Building Regulations England Part L (BREL) Compliance Report

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

Date: Wed 11 Jan 2023 13:10:23

Project Information			
Assessed By	Connor White	Building Type	House, Detached
OCDEA Registration	EES/026201	Assessment Date	2023-01-11

Dwelling Details			
Assessment Type	As designed	Total Floor Area	263 m^2
Site Reference	As Designed	Plot Reference	1st Draft
Address	84 North Road, Gedney Hill, PE120NS		

Client Details	
Name	Andrew King
Company	County Builders Construction Ltd
Address	x, x, x

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	*6.13 kgCO_2/m^2*	
Dwelling carbon dioxide emission rate	1.77 kgCO_2/m^2	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*33.43 kWh$_{PE}$/m^2*	
Dwelling primary energy	16.87 kWh$_{PE}$/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*39.0 kWh/m^2*	
Dwelling fabric energy efficiency	38.8 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*	0.13	Walls (1) (0.13)	OK
Party walls	*0.2*	N/A	N/A	**N/A**
Curtain walls	*1.6*	N/A	N/A	**N/A**
Floors	*0.18*	0.1	Ground Floor (0.1)	OK
Roofs	*0.16*	0.13	Roof (1) (0.14)	OK
Windows, doors, and roof windows	*1.6*	1.39	Front - NW (1.4)	OK
Rooflights	*2.2*	1.3	Front NW, North West (1.3)	OK

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)	17.94	0.13 **(!)**
Exposed wall: Walls (2)	35.76	0.13 **(!)**
Exposed wall: Walls (3)	47.46	0.13 **(!)**
Exposed wall: Walls (4)	47.76	0.13 **(!)**
Exposed wall: Walls (5)	1.42	0.13 **(!)**
Exposed wall: Walls (6)	0.85	0.13 **(!)**
Ground floor: Ground Floor, Ground Floor	175.55	0.1 **(!)**
Exposed roof: Roof (1)	97.08	0.14
Exposed roof: Roof (2)	21.65	0.08 **(!)**
Exposed roof: Roof (3)	132.45	0.13

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 - NW, Window	10.06	North West	1.0	1.4
Front NW, Solid Door	2.1	North West	N/A	1.4
Front NW, Garage Door	10.8	North West	N/A	1.4
Front NW, Rooflight	1.8	North West	1.0	1.3
Rear SE, Window	6.03	South East	1.0	1.4
Rear SE, Solid Door	2.1	South East	N/A	1.4
Rear SE, Glazed Door	10.2	South East	0.7	1.4

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
Rear SE, Rooflight	1.2	South East	1.0	1.3
Side SW, Window	1.09	South West	1.0	1.4
Side NE, Window	2.97	North East	1.0	1.4

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	0.027 **(!)**	E2 CBA-XT-CT-001
External wall	E3: Sill	Calculated by person with suitable expertise	0.036 **(!)**	E3 CBA-XT-CT-003
External wall	E4: Jamb	Calculated by person with suitable expertise	0.023 **(!)**	E4 CBA-XT-CT-004
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.039 **(!)**	E5 CBA-XT-CT-020
External wall	E6: Intermediate floor within a dwelling	SAP table default	0.14	
External wall	E10: Eaves (insulation at ceiling level)	SAP table default	0.12	
External wall	E11: Eaves (insulation at rafter level)	SAP table default	0.15	
External wall	E12: Gable (insulation at ceiling level)	SAP table default	0.25	
External wall	E13: Gable (insulation at rafter level)	SAP table default	0.25	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.036 **(!)**	E16 CBA-XT-CT-016
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.059	E17 CBA-XT-CT-017
Roof	R1: Head of roof window	SAP table default	0.24	
Roof	R2: Sill of roof window	SAP table default	0.24	
Roof	R3: Jamb of roof window	SAP table default	0.24	
Roof	R4: Ridge (vaulted ceiling)	SAP table default	0.12	
Roof	R5: Ridge (inverted)	SAP table default	0.12	
Roof	R6: Flat ceiling	SAP table default	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	4.5 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	219.3%
Emitter type	Both radiators and underfloor
Flow temperature	
System type	Air source heat pump
Manufacturer	
Model	
Commissioning	
Secondary heating system: Closed room heater	
Fuel	Manufactured smokeless fuel
Efficiency	60.0%
Commissioning	

5 Hot water

Cylinder/store - type: Cylinder	
Capacity	210 litres
Declared heat loss	N/A
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: Time and temperature zone control by arrangement of plumbing and electrical services		
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	80 lm/W	**OK**
External lights control	N/A	

8 Mechanical ventilation		
System type: N/A		
Maximum permitted specific fan power	*N/A*	
Specific fan power	N/A	**N/A**
Minimum permitted heat recovery efficiency	*N/A*	
Heat recovery efficiency	N/A	**N/A**
Manufacturer/Model		
Commissioning		

9 Local generation	
Technology type: **Photovoltaic system (1)**	
Peak power	7 kWp
Orientation	South East
Pitch	45°
Overshading	None or very little
Manufacturer	
MCS certificate	

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

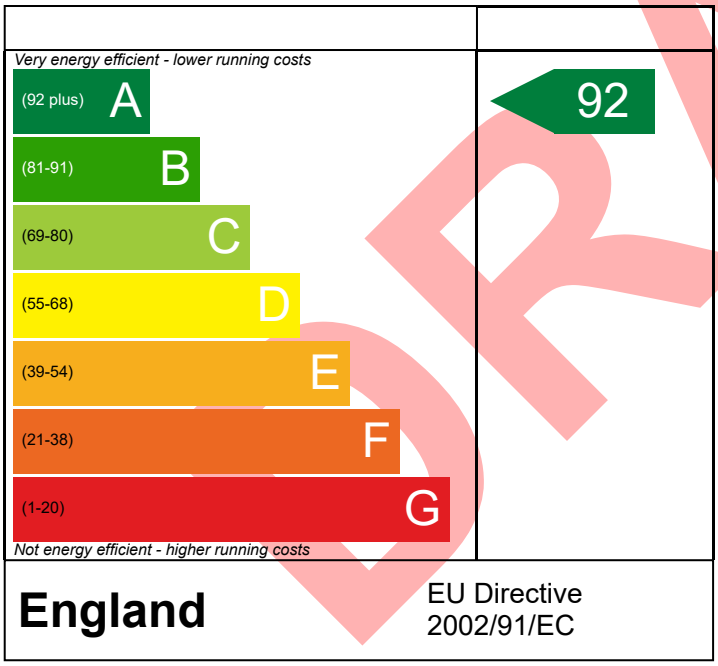
84, North Road, Gedney Hill, PE120NS

Dwelling type:	House, Detached
Date of assessment:	11/01/2023
Produced by:	Connor White
Total floor area:	262.57 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.

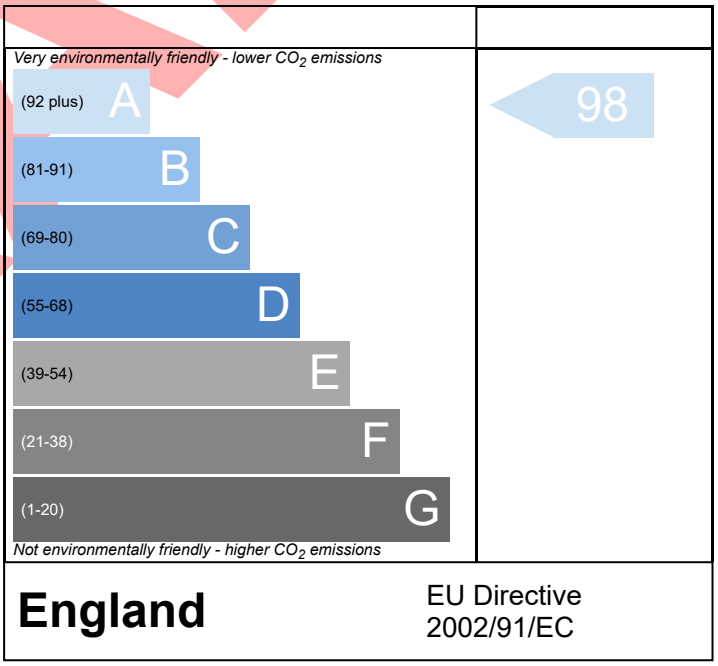
The energy performance has been assessed using the Government approved SAP 10 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO2) emissions.

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.

DRAFT

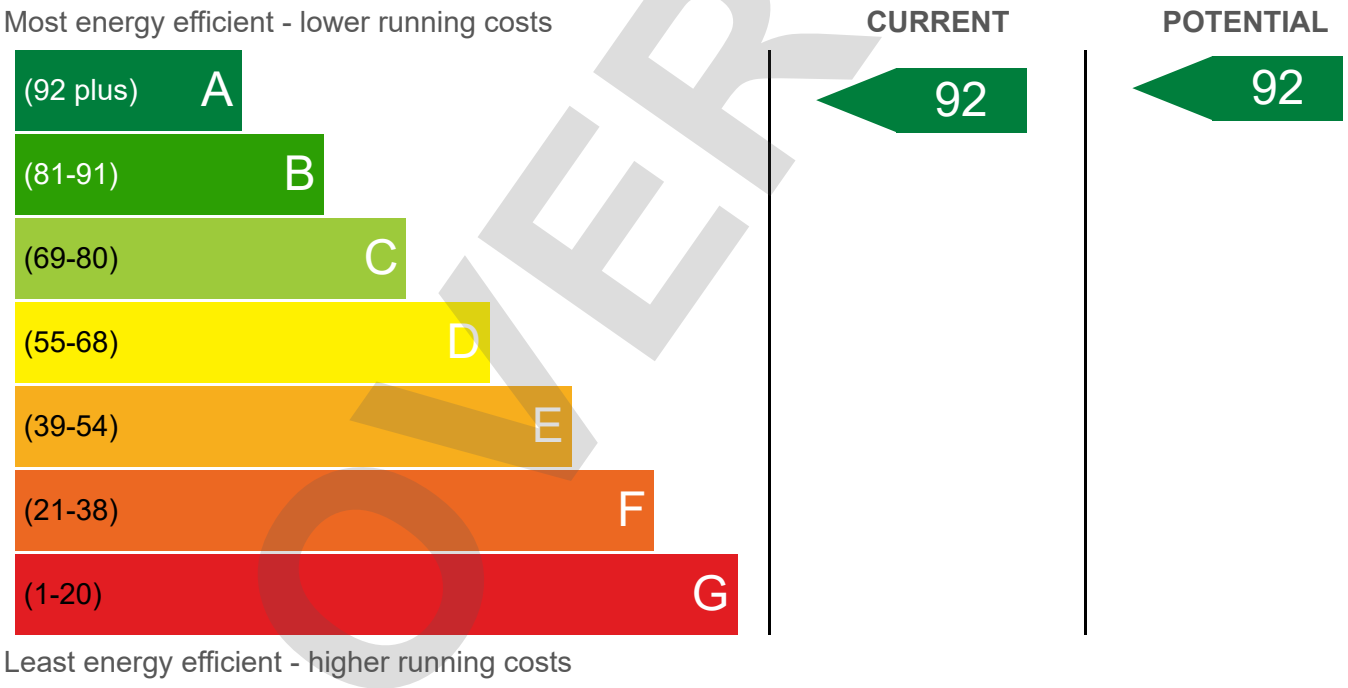
Overview Report

Dwelling Address	84, North Road, Gedney Hill, PE120NS
Report Date	11/01/2023
Property Type	House, Detached
Floor Area [m^2]	263

This document is not an Energy Performance Certificate (EPC) as required by the Energy Performance of Buildings Regulations

Energy Rating

The current energy rating represents the overall energy efficiency of the dwelling. The potential energy rating is the overall energy rating of the dwelling after all of the recommend measures provided on the next page have been installed. A higher score represents a more energy efficient dwelling with lower fuel bills.



OVERVIEW

Overview Report

Breakdown of property's energy performance

Each feature is assessed as one of the following:

Very Poor	Poor	Average	Good	Very Good

Feature	Description	Energy Performance
Walls	Average thermal transmittance 0.13 W/m²K	Very Good
Roof	Average thermal transmittance 0.13 W/m²K	Very Good
Floor	Average thermal transmittance 0.1 W/m²K	Very Good
Windows	High performance glazing	Good
Main heating	Air source heat pump, radiators and underfloor, electric	Average
Main heating controls	Time and temperature zone control	Very Good
Secondary heating	Room heaters, smokeless fuel	
Hot water	From main system	Average
Lighting	Good lighting efficiency	Good
Air tightness	Air permeability [AP50] = 4.5 m³/h.m² (assumed)	Good

Primary Energy use

The primary energy use for this property per year is 14 kilowatt hour (kWh) per square metre

Estimated CO_2 emissions of the dwelling

The estimated CO rating provides an indication of the dwelling's impact on the environment in terms of carbon dioxide emissions; the higher the rating the less impact it has on the environment.

The estimated CO emissions for this dwellings is: **0.4** per year

With the recommended measures the potential CO emissions could be: **0** per year

OVERVIEW

Overview Report

Recommendations

The recommended measures provided below will help to improve the energy efficiency of the dwelling.
To reach the dwelling's potential energy rating all of the recommended measures shown below would need to be installed.
Having these measures installed individually or in any other order may give a different result when compared with the cumulative potential rating.

Recommended measure	Typical Yearly Saving	Potential Rating after measure installed	Cumulative savings (per year)	Cumulative Potential Rating

Estimated energy use and potential savings

Estimated energy cost for this property over a year

£407

Over a year you could save

£0

The estimated cost and savings show how much the average household would spend in this property for heating, lighting and hot water. It is not based on how energy is used by the people living at the property.

Contacting the assessor and the accreditation scheme

Assessor contact details	
Assessor name	Mr. Connor White
Assessor's accreditation number	
Email Address	

OVERVIEW

Overview Report

Accreditation scheme contact details	
Accreditation scheme	
Telephone	
Email Address	

Assessment details	
Related party disclosure	
Date of assessment	10/01/2023
Date of certificate	10/01/2023
Type of assessment	SAP, new dwelling

OVERVIEW