

Energy Assessment / SAP Details Applied

For the proposed development at:

Blewgarth, The Warren, Caversham, RG4 7TH

Energy Calculations Ltd

SAP ◆ CODE ◆ SBEM ◆ DESIGN

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Blewgarth, The Warren, Caversham, RG4 7TH

5th June 2023

Property reference: SAP 10 – M00468

Contents

1. Introduction.
2. Services, Thermal , SAP details Applied
3. Results

1. Introduction

The calculations provided, draw upon the detailed SAP 10 assessment. This gives as accurate a guide as possible to the energy usage of the final development in operation, to comply with part L 2021. The Energy Assessment relates to a new dwelling at Blewgarth, The Warren, Caversham, RG4 7TH

Overheating has been removed from SAP and is now an independent regulation part O,

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2: Services & Thermals

The total CO₂ emissions has been calculated taking full account of energy demands for space heating and hot water, and electricity for pumps, fans, lights, using the orientation and the use of building elements (walls, windows etc.) with U-values and other reference values and in most cases consistent with achieving compliance with Approved Document Part L: 2021.

Element	U – Value Element	Element	U – Value Element
Walls	0.14	Floor	0.10
Windows	1.00 (g- value 0.23)	Doors	1.00
Roof Slope	0.10	Roof lights	1.20 (g value 0.23)
Floor exposed – to achieve	0.10	Flat roof	0.10

Services & Renewable

Thermal Bridging – PSI values taken form BRE timber frame and default – to be confirm they are correct. – see separate document

Air pressure test 2.50

Lighting = Efficacy 90 lm/w

Extraction – MVHR – Titon HRV 1.6 plus Eco

Air to water heat pump – Samsung AE120RXYDEG

Water cylinder – minimum heat loss

Emitters - Under floor

Controls - time and temperature zone controls

Electricity tariff – Standard

Water storage – from header tank

Shower - 10 ltr per person per day

Internal water use – 125 ltr per person per day

4 Kw peak Photovoltaic panels facing South West, connected to the electricity meter, Battery Capacity 10kwh

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3: Results - shows the summary for the calculations

TER = Target Emission Rate kgCO₂/yr/m²
DER = Dwelling Emission Rate kgCO₂/yr/m²
TFEE = Target Fabric Energy Efficiency kWh/m²/yr
DFEE = Dwelling Fabric Energy Efficiency kWh/m²/yr
TPER = Target Primary Energy Rate kWh/m²/yr
DPER = Dwelling Primary Energy Rate kWh/m²/yr

Table 1

TER	DER	% Reduction	TFEE	DFEE	% Reduction	TPER	DPER	% Reduction	SAP Rating
6.82	2.04	70.09	37.64	37.63	00.2	36.01	20.38	43.40	89 B

With reference to the heat pump, water cylinder and MVHR units these have been applied for the efficiency only and needs to be clarified that its suitable for use, if an alternative is used please inform us and we will check the efficiencies as an alternative could make the calculations fail L1A building regulations.

With reference to the construction details a full specification / u – value calculations will be required before the As built SAP and EPC can be issued, including photograph evidence (date and location stamped - of construction, services, thermal bridging, and insulation levels and type. (see example)

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