## 22.0 Pressure Testing

## 22.0 Lighting

No Fixed Lighting

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

## 24.0 Main Heating 1

Description


Percentage of Heat

 %

Fuel Type

SAP Code

In Winter

In Summer

Controls SAP Code

Controls description

Delayed Start Stat

Flue Type

Fan Assisted Flue

Is MHS Pumped

Heating Pump Age

Heat Emitter

Flow Temperature

# Summary for Input Data

|                     |                |
|---------------------|----------------|
| Boiler Interlock    | No             |
| Combi boiler type   | Standard Combi |
| Combi keep hot type | None           |

|                            |                                            |   |
|----------------------------|--------------------------------------------|---|
| <b>25.0 Main Heating 2</b> | Database                                   |   |
| Description                | KERS                                       |   |
| Percentage of Heat         | 0.00                                       | % |
| Database Ref. No.          | 104956                                     |   |
| Fuel Type                  | Electricity                                |   |
| In Winter                  | 0.00                                       |   |
| In Summer                  | 75.00                                      |   |
| Model Name                 | KERS MEV-W230                              |   |
| Manufacturer               | KERS Innovations UK Ltd                    |   |
| Controls                   | 2100                                       |   |
| Controls description       | Not applicable (heating provides DHW only) |   |

|                           |      |
|---------------------------|------|
| <b>26.0 Heat Networks</b> | None |
|---------------------------|------|

|                               |      |
|-------------------------------|------|
| <b>27.0 Secondary Heating</b> | None |
|-------------------------------|------|

|                                                  |                |
|--------------------------------------------------|----------------|
| <b>28.0 Water Heating</b>                        |                |
| Water Heating                                    | Main Heating 1 |
| SAP Code                                         | 901            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |

## 28.3 Waste Water Heat Recovery System

|                                |      |
|--------------------------------|------|
| <b>29.0 Hot Water Cylinder</b> | None |
|--------------------------------|------|

|                        |     |     |     |     |      |     |     |     |     |     |     |  |
|------------------------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|--|
| 34.0 Small-scale Hydro |     |     |     |     | None |     |     |     |     |     |     |  |
| Jan                    | Feb | Mar | Apr | May | Jun  | Jul | Aug | Sep | Oct | Nov | Dec |  |

|                                                   |
|---------------------------------------------------|
| <b>Recommendations</b>                            |
| Lower cost measures                               |
| None                                              |
| Further measures to achieve even higher standards |
| None                                              |

# Summary for Input Data



|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 1B                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 1B - Notional                              | Plot Type Ref  | Flat 1B    |
| Plot Address         | Flat 1B, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |        |      |     |
|------------------------------------|------|---------------|--------|------|-----|
| SAP Rating                         | 78 C | DER           | 26.21  | TER  |     |
| Environmental                      | 80 C | % DER < TER   |        |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 1.43 | DFEE          | 64.39  | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |        |      |     |
| % DPER < TPER                      |      | DPER          | 143.93 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                            |                     |        |
|----------------------------|---------------------|--------|
| Orientation                | South               |        |
| Property Tenture           | 3                   |        |
| Transaction Type           | 6                   |        |
| Terrain Type               | Suburban            |        |
| 1.0 Property Type          | Flat, End-Terrace   |        |
| Position of Flat           | Mid-floor flat      |        |
| Which Floor                | 2                   |        |
| 2.0 Number of Storeys      | 1                   |        |
| 3.0 Date Built             | 2025                |        |
| 4.0 Sheltered Sides        | 2                   |        |
| 5.0 Sunlight/Shade         | Average or unknown  |        |
| 6.0 Thermal Mass Parameter | Precise calculation |        |
| Thermal Mass               | 376.20              | kJ/m²K |

|                                |          |
|--------------------------------|----------|
| 7.0 Electricity Tariff         | Standard |
| Smart electricity meter fitted | Yes      |
| Smart gas meter fitted         | No       |

|                  |               |                     |                      |                       |
|------------------|---------------|---------------------|----------------------|-----------------------|
| 7.0 Measurements |               | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|                  | Ground floor: | 13.80 m             | 61.00 m <sup>2</sup> | 3.10 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 24.70 | m <sup>2</sup> |
|-----------------|-------|----------------|

| Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
| External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.30                         | 190.00                      | 42.78                       | 35.34                       | 0.00        | None    | 7.44     | Enter Gross Area      |

| Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
| Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 61.38                  | 0.00        | None    |

| Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-----------------|------------------------------|-----------------------------|------------------------|
| Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 101.68                 |

| Description     | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-----------------|-------------------------------------------------|-----------------------------|------------------------|
| Party Ceiling 1 | Precast concrete planks floor, screed, carpeted | 30.00                       | 61.00                  |

| Description   | Storey Index    | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|---------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
| Party Floor 1 | Lowest occupied | Precast concrete planks floor, screed, carpeted | 40.00                       | 61.00                  |

# Summary for Input Data

## 12.0 Opening Types

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 2.60            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 3.00            |

## 13.0 Openings

| Name | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|------|---------------|----------------|-------------|-----------|-------|
| W1   | Windows - New | External Walls | North       | 1.44      |       |
| W2   | Windows - New | External Walls | North       | 1.44      |       |
| W3   | Windows - New | External Walls | North       | 0.84      |       |
| W4   | Windows - New | External Walls | North       | 0.84      |       |
| W5   | Windows - New | External Walls | North       | 1.44      |       |
| W6   | Windows - New | External Walls | North       | 1.44      |       |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

Y-value

 W/m²K

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

## 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys

Number of open flues

Number of chimneys/flues attached to closed fire

Number of flues attached to solid fuel boiler

Number of flues attached to other heater

Number of blocked chimneys

Number of intermittent extract fans

Number of passive vents

Number of flueless gas fires

## 21.0 Fixed Cooling System

## 22.0 Pressure Testing

## 22.0 Lighting

No Fixed Lighting

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

## 24.0 Main Heating 1

Description


Percentage of Heat

 %

Fuel Type

SAP Code

In Winter

In Summer

Controls SAP Code

Controls description

Delayed Start Stat

Flue Type

Fan Assisted Flue

Is MHS Pumped

Heating Pump Age

Heat Emitter

# Summary for Input Data

|                     |                |
|---------------------|----------------|
| Flow Temperature    | Unknown        |
| Boiler Interlock    | No             |
| Combi boiler type   | Standard Combi |
| Combi keep hot type | None           |

|                            |                                            |   |
|----------------------------|--------------------------------------------|---|
| <b>25.0 Main Heating 2</b> | Database                                   |   |
| Description                | KERS                                       |   |
| Percentage of Heat         | 0.00                                       | % |
| Database Ref. No.          | 104956                                     |   |
| Fuel Type                  | Electricity                                |   |
| In Winter                  | 0.00                                       |   |
| In Summer                  | 75.00                                      |   |
| Model Name                 | KERS MEV-W230                              |   |
| Manufacturer               | KERS Innovations UK Ltd                    |   |
| Controls                   | 2100                                       |   |
| Controls description       | Not applicable (heating provides DHW only) |   |

|                           |      |
|---------------------------|------|
| <b>26.0 Heat Networks</b> | None |
|---------------------------|------|

|                               |      |
|-------------------------------|------|
| <b>27.0 Secondary Heating</b> | None |
|-------------------------------|------|

|                                                  |                |
|--------------------------------------------------|----------------|
| <b>28.0 Water Heating</b>                        |                |
| Water Heating                                    | Main Heating 1 |
| SAP Code                                         | 901            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |

## 28.3 Waste Water Heat Recovery System

|                                |      |
|--------------------------------|------|
| <b>29.0 Hot Water Cylinder</b> | None |
|--------------------------------|------|

|                        |     |     |     |     |      |     |     |     |     |     |     |  |
|------------------------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|--|
| 34.0 Small-scale Hydro |     |     |     |     | None |     |     |     |     |     |     |  |
| Jan                    | Feb | Mar | Apr | May | Jun  | Jul | Aug | Sep | Oct | Nov | Dec |  |

|                                                          |  |
|----------------------------------------------------------|--|
| <b>Recommendations</b>                                   |  |
| <b>Lower cost measures</b>                               |  |
| None                                                     |  |
| <b>Further measures to achieve even higher standards</b> |  |
| None                                                     |  |

# Summary for Input Data

|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 1A                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 1A - Notional                              | Plot Type Ref  | Flat 1A    |
| Plot Address         | Flat 1A, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |        |      |     |
|------------------------------------|------|---------------|--------|------|-----|
| SAP Rating                         | 79 C | DER           | 26.90  | TER  |     |
| Environmental                      | 82 B | % DER < TER   |        |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 1.22 | DFEE          | 63.79  | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |        |      |     |
| % DPER < TPER                      |      | DPER          | 147.73 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                            |
|--------------------------------|----------------------------|
| Orientation                    | South                      |
| Property Tenure                | 3                          |
| Transaction Type               | 6                          |
| Terrain Type                   | Suburban                   |
| 1.0 Property Type              | Flat, End-Terrace          |
| Position of Flat               | Mid-floor flat             |
| Which Floor                    | 1                          |
| 2.0 Number of Storeys          | 1                          |
| 3.0 Date Built                 | 2025                       |
| 4.0 Sheltered Sides            | 2                          |
| 5.0 Sunlight/Shade             | Average or unknown         |
| 6.0 Thermal Mass Parameter     | Precise calculation        |
| Thermal Mass                   | 344.74 kJ/m <sup>2</sup> K |
| 7.0 Electricity Tariff         | Standard                   |
| Smart electricity meter fitted | Yes                        |
| Smart gas meter fitted         | No                         |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 13.10 m             | 50.00 m <sup>2</sup> | 3.10 m                |

|                 |                      |
|-----------------|----------------------|
| 8.0 Living Area | 23.60 m <sup>2</sup> |
|-----------------|----------------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.30                         | 190.00                      | 40.61                       | 30.01                       | 0.00        | None    | 10.60    | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 42.16                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 49.60                  |

| 10.1 Party Ceilings | Description     | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|---------------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                     | Party Ceiling 1 | Precast concrete planks floor, screed, carpeted | 30.00                       | 50.00                  |

| 11.1 Party Floors | Description   | Storey Index    | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-------------------|---------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                   | Party Floor 1 | Lowest occupied | Precast concrete planks floor, screed, carpeted | 40.00                       | 50.00                  |

# Summary for Input Data

## 12.0 Opening Types

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 2.60            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 3.00            |

## 13.0 Openings

| Name      | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|-----------|---------------|----------------|-------------|-----------|-------|
| W1-W3     | Windows - New | External Walls | South       | 4.80      |       |
| W4        | Windows - New | External Walls | South West  | 1.80      |       |
| W5 and W7 | Windows - New | External Walls | South       | 2.00      |       |
| W6        | Windows - New | External Walls | South West  | 1.00      |       |
| W8        | Windows - New | External Walls | South East  | 1.00      |       |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

Y-value

 W/m²K

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

## 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys 

Number of open flues 

Number of chimneys/flues attached to closed fire 

Number of flues attached to solid fuel boiler 

Number of flues attached to other heater 

Number of blocked chimneys 

Number of intermittent extract fans 

Number of passive vents 

Number of flueless gas fires 

## 21.0 Fixed Cooling System

## 22.0 Pressure Testing

## 22.0 Lighting

No Fixed Lighting 

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

## 24.0 Main Heating 1

Description 

Percentage of Heat  %

Fuel Type 

SAP Code 

In Winter 

In Summer 

Controls SAP Code 

Controls description 

Delayed Start Stat 

Flue Type 

Fan Assisted Flue 

Is MHS Pumped 

Heating Pump Age 

Heat Emitter

# Summary for Input Data

|                     |                |
|---------------------|----------------|
| Flow Temperature    | Unknown        |
| Boiler Interlock    | No             |
| Combi boiler type   | Standard Combi |
| Combi keep hot type | None           |

|                            |                                            |   |
|----------------------------|--------------------------------------------|---|
| <b>25.0 Main Heating 2</b> | Database                                   |   |
| Description                | KERS                                       |   |
| Percentage of Heat         | 0.00                                       | % |
| Database Ref. No.          | 104956                                     |   |
| Fuel Type                  | Electricity                                |   |
| In Winter                  | 0.00                                       |   |
| In Summer                  | 75.00                                      |   |
| Model Name                 | KERS MEV-W230                              |   |
| Manufacturer               | KERS Innovations UK Ltd                    |   |
| Controls                   | 2100                                       |   |
| Controls description       | Not applicable (heating provides DHW only) |   |

|                           |      |
|---------------------------|------|
| <b>26.0 Heat Networks</b> | None |
|---------------------------|------|

|                               |      |
|-------------------------------|------|
| <b>27.0 Secondary Heating</b> | None |
|-------------------------------|------|

|                                                  |                |
|--------------------------------------------------|----------------|
| <b>28.0 Water Heating</b>                        |                |
| Water Heating                                    | Main Heating 1 |
| SAP Code                                         | 901            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |

## 28.3 Waste Water Heat Recovery System

|                                |      |
|--------------------------------|------|
| <b>29.0 Hot Water Cylinder</b> | None |
|--------------------------------|------|

## Recommendations

### Lower cost measures

None

### Further measures to achieve even higher standards

None

# Summary for Input Data

|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 0C                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 0C - Notional                              | Plot Type Ref  | Flat 0C    |
| Plot Address         | Flat 0C, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |        |      |     |
|------------------------------------|------|---------------|--------|------|-----|
| SAP Rating                         | 70 C | DER           | 31.11  | TER  |     |
| Environmental                      | 76 C | % DER < TER   |        |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 1.77 | DFEE          | 86.26  | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |        |      |     |
| % DPER < TPER                      |      | DPER          | 176.19 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Ground-floor flat   |        |
| Which Floor                    | 0                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 270.65              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | 7 Hour Off Peak     |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 15.60 m             | 62.00 m <sup>2</sup> | 3.30 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 24.80 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.30                         | 190.00                      | 51.48                       | 41.98                       | 0.00        | None    | 9.50     | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 31.35                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 144.54                 |

| 10.1 Party Ceilings | Description     | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|---------------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                     | Party Ceiling 1 | Precast concrete planks floor, screed, carpeted | 30.00                       | 62.00                  |

| 11.0 Heat Loss Floors | Description    | Type                  | Storey Index    | Construction | U-Value (W/m <sup>2</sup> K) | Shelter Code | Shelter Factor | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-----------------------|----------------|-----------------------|-----------------|--------------|------------------------------|--------------|----------------|-----------------------------|------------------------|
|                       | Heatloss Floor | Exposed Floor - Solid | Lowest occupied | Other        | 0.25                         | None         | 0.00           | 0.00                        | 62.00                  |

## 12.0 Opening Types

# Summary for Input Data



| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 2.60            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 3.00            |

### 13.0 Openings

| Name | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|------|---------------|----------------|-------------|-----------|-------|
| W1   | Windows - New | External Walls | South       | 0.16      |       |
| W4   | Windows - New | External Walls | South West  | 1.80      |       |
| W5   | Windows - New | External Walls | South       | 1.80      |       |
| W6   | Windows - New | External Walls | South East  | 1.80      |       |
| W2   | Windows - New | External Walls | South       | 3.78      |       |
| W3   | Windows - New | External Walls | South       | 0.16      |       |

### 14.0 Conservatory

None

### 15.0 Draught Proofing

100

 %
  

### 16.0 Draught Lobby

No

### 17.0 Thermal Bridging

Default

Y-value

0.20

 W/m²K
  

### 19.0 Mechanical Ventilation

#### Mechanical Ventilation

Mechanical Ventilation System Present

No

### 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys

0

Number of open flues

0

Number of chimneys/flues attached to closed fire

0

Number of flues attached to solid fuel boiler

0

Number of flues attached to other heater

0

Number of blocked chimneys

0

Number of intermittent extract fans

2

Number of passive vents

0

Number of flueless gas fires

0

### 21.0 Fixed Cooling System

No

### 22.0 Pressure Testing

No

### 22.0 Lighting

No Fixed Lighting

No

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

### 24.0 Main Heating 1

SAP table

Description

Gas

Percentage of Heat

100.00

 %

Fuel Type

Mains gas

SAP Code

104

In Winter

79.00

In Summer

75.00

Controls SAP Code

2106

Controls description

Programmer, room thermostat and TRVs

Delayed Start Stat

No

Flue Type

Balanced

Fan Assisted Flue

Yes

Is MHS Pumped

Pump in heated space

Heating Pump Age

2013 or later

Heat Emitter

Radiators

# Summary for Input Data

|                     |                |
|---------------------|----------------|
| Flow Temperature    | Unknown        |
| Boiler Interlock    | No             |
| Combi boiler type   | Standard Combi |
| Combi keep hot type | None           |

|                            |                                            |   |
|----------------------------|--------------------------------------------|---|
| <b>25.0 Main Heating 2</b> | Database                                   |   |
| Description                | KERS                                       |   |
| Percentage of Heat         | 0.00                                       | % |
| Database Ref. No.          | 104956                                     |   |
| Fuel Type                  | Electricity                                |   |
| In Winter                  | 0.00                                       |   |
| In Summer                  | 75.00                                      |   |
| Model Name                 | KERS MEV-W230                              |   |
| Manufacturer               | KERS Innovations UK Ltd                    |   |
| Controls                   | 2100                                       |   |
| Controls description       | Not applicable (heating provides DHW only) |   |

|                           |      |
|---------------------------|------|
| <b>26.0 Heat Networks</b> | None |
|---------------------------|------|

|                               |                      |   |
|-------------------------------|----------------------|---|
| <b>27.0 Secondary Heating</b> | SAP table            |   |
| SAP Code                      | 692                  |   |
| Heating System Description    | Electric Fan heaters |   |
| Fuel Type                     | Electricity          |   |
| SHS efficiency                | 100.00               | % |

|                                                  |                |  |
|--------------------------------------------------|----------------|--|
| <b>28.0 Water Heating</b>                        | Main Heating 1 |  |
| Water Heating                                    |                |  |
| SAP Code                                         | 901            |  |
| 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               | No             |  |
| Cold Water Source                                | From mains     |  |
| Bath Count                                       | 0              |  |

## 28.3 Waste Water Heat Recovery System

|                                |      |
|--------------------------------|------|
| <b>29.0 Hot Water Cylinder</b> | None |
|--------------------------------|------|

|                        |     |     |     |     |      |     |     |     |     |     |     |  |
|------------------------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|--|
| 34.0 Small-scale Hydro |     |     |     |     | None |     |     |     |     |     |     |  |
| Jan                    | Feb | Mar | Apr | May | Jun  | Jul | Aug | Sep | Oct | Nov | Dec |  |

|                                                   |      |
|---------------------------------------------------|------|
| <b>Recommendations</b>                            |      |
| Lower cost measures                               | None |
| Further measures to achieve even higher standards | None |

# Summary for Input Data

|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 0B                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 0B - Notional                              | Plot Type Ref  | Flat 0B    |
| Plot Address         | Flat 0B, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |        |      |     |
|------------------------------------|------|---------------|--------|------|-----|
| SAP Rating                         | 71 C | DER           | 38.83  | TER  |     |
| Environmental                      | 71 C | % DER < TER   |        |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 2.18 | DFEE          | 111.99 | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |        |      |     |
| % DPER < TPER                      |      | DPER          | 211.67 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Ground-floor flat   |        |
| Which Floor                    | 0                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 278.71              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

|                  |               |                     |                      |                       |
|------------------|---------------|---------------------|----------------------|-----------------------|
| 7.0 Measurements |               | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|                  | Ground floor: | 18.80 m             | 61.00 m <sup>2</sup> | 3.30 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 28.40 | m <sup>2</sup> |
|-----------------|-------|----------------|

| Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
| External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.30                         | 190.00                      | 62.04                       | 46.18                       | 0.00        | None    | 15.86    | Enter Gross Area      |

| Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
| Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 30.36                  | 0.00        | None    |

| Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-----------------|------------------------------|-----------------------------|------------------------|
| Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 103.62                 |

| Description     | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-----------------|-------------------------------------------------|-----------------------------|------------------------|
| Party Ceiling 1 | Precast concrete planks floor, screed, carpeted | 30.00                       | 61.00                  |

| Description    | Type                  | Storey Index    | Construction | U-Value (W/m <sup>2</sup> K) | Shelter Code | Shelter Factor | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|----------------|-----------------------|-----------------|--------------|------------------------------|--------------|----------------|-----------------------------|------------------------|
| Heatloss Floor | Exposed Floor - Solid | Lowest occupied | Other        | 0.25                         | None         | 0.00           | 0.00                        | 61.00                  |

## 12.0 Opening Types

# Summary for Input Data

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 2.60            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 3.00            |

### 13.0 Openings

| Name      | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|-----------|---------------|----------------|-------------|-----------|-------|
| D1 and D2 | Doors - New   | External Walls | North       | 3.78      |       |
| W1-W2     | Windows - New | External Walls | North       | 5.60      |       |
| W4        | Windows - New | External Walls | North       | 3.24      |       |
| W5        | Windows - New | External Walls | North East  | 1.62      |       |
| W3        | Windows - New | External Walls | North East  | 1.62      |       |

### 14.0 Conservatory

None

### 15.0 Draught Proofing

100 %

### 16.0 Draught Lobby

No

### 17.0 Thermal Bridging

Default

Y-value

0.20 W/m²K

### 19.0 Mechanical Ventilation

#### Mechanical Ventilation

Mechanical Ventilation System Present

No

### 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys

0

Number of open flues

0

Number of chimneys/flues attached to closed fire

0

Number of flues attached to solid fuel boiler

0

Number of flues attached to other heater

0

Number of blocked chimneys

0

Number of intermittent extract fans

2

Number of passive vents

0

Number of flueless gas fires

0

### 21.0 Fixed Cooling System

No

### 22.0 Pressure Testing

No

### 22.0 Lighting

No Fixed Lighting

No

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

### 24.0 Main Heating 1

SAP table

Description

ASHP

Percentage of Heat

100.00 %

Fuel Type

Mains gas

SAP Code

104

In Winter

79.00

In Summer

75.00

Controls SAP Code

2106

Controls description

Programmer, room thermostat and TRVs

Delayed Start Stat

No

Flue Type

Balanced

Fan Assisted Flue

Yes

Is MHS Pumped

Pump in heated space

Heating Pump Age

2013 or later

Heat Emitter

Radiators

Flow Temperature

Unknown

# Summary for Input Data



|                     |                |
|---------------------|----------------|
| Boiler Interlock    | No             |
| Combi boiler type   | Standard Combi |
| Combi keep hot type | None           |

|                            |                                            |   |
|----------------------------|--------------------------------------------|---|
| <b>25.0 Main Heating 2</b> | Database                                   |   |
| Description                | KERS                                       |   |
| Percentage of Heat         | 0.00                                       | % |
| Database Ref. No.          | 104956                                     |   |
| Fuel Type                  | Electricity                                |   |
| In Winter                  | 0.00                                       |   |
| In Summer                  | 75.00                                      |   |
| Model Name                 | KERS MEV-W230                              |   |
| Manufacturer               | KERS Innovations UK Ltd                    |   |
| Controls                   | 2100                                       |   |
| Controls description       | Not applicable (heating provides DHW only) |   |

|                           |      |
|---------------------------|------|
| <b>26.0 Heat Networks</b> | None |
|---------------------------|------|

|                               |      |
|-------------------------------|------|
| <b>27.0 Secondary Heating</b> | None |
|-------------------------------|------|

|                                                  |                |
|--------------------------------------------------|----------------|
| <b>28.0 Water Heating</b>                        |                |
| Water Heating                                    | Main Heating 1 |
| SAP Code                                         | 901            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |

## 28.3 Waste Water Heat Recovery System

|                                |      |
|--------------------------------|------|
| <b>29.0 Hot Water Cylinder</b> | None |
|--------------------------------|------|

## Recommendations

### Lower cost measures

None

### Further measures to achieve even higher standards

None

# Summary for Input Data



|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 0A                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 0A - Notional                              | Plot Type Ref  | Flat 0A    |
| Plot Address         | Flat 0A, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |        |      |     |
|------------------------------------|------|---------------|--------|------|-----|
| SAP Rating                         | 75 C | DER           | 29.47  | TER  |     |
| Environmental                      | 74 C | % DER < TER   |        |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 2.44 | DFEE          | 85.78  | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |        |      |     |
| % DPER < TPER                      |      | DPER          | 160.83 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Ground-floor flat   |        |
| Which Floor                    | 0                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 215.23              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | 7 Hour Off Peak     |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 14.90 m             | 90.00 m <sup>2</sup> | 3.30 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 32.80 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.30                         | 190.00                      | 49.17                       | 31.92                       | 0.00        | None    | 17.25    | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 54.45                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 89.43                  |

| 10.1 Party Ceilings | Description     | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|---------------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                     | Party Ceiling 1 | Precast concrete planks floor, screed, carpeted | 30.00                       | 90.00                  |

| 11.0 Heat Loss Floors | Description    | Type                  | Storey Index    | Construction | U-Value (W/m <sup>2</sup> K) | Shelter Code | Shelter Factor | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-----------------------|----------------|-----------------------|-----------------|--------------|------------------------------|--------------|----------------|-----------------------------|------------------------|
|                       | Heatloss Floor | Exposed Floor - Solid | Lowest occupied | Other        | 0.25                         | None         | 0.00           | 0.00                        | 90.00                  |

## 12.0 Opening Types

# Summary for Input Data

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 2.60            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 3.00            |

## 13.0 Openings

| Name  | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|-------|---------------|----------------|-------------|-----------|-------|
| D1    | Doors - New   | External Walls | East        | 1.89      |       |
| W1-W3 | Windows - New | External Walls | South       | 4.80      |       |
| W4    | Windows - New | External Walls | South       | 3.78      |       |
| W5    | Windows - New | External Walls | North       | 3.00      |       |
| W6    | Windows - New | External Walls | North       | 3.78      |       |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

Y-value

 W/m²K

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

## 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys

Number of open flues

Number of chimneys/flues attached to closed fire

Number of flues attached to solid fuel boiler

Number of flues attached to other heater

Number of blocked chimneys

Number of intermittent extract fans

Number of passive vents

Number of flueless gas fires

## 21.0 Fixed Cooling System

## 22.0 Pressure Testing

## 22.0 Lighting

No Fixed Lighting

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

## 24.0 Main Heating 1

Description

Percentage of Heat  %

Fuel Type

SAP Code

In Winter

In Summer

Controls SAP Code

Controls description

Delayed Start Stat

Flue Type

Fan Assisted Flue

Is MHS Pumped

Heating Pump Age

Heat Emitter

Flow Temperature

# Summary for Input Data



|                     |                                             |
|---------------------|---------------------------------------------|
| Boiler Interlock    | <input type="text" value="No"/>             |
| Combi boiler type   | <input type="text" value="Standard Combi"/> |
| Combi keep hot type | <input type="text" value="None"/>           |

|                     |                                   |
|---------------------|-----------------------------------|
| 25.0 Main Heating 2 | <input type="text" value="None"/> |
|---------------------|-----------------------------------|

|                    |                                   |
|--------------------|-----------------------------------|
| 26.0 Heat Networks | <input type="text" value="None"/> |
|--------------------|-----------------------------------|

|                        |                                   |
|------------------------|-----------------------------------|
| 27.0 Secondary Heating | <input type="text" value="None"/> |
|------------------------|-----------------------------------|

|                                                  |                                             |
|--------------------------------------------------|---------------------------------------------|
| 28.0 Water Heating                               |                                             |
| Water Heating                                    | <input type="text" value="Main Heating 1"/> |
| SAP Code                                         | <input type="text" value="901"/>            |
| 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="No"/>             |
| Cold Water Source                                | <input type="text" value="From mains"/>     |
| Bath Count                                       | <input type="text" value="0"/>              |

|                                       |
|---------------------------------------|
| 28.3 Waste Water Heat Recovery System |
|---------------------------------------|

|                         |                                   |
|-------------------------|-----------------------------------|
| 29.0 Hot Water Cylinder | <input type="text" value="None"/> |
|-------------------------|-----------------------------------|

|                        |                                   |     |     |     |     |     |     |     |     |     |     |     |
|------------------------|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 34.0 Small-scale Hydro | <input type="text" value="None"/> |     |     |     |     |     |     |     |     |     |     |     |
|                        | Jan                               | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |

## Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

# Appendix 2

SAP Calculations – Be Lean

# Summary for Input Data



|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 2D                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 2D - Be Lean                               | Plot Type Ref  | Flat 2D    |
| Plot Address         | Flat 2D, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |        |      |     |
|------------------------------------|------|---------------|--------|------|-----|
| SAP Rating                         | 80 C | DER           | 22.09  | TER  |     |
| Environmental                      | 83 B | % DER < TER   |        |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 1.25 | DFEE          | 48.41  | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |        |      |     |
| % DPER < TPER                      |      | DPER          | 121.93 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Top-floor flat      |        |
| Which Floor                    | 3                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 310.17              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area | Average Storey Height |
|------------------|---------------|---------------------|---------------------|-----------------------|
|                  |               | 20.50 m             | 61.00 m²            | 2.50 m                |

|                 |       |    |
|-----------------|-------|----|
| 8.0 Living Area | 16.90 | m² |
|-----------------|-------|----|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m²K) | Kappa (kJ/m²K) | Gross Area(m²) | Nett Area (m²) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|-----------------|----------------|----------------|----------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.18            | 190.00         | 51.25          | 46.69          | 0.00        | None    | 4.56     | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m²K) | Kappa (kJ/m²K) | Area (m²) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|-----------------|----------------|-----------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00            | 180.00         | 33.50     | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m²K) | Area (m²) |
|--------------------|-----------------|------------------------------|----------------|-----------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00           | 114.50    |

| 10.0 External Roofs | Description   | Type                | Construction                             | U-Value (W/m²K) | Kappa (kJ/m²K) | Gross Area(m²) | Nett Area (m²) | Shelter Code | Shelter Factor | Calculation Type | Openings |
|---------------------|---------------|---------------------|------------------------------------------|-----------------|----------------|----------------|----------------|--------------|----------------|------------------|----------|
|                     | External Roof | External Plane Roof | Plasterboard, insulated at ceiling level | 0.11            | 9.00           | 61.00          | 61.00          | None         | 0.00           | Enter Gross Area | 0.00     |

| 11.1 Party Floors | Description | Storey Index | Construction | Kappa (kJ/m²K) | Area (m²) |
|-------------------|-------------|--------------|--------------|----------------|-----------|
|-------------------|-------------|--------------|--------------|----------------|-----------|

# Summary for Input Data

Party Floor 1      Lowest occupied      Precast concrete planks floor, screed, carpeted      40.00      61.00

| 12.0 Opening Types |              |            |                        |             |              |         |            |              |                 |
|--------------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Description        | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
| Windows - New      | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.20            |
| Doors - New        | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 1.20            |

| 13.0 Openings |               |                |             |           |       |
|---------------|---------------|----------------|-------------|-----------|-------|
| Name          | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
| W1 and W2     | Windows - New | External Walls | North       | 1.68      |       |
| W3-W5         | Windows - New | External Walls | North       | 2.88      |       |

14.0 Conservatory     

15.0 Draught Proofing       %

16.0 Draught Lobby     

17.0 Thermal Bridging     

Y-value       W/m²K

| 19.0 Mechanical Ventilation           |                                 |
|---------------------------------------|---------------------------------|
| Mechanical Ventilation                |                                 |
| Mechanical Ventilation System Present | <input type="text" value="No"/> |

| 20.0 Fans, Open Fireplaces, Flues                |                                |
|--------------------------------------------------|--------------------------------|
| Number of open chimneys                          | <input type="text" value="0"/> |
| Number of open flues                             | <input type="text" value="0"/> |
| Number of chimneys/flues attached to closed fire | <input type="text" value="0"/> |
| Number of flues attached to solid fuel boiler    | <input type="text" value="0"/> |
| Number of flues attached to other heater         | <input type="text" value="0"/> |
| Number of blocked chimneys                       | <input type="text" value="0"/> |
| Number of intermittent extract fans              | <input type="text" value="2"/> |
| Number of passive vents                          | <input type="text" value="0"/> |
| Number of flueless gas fires                     | <input type="text" value="0"/> |

21.0 Fixed Cooling System     

|                           |                                          |                   |
|---------------------------|------------------------------------------|-------------------|
| 22.0 Pressure Testing     | <input type="text" value="Yes"/>         |                   |
| Designed AP <sub>50</sub> | <input type="text" value="8.00"/>        | m³/(h.m²) @ 50 Pa |
| Property Tested?          | <input type="text" value="Yes"/>         |                   |
| Test Method               | <input type="text" value="Blower Door"/> |                   |

|                   |                                 |          |       |          |       |
|-------------------|---------------------------------|----------|-------|----------|-------|
| 22.0 Lighting     | <input type="text" value="No"/> |          |       |          |       |
| No Fixed Lighting |                                 |          |       |          |       |
|                   | Name                            | Efficacy | Power | Capacity | Count |
|                   | Lighting 1                      | 120.00   | 5.00  | 600.00   | 20    |

|                      |                                                                   |
|----------------------|-------------------------------------------------------------------|
| 24.0 Main Heating 1  | <input type="text" value="SAP table"/>                            |
| Description          | <input type="text" value="Gas"/>                                  |
| Percentage of Heat   | <input type="text" value="100.00"/> %                             |
| Fuel Type            | <input type="text" value="Mains gas"/>                            |
| SAP Code             | <input type="text" value="104"/>                                  |
| In Winter            | <input type="text" value="79.00"/>                                |
| In Summer            | <input type="text" value="75.00"/>                                |
| Controls SAP Code    | <input type="text" value="2106"/>                                 |
| Controls description | <input type="text" value="Programmer, room thermostat and TRVs"/> |
| Delayed Start Stat   | <input type="text" value="No"/>                                   |
| Flue Type            | <input type="text" value="Balanced"/>                             |
| Fan Assisted Flue    | <input type="text" value="Yes"/>                                  |

# Summary for Input Data

|                     |                      |
|---------------------|----------------------|
| Is MHS Pumped       | Pump in heated space |
| Heating Pump Age    | 2013 or later        |
| Heat Emitter        | Radiators            |
| Flow Temperature    | Unknown              |
| Boiler Interlock    | No                   |
| Combi boiler type   | Standard Combi       |
| Combi keep hot type | None                 |

|                            |                                            |   |
|----------------------------|--------------------------------------------|---|
| <b>25.0 Main Heating 2</b> | Database                                   |   |
| Description                | KERS                                       |   |
| Percentage of Heat         | 0.00                                       | % |
| Database Ref. No.          | 104956                                     |   |
| Fuel Type                  | Electricity                                |   |
| In Winter                  | 0.00                                       |   |
| In Summer                  | 75.00                                      |   |
| Model Name                 | KERS MEV-W230                              |   |
| Manufacturer               | KERS Innovations UK Ltd                    |   |
| Controls                   | 2100                                       |   |
| Controls description       | Not applicable (heating provides DHW only) |   |

|                           |      |
|---------------------------|------|
| <b>26.0 Heat Networks</b> | None |
|---------------------------|------|

|                               |      |
|-------------------------------|------|
| <b>27.0 Secondary Heating</b> | None |
|-------------------------------|------|

|                                                  |                |
|--------------------------------------------------|----------------|
| <b>28.0 Water Heating</b>                        | Main Heating 1 |
| Water Heating                                    |                |
| SAP Code                                         | 901            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |

## 28.3 Waste Water Heat Recovery System

|                                |      |
|--------------------------------|------|
| <b>29.0 Hot Water Cylinder</b> | None |
|--------------------------------|------|

|                        |     |     |     |     |      |     |     |     |     |     |     |  |
|------------------------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|--|
| 34.0 Small-scale Hydro |     |     |     |     | None |     |     |     |     |     |     |  |
| Jan                    | Feb | Mar | Apr | May | Jun  | Jul | Aug | Sep | Oct | Nov | Dec |  |

## Recommendations

### Lower cost measures

None

### Further measures to achieve even higher standards

None

# Summary for Input Data



|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 2C                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 2C - Be Lean                               | Plot Type Ref  | Flat 2C    |
| Plot Address         | Flat 2C, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |        |      |     |
|------------------------------------|------|---------------|--------|------|-----|
| SAP Rating                         | 82 B | DER           | 19.91  | TER  |     |
| Environmental                      | 85 B | % DER < TER   |        |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 1.13 | DFEE          | 39.98  | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |        |      |     |
| % DPER < TPER                      |      | DPER          | 110.22 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Top-floor flat      |        |
| Which Floor                    | 3                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 266.96              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 15.70 m             | 61.00 m <sup>2</sup> | 2.50 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 19.60 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.18                         | 190.00                      | 39.25                       | 35.09                       | 0.00        | None    | 4.16     | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 30.75                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 121.50                 |

| 10.0 External Roofs | Description   | Type                | Construction                             | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Code | Shelter Factor | Calculation Type | Openings |
|---------------------|---------------|---------------------|------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------|----------------|------------------|----------|
|                     | External Roof | External Plane Roof | Plasterboard, insulated at ceiling level | 0.11                         | 9.00                        | 61.00                       | 61.00                       | None         | 0.00           | Enter Gross Area | 0.00     |

| 11.1 Party Floors | Description | Storey Index | Construction | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-------------------|-------------|--------------|--------------|-----------------------------|------------------------|
|-------------------|-------------|--------------|--------------|-----------------------------|------------------------|

# Summary for Input Data

Party Floor 1      Lowest occupied      Precast concrete planks floor, screed, carpeted      40.00      61.00

| 12.0 Opening Types |              |            |                        |             |              |         |            |              |                 |
|--------------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Description        | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
| Windows - New      | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.20            |
| Doors - New        | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 1.20            |

| 13.0 Openings |               |                |             |           |       |
|---------------|---------------|----------------|-------------|-----------|-------|
| Name          | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
| W1            | Windows - New | External Walls | South       | 1.12      |       |
| W2            | Windows - New | External Walls | South       | 0.96      |       |
| W3            | Windows - New | External Walls | South       | 0.96      |       |
| W4            | Windows - New | External Walls | East        | 1.12      |       |

|                       |                                      |       |
|-----------------------|--------------------------------------|-------|
| 14.0 Conservatory     | <input type="text" value="None"/>    |       |
| 15.0 Draught Proofing | <input type="text" value="100"/>     | %     |
| 16.0 Draught Lobby    | <input type="text" value="No"/>      |       |
| 17.0 Thermal Bridging | <input type="text" value="Default"/> |       |
| Y-value               | <input type="text" value="0.20"/>    | W/m²K |

| 19.0 Mechanical Ventilation           |                                 |
|---------------------------------------|---------------------------------|
| Mechanical Ventilation                |                                 |
| Mechanical Ventilation System Present | <input type="text" value="No"/> |

|                                                  |                                |
|--------------------------------------------------|--------------------------------|
| 20.0 Fans, Open Fireplaces, Flues                |                                |
| Number of open chimneys                          | <input type="text" value="0"/> |
| Number of open flues                             | <input type="text" value="0"/> |
| Number of chimneys/flues attached to closed fire | <input type="text" value="0"/> |
| Number of flues attached to solid fuel boiler    | <input type="text" value="0"/> |
| Number of flues attached to other heater         | <input type="text" value="0"/> |
| Number of blocked chimneys                       | <input type="text" value="0"/> |
| Number of intermittent extract fans              | <input type="text" value="2"/> |
| Number of passive vents                          | <input type="text" value="0"/> |
| Number of flueless gas fires                     | <input type="text" value="0"/> |

|                           |                                 |
|---------------------------|---------------------------------|
| 21.0 Fixed Cooling System | <input type="text" value="No"/> |
|---------------------------|---------------------------------|

|                           |                                          |                   |
|---------------------------|------------------------------------------|-------------------|
| 22.0 Pressure Testing     | <input type="text" value="Yes"/>         |                   |
| Designed AP <sub>50</sub> | <input type="text" value="8.00"/>        | m³/(h.m²) @ 50 Pa |
| Property Tested?          | <input type="text" value="Yes"/>         |                   |
| Test Method               | <input type="text" value="Blower Door"/> |                   |

|                   |                                 |                 |
|-------------------|---------------------------------|-----------------|
| 22.0 Lighting     | <input type="text" value="No"/> |                 |
| No Fixed Lighting |                                 |                 |
|                   | <b>Name</b>                     | <b>Efficacy</b> |
|                   | Lighting 1                      | 120.00          |
|                   | <b>Power</b>                    | <b>Capacity</b> |
|                   | 5.00                            | 600.00          |
|                   |                                 | <b>Count</b>    |
|                   |                                 | 20              |

|                      |                                                                   |   |
|----------------------|-------------------------------------------------------------------|---|
| 24.0 Main Heating 1  | <input type="text" value="SAP table"/>                            |   |
| Description          | <input type="text" value="Gas"/>                                  |   |
| Percentage of Heat   | <input type="text" value="100.00"/>                               | % |
| Fuel Type            | <input type="text" value="Mains gas"/>                            |   |
| SAP Code             | <input type="text" value="104"/>                                  |   |
| In Winter            | <input type="text" value="79.00"/>                                |   |
| In Summer            | <input type="text" value="75.00"/>                                |   |
| Controls SAP Code    | <input type="text" value="2106"/>                                 |   |
| Controls description | <input type="text" value="Programmer, room thermostat and TRVs"/> |   |
| Delayed Start Stat   | <input type="text" value="No"/>                                   |   |
| Flue Type            | <input type="text" value="Balanced"/>                             |   |

# Summary for Input Data

|                     |                      |  |  |  |  |  |  |  |  |  |  |  |
|---------------------|----------------------|--|--|--|--|--|--|--|--|--|--|--|
| Fan Assisted Flue   | Yes                  |  |  |  |  |  |  |  |  |  |  |  |
| Is MHS Pumped       | Pump in heated space |  |  |  |  |  |  |  |  |  |  |  |
| Heating Pump Age    | 2013 or later        |  |  |  |  |  |  |  |  |  |  |  |
| Heat Emitter        | Radiators            |  |  |  |  |  |  |  |  |  |  |  |
| Flow Temperature    | Unknown              |  |  |  |  |  |  |  |  |  |  |  |
| Boiler Interlock    | No                   |  |  |  |  |  |  |  |  |  |  |  |
| Combi boiler type   | Standard Combi       |  |  |  |  |  |  |  |  |  |  |  |
| Combi keep hot type | None                 |  |  |  |  |  |  |  |  |  |  |  |

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|                            |                                            |  |  |  |  |  |  |  |  |  |  |   |
|----------------------------|--------------------------------------------|--|--|--|--|--|--|--|--|--|--|---|
| <b>25.0 Main Heating 2</b> | Database                                   |  |  |  |  |  |  |  |  |  |  |   |
| Description                | KERS                                       |  |  |  |  |  |  |  |  |  |  |   |
| Percentage of Heat         | 0.00                                       |  |  |  |  |  |  |  |  |  |  | % |
| Database Ref. No.          | 104956                                     |  |  |  |  |  |  |  |  |  |  |   |
| Fuel Type                  | Electricity                                |  |  |  |  |  |  |  |  |  |  |   |
| In Winter                  | 0.00                                       |  |  |  |  |  |  |  |  |  |  |   |
| In Summer                  | 75.00                                      |  |  |  |  |  |  |  |  |  |  |   |
| Model Name                 | KERS MEV-W230                              |  |  |  |  |  |  |  |  |  |  |   |
| Manufacturer               | KERS Innovations UK Ltd                    |  |  |  |  |  |  |  |  |  |  |   |
| Controls                   | 2100                                       |  |  |  |  |  |  |  |  |  |  |   |
| Controls description       | Not applicable (heating provides DHW only) |  |  |  |  |  |  |  |  |  |  |   |

---

|                           |      |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------|------|--|--|--|--|--|--|--|--|--|--|--|
| <b>26.0 Heat Networks</b> | None |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------|------|--|--|--|--|--|--|--|--|--|--|--|

---

|                               |      |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------------|------|--|--|--|--|--|--|--|--|--|--|--|
| <b>27.0 Secondary Heating</b> | None |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------------|------|--|--|--|--|--|--|--|--|--|--|--|

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|                                                  |                |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------------------------|----------------|--|--|--|--|--|--|--|--|--|--|--|
| <b>28.0 Water Heating</b>                        | Main Heating 1 |  |  |  |  |  |  |  |  |  |  |  |
| Water Heating                                    | Main Heating 1 |  |  |  |  |  |  |  |  |  |  |  |
| SAP Code                                         | 901            |  |  |  |  |  |  |  |  |  |  |  |
| 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               | No             |  |  |  |  |  |  |  |  |  |  |  |
| Cold Water Source                                | From mains     |  |  |  |  |  |  |  |  |  |  |  |
| Bath Count                                       | 0              |  |  |  |  |  |  |  |  |  |  |  |

---

|                                              |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>28.3 Waste Water Heat Recovery System</b> |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|

---

|                                |      |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------|------|--|--|--|--|--|--|--|--|--|--|--|
| <b>29.0 Hot Water Cylinder</b> | None |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------|------|--|--|--|--|--|--|--|--|--|--|--|

---

|                               |      |     |     |     |     |     |     |     |     |     |     |     |
|-------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>34.0 Small-scale Hydro</b> | None |     |     |     |     |     |     |     |     |     |     |     |
|                               | Jan  | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |

---

|                                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>Recommendations</b>                            |  |  |  |  |  |  |  |  |  |  |  |  |
| Lower cost measures                               |  |  |  |  |  |  |  |  |  |  |  |  |
| None                                              |  |  |  |  |  |  |  |  |  |  |  |  |
| Further measures to achieve even higher standards |  |  |  |  |  |  |  |  |  |  |  |  |
| None                                              |  |  |  |  |  |  |  |  |  |  |  |  |

# Summary for Input Data

|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 2B                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 2B - Be Lean                               | Plot Type Ref  | Flat 2B    |
| Plot Address         | Flat 2B, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |        |      |     |
|------------------------------------|------|---------------|--------|------|-----|
| SAP Rating                         | 81 B | DER           | 21.08  | TER  |     |
| Environmental                      | 84 B | % DER < TER   |        |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 1.19 | DFEE          | 44.68  | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |        |      |     |
| % DPER < TPER                      |      | DPER          | 116.43 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Top-floor flat      |        |
| Which Floor                    | 3                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 275.34              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 14.60 m             | 61.00 m <sup>2</sup> | 2.50 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 29.40 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.18                         | 190.00                      | 36.50                       | 30.80                       | 0.00        | None    | 5.70     | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 44.25                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 70.00                  |

| 10.0 External Roofs | Description   | Type                | Construction                             | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Code | Shelter Factor | Calculation Type | Openings |
|---------------------|---------------|---------------------|------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------|----------------|------------------|----------|
|                     | External Roof | External Plane Roof | Plasterboard, insulated at ceiling level | 0.11                         | 9.00                        | 61.00                       | 61.00                       | None         | 0.00           | Enter Gross Area | 0.00     |

| 11.1 Party Floors | Description | Storey Index | Construction | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-------------------|-------------|--------------|--------------|-----------------------------|------------------------|
|-------------------|-------------|--------------|--------------|-----------------------------|------------------------|

# Summary for Input Data



Party Floor 1      Lowest occupied      Precast concrete planks floor, screed, carpeted      40.00      45.00

## 12.0 Opening Types

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.20            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 1.20            |

## 13.0 Openings

| Name      | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|-----------|---------------|----------------|-------------|-----------|-------|
| W1        | Windows - New | External Walls | North       | 1.20      |       |
| W2        | Windows - New | External Walls | North       | 1.00      |       |
| W3 and W4 | Windows - New | External Walls | North       | 1.96      |       |
| W5        | Windows - New | External Walls | North       | 1.54      |       |

## 14.0 Conservatory

None

## 15.0 Draught Proofing

100 %

## 16.0 Draught Lobby

No

## 17.0 Thermal Bridging

Default

Y-value

0.20 W/m²K

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

No

## 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys 0

Number of open flues 0

Number of chimneys/flues attached to closed fire 0

Number of flues attached to solid fuel boiler 0

Number of flues attached to other heater 0

Number of blocked chimneys 0

Number of intermittent extract fans 2

Number of passive vents 0

Number of flueless gas fires 0

## 21.0 Fixed Cooling System

No

## 22.0 Pressure Testing

Yes

Designed AP<sub>50</sub> 8.00 m³/(h.m²) @ 50 Pa

Property Tested? Yes

Test Method Blower Door

## 22.0 Lighting

No Fixed Lighting No

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

## 24.0 Main Heating 1

SAP table

Description Gas

Percentage of Heat 100.00 %

Fuel Type Mains gas

SAP Code 104

In Winter 79.00

In Summer 75.00

Controls SAP Code 2106

Controls description Programmer, room thermostat and TRVs

Delayed Start Stat No

Flue Type Balanced

# Summary for Input Data

|                     |                      |  |  |  |  |  |  |  |  |  |  |  |
|---------------------|----------------------|--|--|--|--|--|--|--|--|--|--|--|
| Fan Assisted Flue   | Yes                  |  |  |  |  |  |  |  |  |  |  |  |
| Is MHS Pumped       | Pump in heated space |  |  |  |  |  |  |  |  |  |  |  |
| Heating Pump Age    | 2013 or later        |  |  |  |  |  |  |  |  |  |  |  |
| Heat Emitter        | Radiators            |  |  |  |  |  |  |  |  |  |  |  |
| Flow Temperature    | Unknown              |  |  |  |  |  |  |  |  |  |  |  |
| Boiler Interlock    | No                   |  |  |  |  |  |  |  |  |  |  |  |
| Combi boiler type   | Standard Combi       |  |  |  |  |  |  |  |  |  |  |  |
| Combi keep hot type | None                 |  |  |  |  |  |  |  |  |  |  |  |

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|                            |                                            |  |  |  |  |  |  |  |  |  |  |   |
|----------------------------|--------------------------------------------|--|--|--|--|--|--|--|--|--|--|---|
| <b>25.0 Main Heating 2</b> | Database                                   |  |  |  |  |  |  |  |  |  |  |   |
| Description                | KERS                                       |  |  |  |  |  |  |  |  |  |  |   |
| Percentage of Heat         | 0.00                                       |  |  |  |  |  |  |  |  |  |  | % |
| Database Ref. No.          | 104956                                     |  |  |  |  |  |  |  |  |  |  |   |
| Fuel Type                  | Electricity                                |  |  |  |  |  |  |  |  |  |  |   |
| In Winter                  | 0.00                                       |  |  |  |  |  |  |  |  |  |  |   |
| In Summer                  | 75.00                                      |  |  |  |  |  |  |  |  |  |  |   |
| Model Name                 | KERS MEV-W230                              |  |  |  |  |  |  |  |  |  |  |   |
| Manufacturer               | KERS Innovations UK Ltd                    |  |  |  |  |  |  |  |  |  |  |   |
| Controls                   | 2100                                       |  |  |  |  |  |  |  |  |  |  |   |
| Controls description       | Not applicable (heating provides DHW only) |  |  |  |  |  |  |  |  |  |  |   |

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|                           |      |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------|------|--|--|--|--|--|--|--|--|--|--|--|
| <b>26.0 Heat Networks</b> | None |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------|------|--|--|--|--|--|--|--|--|--|--|--|

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|                               |      |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------------|------|--|--|--|--|--|--|--|--|--|--|--|
| <b>27.0 Secondary Heating</b> | None |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------------|------|--|--|--|--|--|--|--|--|--|--|--|

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|                                                  |                |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------------------------|----------------|--|--|--|--|--|--|--|--|--|--|--|
| <b>28.0 Water Heating</b>                        | Main Heating 1 |  |  |  |  |  |  |  |  |  |  |  |
| Water Heating                                    | Main Heating 1 |  |  |  |  |  |  |  |  |  |  |  |
| SAP Code                                         | 901            |  |  |  |  |  |  |  |  |  |  |  |
| 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               | No             |  |  |  |  |  |  |  |  |  |  |  |
| Cold Water Source                                | From mains     |  |  |  |  |  |  |  |  |  |  |  |
| Bath Count                                       | 0              |  |  |  |  |  |  |  |  |  |  |  |

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|                                              |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>28.3 Waste Water Heat Recovery System</b> |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|

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|                                |      |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------|------|--|--|--|--|--|--|--|--|--|--|--|
| <b>29.0 Hot Water Cylinder</b> | None |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------|------|--|--|--|--|--|--|--|--|--|--|--|

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|                               |      |     |     |     |     |     |     |     |     |     |     |     |
|-------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>34.0 Small-scale Hydro</b> | None |     |     |     |     |     |     |     |     |     |     |     |
|                               | Jan  | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |

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|                                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>Recommendations</b>                            |  |  |  |  |  |  |  |  |  |  |  |  |
| Lower cost measures                               |  |  |  |  |  |  |  |  |  |  |  |  |
| None                                              |  |  |  |  |  |  |  |  |  |  |  |  |
| Further measures to achieve even higher standards |  |  |  |  |  |  |  |  |  |  |  |  |
| None                                              |  |  |  |  |  |  |  |  |  |  |  |  |

# Summary for Input Data



|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 2A                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 2A - Be Lean                               | Plot Type Ref  | Flat 2A    |
| Plot Address         | Flat 2A, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |        |      |     |
|------------------------------------|------|---------------|--------|------|-----|
| SAP Rating                         | 81 B | DER           | 22.04  | TER  |     |
| Environmental                      | 86 B | % DER < TER   |        |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 0.92 | DFEE          | 41.82  | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |        |      |     |
| % DPER < TPER                      |      | DPER          | 122.12 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Top-floor flat      |        |
| Which Floor                    | 3                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 275.42              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 13.20 m             | 45.00 m <sup>2</sup> | 2.50 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 17.20 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.18                         | 190.00                      | 33.00                       | 29.54                       | 0.00        | None    | 3.46     | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 23.25                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 43.50                  |

| 10.0 External Roofs | Description   | Type                | Construction                             | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Code | Shelter Factor | Calculation Type | Openings |
|---------------------|---------------|---------------------|------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------|----------------|------------------|----------|
|                     | External Roof | External Plane Roof | Plasterboard, insulated at ceiling level | 0.11                         | 9.00                        | 45.00                       | 45.00                       | None         | 0.00           | Enter Gross Area | 0.00     |

| 11.1 Party Floors | Description | Storey Index | Construction | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-------------------|-------------|--------------|--------------|-----------------------------|------------------------|
|-------------------|-------------|--------------|--------------|-----------------------------|------------------------|

# Summary for Input Data

Party Floor 1      Lowest occupied      Precast concrete planks floor, screed, carpeted      40.00      45.00

## 12.0 Opening Types

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.20            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 1.20            |

## 13.0 Openings

| Name      | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|-----------|---------------|----------------|-------------|-----------|-------|
| W1        | Windows - New | External Walls | South West  | 0.84      |       |
| W2        | Windows - New | External Walls | South East  | 0.84      |       |
| W3        | Windows - New | External Walls | South East  | 1.28      |       |
| W4 and W5 | Windows - New | External Walls | South       | 0.50      |       |

## 14.0 Conservatory

None

## 15.0 Draught Proofing

100 %

## 16.0 Draught Lobby

No

## 17.0 Thermal Bridging

Default

Y-value

0.20 W/m²K

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

No

## 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys 0

Number of open flues 0

Number of chimneys/flues attached to closed fire 0

Number of flues attached to solid fuel boiler 0

Number of flues attached to other heater 0

Number of blocked chimneys 0

Number of intermittent extract fans 2

Number of passive vents 0

Number of flueless gas fires 0

## 21.0 Fixed Cooling System

No

## 22.0 Pressure Testing

Yes

Designed AP<sub>50</sub> 8.00 m³/(h.m²) @ 50 Pa

Property Tested? Yes

Test Method Blower Door

## 22.0 Lighting

No Fixed Lighting No

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

## 24.0 Main Heating 1

SAP table

Description Gas

Percentage of Heat 100.00 %

Fuel Type Mains gas

SAP Code 104

In Winter 79.00

In Summer 75.00

Controls SAP Code 2106

Controls description Programmer, room thermostat and TRVs

Delayed Start Stat No

Flue Type Balanced

# Summary for Input Data

|                     |                      |  |  |  |  |  |  |  |  |  |  |  |
|---------------------|----------------------|--|--|--|--|--|--|--|--|--|--|--|
| Fan Assisted Flue   | Yes                  |  |  |  |  |  |  |  |  |  |  |  |
| Is MHS Pumped       | Pump in heated space |  |  |  |  |  |  |  |  |  |  |  |
| Heating Pump Age    | 2013 or later        |  |  |  |  |  |  |  |  |  |  |  |
| Heat Emitter        | Radiators            |  |  |  |  |  |  |  |  |  |  |  |
| Flow Temperature    | Unknown              |  |  |  |  |  |  |  |  |  |  |  |
| Boiler Interlock    | No                   |  |  |  |  |  |  |  |  |  |  |  |
| Combi boiler type   | Standard Combi       |  |  |  |  |  |  |  |  |  |  |  |
| Combi keep hot type | None                 |  |  |  |  |  |  |  |  |  |  |  |

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|                            |                                            |  |  |  |  |  |  |  |  |  |  |   |
|----------------------------|--------------------------------------------|--|--|--|--|--|--|--|--|--|--|---|
| <b>25.0 Main Heating 2</b> | Database                                   |  |  |  |  |  |  |  |  |  |  |   |
| Description                | KERS                                       |  |  |  |  |  |  |  |  |  |  |   |
| Percentage of Heat         | 0.00                                       |  |  |  |  |  |  |  |  |  |  | % |
| Database Ref. No.          | 104956                                     |  |  |  |  |  |  |  |  |  |  |   |
| Fuel Type                  | Electricity                                |  |  |  |  |  |  |  |  |  |  |   |
| In Winter                  | 0.00                                       |  |  |  |  |  |  |  |  |  |  |   |
| In Summer                  | 75.00                                      |  |  |  |  |  |  |  |  |  |  |   |
| Model Name                 | KERS MEV-W230                              |  |  |  |  |  |  |  |  |  |  |   |
| Manufacturer               | KERS Innovations UK Ltd                    |  |  |  |  |  |  |  |  |  |  |   |
| Controls                   | 2100                                       |  |  |  |  |  |  |  |  |  |  |   |
| Controls description       | Not applicable (heating provides DHW only) |  |  |  |  |  |  |  |  |  |  |   |

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|                           |      |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------|------|--|--|--|--|--|--|--|--|--|--|--|
| <b>26.0 Heat Networks</b> | None |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------|------|--|--|--|--|--|--|--|--|--|--|--|

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|                               |      |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------------|------|--|--|--|--|--|--|--|--|--|--|--|
| <b>27.0 Secondary Heating</b> | None |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------------|------|--|--|--|--|--|--|--|--|--|--|--|

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|                                                  |                |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------------------------|----------------|--|--|--|--|--|--|--|--|--|--|--|
| <b>28.0 Water Heating</b>                        | Main Heating 1 |  |  |  |  |  |  |  |  |  |  |  |
| Water Heating                                    | Main Heating 1 |  |  |  |  |  |  |  |  |  |  |  |
| SAP Code                                         | 901            |  |  |  |  |  |  |  |  |  |  |  |
| 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               | No             |  |  |  |  |  |  |  |  |  |  |  |
| Cold Water Source                                | From mains     |  |  |  |  |  |  |  |  |  |  |  |
| Bath Count                                       | 0              |  |  |  |  |  |  |  |  |  |  |  |

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|                                              |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>28.3 Waste Water Heat Recovery System</b> |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|

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|                                |      |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------|------|--|--|--|--|--|--|--|--|--|--|--|
| <b>29.0 Hot Water Cylinder</b> | None |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------|------|--|--|--|--|--|--|--|--|--|--|--|

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|                               |      |     |     |     |     |     |     |     |     |     |     |     |
|-------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>34.0 Small-scale Hydro</b> | None |     |     |     |     |     |     |     |     |     |     |     |
|                               | Jan  | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |

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|                                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>Recommendations</b>                            |  |  |  |  |  |  |  |  |  |  |  |  |
| Lower cost measures                               |  |  |  |  |  |  |  |  |  |  |  |  |
| None                                              |  |  |  |  |  |  |  |  |  |  |  |  |
| Further measures to achieve even higher standards |  |  |  |  |  |  |  |  |  |  |  |  |
| None                                              |  |  |  |  |  |  |  |  |  |  |  |  |

# Summary for Input Data

|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 1D                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 1D - Be Lean                               | Plot Type Ref  | Flat 1D    |
| Plot Address         | Flat 1D, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |        |      |     |
|------------------------------------|------|---------------|--------|------|-----|
| SAP Rating                         | 82 B | DER           | 20.09  | TER  |     |
| Environmental                      | 85 B | % DER < TER   |        |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 1.16 | DFEE          | 41.92  | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |        |      |     |
| % DPER < TPER                      |      | DPER          | 110.92 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Mid-floor flat      |        |
| Which Floor                    | 2                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 360.49              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 20.30 m             | 63.00 m <sup>2</sup> | 3.10 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 15.80 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.18                         | 190.00                      | 62.93                       | 54.41                       | 0.00        | None    | 8.52     | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 36.89                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 146.94                 |

| 10.1 Party Ceilings | Description     | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|---------------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                     | Party Ceiling 1 | Precast concrete planks floor, screed, carpeted | 30.00                       | 63.00                  |

| 11.1 Party Floors | Description   | Storey Index    | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-------------------|---------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                   | Party Floor 1 | Lowest occupied | Precast concrete planks floor, screed, carpeted | 40.00                       | 63.00                  |

# Summary for Input Data

## 12.0 Opening Types

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.20            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 1.20            |

## 13.0 Openings

| Name  | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|-------|---------------|----------------|-------------|-----------|-------|
| W1    | Windows - New | External Walls | North       | 0.16      |       |
| W2    | Windows - New | External Walls | North       | 1.28      |       |
| W3    | Windows - New | External Walls | North       | 1.28      |       |
| W4-W6 | Windows - New | External Walls | North       | 4.80      |       |
| W7    | Windows - New | External Walls | South       | 1.00      |       |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

Y-value

 W/m²K

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

## 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys

Number of open flues

Number of chimneys/flues attached to closed fire

Number of flues attached to solid fuel boiler

Number of flues attached to other heater

Number of blocked chimneys

Number of intermittent extract fans

Number of passive vents

Number of flueless gas fires

## 21.0 Fixed Cooling System

## 22.0 Pressure Testing

Designed AP<sub>50</sub>  m³/(h.m²) @ 50 Pa

Property Tested?

Test Method

## 22.0 Lighting

No Fixed Lighting

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

## 24.0 Main Heating 1

Description

Percentage of Heat  %

Fuel Type

SAP Code

In Winter

In Summer

Controls SAP Code

Controls description

Delayed Start Stat

Flue Type

Fan Assisted Flue

# Summary for Input Data

|                     |                      |
|---------------------|----------------------|
| Is MHS Pumped       | Pump in heated space |
| Heating Pump Age    | 2013 or later        |
| Heat Emitter        | Radiators            |
| Flow Temperature    | Unknown              |
| Boiler Interlock    | No                   |
| Combi boiler type   | Standard Combi       |
| Combi keep hot type | None                 |

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|                            |                                            |   |
|----------------------------|--------------------------------------------|---|
| <b>25.0 Main Heating 2</b> | Database                                   |   |
| Description                | KERS                                       |   |
| Percentage of Heat         | 0.00                                       | % |
| Database Ref. No.          | 104956                                     |   |
| Fuel Type                  | Electricity                                |   |
| In Winter                  | 0.00                                       |   |
| In Summer                  | 75.00                                      |   |
| Model Name                 | KERS MEV-W230                              |   |
| Manufacturer               | KERS Innovations UK Ltd                    |   |
| Controls                   | 2100                                       |   |
| Controls description       | Not applicable (heating provides DHW only) |   |

---

|                           |      |
|---------------------------|------|
| <b>26.0 Heat Networks</b> | None |
|---------------------------|------|

---

|                               |      |
|-------------------------------|------|
| <b>27.0 Secondary Heating</b> | None |
|-------------------------------|------|

---

|                                                  |                |
|--------------------------------------------------|----------------|
| <b>28.0 Water Heating</b>                        | Main Heating 1 |
| SAP Code                                         | 901            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |

---

|                                              |  |
|----------------------------------------------|--|
| <b>28.3 Waste Water Heat Recovery System</b> |  |
|----------------------------------------------|--|

---

|                                |      |
|--------------------------------|------|
| <b>29.0 Hot Water Cylinder</b> | None |
|--------------------------------|------|

---

|                               |      |
|-------------------------------|------|
| <b>34.0 Small-scale Hydro</b> | None |
|-------------------------------|------|

---

|  |     |     |     |     |     |     |     |     |     |     |     |     |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|  | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

---

|                                                   |
|---------------------------------------------------|
| <b>Recommendations</b>                            |
| Lower cost measures                               |
| None                                              |
| Further measures to achieve even higher standards |
| None                                              |

# Summary for Input Data

|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 1C                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 1C - Be Lean                               | Plot Type Ref  | Flat 1C    |
| Plot Address         | Flat 1C, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |       |      |     |
|------------------------------------|------|---------------|-------|------|-----|
| SAP Rating                         | 83 B | DER           | 17.52 | TER  |     |
| Environmental                      | 87 B | % DER < TER   |       |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 1    | DFEE          | 31.91 | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |       |      |     |
| % DPER < TPER                      |      | DPER          | 97.12 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Mid-floor flat      |        |
| Which Floor                    | 2                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 313.16              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 15.90 m             | 62.00 m <sup>2</sup> | 3.10 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 24.60 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.18                         | 190.00                      | 49.29                       | 41.49                       | 0.00        | None    | 7.80     | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 32.55                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 148.18                 |

| 10.1 Party Ceilings | Description     | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|---------------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                     | Party Ceiling 1 | Precast concrete planks floor, screed, carpeted | 30.00                       | 62.00                  |

| 11.1 Party Floors | Description   | Storey Index    | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-------------------|---------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                   | Party Floor 1 | Lowest occupied | Precast concrete planks floor, screed, carpeted | 40.00                       | 62.00                  |

# Summary for Input Data

## 12.0 Opening Types

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.20            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 1.20            |

## 13.0 Openings

| Name | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|------|---------------|----------------|-------------|-----------|-------|
| W1   | Windows - New | External Walls | South       | 1.80      |       |
| W2   | Windows - New | External Walls | South West  | 2.00      |       |
| W3   | Windows - New | External Walls | South       | 2.00      |       |
| W4   | Windows - New | External Walls | South East  | 2.00      |       |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

## Y-value

 W/m²K

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

## 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys

Number of open flues

Number of chimneys/flues attached to closed fire

Number of flues attached to solid fuel boiler

Number of flues attached to other heater

Number of blocked chimneys

Number of intermittent extract fans

Number of passive vents

Number of flueless gas fires

## 21.0 Fixed Cooling System

## 22.0 Pressure Testing

 Designed AP<sub>50</sub>
 m³/(h.m²) @ 50 Pa

Property Tested?

Test Method

## 22.0 Lighting

No Fixed Lighting

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

## 24.0 Main Heating 1

Description

Percentage of Heat

 %

Fuel Type

SAP Code

In Winter

In Summer

Controls SAP Code

Controls description

Delayed Start Stat

Flue Type

Fan Assisted Flue

Is MHS Pumped

# Summary for Input Data

|                     |                |
|---------------------|----------------|
| Heating Pump Age    | 2013 or later  |
| Heat Emitter        | Radiators      |
| Flow Temperature    | Unknown        |
| Boiler Interlock    | No             |
| Combi boiler type   | Standard Combi |
| Combi keep hot type | None           |

## 25.0 Main Heating 2

|                      |                                            |   |
|----------------------|--------------------------------------------|---|
|                      | Database                                   |   |
| Description          | KERS                                       |   |
| Percentage of Heat   | 0.00                                       | % |
| Database Ref. No.    | 104956                                     |   |
| Fuel Type            | Electricity                                |   |
| In Winter            | 0.00                                       |   |
| In Summer            | 75.00                                      |   |
| Model Name           | KERS MEV-W230                              |   |
| Manufacturer         | KERS Innovations UK Ltd                    |   |
| Controls             | 2100                                       |   |
| Controls description | Not applicable (heating provides DHW only) |   |

## 26.0 Heat Networks

None

## 27.0 Secondary Heating

None

## 28.0 Water Heating

|                                                  |                |
|--------------------------------------------------|----------------|
| Water Heating                                    | Main Heating 1 |
| SAP Code                                         | 901            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |

## 28.3 Waste Water Heat Recovery System

## 29.0 Hot Water Cylinder

None

## 34.0 Small-scale Hydro

None

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

## Recommendations

### Lower cost measures

None

### Further measures to achieve even higher standards

None

# Summary for Input Data

|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 1B                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 1B - Be Lean                               | Plot Type Ref  | Flat 1B    |
| Plot Address         | Flat 1B, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |        |      |     |
|------------------------------------|------|---------------|--------|------|-----|
| SAP Rating                         | 83 B | DER           | 18.83  | TER  |     |
| Environmental                      | 86 B | % DER < TER   |        |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 1.05 | DFEE          | 36.46  | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |        |      |     |
| % DPER < TPER                      |      | DPER          | 104.18 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Mid-floor flat      |        |
| Which Floor                    | 2                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 376.20              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 13.80 m             | 61.00 m <sup>2</sup> | 3.10 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 24.70 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.18                         | 190.00                      | 42.78                       | 35.34                       | 0.00        | None    | 7.44     | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 61.38                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 101.68                 |

| 10.1 Party Ceilings | Description     | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|---------------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                     | Party Ceiling 1 | Precast concrete planks floor, screed, carpeted | 30.00                       | 61.00                  |

| 11.1 Party Floors | Description   | Storey Index    | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-------------------|---------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                   | Party Floor 1 | Lowest occupied | Precast concrete planks floor, screed, carpeted | 40.00                       | 61.00                  |

# Summary for Input Data



## 12.0 Opening Types

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.20            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 1.20            |

## 13.0 Openings

| Name | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|------|---------------|----------------|-------------|-----------|-------|
| W1   | Windows - New | External Walls | North       | 1.44      |       |
| W2   | Windows - New | External Walls | North       | 1.44      |       |
| W3   | Windows - New | External Walls | North       | 0.84      |       |
| W4   | Windows - New | External Walls | North       | 0.84      |       |
| W5   | Windows - New | External Walls | North       | 1.44      |       |
| W6   | Windows - New | External Walls | North       | 1.44      |       |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

Y-value

 W/m²K

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

## 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys

Number of open flues

Number of chimneys/flues attached to closed fire

Number of flues attached to solid fuel boiler

Number of flues attached to other heater

Number of blocked chimneys

Number of intermittent extract fans

Number of passive vents

Number of flueless gas fires

## 21.0 Fixed Cooling System

## 22.0 Pressure Testing

Designed AP<sub>50</sub>

 m³/(h.m²) @ 50 Pa

Property Tested?

Test Method

## 22.0 Lighting

No Fixed Lighting

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

## 24.0 Main Heating 1

Description

Percentage of Heat

 %

Fuel Type

SAP Code

In Winter

In Summer

Controls SAP Code

Controls description

Delayed Start Stat

Flue Type

Fan Assisted Flue

# Summary for Input Data

|                     |                      |
|---------------------|----------------------|
| Is MHS Pumped       | Pump in heated space |
| Heating Pump Age    | 2013 or later        |
| Heat Emitter        | Radiators            |
| Flow Temperature    | Unknown              |
| Boiler Interlock    | No                   |
| Combi boiler type   | Standard Combi       |
| Combi keep hot type | None                 |

|                            |                                            |   |
|----------------------------|--------------------------------------------|---|
| <b>25.0 Main Heating 2</b> | Database                                   |   |
| Description                | KERS                                       |   |
| Percentage of Heat         | 0.00                                       | % |
| Database Ref. No.          | 104956                                     |   |
| Fuel Type                  | Electricity                                |   |
| In Winter                  | 0.00                                       |   |
| In Summer                  | 75.00                                      |   |
| Model Name                 | KERS MEV-W230                              |   |
| Manufacturer               | KERS Innovations UK Ltd                    |   |
| Controls                   | 2100                                       |   |
| Controls description       | Not applicable (heating provides DHW only) |   |

|                           |      |
|---------------------------|------|
| <b>26.0 Heat Networks</b> | None |
|---------------------------|------|

|                               |      |
|-------------------------------|------|
| <b>27.0 Secondary Heating</b> | None |
|-------------------------------|------|

|                                                  |                |
|--------------------------------------------------|----------------|
| <b>28.0 Water Heating</b>                        |                |
| Water Heating                                    | Main Heating 1 |
| SAP Code                                         | 901            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |

|                                              |  |
|----------------------------------------------|--|
| <b>28.3 Waste Water Heat Recovery System</b> |  |
|----------------------------------------------|--|

|                                |      |
|--------------------------------|------|
| <b>29.0 Hot Water Cylinder</b> | None |
|--------------------------------|------|

|                        |     |     |     |     |      |     |     |     |     |     |     |  |
|------------------------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|--|
| 34.0 Small-scale Hydro |     |     |     |     | None |     |     |     |     |     |     |  |
| Jan                    | Feb | Mar | Apr | May | Jun  | Jul | Aug | Sep | Oct | Nov | Dec |  |

|                                                   |      |
|---------------------------------------------------|------|
| <b>Recommendations</b>                            |      |
| Lower cost measures                               | None |
| Further measures to achieve even higher standards | None |

# Summary for Input Data



|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 1A                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 1A - Be Lean                               | Plot Type Ref  | Flat 1A    |
| Plot Address         | Flat 1A, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |        |      |     |
|------------------------------------|------|---------------|--------|------|-----|
| SAP Rating                         | 83 B | DER           | 18.38  | TER  |     |
| Environmental                      | 88 B | % DER < TER   |        |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 0.85 | DFEE          | 31.85  | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |        |      |     |
| % DPER < TPER                      |      | DPER          | 101.90 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                            |
|--------------------------------|----------------------------|
| Orientation                    | South                      |
| Property Tenure                | 3                          |
| Transaction Type               | 6                          |
| Terrain Type                   | Suburban                   |
| 1.0 Property Type              | Flat, End-Terrace          |
| Position of Flat               | Mid-floor flat             |
| Which Floor                    | 1                          |
| 2.0 Number of Storeys          | 1                          |
| 3.0 Date Built                 | 2025                       |
| 4.0 Sheltered Sides            | 2                          |
| 5.0 Sunlight/Shade             | Average or unknown         |
| 6.0 Thermal Mass Parameter     | Precise calculation        |
| Thermal Mass                   | 344.74 kJ/m <sup>2</sup> K |
| 7.0 Electricity Tariff         | Standard                   |
| Smart electricity meter fitted | Yes                        |
| Smart gas meter fitted         | No                         |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 13.10 m             | 50.00 m <sup>2</sup> | 3.10 m                |

|                 |                      |
|-----------------|----------------------|
| 8.0 Living Area | 23.60 m <sup>2</sup> |
|-----------------|----------------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.18                         | 190.00                      | 40.61                       | 30.01                       | 0.00        | None    | 10.60    | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 42.16                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 49.60                  |

| 10.1 Party Ceilings | Description     | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|---------------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                     | Party Ceiling 1 | Precast concrete planks floor, screed, carpeted | 30.00                       | 50.00                  |

| 11.1 Party Floors | Description   | Storey Index    | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-------------------|---------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                   | Party Floor 1 | Lowest occupied | Precast concrete planks floor, screed, carpeted | 40.00                       | 50.00                  |

# Summary for Input Data

## 12.0 Opening Types

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.20            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 1.20            |

## 13.0 Openings

| Name      | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|-----------|---------------|----------------|-------------|-----------|-------|
| W1-W3     | Windows - New | External Walls | South       | 4.80      |       |
| W4        | Windows - New | External Walls | South West  | 1.80      |       |
| W5 and W7 | Windows - New | External Walls | South       | 2.00      |       |
| W6        | Windows - New | External Walls | South West  | 1.00      |       |
| W8        | Windows - New | External Walls | South East  | 1.00      |       |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

Y-value

 W/m²K

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

## 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys

Number of open flues

Number of chimneys/flues attached to closed fire

Number of flues attached to solid fuel boiler

Number of flues attached to other heater

Number of blocked chimneys

Number of intermittent extract fans

Number of passive vents

Number of flueless gas fires

## 21.0 Fixed Cooling System

## 22.0 Pressure Testing

Designed AP<sub>50</sub>  m³/(h.m²) @ 50 Pa

Property Tested?

Test Method

## 22.0 Lighting

No Fixed Lighting

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

## 24.0 Main Heating 1

Description

Percentage of Heat  %

Fuel Type

SAP Code

In Winter

In Summer

Controls SAP Code

Controls description

Delayed Start Stat

Flue Type

Fan Assisted Flue

# Summary for Input Data

|                     |                      |
|---------------------|----------------------|
| Is MHS Pumped       | Pump in heated space |
| Heating Pump Age    | 2013 or later        |
| Heat Emitter        | Radiators            |
| Flow Temperature    | Unknown              |
| Boiler Interlock    | No                   |
| Combi boiler type   | Standard Combi       |
| Combi keep hot type | None                 |

|                            |                                            |   |
|----------------------------|--------------------------------------------|---|
| <b>25.0 Main Heating 2</b> | Database                                   |   |
| Description                | KERS                                       |   |
| Percentage of Heat         | 0.00                                       | % |
| Database Ref. No.          | 104956                                     |   |
| Fuel Type                  | Electricity                                |   |
| In Winter                  | 0.00                                       |   |
| In Summer                  | 75.00                                      |   |
| Model Name                 | KERS MEV-W230                              |   |
| Manufacturer               | KERS Innovations UK Ltd                    |   |
| Controls                   | 2100                                       |   |
| Controls description       | Not applicable (heating provides DHW only) |   |

|                           |      |
|---------------------------|------|
| <b>26.0 Heat Networks</b> | None |
|---------------------------|------|

|                               |      |
|-------------------------------|------|
| <b>27.0 Secondary Heating</b> | None |
|-------------------------------|------|

|                                                  |                |
|--------------------------------------------------|----------------|
| <b>28.0 Water Heating</b>                        |                |
| Water Heating                                    | Main Heating 1 |
| SAP Code                                         | 901            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |

## 28.3 Waste Water Heat Recovery System

|                                |      |
|--------------------------------|------|
| <b>29.0 Hot Water Cylinder</b> | None |
|--------------------------------|------|

## Recommendations

### Lower cost measures

None

### Further measures to achieve even higher standards

None

# Summary for Input Data

|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 0C                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 0C - Be Lean                               | Plot Type Ref  | Flat 0C    |
| Plot Address         | Flat 0C, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |        |      |     |
|------------------------------------|------|---------------|--------|------|-----|
| SAP Rating                         | 77 C | DER           | 23.22  | TER  |     |
| Environmental                      | 82 B | % DER < TER   |        |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 1.34 | DFEE          | 55.37  | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |        |      |     |
| % DPER < TPER                      |      | DPER          | 131.41 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Ground-floor flat   |        |
| Which Floor                    | 0                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 270.65              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | 7 Hour Off Peak     |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 15.60 m             | 62.00 m <sup>2</sup> | 3.30 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 24.80 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.18                         | 190.00                      | 51.48                       | 41.98                       | 0.00        | None    | 9.50     | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 31.35                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 144.54                 |

| 10.1 Party Ceilings | Description     | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|---------------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                     | Party Ceiling 1 | Precast concrete planks floor, screed, carpeted | 30.00                       | 62.00                  |

| 11.0 Heat Loss Floors | Description    | Type                  | Storey Index    | Construction | U-Value (W/m <sup>2</sup> K) | Shelter Code | Shelter Factor | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-----------------------|----------------|-----------------------|-----------------|--------------|------------------------------|--------------|----------------|-----------------------------|------------------------|
|                       | Heatloss Floor | Exposed Floor - Solid | Lowest occupied | Other        | 0.18                         | None         | 0.00           | 0.00                        | 62.00                  |

## 12.0 Opening Types

# Summary for Input Data

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.20            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 1.20            |

## 13.0 Openings

| Name | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|------|---------------|----------------|-------------|-----------|-------|
| W1   | Windows - New | External Walls | South       | 0.16      |       |
| W4   | Windows - New | External Walls | South West  | 1.80      |       |
| W5   | Windows - New | External Walls | South       | 1.80      |       |
| W6   | Windows - New | External Walls | South East  | 1.80      |       |
| W2   | Windows - New | External Walls | South       | 3.78      |       |
| W3   | Windows - New | External Walls | South       | 0.16      |       |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

Y-value

 W/m²K

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

## 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys

Number of open flues

Number of chimneys/flues attached to closed fire

Number of flues attached to solid fuel boiler

Number of flues attached to other heater

Number of blocked chimneys

Number of intermittent extract fans

Number of passive vents

Number of flueless gas fires

## 21.0 Fixed Cooling System

## 22.0 Pressure Testing

Designed AP<sub>50</sub>
 m³/(h.m²) @ 50 Pa

Property Tested?

Test Method

## 22.0 Lighting

No Fixed Lighting

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

## 24.0 Main Heating 1

Description

Percentage of Heat

 %

Fuel Type

SAP Code

In Winter

In Summer

Controls SAP Code

Controls description

Delayed Start Stat

Flue Type

Fan Assisted Flue

# Summary for Input Data

|                     |                      |
|---------------------|----------------------|
| Is MHS Pumped       | Pump in heated space |
| Heating Pump Age    | 2013 or later        |
| Heat Emitter        | Radiators            |
| Flow Temperature    | Unknown              |
| Boiler Interlock    | No                   |
| Combi boiler type   | Standard Combi       |
| Combi keep hot type | None                 |

---

|                            |                                            |   |
|----------------------------|--------------------------------------------|---|
| <b>25.0 Main Heating 2</b> | Database                                   |   |
| Description                | KERS                                       |   |
| Percentage of Heat         | 0.00                                       | % |
| Database Ref. No.          | 104956                                     |   |
| Fuel Type                  | Electricity                                |   |
| In Winter                  | 0.00                                       |   |
| In Summer                  | 75.00                                      |   |
| Model Name                 | KERS MEV-W230                              |   |
| Manufacturer               | KERS Innovations UK Ltd                    |   |
| Controls                   | 2100                                       |   |
| Controls description       | Not applicable (heating provides DHW only) |   |

---

|                           |      |
|---------------------------|------|
| <b>26.0 Heat Networks</b> | None |
|---------------------------|------|

---

|                               |                      |   |
|-------------------------------|----------------------|---|
| <b>27.0 Secondary Heating</b> | SAP table            |   |
| SAP Code                      | 692                  |   |
| Heating System Description    | Electric Fan heaters |   |
| Fuel Type                     | Electricity          |   |
| SHS efficiency                | 100.00               | % |

---

|                                                  |                |
|--------------------------------------------------|----------------|
| <b>28.0 Water Heating</b>                        | Main Heating 1 |
| SAP Code                                         | 901            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |

---

|                                              |  |
|----------------------------------------------|--|
| <b>28.3 Waste Water Heat Recovery System</b> |  |
|----------------------------------------------|--|

---

|                                |      |
|--------------------------------|------|
| <b>29.0 Hot Water Cylinder</b> | None |
|--------------------------------|------|

---

|                               |      |
|-------------------------------|------|
| <b>34.0 Small-scale Hydro</b> | None |
|-------------------------------|------|

---

|  |     |     |     |     |     |     |     |     |     |     |     |     |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|  | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

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|                                                          |  |
|----------------------------------------------------------|--|
| <b>Recommendations</b>                                   |  |
| <b>Lower cost measures</b>                               |  |
| None                                                     |  |
| <b>Further measures to achieve even higher standards</b> |  |
| None                                                     |  |

# Summary for Input Data

|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 0B                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 0B - Be Lean                               | Plot Type Ref  | Flat 0B    |
| Plot Address         | Flat 0B, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |        |      |     |
|------------------------------------|------|---------------|--------|------|-----|
| SAP Rating                         | 77 C | DER           | 28.39  | TER  |     |
| Environmental                      | 79 C | % DER < TER   |        |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 1.61 | DFEE          | 72.83  | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |        |      |     |
| % DPER < TPER                      |      | DPER          | 155.49 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Ground-floor flat   |        |
| Which Floor                    | 0                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 278.71              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 18.80 m             | 61.00 m <sup>2</sup> | 3.30 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 28.40 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.18                         | 190.00                      | 62.04                       | 46.18                       | 0.00        | None    | 15.86    | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 30.36                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 103.62                 |

| 10.1 Party Ceilings | Description     | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|---------------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                     | Party Ceiling 1 | Precast concrete planks floor, screed, carpeted | 30.00                       | 61.00                  |

| 11.0 Heat Loss Floors | Description    | Type                  | Storey Index    | Construction | U-Value (W/m <sup>2</sup> K) | Shelter Code | Shelter Factor | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-----------------------|----------------|-----------------------|-----------------|--------------|------------------------------|--------------|----------------|-----------------------------|------------------------|
|                       | Heatloss Floor | Exposed Floor - Solid | Lowest occupied | Other        | 0.18                         | None         | 0.00           | 0.00                        | 61.00                  |

## 12.0 Opening Types

# Summary for Input Data

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.20            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 1.20            |

## 13.0 Openings

| Name      | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|-----------|---------------|----------------|-------------|-----------|-------|
| D1 and D2 | Doors - New   | External Walls | North       | 3.78      |       |
| W1-W2     | Windows - New | External Walls | North       | 5.60      |       |
| W4        | Windows - New | External Walls | North       | 3.24      |       |
| W5        | Windows - New | External Walls | North East  | 1.62      |       |
| W3        | Windows - New | External Walls | North East  | 1.62      |       |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

Y-value

 W/m²K

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

## 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys

Number of open flues

Number of chimneys/flues attached to closed fire

Number of flues attached to solid fuel boiler

Number of flues attached to other heater

Number of blocked chimneys

Number of intermittent extract fans

Number of passive vents

Number of flueless gas fires

## 21.0 Fixed Cooling System

## 22.0 Pressure Testing

Designed AP<sub>50</sub>  m²/(h.m²) @ 50 Pa

Property Tested?

Test Method

## 22.0 Lighting

No Fixed Lighting

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

## 24.0 Main Heating 1

Description

Percentage of Heat  %

Fuel Type

SAP Code

In Winter

In Summer

Controls SAP Code

Controls description

Delayed Start Stat

Flue Type

Fan Assisted Flue

Is MHS Pumped

# Summary for Input Data

|                     |                |
|---------------------|----------------|
| Heating Pump Age    | 2013 or later  |
| Heat Emitter        | Radiators      |
| Flow Temperature    | Unknown        |
| Boiler Interlock    | No             |
| Combi boiler type   | Standard Combi |
| Combi keep hot type | None           |

|                            |                                            |   |
|----------------------------|--------------------------------------------|---|
| <b>25.0 Main Heating 2</b> | Database                                   |   |
| Description                | KERS                                       |   |
| Percentage of Heat         | 0.00                                       | % |
| Database Ref. No.          | 104956                                     |   |
| Fuel Type                  | Electricity                                |   |
| In Winter                  | 0.00                                       |   |
| In Summer                  | 75.00                                      |   |
| Model Name                 | KERS MEV-W230                              |   |
| Manufacturer               | KERS Innovations UK Ltd                    |   |
| Controls                   | 2100                                       |   |
| Controls description       | Not applicable (heating provides DHW only) |   |

|                           |      |
|---------------------------|------|
| <b>26.0 Heat Networks</b> | None |
|---------------------------|------|

|                               |      |
|-------------------------------|------|
| <b>27.0 Secondary Heating</b> | None |
|-------------------------------|------|

|                                                  |                |
|--------------------------------------------------|----------------|
| <b>28.0 Water Heating</b>                        |                |
| Water Heating                                    | Main Heating 1 |
| SAP Code                                         | 901            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |

|                                              |  |
|----------------------------------------------|--|
| <b>28.3 Waste Water Heat Recovery System</b> |  |
|----------------------------------------------|--|

|                                |      |
|--------------------------------|------|
| <b>29.0 Hot Water Cylinder</b> | None |
|--------------------------------|------|

|                                                   |      |
|---------------------------------------------------|------|
| <b>Recommendations</b>                            |      |
| Lower cost measures                               | None |
| Further measures to achieve even higher standards | None |

# Summary for Input Data

|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 0A                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 0A - Be Lean                               | Plot Type Ref  | Flat 0A    |
| Plot Address         | Flat 0A, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |        |      |     |
|------------------------------------|------|---------------|--------|------|-----|
| SAP Rating                         | 80 C | DER           | 21.45  | TER  |     |
| Environmental                      | 81 B | % DER < TER   |        |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 1.8  | DFEE          | 55.28  | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |        |      |     |
| % DPER < TPER                      |      | DPER          | 117.71 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Ground-floor flat   |        |
| Which Floor                    | 0                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 215.23              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | 7 Hour Off Peak     |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 14.90 m             | 90.00 m <sup>2</sup> | 3.30 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 32.80 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.18                         | 190.00                      | 49.17                       | 31.92                       | 0.00        | None    | 17.25    | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 54.45                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 89.43                  |

| 10.1 Party Ceilings | Description     | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|---------------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                     | Party Ceiling 1 | Precast concrete planks floor, screed, carpeted | 30.00                       | 90.00                  |

| 11.0 Heat Loss Floors | Description    | Type                  | Storey Index    | Construction | U-Value (W/m <sup>2</sup> K) | Shelter Code | Shelter Factor | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-----------------------|----------------|-----------------------|-----------------|--------------|------------------------------|--------------|----------------|-----------------------------|------------------------|
|                       | Heatloss Floor | Exposed Floor - Solid | Lowest occupied | Other        | 0.18                         | None         | 0.00           | 0.00                        | 90.00                  |

## 12.0 Opening Types

# Summary for Input Data

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.20            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 1.20            |

## 13.0 Openings

| Name  | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|-------|---------------|----------------|-------------|-----------|-------|
| D1    | Doors - New   | External Walls | East        | 1.89      |       |
| W1-W3 | Windows - New | External Walls | South       | 4.80      |       |
| W4    | Windows - New | External Walls | South       | 3.78      |       |
| W5    | Windows - New | External Walls | North       | 3.00      |       |
| W6    | Windows - New | External Walls | North       | 3.78      |       |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

Y-value

 W/m²K

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

## 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys 

Number of open flues 

Number of chimneys/flues attached to closed fire 

Number of flues attached to solid fuel boiler 

Number of flues attached to other heater 

Number of blocked chimneys 

Number of intermittent extract fans 

Number of passive vents 

Number of flueless gas fires 

## 21.0 Fixed Cooling System

## 22.0 Pressure Testing

Designed AP<sub>50</sub>  m²/(h.m²) @ 50 Pa

Property Tested? 

Test Method 

## 22.0 Lighting

No Fixed Lighting 

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

## 24.0 Main Heating 1

Description 

Percentage of Heat  %

Fuel Type 

SAP Code 

In Winter 

In Summer 

Controls SAP Code 

Controls description 

Delayed Start Stat 

Flue Type 

Fan Assisted Flue 

Is MHS Pumped

# Summary for Input Data

|                     |                |
|---------------------|----------------|
| Heating Pump Age    | 2013 or later  |
| Heat Emitter        | Radiators      |
| Flow Temperature    | Unknown        |
| Boiler Interlock    | No             |
| Combi boiler type   | Standard Combi |
| Combi keep hot type | None           |

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|                            |      |
|----------------------------|------|
| <b>25.0 Main Heating 2</b> | None |
|----------------------------|------|

---

|                           |      |
|---------------------------|------|
| <b>26.0 Heat Networks</b> | None |
|---------------------------|------|

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|                               |      |
|-------------------------------|------|
| <b>27.0 Secondary Heating</b> | None |
|-------------------------------|------|

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|                                                  |                |
|--------------------------------------------------|----------------|
| <b>28.0 Water Heating</b>                        |                |
| Water Heating                                    | Main Heating 1 |
| SAP Code                                         | 901            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |

---

|                                              |  |
|----------------------------------------------|--|
| <b>28.3 Waste Water Heat Recovery System</b> |  |
|----------------------------------------------|--|

---

|                                |      |
|--------------------------------|------|
| <b>29.0 Hot Water Cylinder</b> | None |
|--------------------------------|------|

---

|                               |      |
|-------------------------------|------|
| <b>34.0 Small-scale Hydro</b> | None |
|-------------------------------|------|

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|  |     |     |     |     |     |     |     |     |     |     |     |     |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|  | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

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**Recommendations**

Lower cost measures

None

Further measures to achieve even higher standards

None

# Appendix 3

SAP Calculations – Be Clean

# Appendix 4

SAP Calculations – Be Green

# Summary for Input Data



|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 2D                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 2D                                         | Plot Type Ref  | Flat 2D    |
| Plot Address         | Flat 2D, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |       |      |     |
|------------------------------------|------|---------------|-------|------|-----|
| SAP Rating                         | 69 C | DER           | 8.74  | TER  |     |
| Environmental                      | 93 A | % DER < TER   |       |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 0.48 | DFEE          | 48.41 | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |       |      |     |
| % DPER < TPER                      |      | DPER          | 90.02 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Top-floor flat      |        |
| Which Floor                    | 3                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 310.17              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area | Average Storey Height |
|------------------|---------------|---------------------|---------------------|-----------------------|
|                  |               | 20.50 m             | 61.00 m²            | 2.50 m                |

|                 |       |    |
|-----------------|-------|----|
| 8.0 Living Area | 16.90 | m² |
|-----------------|-------|----|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m²K) | Kappa (kJ/m²K) | Gross Area(m²) | Nett Area (m²) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|-----------------|----------------|----------------|----------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.18            | 190.00         | 51.25          | 46.69          | 0.00        | None    | 4.56     | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m²K) | Kappa (kJ/m²K) | Area (m²) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|-----------------|----------------|-----------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00            | 180.00         | 33.50     | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m²K) | Area (m²) |
|--------------------|-----------------|------------------------------|----------------|-----------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00           | 114.50    |

| 10.0 External Roofs | Description   | Type                | Construction                             | U-Value (W/m²K) | Kappa (kJ/m²K) | Gross Area(m²) | Nett Area (m²) | Shelter Code | Shelter Factor | Calculation Type | Openings |
|---------------------|---------------|---------------------|------------------------------------------|-----------------|----------------|----------------|----------------|--------------|----------------|------------------|----------|
|                     | External Roof | External Plane Roof | Plasterboard, insulated at ceiling level | 0.11            | 9.00           | 61.00          | 61.00          | None         | 0.00           | Enter Gross Area | 0.00     |

| 11.1 Party Floors | Description | Storey Index | Construction | Kappa (kJ/m²K) | Area (m²) |
|-------------------|-------------|--------------|--------------|----------------|-----------|
|-------------------|-------------|--------------|--------------|----------------|-----------|

# Summary for Input Data



Party Floor 1      Lowest occupied      Precast concrete planks floor, screed, carpeted      40.00      61.00

| 12.0 Opening Types |              |            |                        |             |              |         |            |              |                 |  |
|--------------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|--|
| Description        | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |  |
| Windows - New      | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.20            |  |
| Doors - New        | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 1.20            |  |

| 13.0 Openings |               |                |             |           |       |
|---------------|---------------|----------------|-------------|-----------|-------|
| Name          | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
| W1 and W2     | Windows - New | External Walls | North       | 1.68      |       |
| W3-W5         | Windows - New | External Walls | North       | 2.88      |       |

|                       |      |         |
|-----------------------|------|---------|
| 14.0 Conservatory     |      | None    |
| 15.0 Draught Proofing |      | 100 %   |
| 16.0 Draught Lobby    |      | No      |
| 17.0 Thermal Bridging |      | Default |
| Y-value               | 0.20 | W/m²K   |

| 19.0 Mechanical Ventilation           |    |
|---------------------------------------|----|
| Mechanical Ventilation                | No |
| Mechanical Ventilation System Present | No |

| 20.0 Fans, Open Fireplaces, Flues                |   |
|--------------------------------------------------|---|
| Number of open chimneys                          | 0 |
| Number of open flues                             | 0 |
| Number of chimneys/flues attached to closed fire | 0 |
| Number of flues attached to solid fuel boiler    | 0 |
| Number of flues attached to other heater         | 0 |
| Number of blocked chimneys                       | 0 |
| Number of intermittent extract fans              | 2 |
| Number of passive vents                          | 0 |
| Number of flueless gas fires                     | 0 |

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

| 22.0 Pressure Testing     |                        |
|---------------------------|------------------------|
| Designed AP <sub>50</sub> | 8.00 m³/(h.m²) @ 50 Pa |
| Property Tested?          | Yes                    |
| Test Method               | Blower Door            |

| 22.0 Lighting     |            |          |       |          |       |
|-------------------|------------|----------|-------|----------|-------|
| No Fixed Lighting | No         |          |       |          |       |
|                   | Name       | Efficacy | Power | Capacity | Count |
|                   | Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

| 24.0 Main Heating 1  |                                      |
|----------------------|--------------------------------------|
| Description          | SAP table                            |
| Percentage of Heat   | Panel                                |
| Fuel Type            | 100.00 %                             |
| SAP Code             | Electricity                          |
|                      | 691                                  |
| In Winter            | 100.00                               |
| In Summer            | 309.80                               |
| Controls SAP Code    | 2603                                 |
| Controls description | Programmer and appliance thermostats |

| 25.0 Main Heating 2 |          |
|---------------------|----------|
| Description         | Database |
| Percentage of Heat  | KERS     |
|                     | 0.00 %   |

# Summary for Input Data

|                      |                                            |
|----------------------|--------------------------------------------|
| Database Ref. No.    | 104956                                     |
| Fuel Type            | Electricity                                |
| In Winter            | 0.00                                       |
| In Summer            | 309.80                                     |
| Model Name           | KERS MEV-W230                              |
| Manufacturer         | KERS Innovations UK Ltd                    |
| Controls             | 2100                                       |
| Controls description | Not applicable (heating provides DHW only) |

**26.0 Heat Networks**

**27.0 Secondary Heating**

## 28.0 Water Heating

|                                                  |                |
|--------------------------------------------------|----------------|
| Water Heating                                    | Main Heating 2 |
| SAP Code                                         | 914            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |
| Immersion Only Heating Hot Water                 | No             |

## 28.3 Waste Water Heat Recovery System

|                                |                                             |         |
|--------------------------------|---------------------------------------------|---------|
| <b>29.0 Hot Water Cylinder</b> | <input type="text" value="Internal Store"/> |         |
| Insulation Type                | <input type="text" value="Measured Loss"/>  |         |
| Cylinder Volume                | <input type="text" value="230.00"/>         | L       |
| Loss                           | <input type="text" value="1.46"/>           | kWh/day |

|                        |     |     |     |     |      |     |     |     |     |     |     |  |
|------------------------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|--|
| 34.0 Small-scale Hydro |     |     |     |     | None |     |     |     |     |     |     |  |
| Jan                    | Feb | Mar | Apr | May | Jun  | Jul | Aug | Sep | Oct | Nov | Dec |  |

## Recommendations

|                                                   |      |
|---------------------------------------------------|------|
| Lower cost measures                               | None |
| Further measures to achieve even higher standards | None |

# Summary for Input Data

|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 2C                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 2C                                         | Plot Type Ref  | Flat 2C    |
| Plot Address         | Flat 2C, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |       |      |     |
|------------------------------------|------|---------------|-------|------|-----|
| SAP Rating                         | 74 C | DER           | 7.48  | TER  |     |
| Environmental                      | 94 A | % DER < TER   |       |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 0.41 | DFEE          | 39.98 | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |       |      |     |
| % DPER < TPER                      |      | DPER          | 77.09 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Top-floor flat      |        |
| Which Floor                    | 3                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 266.96              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

|                  |               |                     |                      |                       |
|------------------|---------------|---------------------|----------------------|-----------------------|
| 7.0 Measurements |               | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|                  | Ground floor: | 15.70 m             | 61.00 m <sup>2</sup> | 2.50 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 19.60 | m <sup>2</sup> |
|-----------------|-------|----------------|

| Description    | Type       | Construction                                                         | U-Value<br>(W/m <sup>2</sup> K) | Kappa<br>(kJ/m <sup>2</sup> K) | Gross<br>Area(m <sup>2</sup> ) | Nett Area<br>(m <sup>2</sup> ) | Shelter<br>Res | Shelter | Openings | Area Calculation<br>Type |
|----------------|------------|----------------------------------------------------------------------|---------------------------------|--------------------------------|--------------------------------|--------------------------------|----------------|---------|----------|--------------------------|
| External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.18                            | 190.00                         | 39.25                          | 35.09                          | 0.00           | None    | 4.16     | Enter Gross Area         |

| Description  | Type       | Construction                                                  | U-Value<br>(W/m <sup>2</sup> K) | Kappa<br>(kJ/m <sup>2</sup> K) | Area<br>(m <sup>2</sup> ) | Shelter<br>Res | Shelter |
|--------------|------------|---------------------------------------------------------------|---------------------------------|--------------------------------|---------------------------|----------------|---------|
| Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                            | 180.00                         | 30.75                     | 0.00           | None    |

| Description     | Construction                 | Kappa<br>(kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-----------------|------------------------------|--------------------------------|------------------------|
| Internal Wall 1 | Plasterboard on timber frame | 9.00                           | 121.50                 |

| Description   | Type                | Construction                             | U-Value<br>(W/m <sup>2</sup> K) | Kappa<br>(kJ/m <sup>2</sup> K) | Gross<br>Area(m <sup>2</sup> ) | Nett<br>Area<br>(m <sup>2</sup> ) | Shelter<br>Code | Shelter<br>Factor | Calculation<br>Type | Openings |
|---------------|---------------------|------------------------------------------|---------------------------------|--------------------------------|--------------------------------|-----------------------------------|-----------------|-------------------|---------------------|----------|
| External Roof | External Plane Roof | Plasterboard, insulated at ceiling level | 0.11                            | 9.00                           | 61.00                          | 61.00                             | None            | 0.00              | Enter Gross Area    | 0.00     |

| Description | Storey<br>Index | Construction | Kappa<br>(kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-------------|-----------------|--------------|--------------------------------|------------------------|
|-------------|-----------------|--------------|--------------------------------|------------------------|

# Summary for Input Data

Party Floor 1      Lowest occupied      Precast concrete planks floor, screed, carpeted      40.00      61.00

| 12.0 Opening Types |              |            |                        |             |              |         |            |              |                 |
|--------------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Description        | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
| Windows - New      | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.20            |
| Doors - New        | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 1.20            |

| 13.0 Openings |               |                |             |           |       |
|---------------|---------------|----------------|-------------|-----------|-------|
| Name          | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
| W1            | Windows - New | External Walls | South       | 1.12      |       |
| W2            | Windows - New | External Walls | South       | 0.96      |       |
| W3            | Windows - New | External Walls | South       | 0.96      |       |
| W4            | Windows - New | External Walls | East        | 1.12      |       |

|                       |                                      |       |
|-----------------------|--------------------------------------|-------|
| 14.0 Conservatory     | <input type="text" value="None"/>    |       |
| 15.0 Draught Proofing | <input type="text" value="100"/>     | %     |
| 16.0 Draught Lobby    | <input type="text" value="No"/>      |       |
| 17.0 Thermal Bridging | <input type="text" value="Default"/> |       |
| Y-value               | <input type="text" value="0.20"/>    | W/m²K |

| 19.0 Mechanical Ventilation           |                                 |
|---------------------------------------|---------------------------------|
| Mechanical Ventilation                |                                 |
| Mechanical Ventilation System Present | <input type="text" value="No"/> |

|                                                  |                                |
|--------------------------------------------------|--------------------------------|
| 20.0 Fans, Open Fireplaces, Flues                |                                |
| Number of open chimneys                          | <input type="text" value="0"/> |
| Number of open flues                             | <input type="text" value="0"/> |
| Number of chimneys/flues attached to closed fire | <input type="text" value="0"/> |
| Number of flues attached to solid fuel boiler    | <input type="text" value="0"/> |
| Number of flues attached to other heater         | <input type="text" value="0"/> |
| Number of blocked chimneys                       | <input type="text" value="0"/> |
| Number of intermittent extract fans              | <input type="text" value="2"/> |
| Number of passive vents                          | <input type="text" value="0"/> |
| Number of flueless gas fires                     | <input type="text" value="0"/> |

|                           |                                 |
|---------------------------|---------------------------------|
| 21.0 Fixed Cooling System | <input type="text" value="No"/> |
|---------------------------|---------------------------------|

|                           |                                          |                   |
|---------------------------|------------------------------------------|-------------------|
| 22.0 Pressure Testing     | <input type="text" value="Yes"/>         |                   |
| Designed AP <sub>50</sub> | <input type="text" value="8.00"/>        | m³/(h.m²) @ 50 Pa |
| Property Tested?          | <input type="text" value="Yes"/>         |                   |
| Test Method               | <input type="text" value="Blower Door"/> |                   |

|                   |                                 |                 |
|-------------------|---------------------------------|-----------------|
| 22.0 Lighting     | <input type="text" value="No"/> |                 |
| No Fixed Lighting |                                 |                 |
|                   | <b>Name</b>                     | <b>Efficacy</b> |
|                   | Lighting 1                      | 120.00          |
|                   | <b>Power</b>                    | <b>Capacity</b> |
|                   | 5.00                            | 600.00          |
|                   |                                 | <b>Count</b>    |
|                   |                                 | 20              |

|                      |                                                                   |   |
|----------------------|-------------------------------------------------------------------|---|
| 24.0 Main Heating 1  | <input type="text" value="SAP table"/>                            |   |
| Description          | <input type="text" value="Panel"/>                                |   |
| Percentage of Heat   | <input type="text" value="100.00"/>                               | % |
| Fuel Type            | <input type="text" value="Electricity"/>                          |   |
| SAP Code             | <input type="text" value="691"/>                                  |   |
| In Winter            | <input type="text" value="100.00"/>                               |   |
| In Summer            | <input type="text" value="309.80"/>                               |   |
| Controls SAP Code    | <input type="text" value="2603"/>                                 |   |
| Controls description | <input type="text" value="Programmer and appliance thermostats"/> |   |

|                     |                                       |  |
|---------------------|---------------------------------------|--|
| 25.0 Main Heating 2 | <input type="text" value="Database"/> |  |
| Description         | <input type="text" value="KERS"/>     |  |

# Summary for Input Data

|                      |                                            |   |
|----------------------|--------------------------------------------|---|
| Percentage of Heat   | 0.00                                       | % |
| Database Ref. No.    | 104956                                     |   |
| Fuel Type            | Electricity                                |   |
| In Winter            | 0.00                                       |   |
| In Summer            | 309.80                                     |   |
| Model Name           | KERS MEV-W230                              |   |
| Manufacturer         | KERS Innovations UK Ltd                    |   |
| Controls             | 2100                                       |   |
| Controls description | Not applicable (heating provides DHW only) |   |

## 26.0 Heat Networks

None

## 27.0 Secondary Heating

None

## 28.0 Water Heating

|                                                  |                |
|--------------------------------------------------|----------------|
| Water Heating                                    | Main Heating 2 |
| SAP Code                                         | 914            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |
| Immersion Only Heating Hot Water                 | No             |

## 28.3 Waste Water Heat Recovery System

## 29.0 Hot Water Cylinder

|                 |                |         |
|-----------------|----------------|---------|
|                 | Internal Store |         |
| Insulation Type | Measured Loss  |         |
| Cylinder Volume | 230.00         | L       |
| Loss            | 1.46           | kWh/day |

## 34.0 Small-scale Hydro

None

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

## Recommendations

### Lower cost measures

None

### Further measures to achieve even higher standards

None

# Summary for Input Data



|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 2B                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 2B                                         | Plot Type Ref  | Flat 2B    |
| Plot Address         | Flat 2B, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |       |      |     |
|------------------------------------|------|---------------|-------|------|-----|
| SAP Rating                         | 71 C | DER           | 8.19  | TER  |     |
| Environmental                      | 94 A | % DER < TER   |       |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 0.44 | DFEE          | 44.68 | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |       |      |     |
| % DPER < TPER                      |      | DPER          | 84.39 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Top-floor flat      |        |
| Which Floor                    | 3                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 275.34              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 14.60 m             | 61.00 m <sup>2</sup> | 2.50 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 29.40 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.18                         | 190.00                      | 36.50                       | 30.80                       | 0.00        | None    | 5.70     | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 44.25                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 70.00                  |

| 10.0 External Roofs | Description   | Type                | Construction                             | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Code | Shelter Factor | Calculation Type | Openings |
|---------------------|---------------|---------------------|------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------|----------------|------------------|----------|
|                     | External Roof | External Plane Roof | Plasterboard, insulated at ceiling level | 0.11                         | 9.00                        | 61.00                       | 61.00                       | None         | 0.00           | Enter Gross Area | 0.00     |

| 11.1 Party Floors | Description | Storey Index | Construction | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-------------------|-------------|--------------|--------------|-----------------------------|------------------------|
|-------------------|-------------|--------------|--------------|-----------------------------|------------------------|

# Summary for Input Data

Party Floor 1      Lowest occupied      Precast concrete planks floor, screed, carpeted      40.00      45.00

| 12.0 Opening Types |              |            |                        |             |              |         |            |              |                 |
|--------------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Description        | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
| Windows - New      | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.20            |
| Doors - New        | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 1.20            |

| 13.0 Openings |               |                |             |           |       |
|---------------|---------------|----------------|-------------|-----------|-------|
| Name          | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
| W1            | Windows - New | External Walls | North       | 1.20      |       |
| W2            | Windows - New | External Walls | North       | 1.00      |       |
| W3 and W4     | Windows - New | External Walls | North       | 1.96      |       |
| W5            | Windows - New | External Walls | North       | 1.54      |       |

|                       |                                      |       |
|-----------------------|--------------------------------------|-------|
| 14.0 Conservatory     | <input type="text" value="None"/>    |       |
| 15.0 Draught Proofing | <input type="text" value="100"/>     | %     |
| 16.0 Draught Lobby    | <input type="text" value="No"/>      |       |
| 17.0 Thermal Bridging | <input type="text" value="Default"/> |       |
| Y-value               | <input type="text" value="0.20"/>    | W/m²K |

| 19.0 Mechanical Ventilation           |                                 |
|---------------------------------------|---------------------------------|
| Mechanical Ventilation                |                                 |
| Mechanical Ventilation System Present | <input type="text" value="No"/> |

|                                                  |                                |
|--------------------------------------------------|--------------------------------|
| 20.0 Fans, Open Fireplaces, Flues                |                                |
| Number of open chimneys                          | <input type="text" value="0"/> |
| Number of open flues                             | <input type="text" value="0"/> |
| Number of chimneys/flues attached to closed fire | <input type="text" value="0"/> |
| Number of flues attached to solid fuel boiler    | <input type="text" value="0"/> |
| Number of flues attached to other heater         | <input type="text" value="0"/> |
| Number of blocked chimneys                       | <input type="text" value="0"/> |
| Number of intermittent extract fans              | <input type="text" value="2"/> |
| Number of passive vents                          | <input type="text" value="0"/> |
| Number of flueless gas fires                     | <input type="text" value="0"/> |

|                           |                                 |
|---------------------------|---------------------------------|
| 21.0 Fixed Cooling System | <input type="text" value="No"/> |
|---------------------------|---------------------------------|

|                           |                                          |                   |
|---------------------------|------------------------------------------|-------------------|
| 22.0 Pressure Testing     | <input type="text" value="Yes"/>         |                   |
| Designed AP <sub>50</sub> | <input type="text" value="8.00"/>        | m³/(h.m²) @ 50 Pa |
| Property Tested?          | <input type="text" value="Yes"/>         |                   |
| Test Method               | <input type="text" value="Blower Door"/> |                   |

|                   |                                 |                 |
|-------------------|---------------------------------|-----------------|
| 22.0 Lighting     | <input type="text" value="No"/> |                 |
| No Fixed Lighting |                                 |                 |
|                   | <b>Name</b>                     | <b>Efficacy</b> |
|                   | Lighting 1                      | 120.00          |
|                   | <b>Power</b>                    | <b>Capacity</b> |
|                   | 5.00                            | 600.00          |
|                   |                                 | <b>Count</b>    |
|                   |                                 | 20              |

|                      |                                                                   |   |
|----------------------|-------------------------------------------------------------------|---|
| 24.0 Main Heating 1  | <input type="text" value="SAP table"/>                            |   |
| Description          | <input type="text" value="Panel"/>                                |   |
| Percentage of Heat   | <input type="text" value="100.00"/>                               | % |
| Fuel Type            | <input type="text" value="Electricity"/>                          |   |
| SAP Code             | <input type="text" value="691"/>                                  |   |
| In Winter            | <input type="text" value="100.00"/>                               |   |
| In Summer            | <input type="text" value="309.80"/>                               |   |
| Controls SAP Code    | <input type="text" value="2603"/>                                 |   |
| Controls description | <input type="text" value="Programmer and appliance thermostats"/> |   |

|                     |                                       |  |
|---------------------|---------------------------------------|--|
| 25.0 Main Heating 2 | <input type="text" value="Database"/> |  |
| Description         | <input type="text" value="KERS"/>     |  |

# Summary for Input Data

|                      |                                            |   |
|----------------------|--------------------------------------------|---|
| Percentage of Heat   | 0.00                                       | % |
| Database Ref. No.    | 104956                                     |   |
| Fuel Type            | Electricity                                |   |
| In Winter            | 0.00                                       |   |
| In Summer            | 309.80                                     |   |
| Model Name           | KERS MEV-W230                              |   |
| Manufacturer         | KERS Innovations UK Ltd                    |   |
| Controls             | 2100                                       |   |
| Controls description | Not applicable (heating provides DHW only) |   |

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|                           |      |
|---------------------------|------|
| <b>26.0 Heat Networks</b> | None |
|---------------------------|------|

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|                               |      |
|-------------------------------|------|
| <b>27.0 Secondary Heating</b> | None |
|-------------------------------|------|

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|                                                  |                |
|--------------------------------------------------|----------------|
| <b>28.0 Water Heating</b>                        |                |
| Water Heating                                    | Main Heating 2 |
| SAP Code                                         | 914            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |
| Immersion Only Heating Hot Water                 | No             |

---

|                                              |  |
|----------------------------------------------|--|
| <b>28.3 Waste Water Heat Recovery System</b> |  |
|----------------------------------------------|--|

---

|                                |                |         |
|--------------------------------|----------------|---------|
| <b>29.0 Hot Water Cylinder</b> | Internal Store |         |
| Insulation Type                | Measured Loss  |         |
| Cylinder Volume                | 230.00         | L       |
| Loss                           | 1.46           | kWh/day |

---

|                               |      |
|-------------------------------|------|
| <b>34.0 Small-scale Hydro</b> | None |
|-------------------------------|------|

---

|  |     |     |     |     |     |     |     |     |     |     |     |     |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|  | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

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|                                                   |
|---------------------------------------------------|
| <b>Recommendations</b>                            |
| Lower cost measures                               |
| None                                              |
| Further measures to achieve even higher standards |
| None                                              |

# Summary for Input Data



|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 2A                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 2A                                         | Plot Type Ref  | Flat 2A    |
| Plot Address         | Flat 2A, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |       |      |     |
|------------------------------------|------|---------------|-------|------|-----|
| SAP Rating                         | 76 C | DER           | 8.00  | TER  |     |
| Environmental                      | 95 A | % DER < TER   |       |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 0.32 | DFEE          | 41.82 | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |       |      |     |
| % DPER < TPER                      |      | DPER          | 82.48 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                            |
|--------------------------------|----------------------------|
| Orientation                    | South                      |
| Property Tenure                | 3                          |
| Transaction Type               | 6                          |
| Terrain Type                   | Suburban                   |
| 1.0 Property Type              | Flat, End-Terrace          |
| Position of Flat               | Top-floor flat             |
| Which Floor                    | 3                          |
| 2.0 Number of Storeys          | 1                          |
| 3.0 Date Built                 | 2025                       |
| 4.0 Sheltered Sides            | 2                          |
| 5.0 Sunlight/Shade             | Average or unknown         |
| 6.0 Thermal Mass Parameter     | Precise calculation        |
| Thermal Mass                   | 275.42 kJ/m <sup>2</sup> K |
| 7.0 Electricity Tariff         | Standard                   |
| Smart electricity meter fitted | Yes                        |
| Smart gas meter fitted         | No                         |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 13.20 m             | 45.00 m <sup>2</sup> | 2.50 m                |

|                 |                      |
|-----------------|----------------------|
| 8.0 Living Area | 17.20 m <sup>2</sup> |
|-----------------|----------------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.18                         | 190.00                      | 33.00                       | 29.54                       | 0.00        | None    | 3.46     | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 23.25                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 43.50                  |

| 10.0 External Roofs | Description   | Type                | Construction                             | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Code | Shelter Factor | Calculation Type | Openings |
|---------------------|---------------|---------------------|------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------|----------------|------------------|----------|
|                     | External Roof | External Plane Roof | Plasterboard, insulated at ceiling level | 0.11                         | 9.00                        | 45.00                       | 45.00                       | None         | 0.00           | Enter Gross Area | 0.00     |

| 11.1 Party Floors | Description | Storey Index | Construction | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-------------------|-------------|--------------|--------------|-----------------------------|------------------------|
|-------------------|-------------|--------------|--------------|-----------------------------|------------------------|

# Summary for Input Data

Party Floor 1      Lowest occupied      Precast concrete planks floor, screed, carpeted      40.00      45.00

## 12.0 Opening Types

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.20            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 1.20            |

## 13.0 Openings

| Name      | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|-----------|---------------|----------------|-------------|-----------|-------|
| W1        | Windows - New | External Walls | South West  | 0.84      |       |
| W2        | Windows - New | External Walls | South East  | 0.84      |       |
| W3        | Windows - New | External Walls | South East  | 1.28      |       |
| W4 and W5 | Windows - New | External Walls | South       | 0.50      |       |

## 14.0 Conservatory

None

## 15.0 Draught Proofing

100 %

## 16.0 Draught Lobby

No

## 17.0 Thermal Bridging

Default

Y-value

0.20 W/m²K

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

No

## 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys 0

Number of open flues 0

Number of chimneys/flues attached to closed fire 0

Number of flues attached to solid fuel boiler 0

Number of flues attached to other heater 0

Number of blocked chimneys 0

Number of intermittent extract fans 2

Number of passive vents 0

Number of flueless gas fires 0

## 21.0 Fixed Cooling System

No

## 22.0 Pressure Testing

Yes

Designed AP<sub>50</sub> 8.00 m³/(h.m²) @ 50 Pa

Property Tested? Yes

Test Method Blower Door

## 22.0 Lighting

No Fixed Lighting No

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

## 24.0 Main Heating 1

SAP table

Description Panel

Percentage of Heat 100.00 %

Fuel Type Electricity

SAP Code 691

In Winter 100.00

In Summer 309.80

Controls SAP Code 2603

Controls description Programmer and appliance thermostats

## 25.0 Main Heating 2

Database

Description KERS

# Summary for Input Data

|                      |                                            |   |
|----------------------|--------------------------------------------|---|
| Percentage of Heat   | 0.00                                       | % |
| Database Ref. No.    | 104956                                     |   |
| Fuel Type            | Electricity                                |   |
| In Winter            | 0.00                                       |   |
| In Summer            | 309.80                                     |   |
| Model Name           | KERS MEV-W230                              |   |
| Manufacturer         | KERS Innovations UK Ltd                    |   |
| Controls             | 2100                                       |   |
| Controls description | Not applicable (heating provides DHW only) |   |

## 26.0 Heat Networks

None

## 27.0 Secondary Heating

None

## 28.0 Water Heating

|                                                  |                |
|--------------------------------------------------|----------------|
| Water Heating                                    | Main Heating 2 |
| SAP Code                                         | 914            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |
| Immersion Only Heating Hot Water                 | No             |

## 28.3 Waste Water Heat Recovery System

## 29.0 Hot Water Cylinder

|                 |                |         |
|-----------------|----------------|---------|
|                 | Internal Store |         |
| Insulation Type | Measured Loss  |         |
| Cylinder Volume | 230.00         | L       |
| Loss            | 1.46           | kWh/day |

## 34.0 Small-scale Hydro

None

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

## Recommendations

### Lower cost measures

None

### Further measures to achieve even higher standards

None

# Summary for Input Data

|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 1D                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 1D                                         | Plot Type Ref  | Flat 1D    |
| Plot Address         | Flat 1D, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |       |      |     |
|------------------------------------|------|---------------|-------|------|-----|
| SAP Rating                         | 73 C | DER           | 7.69  | TER  |     |
| Environmental                      | 94 A | % DER < TER   |       |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 0.42 | DFEE          | 41.92 | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |       |      |     |
| % DPER < TPER                      |      | DPER          | 79.08 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Mid-floor flat      |        |
| Which Floor                    | 2                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 360.49              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 20.30 m             | 63.00 m <sup>2</sup> | 3.10 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 15.80 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.18                         | 190.00                      | 62.93                       | 54.41                       | 0.00        | None    | 8.52     | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 36.89                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 146.94                 |

| 10.1 Party Ceilings | Description     | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|---------------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                     | Party Ceiling 1 | Precast concrete planks floor, screed, carpeted | 30.00                       | 63.00                  |

| 11.1 Party Floors | Description   | Storey Index    | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-------------------|---------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                   | Party Floor 1 | Lowest occupied | Precast concrete planks floor, screed, carpeted | 40.00                       | 63.00                  |

# Summary for Input Data

## 12.0 Opening Types

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.20            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 1.20            |

## 13.0 Openings

| Name  | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|-------|---------------|----------------|-------------|-----------|-------|
| W1    | Windows - New | External Walls | North       | 0.16      |       |
| W2    | Windows - New | External Walls | North       | 1.28      |       |
| W3    | Windows - New | External Walls | North       | 1.28      |       |
| W4-W6 | Windows - New | External Walls | North       | 4.80      |       |
| W7    | Windows - New | External Walls | South       | 1.00      |       |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

Y-value

 W/m²K

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

## 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys 

Number of open flues 

Number of chimneys/flues attached to closed fire 

Number of flues attached to solid fuel boiler 

Number of flues attached to other heater 

Number of blocked chimneys 

Number of intermittent extract fans 

Number of passive vents 

Number of flueless gas fires 

## 21.0 Fixed Cooling System

## 22.0 Pressure Testing

Designed AP<sub>50</sub>  m³/(h.m²) @ 50 Pa

Property Tested? 

Test Method 

## 22.0 Lighting

No Fixed Lighting 

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

## 24.0 Main Heating 1

Description 

Percentage of Heat  %

Fuel Type 

SAP Code 

In Winter 

In Summer 

Controls SAP Code 

Controls description 

## 25.0 Main Heating 2

Description 

Percentage of Heat  %

# Summary for Input Data

|                      |                                            |
|----------------------|--------------------------------------------|
| Database Ref. No.    | 104956                                     |
| Fuel Type            | Electricity                                |
| In Winter            | 0.00                                       |
| In Summer            | 309.80                                     |
| Model Name           | KERS MEV-W230                              |
| Manufacturer         | KERS Innovations UK Ltd                    |
| Controls             | 2100                                       |
| Controls description | Not applicable (heating provides DHW only) |

**26.0 Heat Networks**

**27.0 Secondary Heating**

## 28.0 Water Heating

|                                                  |                |
|--------------------------------------------------|----------------|
| Water Heating                                    | Main Heating 2 |
| SAP Code                                         | 914            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |
| Immersion Only Heating Hot Water                 | No             |

## 28.3 Waste Water Heat Recovery System

|                                |                                             |         |
|--------------------------------|---------------------------------------------|---------|
| <b>29.0 Hot Water Cylinder</b> | <input type="text" value="Internal Store"/> |         |
| Insulation Type                | <input type="text" value="Measured Loss"/>  |         |
| Cylinder Volume                | <input type="text" value="230.00"/>         | L       |
| Loss                           | <input type="text" value="1.46"/>           | kWh/day |

|                        |     |     |     |     |      |     |     |     |     |     |     |  |
|------------------------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|--|
| 34.0 Small-scale Hydro |     |     |     |     | None |     |     |     |     |     |     |  |
| Jan                    | Feb | Mar | Apr | May | Jun  | Jul | Aug | Sep | Oct | Nov | Dec |  |

## Recommendations

|                                                   |      |
|---------------------------------------------------|------|
| Lower cost measures                               | None |
| Further measures to achieve even higher standards | None |

# Summary for Input Data

|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 1C                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 1C                                         | Plot Type Ref  | Flat 1C    |
| Plot Address         | Flat 1C, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |       |      |     |
|------------------------------------|------|---------------|-------|------|-----|
| SAP Rating                         | 79 C | DER           | 6.16  | TER  |     |
| Environmental                      | 95 A | % DER < TER   |       |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 0.33 | DFEE          | 31.91 | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |       |      |     |
| % DPER < TPER                      |      | DPER          | 63.36 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Mid-floor flat      |        |
| Which Floor                    | 2                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 313.16              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 15.90 m             | 62.00 m <sup>2</sup> | 3.10 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 24.60 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.18                         | 190.00                      | 49.29                       | 41.49                       | 0.00        | None    | 7.80     | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 32.55                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 148.18                 |

| 10.1 Party Ceilings | Description     | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|---------------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                     | Party Ceiling 1 | Precast concrete planks floor, screed, carpeted | 30.00                       | 62.00                  |

| 11.1 Party Floors | Description   | Storey Index    | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-------------------|---------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                   | Party Floor 1 | Lowest occupied | Precast concrete planks floor, screed, carpeted | 40.00                       | 62.00                  |

# Summary for Input Data

## 12.0 Opening Types

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.20            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 1.20            |

## 13.0 Openings

| Name | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|------|---------------|----------------|-------------|-----------|-------|
| W1   | Windows - New | External Walls | South       | 1.80      |       |
| W2   | Windows - New | External Walls | South West  | 2.00      |       |
| W3   | Windows - New | External Walls | South       | 2.00      |       |
| W4   | Windows - New | External Walls | South East  | 2.00      |       |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

Y-value

 W/m²K

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

## 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys

Number of open flues

Number of chimneys/flues attached to closed fire

Number of flues attached to solid fuel boiler

Number of flues attached to other heater

Number of blocked chimneys

Number of intermittent extract fans

Number of passive vents

Number of flueless gas fires

## 21.0 Fixed Cooling System

## 22.0 Pressure Testing

Designed AP<sub>50</sub>

 m³/(h.m²) @ 50 Pa

Property Tested?

Test Method

## 22.0 Lighting

No Fixed Lighting

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

## 24.0 Main Heating 1

Description

Percentage of Heat

 %

Fuel Type

SAP Code

In Winter

In Summer

Controls SAP Code

Controls description

## 25.0 Main Heating 2

Description

Percentage of Heat

 %

# Summary for Input Data

|                      |                                            |
|----------------------|--------------------------------------------|
| Database Ref. No.    | 104956                                     |
| Fuel Type            | Electricity                                |
| In Winter            | 0.00                                       |
| In Summer            | 309.80                                     |
| Model Name           | KERS MEV-W230                              |
| Manufacturer         | KERS Innovations UK Ltd                    |
| Controls             | 2100                                       |
| Controls description | Not applicable (heating provides DHW only) |

**26.0 Heat Networks**

**27.0 Secondary Heating**

## 28.0 Water Heating

|                                                  |                |
|--------------------------------------------------|----------------|
| Water Heating                                    | Main Heating 2 |
| SAP Code                                         | 914            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |
| Immersion Only Heating Hot Water                 | No             |

## 28.3 Waste Water Heat Recovery System

|                                |                                             |         |
|--------------------------------|---------------------------------------------|---------|
| <b>29.0 Hot Water Cylinder</b> | <input type="text" value="Internal Store"/> |         |
| Insulation Type                | <input type="text" value="Measured Loss"/>  |         |
| Cylinder Volume                | <input type="text" value="230.00"/>         | L       |
| Loss                           | <input type="text" value="1.46"/>           | kWh/day |

|                        |     |     |     |     |      |     |     |     |     |     |     |  |
|------------------------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|--|
| 34.0 Small-scale Hydro |     |     |     |     | None |     |     |     |     |     |     |  |
| Jan                    | Feb | Mar | Apr | May | Jun  | Jul | Aug | Sep | Oct | Nov | Dec |  |

## Recommendations

|                                                   |      |
|---------------------------------------------------|------|
| Lower cost measures                               | None |
| Further measures to achieve even higher standards | None |

# Summary for Input Data

|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 1B                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 1B                                         | Plot Type Ref  | Flat 1B    |
| Plot Address         | Flat 1B, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |       |      |     |
|------------------------------------|------|---------------|-------|------|-----|
| SAP Rating                         | 76 C | DER           | 6.92  | TER  |     |
| Environmental                      | 95 A | % DER < TER   |       |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 0.36 | DFEE          | 36.46 | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |       |      |     |
| % DPER < TPER                      |      | DPER          | 71.24 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Mid-floor flat      |        |
| Which Floor                    | 2                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 376.20              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 13.80 m             | 61.00 m <sup>2</sup> | 3.10 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 24.70 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.18                         | 190.00                      | 42.78                       | 35.34                       | 0.00        | None    | 7.44     | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 61.38                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 101.68                 |

| 10.1 Party Ceilings | Description     | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|---------------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                     | Party Ceiling 1 | Precast concrete planks floor, screed, carpeted | 30.00                       | 61.00                  |

| 11.1 Party Floors | Description   | Storey Index    | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-------------------|---------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                   | Party Floor 1 | Lowest occupied | Precast concrete planks floor, screed, carpeted | 40.00                       | 61.00                  |

# Summary for Input Data

## 12.0 Opening Types

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.20            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 1.20            |

## 13.0 Openings

| Name | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|------|---------------|----------------|-------------|-----------|-------|
| W1   | Windows - New | External Walls | North       | 1.44      |       |
| W2   | Windows - New | External Walls | North       | 1.44      |       |
| W3   | Windows - New | External Walls | North       | 0.84      |       |
| W4   | Windows - New | External Walls | North       | 0.84      |       |
| W5   | Windows - New | External Walls | North       | 1.44      |       |
| W6   | Windows - New | External Walls | North       | 1.44      |       |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

Y-value

 W/m²K

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

## 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys

Number of open flues

Number of chimneys/flues attached to closed fire

Number of flues attached to solid fuel boiler

Number of flues attached to other heater

Number of blocked chimneys

Number of intermittent extract fans

Number of passive vents

Number of flueless gas fires

## 21.0 Fixed Cooling System

## 22.0 Pressure Testing

Designed AP<sub>50</sub>

 m³/(h.m²) @ 50 Pa

Property Tested?

Test Method

## 22.0 Lighting

No Fixed Lighting

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

## 24.0 Main Heating 1

Description

Percentage of Heat

 %

Fuel Type

SAP Code

In Winter

In Summer

Controls SAP Code

Controls description

## 25.0 Main Heating 2

Description

# Summary for Input Data

|                      |                                            |   |
|----------------------|--------------------------------------------|---|
| Percentage of Heat   | 0.00                                       | % |
| Database Ref. No.    | 104956                                     |   |
| Fuel Type            | Electricity                                |   |
| In Winter            | 0.00                                       |   |
| In Summer            | 309.80                                     |   |
| Model Name           | KERS MEV-W230                              |   |
| Manufacturer         | KERS Innovations UK Ltd                    |   |
| Controls             | 2100                                       |   |
| Controls description | Not applicable (heating provides DHW only) |   |

## 26.0 Heat Networks

None

## 27.0 Secondary Heating

None

## 28.0 Water Heating

|                                                  |                |
|--------------------------------------------------|----------------|
| Water Heating                                    | Main Heating 2 |
| SAP Code                                         | 914            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |
| Immersion Only Heating Hot Water                 | No             |

## 28.3 Waste Water Heat Recovery System

## 29.0 Hot Water Cylinder

|                 |                |         |
|-----------------|----------------|---------|
|                 | Internal Store |         |
| Insulation Type | Measured Loss  |         |
| Cylinder Volume | 230.00         | L       |
| Loss            | 1.46           | kWh/day |

## 34.0 Small-scale Hydro

None

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

## Recommendations

### Lower cost measures

None

### Further measures to achieve even higher standards

None

# Summary for Input Data

|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 1A                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 1A                                         | Plot Type Ref  | Flat 1A    |
| Plot Address         | Flat 1A, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |       |      |     |
|------------------------------------|------|---------------|-------|------|-----|
| SAP Rating                         | 81 B | DER           | 6.14  | TER  |     |
| Environmental                      | 96 A | % DER < TER   |       |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 0.27 | DFEE          | 31.85 | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |       |      |     |
| % DPER < TPER                      |      | DPER          | 63.10 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Mid-floor flat      |        |
| Which Floor                    | 1                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 344.74              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 13.10 m             | 50.00 m <sup>2</sup> | 3.10 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 23.60 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.18                         | 190.00                      | 40.61                       | 30.01                       | 0.00        | None    | 10.60    | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 42.16                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 49.60                  |

| 10.1 Party Ceilings | Description     | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|---------------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                     | Party Ceiling 1 | Precast concrete planks floor, screed, carpeted | 30.00                       | 50.00                  |

| 11.1 Party Floors | Description   | Storey Index    | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-------------------|---------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                   | Party Floor 1 | Lowest occupied | Precast concrete planks floor, screed, carpeted | 40.00                       | 50.00                  |

# Summary for Input Data

## 12.0 Opening Types

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.20            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 1.20            |

## 13.0 Openings

| Name      | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|-----------|---------------|----------------|-------------|-----------|-------|
| W1-W3     | Windows - New | External Walls | South       | 4.80      |       |
| W4        | Windows - New | External Walls | South West  | 1.80      |       |
| W5 and W7 | Windows - New | External Walls | South       | 2.00      |       |
| W6        | Windows - New | External Walls | South West  | 1.00      |       |
| W8        | Windows - New | External Walls | South East  | 1.00      |       |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

Y-value

 W/m²K

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

## 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys

Number of open flues

Number of chimneys/flues attached to closed fire

Number of flues attached to solid fuel boiler

Number of flues attached to other heater

Number of blocked chimneys

Number of intermittent extract fans

Number of passive vents

Number of flueless gas fires

## 21.0 Fixed Cooling System

## 22.0 Pressure Testing

Designed AP<sub>50</sub>  m³/(h.m²) @ 50 Pa

Property Tested?

Test Method

## 22.0 Lighting

No Fixed Lighting

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

## 24.0 Main Heating 1

Description

Percentage of Heat  %

Fuel Type

SAP Code

In Winter

In Summer

Controls SAP Code

Controls description

## 25.0 Main Heating 2

Description

Percentage of Heat  %

# Summary for Input Data

|                      |                                            |
|----------------------|--------------------------------------------|
| Database Ref. No.    | 104956                                     |
| Fuel Type            | Electricity                                |
| In Winter            | 0.00                                       |
| In Summer            | 309.80                                     |
| Model Name           | KERS MEV-W230                              |
| Manufacturer         | KERS Innovations UK Ltd                    |
| Controls             | 2100                                       |
| Controls description | Not applicable (heating provides DHW only) |

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|                           |      |
|---------------------------|------|
| <b>26.0 Heat Networks</b> | None |
|---------------------------|------|

---

|                               |      |
|-------------------------------|------|
| <b>27.0 Secondary Heating</b> | None |
|-------------------------------|------|

---

|                                                  |                |
|--------------------------------------------------|----------------|
| <b>28.0 Water Heating</b>                        |                |
| Water Heating                                    | Main Heating 2 |
| SAP Code                                         | 914            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |
| Immersion Only Heating Hot Water                 | No             |

---

## 28.3 Waste Water Heat Recovery System

---

|                                |                |         |
|--------------------------------|----------------|---------|
| <b>29.0 Hot Water Cylinder</b> | Internal Store |         |
| Insulation Type                | Measured Loss  |         |
| Cylinder Volume                | 230.00         | L       |
| Loss                           | 1.46           | kWh/day |

---

## Recommendations

### Lower cost measures

None

### Further measures to achieve even higher standards

None

# Summary for Input Data

|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 0C                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 0C                                         | Plot Type Ref  | Flat 0C    |
| Plot Address         | Flat 0C, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |       |      |     |
|------------------------------------|------|---------------|-------|------|-----|
| SAP Rating                         | 77 C | DER           | 8.89  | TER  |     |
| Environmental                      | 93 A | % DER < TER   |       |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 0.5  | DFEE          | 55.37 | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |       |      |     |
| % DPER < TPER                      |      | DPER          | 97.06 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Ground-floor flat   |        |
| Which Floor                    | 0                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 270.65              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | 7 Hour Off Peak     |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 15.60 m             | 62.00 m <sup>2</sup> | 3.30 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 24.80 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.18                         | 190.00                      | 51.48                       | 41.98                       | 0.00        | None    | 9.50     | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 31.35                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 144.54                 |

| 10.1 Party Ceilings | Description     | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|---------------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                     | Party Ceiling 1 | Precast concrete planks floor, screed, carpeted | 30.00                       | 62.00                  |

| 11.0 Heat Loss Floors | Description    | Type                  | Storey Index    | Construction | U-Value (W/m <sup>2</sup> K) | Shelter Code | Shelter Factor | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-----------------------|----------------|-----------------------|-----------------|--------------|------------------------------|--------------|----------------|-----------------------------|------------------------|
|                       | Heatloss Floor | Exposed Floor - Solid | Lowest occupied | Other        | 0.18                         | None         | 0.00           | 0.00                        | 62.00                  |

## 12.0 Opening Types

# Summary for Input Data

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.20            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 1.20            |

## 13.0 Openings

| Name | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|------|---------------|----------------|-------------|-----------|-------|
| W1   | Windows - New | External Walls | South       | 0.16      |       |
| W4   | Windows - New | External Walls | South West  | 1.80      |       |
| W5   | Windows - New | External Walls | South       | 1.80      |       |
| W6   | Windows - New | External Walls | South East  | 1.80      |       |
| W2   | Windows - New | External Walls | South       | 3.78      |       |
| W3   | Windows - New | External Walls | South       | 0.16      |       |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

Y-value

 W/m²K

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

## 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys

Number of open flues

Number of chimneys/flues attached to closed fire

Number of flues attached to solid fuel boiler

Number of flues attached to other heater

Number of blocked chimneys

Number of intermittent extract fans

Number of passive vents

Number of flueless gas fires

## 21.0 Fixed Cooling System

## 22.0 Pressure Testing

Designed AP<sub>50</sub>
 m³/(h.m²) @ 50 Pa

Property Tested?

Test Method

## 22.0 Lighting

No Fixed Lighting

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

## 24.0 Main Heating 1

Description

Percentage of Heat

 %

Fuel Type

SAP Code

In Winter

In Summer

Controls SAP Code

Controls description

Number Of Heaters  
3

PCDF Index  
230004 m

## 25.0 Main Heating 2

# Summary for Input Data

|                      |                                            |   |
|----------------------|--------------------------------------------|---|
| Description          | KERS                                       |   |
| Percentage of Heat   | 0.00                                       | % |
| Database Ref. No.    | 104956                                     |   |
| Fuel Type            | Electricity                                |   |
| In Winter            | 0.00                                       |   |
| In Summer            | 309.80                                     |   |
| Model Name           | KERS MEV-W230                              |   |
| Manufacturer         | KERS Innovations UK Ltd                    |   |
| Controls             | 2100                                       |   |
| Controls description | Not applicable (heating provides DHW only) |   |

## 26.0 Heat Networks

None

## 27.0 Secondary Heating

|                            |  |                      |
|----------------------------|--|----------------------|
| .0 Secondary Heating       |  | SAP table            |
| SAP Code                   |  | 692                  |
| Heating System Description |  | Electric Fan heaters |
| Fuel Type                  |  | Electricity          |
| SHS efficiency             |  | 100.00 %             |

## 28.0 Water Heating

|                                                  |                |
|--------------------------------------------------|----------------|
| Water Heating                                    | Main Heating 2 |
| SAP Code                                         | 914            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |
| Immersion Only Heating Hot Water                 | No             |

## 28.3 Waste Water Heat Recovery System

## 29.0 Hot Water Cylinder

|                      |                |         |
|----------------------|----------------|---------|
| 0 Hot Water Cylinder | Internal Store |         |
| Insulation Type      | Measured Loss  |         |
| Cylinder Volume      | 230.00         | L       |
| Loss                 | 1.46           | kWh/day |

## Recommendations

### Lower cost measures

None

### Further measures to achieve even higher standards

None

# Summary for Input Data

|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 0B                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 0B - Actual - Be Green                     | Plot Type Ref  | Flat 0B    |
| Plot Address         | Flat 0B, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |        |      |     |
|------------------------------------|------|---------------|--------|------|-----|
| SAP Rating                         | 71 C | DER           | 11.35  | TER  |     |
| Environmental                      | 92 A | % DER < TER   |        |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 0.63 | DFEE          | 72.83  | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |        |      |     |
| % DPER < TPER                      |      | DPER          | 123.99 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Ground-floor flat   |        |
| Which Floor                    | 0                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 278.71              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | 7 Hour Off Peak     |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 18.80 m             | 61.00 m <sup>2</sup> | 3.30 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 28.40 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.18                         | 190.00                      | 62.04                       | 46.18                       | 0.00        | None    | 15.86    | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 30.36                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 103.62                 |

| 10.1 Party Ceilings | Description     | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|---------------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                     | Party Ceiling 1 | Precast concrete planks floor, screed, carpeted | 30.00                       | 61.00                  |

| 11.0 Heat Loss Floors | Description    | Type                  | Storey Index    | Construction | U-Value (W/m <sup>2</sup> K) | Shelter Code | Shelter Factor | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-----------------------|----------------|-----------------------|-----------------|--------------|------------------------------|--------------|----------------|-----------------------------|------------------------|
|                       | Heatloss Floor | Exposed Floor - Solid | Lowest occupied | Other        | 0.18                         | None         | 0.00           | 0.00                        | 61.00                  |

## 12.0 Opening Types

# Summary for Input Data

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.20            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 1.20            |

### 13.0 Openings

| Name      | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|-----------|---------------|----------------|-------------|-----------|-------|
| D1 and D2 | Doors - New   | External Walls | North       | 3.78      |       |
| W1-W2     | Windows - New | External Walls | North       | 5.60      |       |
| W4        | Windows - New | External Walls | North       | 3.24      |       |
| W5        | Windows - New | External Walls | North East  | 1.62      |       |
| W3        | Windows - New | External Walls | North East  | 1.62      |       |

### 14.0 Conservatory

None

### 15.0 Draught Proofing

100

 %
  

### 16.0 Draught Lobby

No

### 17.0 Thermal Bridging

Default

Y-value

0.20

 W/m²K
  

### 19.0 Mechanical Ventilation

#### Mechanical Ventilation

Mechanical Ventilation System Present

No

### 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys

0

Number of open flues

0

Number of chimneys/flues attached to closed fire

0

Number of flues attached to solid fuel boiler

0

Number of flues attached to other heater

0

Number of blocked chimneys

0

Number of intermittent extract fans

2

Number of passive vents

0

Number of flueless gas fires

0

### 21.0 Fixed Cooling System

No

### 22.0 Pressure Testing

Yes

Designed AP<sub>50</sub>

8.00

 m²/(h.m²) @ 50 Pa

Property Tested?

Yes

Test Method

Blower Door

### 22.0 Lighting

No Fixed Lighting

No

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

### 24.0 Main Heating 1

SAP table

Description

ASHP

Percentage of Heat

100.00

 %

Fuel Type

Electricity

SAP Code

409

In Winter

100.00

In Summer

309.80

Controls SAP Code

2404

Controls description

Controls for high heat retention storage heaters

Number Of Heaters

3

PCDF Index

230002 m

### 25.0 Main Heating 2

Database

Description

KERS

# Summary for Input Data

|                      |                                            |   |
|----------------------|--------------------------------------------|---|
| Percentage of Heat   | 0.00                                       | % |
| Database Ref. No.    | 104956                                     |   |
| Fuel Type            | Electricity                                |   |
| In Winter            | 0.00                                       |   |
| In Summer            | 309.80                                     |   |
| Model Name           | KERS MEV-W230                              |   |
| Manufacturer         | KERS Innovations UK Ltd                    |   |
| Controls             | 2100                                       |   |
| Controls description | Not applicable (heating provides DHW only) |   |

## 26.0 Heat Networks

None

## 27.0 Secondary Heating

|                            |                                              |   |
|----------------------------|----------------------------------------------|---|
| SAP table                  |                                              |   |
| SAP Code                   | 691                                          |   |
| Heating System Description | Electric Panel, convector or radiant heaters |   |
| Fuel Type                  | Electricity                                  |   |
| SHS efficiency             | 100.00                                       | % |

## 28.0 Water Heating

|                                                  |                |
|--------------------------------------------------|----------------|
| Water Heating                                    | Main Heating 2 |
| SAP Code                                         | 914            |
| 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               | No             |
| Cold Water Source                                | From mains     |
| Bath Count                                       | 0              |
| Immersion Only Heating Hot Water                 | No             |

## 28.3 Waste Water Heat Recovery System

## 29.0 Hot Water Cylinder

|                 |               |         |
|-----------------|---------------|---------|
| Internal Store  |               |         |
| Insulation Type | Measured Loss |         |
| Cylinder Volume | 230.00        | L       |
| Loss            | 1.46          | kWh/day |

## Recommendations

### Lower cost measures

None

### Further measures to achieve even higher standards

None

# Summary for Input Data

|                      |                                                 |                |            |
|----------------------|-------------------------------------------------|----------------|------------|
| Plot Reference       | Flat 0A                                         | Issued on Date | 04/12/2025 |
| Assessment Reference | Flat 0A                                         | Plot Type Ref  | Flat 0A    |
| Plot Address         | Flat 0A, 144, Bury Old Road, Manchester, M8 4HE | SAP Version    | 10.2       |

|                                    |      |               |        |      |     |
|------------------------------------|------|---------------|--------|------|-----|
| SAP Rating                         | 69 C | DER           | 10.63  | TER  |     |
| Environmental                      | 91 B | % DER < TER   |        |      | N/A |
| CO <sub>2</sub> Emissions (t/year) | 0.89 | DFEE          | 55.28  | TFEE |     |
| Compliance Check                   | N/A  | % DFEE < TFEE |        |      |     |
| % DPER < TPER                      |      | DPER          | 117.39 | TPER |     |

|                  |                          |             |           |
|------------------|--------------------------|-------------|-----------|
| Assessor Details | Mr. Andreas Andreou      | Assessor ID | AC35-0001 |
| Client           | Sam Golding, Sam Golding |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | South               |        |
| Property Tenture               | 3                   |        |
| Transaction Type               | 6                   |        |
| Terrain Type                   | Suburban            |        |
| 1.0 Property Type              | Flat, End-Terrace   |        |
| Position of Flat               | Ground-floor flat   |        |
| Which Floor                    | 0                   |        |
| 2.0 Number of Storeys          | 1                   |        |
| 3.0 Date Built                 | 2025                |        |
| 4.0 Sheltered Sides            | 2                   |        |
| 5.0 Sunlight/Shade             | Average or unknown  |        |
| 6.0 Thermal Mass Parameter     | Precise calculation |        |
| Thermal Mass                   | 215.23              | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | 7 Hour Off Peak     |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | No                  |        |

| 7.0 Measurements | Ground floor: | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------|---------------------|----------------------|-----------------------|
|                  |               | 14.90 m             | 90.00 m <sup>2</sup> | 3.30 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 32.80 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description    | Type       | Construction                                                         | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|----------------|------------|----------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Walls | Solid Wall | Solid wall : dense plaster, 200 mm dense block, insulated externally | 0.18                         | 190.00                      | 49.17                       | 31.92                       | 0.00        | None    | 17.25    | Enter Gross Area      |

| 9.1 Party Walls | Description  | Type       | Construction                                                  | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|--------------|------------|---------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall 1 | Solid Wall | Dense plaster both sides, dense blocks, cavity or cavity fill | 0.00                         | 180.00                      | 54.45                  | 0.00        | None    |

| 9.2 Internal Walls | Description     | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|-----------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall 1 | Plasterboard on timber frame | 9.00                        | 89.43                  |

| 10.1 Party Ceilings | Description     | Construction                                    | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|---------------------|-----------------|-------------------------------------------------|-----------------------------|------------------------|
|                     | Party Ceiling 1 | Precast concrete planks floor, screed, carpeted | 30.00                       | 90.00                  |

| 11.0 Heat Loss Floors | Description    | Type                  | Storey Index    | Construction | U-Value (W/m <sup>2</sup> K) | Shelter Code | Shelter Factor | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|-----------------------|----------------|-----------------------|-----------------|--------------|------------------------------|--------------|----------------|-----------------------------|------------------------|
|                       | Heatloss Floor | Exposed Floor - Solid | Lowest occupied | Other        | 0.18                         | None         | 0.00           | 0.00                        | 90.00                  |

## 12.0 Opening Types

# Summary for Input Data

| Description   | Data Source  | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|---------------|--------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Windows - New | Manufacturer | Window     | Double Low-E Soft 0.05 |             |              | 0.63    |            | 0.70         | 1.20            |
| Doors - New   | Manufacturer | Solid Door |                        |             |              | 0.00    |            |              | 1.20            |

## 13.0 Openings

| Name  | Opening Type  | Location       | Orientation | Area (m²) | Pitch |
|-------|---------------|----------------|-------------|-----------|-------|
| D1    | Doors - New   | External Walls | East        | 1.89      |       |
| W1-W3 | Windows - New | External Walls | South       | 4.80      |       |
| W4    | Windows - New | External Walls | South       | 3.78      |       |
| W5    | Windows - New | External Walls | North       | 3.00      |       |
| W6    | Windows - New | External Walls | North       | 3.78      |       |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

Y-value

 W/m²K

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

## 20.0 Fans, Open Fireplaces, Flues

Number of open chimneys 

Number of open flues 

Number of chimneys/flues attached to closed fire 

Number of flues attached to solid fuel boiler 

Number of flues attached to other heater 

Number of blocked chimneys 

Number of intermittent extract fans 

Number of passive vents 

Number of flueless gas fires 

## 21.0 Fixed Cooling System

## 22.0 Pressure Testing

Designed AP<sub>50</sub>  m²/(h.m²) @ 50 Pa

Property Tested? 

Test Method 

## 22.0 Lighting

No Fixed Lighting 

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Lighting 1 | 120.00   | 5.00  | 600.00   | 20    |

## 24.0 Main Heating 1

Description 

Percentage of Heat  %

Fuel Type 

SAP Code 

In Winter 

In Summer 

Controls SAP Code 

Controls description 

Number Of Heaters  
4

PCDF Index  
230002 m

## 25.0 Main Heating 2

Description

# Summary for Input Data

|                      |                                            |   |
|----------------------|--------------------------------------------|---|
| Percentage of Heat   | 0.00                                       | % |
| Database Ref. No.    | 104957                                     |   |
| Fuel Type            | Electricity                                |   |
| In Winter            | 0.00                                       |   |
| In Summer            | 100.00                                     |   |
| Model Name           | KERS MEV-W160                              |   |
| Manufacturer         | KERS Innovations UK Ltd                    |   |
| Controls             | 2100                                       |   |
| Controls description | Not applicable (heating provides DHW only) |   |

## 26.0 Heat Networks

None

## 27.0 Secondary Heating

|                            |                                              |   |
|----------------------------|----------------------------------------------|---|
| SAP table                  | SAP table                                    |   |
| SAP Code                   | 691                                          |   |
| Heating System Description | Electric Panel, convector or radiant heaters |   |
| Fuel Type                  | Electricity                                  |   |
| SHS efficiency             | 100.00                                       | % |

## 28.0 Water Heating

|                                                  |             |
|--------------------------------------------------|-------------|
| Water Heating                                    | Independent |
| SAP Code                                         | 903         |
| Fuel Type                                        | Electricity |
| 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               | No          |
| Immersion Heater                                 | Dual        |
| Cold Water Source                                | From mains  |
| Bath Count                                       | 0           |

## 28.3 Waste Water Heat Recovery System

## 29.0 Hot Water Cylinder

|                 |                |         |
|-----------------|----------------|---------|
| Internal Store  | Internal Store |         |
| Insulation Type | Measured Loss  |         |
| Cylinder Volume | 230.00         | L       |
| Loss            | 1.46           | kWh/day |

## 34.0 Small-scale Hydro

None

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

## Recommendations

### Lower cost measures

None

### Further measures to achieve even higher standards

None