Building Regulations England Part L (BREL) Compliance Report

Approved Document L1 2021 Edition, England assessed by Array SAP 10 program, Array

Date: Fri 16 Feb 2024 16:24:40

Project Information			
Assessed By	Connor Campbell	Building Type	House, Semi-detached
OCDEA Registration	EES/031103	Assessment Date	2024-02-16

Dwelling Details			
Assessment Type	As designed	Total Floor Area	75 m^2
Site Reference	39 - AHA	Plot Reference	39 - AHA
Address	39 - AHA 39 - AHA, TN18		

Client Details	
Name	Dandara South East
Company	Dandara South East
Address	-, -, -

This report covers items included within the SAP calculations. It is not a complete report of regulations compliance.

1a Target emission rate and dwelling emission rate		
Fuel for main heating system	Electricity	
Target carbon dioxide emission rate	*11.85 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.43 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*62.04 kWh_{PE}/m^2*	
Dwelling primary energy	36.01 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*36.7 kWh/m^2*	
Dwelling fabric energy efficiency	35.4 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.24	Walls (1) (0.24)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Flr - Ground (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.2	Front (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	40.325	0.24
Exposed wall: Walls (2)	36.009	0.23
Party wall: Party Wall (1)	41.74	0 **(!)**
Ground floor: Flr - Ground, Flr - Ground	37.453	0.11
Exposed roof: Roof (1)	37.453	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
Front, Solid Door	2.148	North	N/A	1 **(!)**
Rear, Solid Door	2.146	South	N/A	1 **(!)**
Front, Windows	1.31	North	1.0	1.3
Rear, Windows	4.681	South	1.0	1.3
Front, Windows	1.902	North	1.0	1.3
L Side, Windows	0.719	East	1.0	1.3

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))
Building part **1 - Main Dwelling**: Thermal bridging calculated from linear thermal transmittances for each junction

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.057	
External wall	E3: Sill	Calculated by person with suitable expertise	0.021 **(!)**	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.016 **(!)**	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.022 **(!)**	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.003 **(!)**	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.071	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.044	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.039 **(!)**	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.0385 **(!)**	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.16	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.12	

3 Air permeability (better than typically expected values are flagged with a subsequent (!))		
Maximum permitted air permeability at 50Pa	*8 m^3/hm^2*	
Dwelling air permeability at 50Pa	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	308.6%
Emitter type	Radiators
Flow temperature	45°C
System type	Heat Pump
Manufacturer	Panasonic HVAC UK Ltd
Model	WH-MDC05J3E5
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	150 litres
Declared heat loss	1.22 kWh/day
Primary pipework insulated	Yes
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: N/A	
Efficiency	
Manufacturer	
Model	

6 Controls	
Main heating 1 - type: Programmer, room thermostat and TRVs	
Function	
Ecodesign class	
Manufacturer	
Model	

Water heating - type: Cylinder thermostat and HW separately timed	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 lm/W	**OK**
External lights control	N/A	

8 Mechanical ventilation		
System type: Decentralised mechanical extract		
Maximum permitted specific fan power	*0.7 W/(l/s)*	
Specific fan power	0.16 W/(l/s)	**OK**
Minimum permitted heat recovery efficiency	*N/A*	
Heat recovery efficiency	N/A	**N/A**
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		

9 Local generation
N/A

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Predicted Energy Assessment

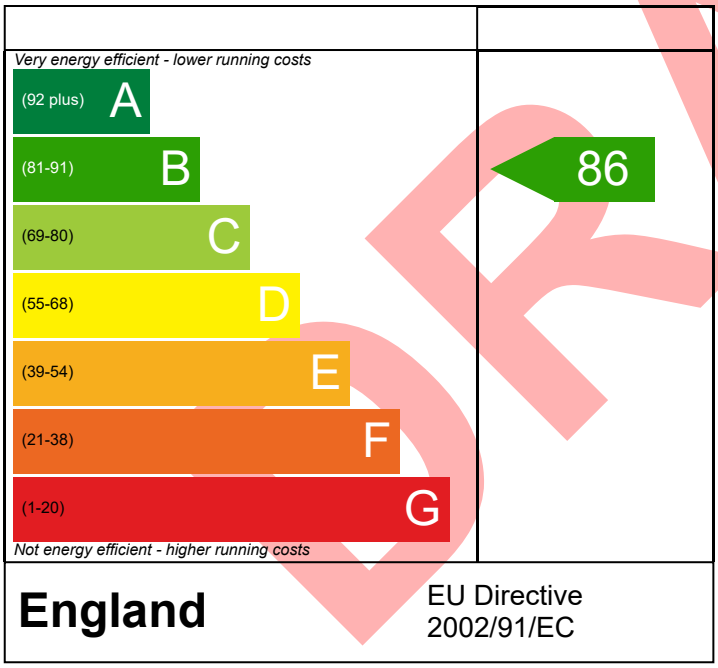
39 - AHA, 39 - AHA, TN18

Dwelling type:	House, Semi-Detached
Date of assessment:	16/02/2024
Produced by:	Michael Juckes
Total floor area:	74.91 m²
DRRN:	

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

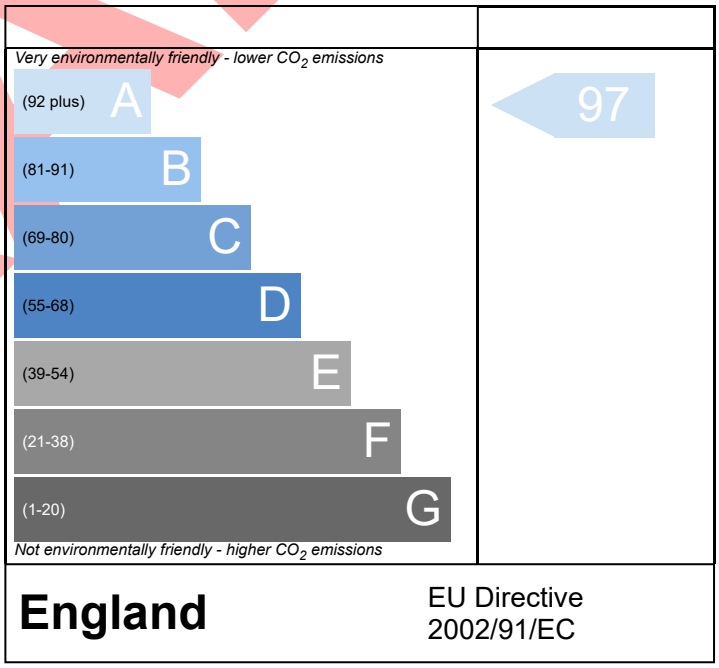
The energy performance has been assessed using the Government approved SAP 10 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO2) emissions.

Energy Efficiency Rating



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

Environmental Impact (CO_2) Rating



The environmental impact rating is a measure of a home's impact on the environment in terms of carbon dioxide (CO_2) emissions. The higher the rating the less impact it has on the environment.