Land and Buildings at Red House Farm, Priory Road, Fressingfield, Suffolk

# ENERGY ASSESSMENT REPORTS PLOTS 15-28

Condition 13: Ref: DC/20/0347 (reserved Matters application relating to Hybrid Permission 4410/16

Studio 303 Ltd 2<sup>nd</sup> January 2024

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

Date: Thu 12 Oct 2023 14:47:43

Project Information			
Assessed By	Alexandru Ardelean	Building Type	Bungalow, Detached
OCDEA Registration	EES/022722	Assessment Date	2023-10-12

Dwelling Details			
Assessment Type	As designed	Total Floor Area	102 m <sup>2</sup>
Site Reference	Plot 15	Plot Reference	001
Address	Plot 1 Priory Road, Fressingfield		

Client Details	
Name	Paul Sweeney
Company	studio303
Address	Priory Road, Fressingfield, IP21 5PH

1a Target emission rate and dwelling emission rate				
Fuel for main heating system	Electricity			
Target carbon dioxide emission rate	9.32 kgCO <sub>2</sub> /m <sup>2</sup>			
Dwelling carbon dioxide emission rate	4.28 kgCO <sub>2</sub> /m <sup>2</sup>	OK		
1b Target primary energy rate and dwelling primary energy				
Target primary energy	50.45 kWh <sub>PE</sub> /m <sup>2</sup>			
Dwelling primary energy	44.63 kWh <sub>PE</sub> /m <sup>2</sup>	OK		
1c Target fabric energy efficiency and dwelling fabric energy efficiency				
Target fabric energy efficiency	47.1 kWh/m <sup>2</sup>			
Dwelling fabric energy efficiency	44.3 kWh/m <sup>2</sup>	OK		

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m <sup>2</sup> K]	Dwelling average U-Value [W/m <sup>2</sup> K]	Element with highest individual U-Value	
External walls	0.26	0.15	Walls (1) (0.15)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	0.08	Heatloss Floor 1 (0.08)	OK
Roofs	0.16	0.12	Roof (2) (0.16)	OK
Windows, doors,	1.6	1.48	Folding Door (1.6)	OK
and roof windows				
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 <sup>2</sup> ]	U-Value [W/m <sup>2</sup> K]			
Exposed wall: Walls (1)	93.81	0.15			
Ground floor: Heatloss Floor 1, Heatloss Floor 1	101.52	0.08 (!)			
Exposed roof: Roof (1)	97.82	0.12			
Exposed roof: Roof (2)	4.52	0.16			

2c Openings (better than typically expected values are flagged with a subsequent (!))					
Name	Area [m <sup>2</sup> ]	Orientation	Frame factor	U-Value [W/m <sup>2</sup> K]	
Windows-front, Window	3.5	South West	0.7	1.4	
Door-entrance, Door	2.04	South West	N/A	1.4	
Windows-rear, Window	1.55	North East	0.7	1.4	
Windows-side, Window	0.92	South East	0.7	1.4	
Windows-side, Window	3.4	North West	0.7	1.4	
Folding Door, Folding Door	7.65	North East	0.7	1.6	

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))						
Building part 1 -	Main Dwelling: Thermal bridging ca	alculated from linear thermal tran	smittances for eac	h junction		
Main element	Main element Junction detail Source Psi value Drawing /					
			[W/mK]	reference		
External wall	E2: Other lintels (including other	Not government-approved	0.222	RCD		
steel lintels) scheme						

Main element	Junction detail		Source	Psi value [W/mK]	Drawing / reference	
External wall	E3: Sill		Not government-approved scheme	0.023 (!)	RCD	
External wall	E4: Jamb		Not government-approved scheme	0.018 (!)	RCD	
External wall	E5: Ground floor (norm	nal)	Not government-approved scheme	0.044	RCD	
External wall	E10: Eaves (insulation level)	at ceiling	Not government-approved scheme	0.054	RCD	
External wall	E12: Gable (insulation level)	at ceiling	Not government-approved scheme	0.027 (!)	RCD	
External wall	E16: Corner (normal)		Not government-approved scheme	0.031 (!)	RCD	
External wall	E17: Corner (inverted area greater than exte	rnal area)	Not government-approved scheme	-0.064	RCD	
External wall	E11: Eaves (insulation level)		SAP table default	0.15		
External wall	E13: Gable (insulation level)	at rafter	SAP table default	0.25		
Roof	R6: Flat ceiling		SAP table default	0.12		
3 Air permeabil	ity (better than typicall	y expected	values are flagged with a subs	sequent (!))		
	tted air permeability at 5	0Pa	8 m <sup>3</sup> /hm <sup>2</sup>			
	neability at 50Pa		5 m <sup>3</sup> /hm <sup>2</sup> , Design value		OK	
Air permeability	test certificate reference					
4 Space heating						
	/stem 1: Heat pump with		or underfloor heating - Electricity			
Efficiency		264.7%				
Emitter type		Underfloor	r			
Flow temperatur	e	55°C				
System type		Heat Pum				
Manufacturer			roup UK Ltd			
Model		aroTHERM	/I plus 3.5kW + AI-Not valid			
Commissioning						
	ting system: N/A					
Fuel		N/A				
Efficiency		N/A				
Commissioning						
5 Hot water						
Cylinder/store	type: Cylinder	450 "				
Capacity		150 litres	(d.e			
Declared heat lo		1.88 kWh/	day			
Primary pipewor	k insulated	Yes				
Manufacturer						
Model						
Commissioning	of room or other 4					
	at recovery system 1 -	type: N/A				
Efficiency Manufacturer						
Model						
6 Controls						
	<ul> <li>type: Time and temper</li> </ul>	ature zone	control by arrangement of plumbi	ng and electrical s	ervices	
Function						
Ecodesign class	· ·					
Manufacturer data and a second s						
Model						
· · · · ·	type: Cylinder thermost	at and HW	separately timed			
Manufacturer						

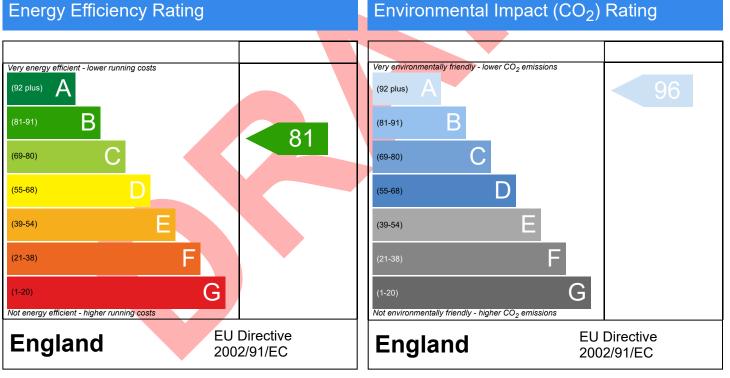
7 Lighting					
Minimum permitted light source efficacy	75 lm/W				
Lowest light source efficacy	75 lm/W		OK		
External lights control	N/A				
8 Mechanical ventilation					
System type: N/A					
Maximum permitted specific fan power	N/A				
Specific fan power	N/A		N/A		
Minimum permitted heat recovery	N/A				
efficiency					
Heat recovery efficiency	N/A		N/A		
Manufacturer/Model					
Commissioning					
9 Local generation					
N/A					
10 Heat networks					
N/A					
11 Supporting documentary evidence					
N/A					
12 Declarations					
a. Assessor Declaration					
	nfirmation that the co	ontents of this BREL Compliance Report			
		formation submitted for this dwelling for			
		and that the supporting documentary			
evidence (SAP Conventions, Append					
documentary evidence required) has					
Compliance Report.					
Signed: Assessor ID:					
Name: Date:					
b. Client Declaration					
N/A					



Dwelling type: Date of assessment: Produced by: Total floor area: DRRN: Bungalow, Detached 12/10/2023 Alexandru Ardelean 101.52 m<sup>2</sup>

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.



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.

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

Date: Thu 12 Oct 2023 14:47:43

Project Information			
Assessed By	Alexandru Ardelean	Building Type	Bungalow, Semi-detached
OCDEA Registration	EES/022722	Assessment Date	2023-10-12

Dwelling Details			
Assessment Type	As designed	Total Floor Area	80 m <sup>2</sup>
Site Reference	Plot 16	Plot Reference	001
Address	Plot 1 Priory Road, Fressingfield		

Client Details	
Name	Paul Sweeney
Company	studio303
Address	Priory Road, Fressingfield, IP21 5PH

1a Target emission rate and dwelling emission rate				
Fuel for main heating system	Electricity			
Target carbon dioxide emission rate	10.27 kgCO <sub>2</sub> /m <sup>2</sup>			
Dwelling carbon dioxide emission rate	4.7 kgCO <sub>2</sub> /m <sup>2</sup>	OK		
1b Target primary energy rate and dwelling primary energy				
Target primary energy	55.1 kWh <sub>PE</sub> /m <sup>2</sup>			
Dwelling primary energy	49.13 kWh <sub>PE</sub> /m <sup>2</sup>	OK		
1c Target fabric energy efficiency and dwelling fabric energy efficiency				
Target fabric energy efficiency	46.6 kWh/m <sup>2</sup>			
Dwelling fabric energy efficiency	44.8 kWh/m <sup>2</sup>	ОК		

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m <sup>2</sup> K]	Dwelling average U-Value [W/m <sup>2</sup> K]	Element with highest individual U-Value	
External walls	0.26	0.15	Walls (1) (0.15)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.08	Heatloss Floor 1 (0.08)	OK
Roofs	0.16	0.12	Roof (1) (0.12)	OK
Windows, doors,	1.6	1.49	Folding Door (1.6)	OK
and roof windows				
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 <sup>2</sup> ]	U-Value [W/m <sup>2</sup> K]	
Exposed wall: Walls (1)	67.66	0.15	
Party wall: Party Wall (1)	17.92	0 (!)	
Ground floor: Heatloss Floor 1, Heatloss Floor 1	80.24	0.08 (!)	
Exposed roof: Roof (1)	80.24	0.12	

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m <sup>2</sup> ]	Orientation	Frame factor	U-Value [W/m <sup>2</sup> K]
Windows-front, Window	3.03	South West	0.7	1.4
Door-entrance, Door	2.04	South West	N/A	1.4
Windows-rear, Window	3.37	North East	0.7	1.4
Windows-side, Window	1.7	North West	0.7	1.4
Folding Door, Folding Door	7.65	North East	0.7	1.6

2d Thermal brid	2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))					
Building part 1 -	Main Dwelling: Thermal bridging ca	alculated from linear thermal transm	ittances for each j	unction		
Main element         Junction detail         Source         Psi value         Drawing /           [W/mK]         reference						
External wall	E2: Other lintels (including other steel lintels)	Not government-approved scheme	0.222	RCD		

Main element	Junction detail		Source	Psi value [W/mK]	Drawing / reference
External wall	E3: Sill		Not government-approved scheme	0.023 (!)	RCD
External wall	E4: Jamb		Not government-approved scheme	0.018 (!)	RCD
External wall	E5: Ground floor (normal	l)	Not government-approved	0.044	RCD
External wall	E10: Eaves (insulation a	t ceiling	scheme Not government-approved	0.054	RCD
External wall	level) E12: Gable (insulation at	ceiling	scheme Not government-approved	0.027 (!)	RCD
External wall	level) E16: Corner (normal)		scheme Not government-approved	0.031 (!)	RCD
External wall	E17: Corner (inverted - in		scheme Not government-approved	-0.064	RCD
External wall	area greater than externa E18: Party wall between		scheme Not government-approved	0.046	RCD
Party wall	P1: Ground floor		scheme Not government-approved	0.172	RCD
Party wall	P4: Roof (insulation at ce	eiling	scheme Not government-approved scheme	0.19	RCD
3 Air permeabil	,	expected	values are flagged with a subs	sequent (!))	
	tted air permeability at 50F		$8 m^3/hm^2$		
	neability at 50Pa		5 m <sup>3</sup> /hm <sup>2</sup> , Design value		OK
	test certificate reference		,		
4 Space heating	9				
Main heating sy	/stem 1: Heat pump with r		r underfloor heating - Electricity		
Efficiency		255.1%			
Emitter type		Jnderfloor			
Flow temperatur		55°C	<u></u>		
System type Manufacturer		Heat Pump	oup UK Ltd		
Model			l plus 3.5kW + AI-Not valid		
Commissioning					
	ting system: N/A				
Fuel	1	N/A			
Efficiency	1	N/A			
Commissioning					
5 Hot water					
Cylinder/store -					
Capacity Declared heat lo		150 litres			
Primary pipewor		I.88 kWh/c Yes	Jay		
Manufacturer					
Model					
Commissioning					
	at recovery system 1 - ty	pe: N/A			
Efficiency					
Manufacturer					
Model					
	- type: Time and temperate	ure zone c	ontrol by arrangement of plumbi	ng and electrical s	ervices
Main heating 1					
Function					
<b>Main heating 1</b> Function Ecodesign class					
Main heating 1 Function Ecodesign class Manufacturer					
Main heating 1 Function Ecodesign class Manufacturer Model		and IM/ -	an a rataly time d		
Main heating 1 Function Ecodesign class Manufacturer Model		and HW s	eparately timed		

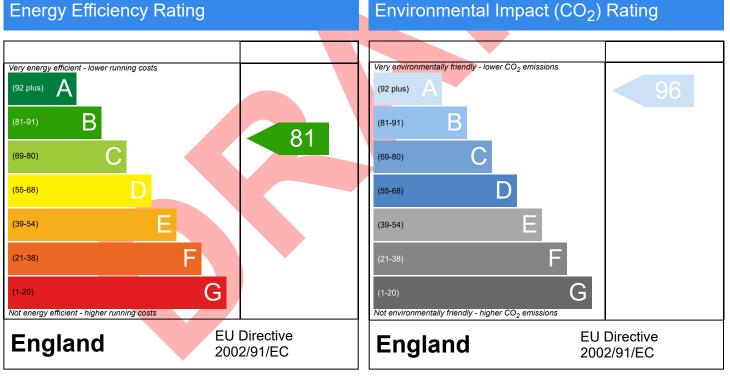
7 Lighting				
Minimum permitted light source efficacy	75 lm/W			
Lowest light source efficacy	75 lm/W		OK	
External lights control	N/A			
8 Mechanical ventilation				
System type: N/A				
Maximum permitted specific fan power	N/A			
Specific fan power	N/A		N/A	
Minimum permitted heat recovery	N/A			
efficiency				
Heat recovery efficiency	N/A		N/A	
Manufacturer/Model				
Commissioning				
9 Local generation				
N/A				
10 Heat networks				
N/A				
11 Supporting documentary evidence				
N/A				
12 Declarations				
a. Assessor Declaration				
	nfirmation that the co	ontents of this BREL Compliance Report		
		formation submitted for this dwelling for		
		and that the supporting documentary		
evidence (SAP Conventions, Append				
documentary evidence required) has				
Compliance Report.				
Signed: Assessor ID:				
Name: Date:				
b. Client Declaration	h Client Declaration			
N/A				



Dwelling type: Date of assessment: Produced by: Total floor area: DRRN: Bungalow, Semi-Detached 12/10/2023 Alexandru Ardelean 80.24 m<sup>2</sup>

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Date: Thu 12 Oct 2023 14:47:43

Project Information			
Assessed By	Alexandru Ardelean	Building Type	Bungalow, Semi-detached
OCDEA Registration	EES/022722	Assessment Date	2023-10-12

Dwelling Details			
Assessment Type	As designed	Total Floor Area	80 m <sup>2</sup>
Site Reference	Plot 17	Plot Reference	001
Address	Plot 1 Priory Road, Fressingfield		

Client Details	
Name	Paul Sweeney
Company	studio303
Address	Priory Road, Fressingfield, IP21 5PH

1a Target emission rate and dwelling emission rate				
Fuel for main heating system	Electricity			
Target carbon dioxide emission rate	10.12 kgCO <sub>2</sub> /m <sup>2</sup>			
Dwelling carbon dioxide emission rate	4.66 kgCO <sub>2</sub> /m <sup>2</sup>	OK		
1b Target primary energy rate and dwelling primary energy				
Target primary energy	54.27 kWh <sub>PE</sub> /m <sup>2</sup>			
Dwelling primary energy	48.68 kWh <sub>PE</sub> /m <sup>2</sup>	OK		
1c Target fabric energy efficiency and dwelling fabric energy efficiency				
Target fabric energy efficiency	45.9 kWh/m <sup>2</sup>			
Dwelling fabric energy efficiency	44.1 kWh/m <sup>2</sup>	OK		

2a Fabric U-values					
Element	Maximum permitted average U-Value [W/m <sup>2</sup> K]	Dwelling average U-Value [W/m <sup>2</sup> K]	Element with highest individual U-Value		
External walls	0.26	0.15	Walls (1) (0.15)	OK	
Party walls	0.2	0	Party Wall (1) (0)	N/A	
Curtain walls	1.6	0	N/A	N/A	
Floors	0.18	0.08	Heatloss Floor 1 (0.08)	OK	
Roofs	0.16	0.12	Roof (1) (0.12)	OK	
Windows, doors,	1.6	1.49	Folding Door (1.6)	OK	
and roof windows					
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 <sup>2</sup> ]	U-Value [W/m <sup>2</sup> K]			
Exposed wall: Walls (1)	67.66	0.15			
Party wall: Party Wall (1)	17.92	0 (!)			
Ground floor: Heatloss Floor 1, Heatloss Floor 1	80.24	0.08 <b>(!)</b>			
Exposed roof: Roof (1)	80.24	0.12			

2c Openings (better than typically expected values are flagged with a subsequent (!))					
Name	Area [m <sup>2</sup> ]	Orientation	Frame factor	U-Value [W/m <sup>2</sup> K]	
Windows-front, Window	3.03	South West	0.7	1.4	
Door-entrance, Door	2.04	South West	N/A	1.4	
Windows-rear, Window	3.37	North East	0.7	1.4	
Windows-side, Window	1.7	South East	0.7	1.4	
Folding Door, Folding Door	7.65	North East	0.7	1.6	

2d Thermal brid	2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))						
Building part 1 -	Main Dwelling: Thermal bridging ca	alculated from linear thermal transm	ittances for each	junction			
Main element         Junction detail         Source         Psi value         Drav           [W/mK]         refer							
External wall	E2: Other lintels (including other steel lintels)	Not government-approved scheme	0.222	RCD			

Main element	Junction detail		Source	Psi value [W/mK]	Drawing / reference
External wall	E3: Sill		Not government-approved scheme	0.023 (!)	RCD
External wall	E4: Jamb		Not government-approved scheme	0.018 (!)	RCD
External wall	E5: Ground floor (normal	l)	Not government-approved	0.044	RCD
External wall	E10: Eaves (insulation a	t ceiling	scheme Not government-approved	0.054	RCD
External wall	level) E12: Gable (insulation at	ceiling	scheme Not government-approved	0.027 (!)	RCD
External wall	level) E16: Corner (normal)		scheme Not government-approved	0.031 (!)	RCD
External wall	E17: Corner (inverted - in		scheme Not government-approved	-0.064	RCD
External wall	area greater than externa E18: Party wall between		scheme Not government-approved	0.046	RCD
Party wall	P1: Ground floor		scheme Not government-approved	0.172	RCD
Party wall	P4: Roof (insulation at ce	eiling	scheme Not government-approved scheme	0.19	RCD
3 Air permeabil	,	expected	values are flagged with a subs	sequent (!))	
	tted air permeability at 50F		$8 m^3/hm^2$		
	neability at 50Pa		5 m <sup>3</sup> /hm <sup>2</sup> , Design value		OK
	test certificate reference		,		
4 Space heating	9				
Main heating sy	/stem 1: Heat pump with r		r underfloor heating - Electricity		
Efficiency		255.1%			
Emitter type		Jnderfloor			
Flow temperatur		55°C	<u></u>		
System type Heat Pump Manufacturer Vaillant Gro			oup UK Ltd		
Model			l plus 3.5kW + AI-Not valid		
Commissioning					
	ting system: N/A				
Fuel	1	N/A			
Efficiency	1	N/A			
Commissioning					
5 Hot water					
Cylinder/store -					
Capacity Declared heat lo		150 litres			
Primary pipewor		I.88 kWh/c Yes	Jay		
Manufacturer					
Model					
Commissioning					
	at recovery system 1 - ty	pe: N/A			
Efficiency					
Manufacturer					
Model					
	- type: Time and temperate	ure zone c	ontrol by arrangement of plumbi	ng and electrical s	ervices
Main heating 1					
Function					
<b>Main heating 1</b> Function Ecodesign class					
Main heating 1 Function Ecodesign class Manufacturer					
Main heating 1 Function Ecodesign class Manufacturer Model		and IM/ -	an a rataly time d		
Main heating 1 Function Ecodesign class Manufacturer Model		and HW s	eparately timed		

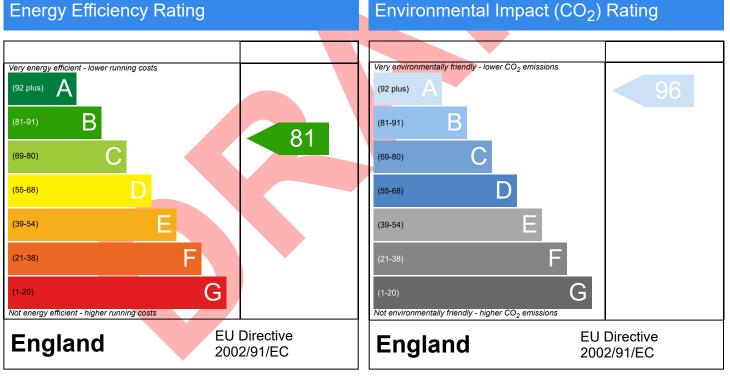
7 Lighting						
Minimum permitted light source efficacy 75 lm/W						
Lowest light source efficacy	75 lm/W		OK			
External lights control	N/A					
8 Mechanical ventilation						
System type: N/A						
Maximum permitted specific fan power	N/A					
Specific fan power	N/A		N/A			
Minimum permitted heat recovery	N/A					
efficiency						
Heat recovery efficiency	N/A		N/A			
Manufacturer/Model						
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						
		formation submitted for this dwelling for				
		and that the supporting documentary				
evidence (SAP Conventions, Append						
documentary evidence required) has						
Compliance Report.						
Signed:		Assessor ID:				
Name:		Date:				
b. Client Declaration	h Client Declaration					
N/A						



Dwelling type: Date of assessment: Produced by: Total floor area: DRRN: Bungalow, Semi-Detached 12/10/2023 Alexandru Ardelean 80.24 m<sup>2</sup>

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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.

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

Date: Thu 12 Oct 2023 14:47:44

Project Information			
Assessed By	Alexandru Ardelean	Building Type	House, Detached
OCDEA Registration	EES/022722	Assessment Date	2023-10-12

Dwelling Details					
Assessment Type	As designed	Total Floor Area	127 m <sup>2</sup>		
Site Reference	Plot 18	Plot Reference	001		
Address	Plot 1 Priory Road, Fressingfield				

Client Details	
Name	Paul Sweeney
Company	studio303
Address	Priory Road, Fressingfield, IP21 5PH

1a Target emission rate and dwelling emission rate					
Fuel for main heating system Electricity					
Target carbon dioxide emission rate $10.28 \text{ kgCO}_2/\text{m}^2$					
Dwelling carbon dioxide emission rate 3.86 kgCO <sub>2</sub> /m <sup>2</sup> OK					
1b Target primary energy rate and dwelling primary energy					
Target primary energy 53.84 kWh <sub>PE</sub> /m <sup>2</sup>					
Dwelling primary energy	40.08 kWh <sub>PE</sub> /m <sup>2</sup>	OK			
1c Target fabric energy efficiency and dwelling fabric energy efficiency					
Target fabric energy efficiency 43.9 kWh/m <sup>2</sup>					
Dwelling fabric energy efficiency 42.1 kWh/m <sup>2</sup> OK					

2a Fabric U-values					
Element	Maximum permitted average U-Value [W/m <sup>2</sup> K]	Dwelling average U-Value [W/m <sup>2</sup> K]	Element with highest individual U-Value		
External walls	0.26	0.15	Walls (1) (0.15)	OK	
Party walls	0.2	N/A	N/A	N/A	
Curtain walls	1.6	N/A	N/A	N/A	
Floors	0.18	0.08	Heatloss Floor 1 (0.08)	OK	
Roofs	0.16	0.12	Roof (1) (0.12)	OK	
Windows, doors,	1.6	1.43	Folding Door (1.6)	OK	
and roof windows					
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 <sup>2</sup> ]	U-Value [W/m <sup>2</sup> K]			
Exposed wall: Walls (1)	152.88	0.15			
Ground floor: Heatloss Floor 1, Heatloss Floor 1	69.69	0.08 (!)			
Exposed roof: Roof (1)	69.69	0.12			

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m <sup>2</sup> ]	Orientation	Frame factor	U-Value [W/m <sup>2</sup> K]
Windows-side, Window	1.7	South East	0.7	1.4
Door-entrance, Door	2.14	North East	N/A	1.4
Windows-side, Window	3.02	North West	0.7	1.4
Windows-rear, Window	9.83	South West	0.7	1.4
Windows-front, Window	10.98	North East	0.7	1.4
Folding Door, Folding Door	5	South West	0.7	1.6

	lging (better than typically expect Main Dwelling: Thermal bridging ca			Inction
Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E2: Other lintels (including other steel lintels)	Not government-approved scheme	0.222	RCD

Main element	Junction detail Source		Psi value [W/mK]	Drawing / reference		
External wall	E3: Sill		Not government-approved scheme	0.023 (!)	RCD	
External wall	E4: Jamb		Not government-approved scheme	0.018 (!)	RCD	
External wall	E5: Ground floor (normal)		Not government-approved scheme	0.044	RCD	
External wall	E10: Eaves (insulation level)	at ceiling	Not government-approved scheme	0.054	RCD	
External wall	E12: Gable (insulation level)	at ceiling	Not government-approved scheme	0.027 <b>(!)</b>	RCD	
External wall	E16: Corner (normal)		Not government-approved scheme	0.031 <b>(!)</b>	RCD	
External wall	E6: Intermediate floor welling		Not government-approved scheme	0 (!)	RCD	
External wall	E24: Eaves (insulation level - inverted)	at ceiling	SAP table default	0.15		
External wall	E17: Corner (inverted - area greater than exter		Not government-approved scheme	-0.064	RCD	
			values are flagged with a subs	sequent (!))		
	tted air permeability at 5	0Pa	8 m <sup>3</sup> /hm <sup>2</sup>			
Dwelling air pern			5 m <sup>3</sup> /hm <sup>2</sup> , Design value		OK	
Air permeability I	test certificate reference					
4 Space heating						
	vstem 1: Heat pump with		or underfloor heating - Electricity			
Efficiency		274.9%				
Emitter type		Both radiators and underfloor				
Flow temperature	e	55°C				
System type		Heat Pum				
Manufacturer	Vaillant Group UK Ltd aroTHERM plus 3.5kW + AI-Not valid					
Model Commissioning		arotheri	/ plus 3.5kW + Al-Not Valid			
	ting system: Closed roc	m heater				
Fuel	ing system. Closed loc	Wood logs	• • • • • • • • • • • • • • • • • • •			
Efficiency	65.0%					
Commissioning						
5 Hot water Cylinder/store -	type: Cylinder					
Capacity	type. Cymider	150 litres				
Declared heat lo	SS	1.88 kWh/	day			
Primary pipewor		Yes				
Manufacturer						
Model						
Commissioning						
	at recovery system 1 -	type: N/A				
Efficiency						
Manufacturer						
Model						
6 Controls						
-	<ul> <li>type: Time and temper</li> </ul>	ature zone o	control by arrangement of plumbi	ng and electrical s	ervices	
Function						
Ecodesign class						
Manufacturer						
Model	to man O all and a set of the set		a manata ha tiza a d			
	type: Cylinder thermost	at and HW s	separately timed			
Manufacturer						
Model						

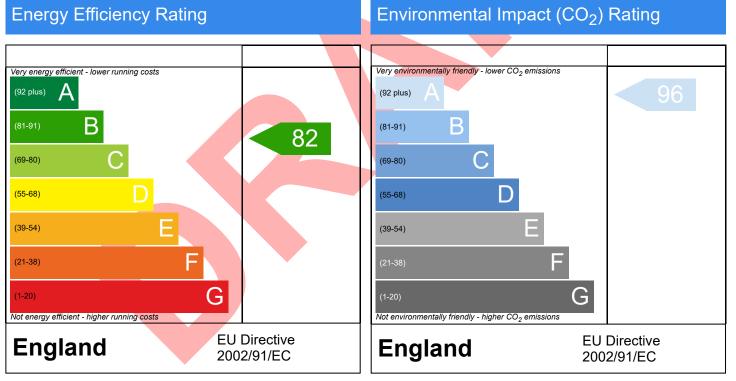
7 Lighting			
Minimum permitted light source efficacy	75 lm/W		
Lowest light source efficacy	75 lm/W		OK
External lights control	N/A		
8 Mechanical ventilation			
System type: N/A			
Maximum permitted specific fan power	N/A		
Specific fan power	N/A		N/A
Minimum permitted heat recovery	N/A		
efficiency			
Heat recovery efficiency	N/A		N/A
Manufacturer/Model			
Commissioning			
9 Local generation			
N/A			
10 Heat networks			
N/A			
11 Supporting documentary evidence			
N/A			
12 Declarations			
a. Assessor Declaration			
	nfirmation that the co	ontents of this BREL Compliance Report	
		formation submitted for this dwelling for	
		and that the supporting documentary	
evidence (SAP Conventions, Append			
documentary evidence required) has			
Compliance Report.			
Signed:		Assessor ID:	
Name:		Date:	
b. Client Declaration			
N/A			



Dwelling type: Date of assessment: Produced by: Total floor area: DRRN: House, Detached 12/10/2023 Alexandru Ardelean 127.04 m<sup>2</sup>

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.



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.

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

Date: Thu 12 Oct 2023 14:47:42

Project Information			
Assessed By	Alexandru Ardelean	Building Type	Maisonette, Semi-detached
OCDEA Registration	EES/022722	Assessment Date	2023-10-12

Dwelling Details			
Assessment Type	As designed	Total Floor Area	50 m <sup>2</sup>
Site Reference	Plot 19	Plot Reference	001
Address	Plot 1 Priory Road, Fressingfie	ld	

Client Details	
Name	Paul Sweeney
Company	studio303
Address	Priory Road, Fressingfield, IP21 5PH

1a Target emission rate and dwelling emission rate		
Fuel for main heating system	Electricity	
Target carbon dioxide emission rate	12.99 kgCO <sub>2</sub> /m <sup>2</sup>	
Dwelling carbon dioxide emission rate	4.64 kgCO <sub>2</sub> /m <sup>2</sup>	OK
1b Target primary energy rate and dwelling primary energy	1Y	
Target primary energy	68.3 kWh <sub>PE</sub> /m <sup>2</sup>	
Dwelling primary energy	49.06 kWh <sub>PE</sub> /m <sup>2</sup>	OK
1c Target fabric energy efficiency and dwelling fabric ene	rgy efficiency	
Target fabric energy efficiency	32.4 kWh/m <sup>2</sup>	
Dwelling fabric energy efficiency	29.0 kWh/m <sup>2</sup>	OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m <sup>2</sup> K]	Dwelling average U-Value [W/m <sup>2</sup> K]	Element with highest individual U-Value	
External walls	0.26	0.15	Walls (1) (0.15)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.08	Heatloss Floor 1 (0.08)	OK
Roofs	0.16	N/A	N/A	N/A
Windows, doors,	1.6	1.4	Windows-front (1.4)	OK
and roof windows				
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 <sup>2</sup> ]	U-Value [W/m <sup>2</sup> K]		
Exposed wall: Walls (1)	25.1	0.15		
Party wall: Party Wall (1)	35.14	0 (!)		
Ground floor: Heatloss Floor 1, Heatloss Floor 1	49.95	0.08 (!)		

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m <sup>2</sup> ]	Orientation	Frame factor	U-Value [W/m <sup>2</sup> K]
Windows-front, Window	2.66	North East	0.7	1.4
Door-entrance, Door	2.14	North East	N/A	1.4
Windows-rear, Window	3.4	South West	0.7	1.4

Building part 1 -	Main Dwelling: Thermal bridging ca	alculated from linear thermal tran	smittances for eac	h junction
Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E2: Other lintels (including other steel lintels)	Not government-approved scheme	0.222	RCD
External wall	E3: Sill	Not government-approved scheme	0.023 (!)	RCD
External wall	E4: Jamb	Not government-approved scheme	0.018 (!)	RCD

Main element	Junction detail		Source	Psi value [W/mK]	Drawing / reference	
External wall			Not government-approved scheme	0.044	RCD	
External wall			Not government-approved scheme	0.031 (!)	RCD	
External wall	E7: Party floor betweer (in blocks of flats)	dwellings	Not government-approved scheme	0.037 (!)	RCD	
External wall	E18: Party wall betwee	n dwellings		0.046	RCD	
Party wall	P1: Ground floor		Not government-approved scheme	0.172	RCD	
Party wall	P3: Intermediate floor b dwellings (in blocks of f		SAP table default	0 (!)		
			values are flagged with a subs	sequent (!))	·	
	tted air permeability at 50	)Pa	8 m <sup>3</sup> /hm <sup>2</sup>			
Dwelling air pern			5 m <sup>3</sup> /hm <sup>2</sup> , Design value		OK	
Air permeability	est certificate reference					
4 Space heating	]					
Main heating sy		radiators or	underfloor heating - Electricity			
Efficiency		231.0%	<u> </u>			
Emitter type		Underfloor				
Flow temperatur	е	55°C				
System type		Heat Pump	1			
Manufacturer		Vaillant Gro				
Model			plus 3.5kW + AI-Not valid			
Commissioning						
	ing system: N/A					
Fuel		N/A				
Efficiency		N/A				
Commissioning						
5 Hot water						
Cylinder/store -	type: Cylinder					
Capacity		150 litres				
Declared heat lo		1.88 kWh/c	ay			
Primary pipewor	k insulated	Yes				
Manufacturer						
Model						
Commissioning						
	at recovery system 1 -	type: N/A				
Efficiency						
Manufacturer						
Model						
6 Controls						
-	<ul> <li>type: Time and tempera</li> </ul>	ature zone c	ontrol by arrangement of plumbi	ng and electrical s	ervices	
Function						
Ecodesign class						
Ecodesign class Manufacturer						
Ecodesign class Manufacturer Model						
Ecodesign class Manufacturer Model Water heating -	type: Cylinder thermosta	at and HW s	eparately timed			
Ecodesign class Manufacturer Model <b>Water heating -</b> Manufacturer	type: Cylinder thermosta	at and HW s	eparately timed			
Ecodesign class Manufacturer Model Water heating -	type: Cylinder thermosta	at and HW s	eparately timed			
Ecodesign class Manufacturer Model Water heating - Manufacturer Model 7 Lighting		at and HW s	eparately timed			
Ecodesign class Manufacturer Model Water heating - Manufacturer Model 7 Lighting	type: Cylinder thermosta	at and HW s	eparately timed			
Ecodesign class Manufacturer Model Water heating - Manufacturer Model 7 Lighting	ted light source efficacy		eparately timed		ОК	

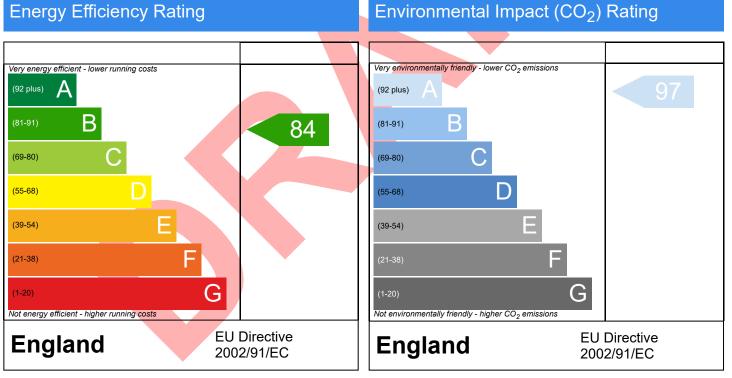
8 Mechanical ventilation						
System type: N/A						
Maximum permitted specific fan power	N/A					
Specific fan power	N/A		N/A			
Minimum permitted heat recovery	N/A					
efficiency						
Heat recovery efficiency	N/A		N/A			
Manufacturer/Model						
Commissioning						
9 Local generation						
N/A						
10 Heat networks						
N/A						
11 Supporting documentary evidence						
N/A						
12 Declarations						
a. Assessor Declaration						
		ntents of this BREL Compliance Report				
		formation submitted for this dwelling for				
the purpose of carrying out the "As de						
evidence (SAP Conventions, Append						
documentary evidence required) has	been reviewed in the	course of preparing this BREL				
Compliance Report.						
O'ment						
Signed:		Assessor ID:				
Name:	Name: Date:					
b. Client Declaration		·				
N/A						



Dwelling type: Date of assessment: Produced by: Total floor area: DRRN: Maisonette, Semi-Detached 12/10/2023 Alexandru Ardelean 49.95 m<sup>2</sup>

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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.



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.

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

Date: Thu 12 Oct 2023 14:47:44

Project Information						
Assessed By	Alexandru Ardelean	Building Type	House, Detached			
OCDEA Registration	EES/022722	Assessment Date	2023-10-12			

Dwelling Details						
Assessment Type	As designed	Total Floor Area	127 m <sup>2</sup>			
Site Reference	Plot 20	Plot Reference	001			
Address	Plot 1 Priory Road, Fressingfie	ld				

Client Details	
Name	Paul Sweeney
Company	studio303
Address	Priory Road, Fressingfield, IP21 5PH

1a Target emission rate and dwelling emission rate					
Fuel for main heating system	Electricity				
Target carbon dioxide emission rate	10.28 kgCO <sub>2</sub> /m <sup>2</sup>				
Dwelling carbon dioxide emission rate	3.86 kgCO <sub>2</sub> /m <sup>2</sup>	OK			
1b Target primary energy rate and dwelling primary energy	IY				
Target primary energy	53.85 kWh <sub>PE</sub> /m <sup>2</sup>				
Dwelling primary energy	40.08 kWh <sub>PE</sub> /m <sup>2</sup>	OK			
1c Target fabric energy efficiency and dwelling fabric energy efficiency					
Target fabric energy efficiency	43.9 kWh/m <sup>2</sup>				
Dwelling fabric energy efficiency	42.1 kWh/m <sup>2</sup>	OK			

2a Fabric U-values					
Element	Maximum permitted average U-Value [W/m <sup>2</sup> K]	Dwelling average U-Value [W/m <sup>2</sup> K]	Element with highest individual U-Value		
External walls	0.26	0.15	Walls (1) (0.15)	OK	
Party walls	0.2	N/A	N/A	N/A	
Curtain walls	1.6	N/A	N/A	N/A	
Floors	0.18	0.08	Heatloss Floor 1 (0.08)	OK	
Roofs	0.16	0.12	Roof (1) (0.12)	OK	
Windows, doors,	1.6	1.43	Folding Door (1.6)	OK	
and roof windows					
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 <sup>2</sup> ]	U-Value [W/m <sup>2</sup> K]			
Exposed wall: Walls (1)	152.9	0.15			
Ground floor: Heatloss Floor 1, Heatloss Floor 1	69.69	0.08 (!)			
Exposed roof: Roof (1)	69.69	0.12			

2c Openings (better than typically expected values are flagged with a subsequent (!))					
Name	Area [m <sup>2</sup> ]	Orientation	Frame factor	U-Value [W/m <sup>2</sup> K]	
Windows-side, Window	1.7	South East	0.7	1.4	
Door-entrance, Door	2.14	North East	N/A	1.4	
Windows-side, Window	3.02	North West	0.7	1.4	
Windows-rear, Window	9.81	South West	0.7	1.4	
Windows-front, Window	10.98	North East	0.7	1.4	
Folding Door, Folding Door	5	South West	0.7	1.6	

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)	Not government-approved scheme	0.222	RCD		

Main element	Junction detail		Source	Psi value [W/mK]	Drawing / reference
External wall	E3: Sill		Not government-approved scheme	0.023 (!)	RCD
External wall	E4: Jamb		Not government-approved scheme	0.018 (!)	RCD
External wall	E5: Ground floor (norm	ial)	Not government-approved scheme	0.044	RCD
External wall	E10: Eaves (insulation level)	at ceiling	Not government-approved scheme	0.054	RCD
External wall	E12: Gable (insulation level)	at ceiling	Not government-approved scheme	0.027 <b>(!)</b>	RCD
External wall	E16: Corner (normal)		Not government-approved scheme	0.031 <b>(!)</b>	RCD
External wall	E6: Intermediate floor welling		Not government-approved scheme	0 (!)	RCD
External wall	E24: Eaves (insulation level - inverted)	at ceiling	SAP table default	0.15	
External wall	E17: Corner (inverted - area greater than exter		Not government-approved scheme	-0.064	RCD
			values are flagged with a subs	sequent (!))	
	tted air permeability at 5	0Pa	8 m <sup>3</sup> /hm <sup>2</sup>		
Dwelling air pern			5 m <sup>3</sup> /hm <sup>2</sup> , Design value		OK
Air permeability I	test certificate reference				
4 Space heating					
	vstem 1: Heat pump with		or underfloor heating - Electricity		
Efficiency		274.9%			
Emitter type			tors and underfloor		
Flow temperature	e	55°C			
System type		Heat Pum			
Manufacturer			oup UK Ltd		
Model Commissioning		arotheri	/ plus 3.5kW + AI-Not valid		
	ting system: Closed roc	m heater			
Fuel	ing system. Closed loc	Wood logs	• • • • • • • • • • • • • • • • • • •		
Efficiency		65.0%			
Commissioning		00.070			
5 Hot water Cylinder/store -	type: Cylinder				
Capacity	type. Cymider	150 litres			
Declared heat lo	SS	1.88 kWh/	day		
Primary pipewor		Yes			
Manufacturer					
Model					
Commissioning					
	at recovery system 1 -	type: N/A			
Efficiency					
Manufacturer					
Model					
6 Controls					
-	<ul> <li>type: Time and temper</li> </ul>	ature zone o	control by arrangement of plumbi	ng and electrical s	ervices
Function					
Ecodesign class					
Manufacturer					
Model	turner Order de mil		a manata ha tiza a d		
	type: Cylinder thermost	at and HW s	separately timed		
Manufacturer					
Model					

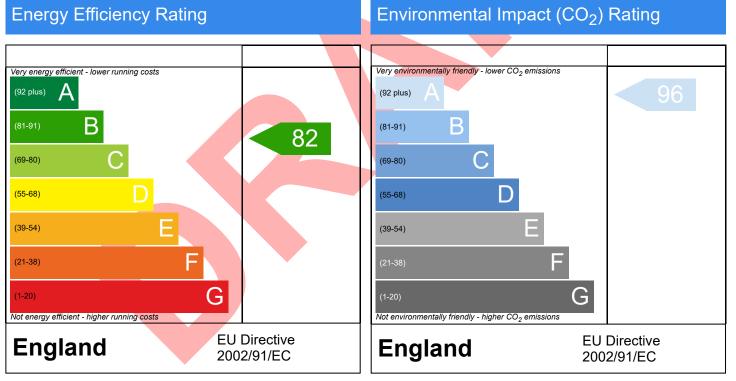
7 Lighting			
Minimum permitted light source efficacy	75 lm/W		
Lowest light source efficacy	75 lm/W		OK
External lights control	N/A		
8 Mechanical ventilation			
System type: N/A			
Maximum permitted specific fan power	N/A		
Specific fan power	N/A		N/A
Minimum permitted heat recovery	N/A		
efficiency			
Heat recovery efficiency	N/A		N/A
Manufacturer/Model			
Commissioning			
9 Local generation			
N/A			
10 Heat networks			
N/A			
11 Supporting documentary evidence			
N/A			
12 Declarations			
a. Assessor Declaration			
	nfirmation that the co	ontents of this BREL Compliance Report	
		formation submitted for this dwelling for	
		and that the supporting documentary	
evidence (SAP Conventions, Append			
documentary evidence required) has			
Compliance Report.			
Signed:		Assessor ID:	
Name:		Date:	
b. Client Declaration			
N/A			



Dwelling type: Date of assessment: Produced by: Total floor area: DRRN: House, Detached 12/10/2023 Alexandru Ardelean 127.04 m<sup>2</sup>

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

Date: Thu 12 Oct 2023 14:47:42

Project Information			
Assessed By	Alexandru Ardelean	Building Type	Maisonette, Semi-detached
OCDEA Registration	EES/022722	Assessment Date	2023-10-12

Dwelling Details					
Assessment Type	As designed	Total Floor Area	68 m <sup>2</sup>		
Site Reference	Plot 21	Plot Reference	001		
Address	Plot 1 Priory Road, Fressingfield				

Client Details	
Name	Paul Sweeney
Company	studio303
Address	Priory Road, Fressingfield, IP21 5PH

1a Target emission rate and dwelling emission rate					
Fuel for main heating system	Electricity				
Target carbon dioxide emission rate	12.52 kgCO <sub>2</sub> /m <sup>2</sup>				
Dwelling carbon dioxide emission rate	5.03 kgCO <sub>2</sub> /m <sup>2</sup>	OK			
1b Target primary energy rate and dwelling primary energy					
Target primary energy	65.8 kWh <sub>PE</sub> /m <sup>2</sup>				
Dwelling primary energy	52.9 kWh <sub>PE</sub> /m <sup>2</sup>	OK			
1c Target fabric energy efficiency and dwelling fabric energy efficiency					
Target fabric energy efficiency	37.4 kWh/m <sup>2</sup>				
Dwelling fabric energy efficiency	39.2 kWh/m <sup>2</sup>	FAIL			

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m <sup>2</sup> K]	Dwelling average U-Value [W/m <sup>2</sup> K]	Element with highest individual U-Value	
External walls	0.26	0.15	Walls (2) (0.17)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.08	Heatloss Floor 1 (0.08)	OK
Roofs	0.16	0.1	Roof (2) (0.16)	OK
Windows, doors,	1.6	1.4	Windows-front (1.4)	OK
and roof windows				
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 <sup>2</sup> ]	U-Value [W/m <sup>2</sup> K]			
Exposed wall: Walls (1)	61.94	0.15			
Exposed wall: Walls (2)	4.03	0.17			
Party wall: Party Wall (1)	37.11	0 (!)			
Ground floor: Heatloss Floor 1, Heatloss Floor 1	7.84	0.08 (!)			
Exposed roof: Roof (1)	46.44	0.08 (!)			
Exposed roof: Roof (2)	17.05	0.16			

2c Openings (better than typically expected values are flagged with a subsequent (!))					
Name	Area [m <sup>2</sup> ]	Orientation	Frame factor	U-Value [W/m <sup>2</sup> K]	
Windows-front, Window	3.03	North East	0.7	1.4	
Door-entrance, Door	2.14	North East	N/A	1.4	
Windows-rear, Window	3.03	South West	0.7	1.4	
Doors-side, Door	4.3	South East	N/A	1.4	

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))					
Building part 1 -	Main Dwelling: Thermal bridging ca	alculated from linear thermal trans	mittances for eac	h junction	
Main element	Main element Junction detail Source Psi value Drawing /				
			[W/mK]	reference	
External wall	E2: Other lintels (including other	Not government-approved	0.222	RCD	
steel lintels) scheme					

Main element	Junction detail		Source	Psi value [W/mK]	Drawing / reference
External wall			Not government-approved scheme	0.023 (!)	RCD
External wall			Not government-approved scheme	0.018 (!)	RCD
External wall	E5: Ground floor (normal)		Not government-approved scheme	0.044	RCD
External wall	E16: Corner (normal)		Not government-approved scheme	0.031 (!)	RCD
External wall	E7: Party floor between dv (in blocks of flats)	wellings	Not government-approved scheme	0.037 (!)	RCD
External wall	E18: Party wall between d	wellings	Not government-approved scheme	0.046	RCD
Party wall	P1: Ground floor		Not government-approved scheme	0.172	RCD
Party wall	P3: Intermediate floor betw dwellings (in blocks of flats		SAP table default	0 (!)	
External wall	E6: Intermediate floor with dwelling		Not government-approved scheme	0 (!)	RCD
External wall	E10: Eaves (insulation at o level)	ceiling	Not government-approved scheme	0.054	RCD
External wall	E11: Eaves (insulation at r level)	rafter	SAP table default	0.15	
External wall	E12: Gable (insulation at c level)	ceiling	Not government-approved scheme	0.027 (!)	RCD
External wall	E13: Gable (insulation at r level)	after	SAP table default	0.25	
Party wall	P4: Roof (insulation at ceil level)	ling	Not government-approved scheme	0.19	RCD
Party wall	P5: Roof (insulation at raft	er level)	SAP table default	0.48	
Roof	R6: Flat ceiling		SAP table default	0.12	
3 Air parmaahi	lity (bottor than typically or	vpoctod	values are flagged with a subs	sequent (I))	
	itted air permeability at 50Pa		8 m <sup>3</sup> /hm <sup>2</sup>		
	meability at 50Pa		4 m <sup>3</sup> /hm <sup>2</sup> , Design value		OK
Air permeability	test certificate reference				·
4 Space heating	a				
		diators or	underfloor heating - Electricity		
Efficiency		6.8%	and officer floating Electricity		
Emitter type			ors and underfloor		
Flow temperatur	re 55	5°C			
System type		eat Pump	1		
Manufacturer	Va	aillant Gro	oup UK Ltd		
Model	ar	oTHERM	plus 3.5kW + AI-Not valid		
Commissioning					
	ting system: N/A				
Fuel	N/				
Efficiency	N/	Ά			
Commissioning					
5 Hot water					
Cylinder/store	- type: Cylinder				
Capacity	15	50 litres			
Declared heat lo	oss 1.8	lay			
Primary pipewor					
Manufacturer					
Model					
Commissioning					
	at recovery system 1 - typ	e: N/A			
Efficiency					
Manufacturer					
Model					

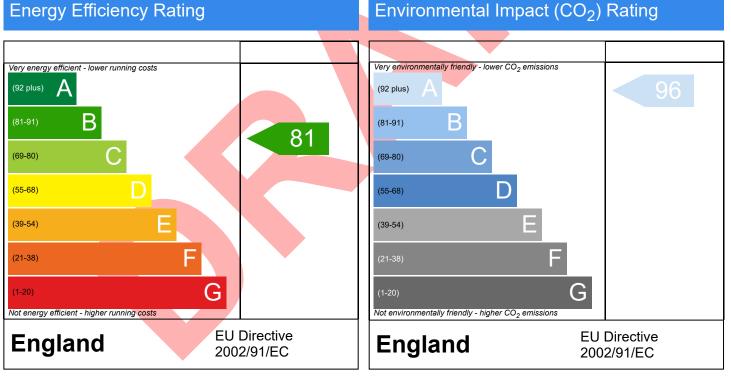
6 Controls					
Main heating 1 - type: Time and temper	ature zone control by	arrangement of plumbing and electrical se	ervices		
Function					
Ecodesign class					
Manufacturer					
Model					
Water heating - type: Cylinder thermost	at and HW separately	<sup>r</sup> timed			
Manufacturer					
Model					
7 Lighting					
Minimum permitted light source efficacy	75 lm/W				
Lowest light source efficacy	75 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	N/A				
efficiency					
Heat recovery efficiency	N/A		N/A		
Manufacturer/Model			-		
Commissioning					
-	I				
9 Local generation N/A					
10 Heat networks					
N/A					
11 Supporting documentary evidence					
N/A					
12 Declarations					
a. Assessor Declaration	ofirmation that the ac	entents of this PREL Compliance Penert			
		ntents of this BREL Compliance Report			
		nformation submitted for this dwelling for and that the supporting documentary			
evidence (SAP Conventions, Append					
documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.					
Signed:		Assessor ID:			
Name:		Date:			
b. Client Declaration		I			
N/A					



Dwelling type: Date of assessment: Produced by: Total floor area: DRRN: Maisonette, Semi-Detached 12/10/2023 Alexandru Ardelean 68.24 m<sup>2</sup>

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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.



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.

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

Date: Thu 12 Oct 2023 14:47:42

Project Information			
Assessed By	Alexandru Ardelean	Building Type	Maisonette, Semi-detached
OCDEA Registration	EES/022722	Assessment Date	2023-10-12

Dwelling Details					
Assessment Type	As designed	Total Floor Area	68 m <sup>2</sup>		
Site Reference	Plot 22	Plot Reference	001		
Address	Plot 1 Priory Road, Fressingfield				

Client Details	
Name	Paul Sweeney
Company	studio303
Address	Priory Road, Fressingfield, IP21 5PH

1a Target emission rate and dwelling emission rate			
Fuel for main heating system	Electricity		
Target carbon dioxide emission rate	12.52 kgCO <sub>2</sub> /m <sup>2</sup>		
Dwelling carbon dioxide emission rate	5.03 kgCO <sub>2</sub> /m <sup>2</sup>	OK	
1b Target primary energy rate and dwelling primary energy			
Target primary energy	65.8 kWh <sub>PE</sub> /m <sup>2</sup>		
Dwelling primary energy	52.9 kWh <sub>PE</sub> /m <sup>2</sup>	OK	
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	37.4 kWh/m <sup>2</sup>		
Dwelling fabric energy efficiency	39.2 kWh/m <sup>2</sup>	FAIL	

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m <sup>2</sup> K]	Dwelling average U-Value [W/m <sup>2</sup> K]	Element with highest individual U-Value	
External walls	0.26	0.15	Walls (2) (0.17)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.08	Heatloss Floor 1 (0.08)	OK
Roofs	0.16	0.1	Roof (2) (0.16)	OK
Windows, doors,	1.6	1.4	Windows-front (1.4)	OK
and roof windows				
Rooflights	2.2	N/A	N/A	N/A

Name	Net area [m <sup>2</sup> ]	U-Value [W/m <sup>2</sup> K]
Exposed wall: Walls (1)	61.94	0.15
Exposed wall: Walls (2)	4.03	0.17
Party wall: Party Wall (1)	37.11	0 (!)
Ground floor: Heatloss Floor 1, Heatloss Floor 1	7.84	0.08 (!)
Exposed roof: Roof (1)	46.44	0.08 (!)
Exposed roof: Roof (2)	17.05	0.16

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m <sup>2</sup> ]	Orientation	Frame factor	U-Value [W/m <sup>2</sup> K]
Windows-front, Window	3.03	North East	0.7	1.4
Door-entrance, Door	2.14	North East	N/A	1.4
Windows-rear, Window	3.03	South West	0.7	1.4
Doors-side, Door	4.3	South East	N/A	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	lain element Junction detail Source Psi value Drawing /				
	[W/mK] reference				
External wall	E2: Other lintels (including other	Not government-approved	0.222	RCD	
steel lintels) scheme					

Main element	Junction detail		Source	Psi value [W/mK]	Drawing / reference
External wall			Not government-approved scheme	0.023 (!)	RCD
External wall			Not government-approved scheme	0.018 (!)	RCD
External wall	E5: Ground floor (normal)		Not government-approved scheme	0.044	RCD
External wall	E16: Corner (normal)		Not government-approved scheme	0.031 (!)	RCD
External wall	E7: Party floor between dwellings (in blocks of flats)		Not government-approved scheme	0.037 (!)	RCD
External wall	E18: Party wall between d	wellings	Not government-approved scheme	0.046	RCD
Party wall	P1: Ground floor		Not government-approved scheme	0.172	RCD
Party wall	P3: Intermediate floor betw dwellings (in blocks of flats		SAP table default	0 (!)	
External wall	E6: Intermediate floor with dwelling		Not government-approved scheme	0 (!)	RCD
External wall	E10: Eaves (insulation at o level)	ceiling	Not government-approved scheme	0.054	RCD
External wall	E11: Eaves (insulation at r level)	rafter	SAP table default	0.15	
External wall	E12: Gable (insulation at c level)	ceiling	Not government-approved scheme	0.027 (!)	RCD
External wall	E13: Gable (insulation at rafter level)		SAP table default	0.25	
Party wall	P4: Roof (insulation at ceiling level)		Not government-approved scheme	0.19	RCD
Party wall	P5: Roof (insulation at raft	er level)	SAP table default	0.48	
Roof	R6: Flat ceiling		SAP table default	0.12	
3 Air parmaahi	lity (bottor than typically or	vpoctod	values are flagged with a subs	sequent (I))	
	itted air permeability at 50Pa		8 m <sup>3</sup> /hm <sup>2</sup>		
	meability at 50Pa		4 m <sup>3</sup> /hm <sup>2</sup> , Design value		OK
Air permeability	test certificate reference				·
4 Space heating	a				
		diators or	underfloor heating - Electricity		
Efficiency		6.8%	and officer floating Electricity		
Emitter type			ors and underfloor		
Flow temperatur	re 55	5°C			
System type		eat Pump	1		
Manufacturer	Va	aillant Gro	oup UK Ltd		
Model	ar	oTHERM	plus 3.5kW + AI-Not valid		
Commissioning					
	ting system: N/A				
Fuel	N/				
Efficiency	N/	Ά			
Commissioning					
5 Hot water					
Cylinder/store	- type: Cylinder				
Capacity 150 litres					
Declared heat loss 1.88 kWh/day			lay		
	pipework insulated Yes				
Manufacturer					
Model					
Commissioning					
	at recovery system 1 - typ	e: N/A			
Efficiency					
Manufacturer					
Model					

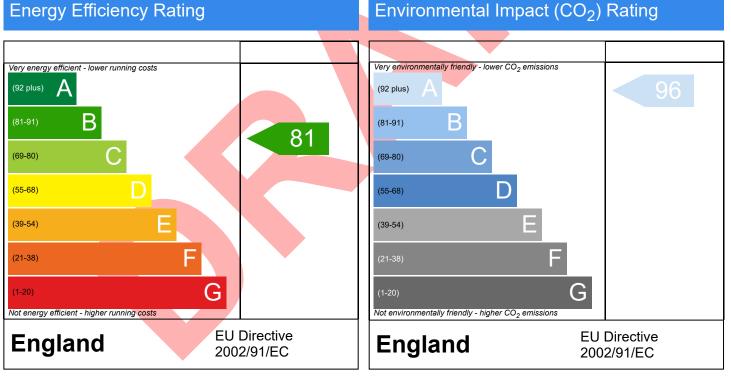
6 Controls				
Main heating 1 - type: Time and temper	ature zone control by	arrangement of plumbing and electrical se	ervices	
Function				
Ecodesign class				
Manufacturer				
Model				
Water heating - type: Cylinder thermost	at and HW separately	<sup>r</sup> timed		
Manufacturer				
Model				
7 Lighting				
Minimum permitted light source efficacy	75 lm/W			
Lowest light source efficacy	75 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	N/A			
efficiency				
Heat recovery efficiency	N/A		N/A	
Manufacturer/Model			-	
Commissioning				
-	I			
9 Local generation N/A				
10 Heat networks				
N/A				
11 Supporting documentary evidence				
N/A				
12 Declarations				
a. Assessor Declaration	ofirmation that the ac	entents of this PREL Compliance Penert		
		ntents of this BREL Compliance Report		
		nformation submitted for this dwelling for and that the supporting documentary		
evidence (SAP Conventions, Append				
documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.				
Signed:		Assessor ID:		
Name:		Date:		
b. Client Declaration		I		
N/A				



Dwelling type: Date of assessment: Produced by: Total floor area: DRRN: Maisonette, Semi-Detached 12/10/2023 Alexandru Ardelean 68.24 m<sup>2</sup>

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

Date: Thu 12 Oct 2023 14:47:44

Project Information			
Assessed By	Alexandru Ardelean	Building Type	House, Detached
OCDEA Registration	EES/022722	Assessment Date	2023-10-12

Dwelling Details			
Assessment Type	As designed	Total Floor Area	127 m <sup>2</sup>
Site Reference	Plot 23	Plot Reference	001
Address Plot 1 Priory Road, Fressingfield			

Client Details	
Name	Paul Sweeney
Company	studio303
Address	Priory Road, Fressingfield, IP21 5PH

1a Target emission rate and dwelling emission rate				
Fuel for main heating system	Electricity			
Target carbon dioxide emission rate	10.11 kgCO <sub>2</sub> /m <sup>2</sup>			
Dwelling carbon dioxide emission rate	3.8 kgCO <sub>2</sub> /m <sup>2</sup>	OK		
1b Target primary energy rate and dwelling primary energy	1b Target primary energy rate and dwelling primary energy			
Target primary energy	52.92 kWh <sub>PE</sub> /m <sup>2</sup>			
Dwelling primary energy	39.54 kWh <sub>PE</sub> /m <sup>2</sup>	OK		
1c Target fabric energy efficiency and dwelling fabric energy efficiency				
Target fabric energy efficiency	42.9 kWh/m <sup>2</sup>			
Dwelling fabric energy efficiency	41.0 kWh/m <sup>2</sup>	OK		

2a Fabric U-values					
Element	Maximum permitted average U-Value [W/m <sup>2</sup> K]	Dwelling average U-Value [W/m <sup>2</sup> K]	Element with highest individual U-Value		
External walls	0.26	0.15	Walls (1) (0.15)	OK	
Party walls	0.2	N/A	N/A	N/A	
Curtain walls	1.6	N/A	N/A	N/A	
Floors	0.18	0.08	Heatloss Floor 1 (0.08)	OK	
Roofs	0.16	0.12	Roof (1) (0.12)	OK	
Windows, doors,	1.6	1.43	Folding Door (1.6)	OK	
and roof windows					
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 <sup>2</sup> ]	U-Value [W/m <sup>2</sup> K]		
Exposed wall: Walls (1)	152.9	0.15		
Ground floor: Heatloss Floor 1, Heatloss Floor 1	69.69	0.08 (!)		
Exposed roof: Roof (1)	69.69	0.12		

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m <sup>2</sup> ]	Orientation	Frame factor	U-Value [W/m <sup>2</sup> K]
Windows-side, Window	1.7	East	0.7	1.4
Door-entrance, Door	2.14	North	N/A	1.4
Windows-side, Window	3.02	West	0.7	1.4
Windows-rear, Window	9.81	South	0.7	1.4
Windows-front, Window	10.98	North	0.7	1.4
Folding Door, Folding Door	5	South	0.7	1.6

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)	Not government-approved scheme	0.222	RCD

Main element	Junction detail		Source	Psi value [W/mK]	Drawing / reference		
External wall	E3: Sill		Not government-approved scheme	0.023 (!)	RCD		
External wall	E4: Jamb		Not government-approved scheme	0.018 (!)	RCD		
External wall	E5: Ground floor (normal)		Not government-approved scheme	0.044	RCD		
External wall	E10: Eaves (insulation at ceiling level)		Not government-approved scheme	0.054	RCD		
External wall	E12: Gable (insulation at ceiling level)		Not government-approved scheme	0.027 <b>(!)</b>	RCD		
External wall	E16: Corner (normal)		Not government-approved scheme	0.031 <b>(!)</b>	RCD		
External wall	E6: Intermediate floor v dwelling		Not government-approved scheme	0 (!)	RCD		
External wall	E24: Eaves (insulation at ceiling level - inverted)		SAP table default	0.15			
External wall	E17: Corner (inverted - area greater than exter		Not government-approved scheme	-0.064	RCD		
			values are flagged with a subs	sequent (!))			
	tted air permeability at 5	0Pa	8 m <sup>3</sup> /hm <sup>2</sup>		T		
Dwelling air pern			5 m <sup>3</sup> /hm <sup>2</sup> , Design value		OK		
Air permeability t	test certificate reference						
4 Space heating							
	vstem 1: Heat pump with		r underfloor heating - Electricity				
Efficiency		274.9%					
Emitter type			tors and underfloor				
Flow temperature	e	55°C					
System type	Heat Pump						
Manufacturer	Vaillant Gro		N plus 3.5kW + Al-Not valid				
Commissioning							
5	ting system: Closed roo	m heater					
Fuel		Wood logs	1				
Efficiency		65.0%	-				
Commissioning							
5 Hot water							
Cylinder/store -	type: Cylinder						
Capacity	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	150 litres					
Declared heat los	SS	1.88 kWh/day					
Primary pipeworl		Yes					
Manufacturer	· · · · · · · · · · · · · · · · · · ·						
Model							
Commissioning							
	at recovery system 1 -	type: N/A					
Efficiency							
Manufacturer							
Model							
6 Controls							
-	<ul> <li>type: Time and temperative</li> </ul>	ature zone o	control by arrangement of plumbi	ng and electrical s	ervices		
Function							
Ecodesign class							
Manufacturer							
Model	turon Culturates (house it		oporataly tire and				
	type: Cylinder thermosta	al and HVV s					
Manufacturer Model							
Model							

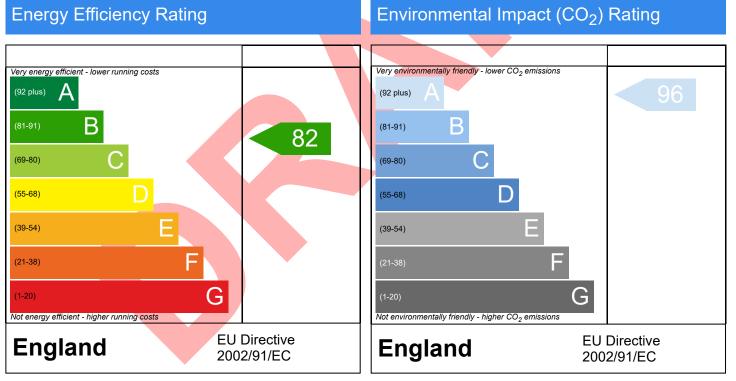
7 Lighting						
Minimum permitted light source efficacy 75 lm/W						
Lowest light source efficacy	75 lm/W		OK			
External lights control	N/A					
8 Mechanical ventilation						
System type: N/A						
Maximum permitted specific fan power	N/A					
Specific fan power	N/A		N/A			
Minimum permitted heat recovery	N/A					
efficiency						
Heat recovery efficiency	N/A		N/A			
Manufacturer/Model						
Commissioning						
9 Local generation						
N/A						
10 Heat networks						
N/A						
11 Supporting documentary evidence						
N/A						
12 Declarations						
a. Assessor Declaration						
	nfirmation that the co	ontents of this BREL Compliance Report				
		formation submitted for this dwelling for				
		and that the supporting documentary				
evidence (SAP Conventions, Append						
documentary evidence required) has						
Compliance Report.						
Signed: Assessor ID:						
Name: Date:						
b. Client Declaration						
N/A						



Dwelling type: Date of assessment: Produced by: Total floor area: DRRN: House, Detached 12/10/2023 Alexandru Ardelean 127.04 m<sup>2</sup>

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

Date: Thu 12 Oct 2023 14:47:44

Project Information				
Assessed By	Alexandru Ardelean	Building Type	House, Detached	
OCDEA Registration	EES/022722	Assessment Date	2023-10-12	

Dwelling Details				
Assessment Type	As designed	Total Floor Area	138 m <sup>2</sup>	
Site Reference	Plot 24	Plot Reference	001	
Address Plot 1 Priory Road, Fressingfield				

Client Details	
Name	Paul Sweeney
Company	studio303
Address	Priory Road, Fressingfield, IP21 5PH

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	10.39 kgCO <sub>2</sub> /m <sup>2</sup>			
Dwelling carbon dioxide emission rate	3.83 kgCO <sub>2</sub> /m <sup>2</sup>	ОК		
1b Target primary energy rate and dwelling primary energy				
Target primary energy	54.44 kWh <sub>PE</sub> /m <sup>2</sup>			
Dwelling primary energy	39.75 kWh <sub>PE</sub> /m <sup>2</sup>	ОК		
1c Target fabric energy efficiency and dwelling fabric energy efficiency				
Target fabric energy efficiency	44.4 kWh/m <sup>2</sup>			
Dwelling fabric energy efficiency	42.5 kWh/m <sup>2</sup>	OK		

2a Fabric U-values					
Element	Maximum permitted average U-Value [W/m <sup>2</sup> K]	Dwelling average U-Value [W/m <sup>2</sup> K]	Element with highest individual U-Value		
External walls	0.26	0.15	Walls (2) (0.17)	OK	
Party walls	0.2	N/A	N/A	N/A	
Curtain walls	1.6	N/A	N/A	N/A	
Floors	0.18	0.08	Heatloss Floor 1 (0.08)	OK	
Roofs	0.16	0.13	Roof (3) (0.19)	OK	
Windows, doors,	1.6	1.4	Windows-side (1.4)	OK	
and roof windows					
Rooflights	2.2	N/A	N/A	N/A	

Name	Net area [m <sup>2</sup> ]	U-Value [W/m <sup>2</sup> K]
Exposed wall: Walls (1)	177.65	0.15
Exposed wall: Walls (2)	0.49	0.17
Ground floor: Heatloss Floor 1, Heatloss Floor 1	69.76	0.08 (!)
Exposed roof: Roof (1)	63.31	0.12
Exposed roof: Roof (2)	7.44	0.16
Exposed roof: Roof (3)	1.66	0.19

2c Openings (better than typically expected values are flagged with a subsequent (!))					
Name	Area [m <sup>2</sup> ]	Orientation	Frame factor	U-Value [W/m <sup>2</sup> K]	
Windows-side, Window	4.21	North East	0.7	1.4	
Door-entrance, Door	2.14	North West	N/A	1.4	
Windows-side, Window	2.27	South West	0.7	1.4	
Windows-rear, Window	10.79	South East	0.7	1.4	
Windows-front, Window	9.17	North West	0.7	1.4	
Door-side, Half Glazed Door	1.91	North East	N/A	1.4	

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Main element	Junction detail		Source	Psi value [W/mK]	Drawing / reference	
External wall	E2: Other lintels (including other steel lintels)		Not government-approved scheme	0.222	RCD	
External wall	E3: Sill		Not government-approved scheme	0.023 (!)	RCD	
External wall	E4: Jamb		Not government-approved scheme	0.018 (!)	RCD	
External wall	E5: Ground floor (norm	al)	Not government-approved scheme	0.044	RCD	
External wall	E10: Eaves (insulation level)	at ceiling	Not government-approved scheme	0.054	RCD	
External wall	E12: Gable (insulation level)	at ceiling	Not government-approved scheme	0.027 <b>(!)</b>	RCD	
External wall	E16: Corner (normal)		Not government-approved scheme	0.031 (!)	RCD	
External wall	E6: Intermediate floor v dwelling		Not government-approved scheme	0 (!)	RCD	
External wall	E24: Eaves (insulation level - inverted)		SAP table default	0.15		
External wall	E17: Corner (inverted - area greater than exter	nal area)	Not government-approved scheme	-0.064	RCD	
External wall	E11: Eaves (insulation level)		SAP table default	0.15		
External wall	E13: Gable (insulation level)	at rafter	SAP table default	0.25		
External wall Roof	E14: Flat roof R6: Flat ceiling		SAP table default SAP table default	0.16		
	÷ – – – – – – – – – – – – – – – – – – –					
			values are flagged with a sub	sequent (!))		
	tted air permeability at 50	)Pa	$8 m^3/hm^2$		01/	
	neability at 50Pa test certificate reference		5 m <sup>3</sup> /hm <sup>2</sup> , Design value		OK	
4 Space heating	a					
		radiators o	r underfloor heating - Electricity			
Efficiency		275.6%				
Emitter type		Both radia	tors and underfloor			
Flow temperatur	е	55°C				
System type		Heat Pum	)			
Manufacturer		Vaillant Gr	oup UK Ltd			
Model		aroTHERN	1 plus 3.5kW + Al			
Commissioning						
	ting system: Closed roo					
Fuel		Wood logs	;			
Efficiency		65.0%				
Commissioning						
5 Hot water						
Cylinder/store -	· type: Cylinder					
Capacity 150 litres						
	Peclared heat loss 1.88 kWh/day					
	Primary pipework insulated Yes					
	Manufacturer					
Model						
Commissioning		1				
	at recovery system 1 -	type: N/A				
		1				
Efficiency						
Manufacturer Model						

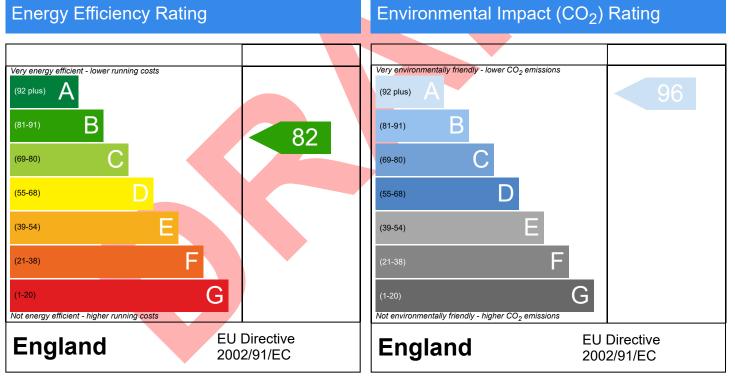
6 Controls					
Main heating 1 - type: Time and temper	ature zone control by	arrangement of plumbing and electrical se	ervices		
Function					
Ecodesign class					
Manufacturer					
Model					
Water heating - type: Cylinder thermost	at and HW separately	<sup>r</sup> timed			
Manufacturer					
Model					
7 Lighting					
Minimum permitted light source efficacy	75 lm/W				
Lowest light source efficacy	75 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	N/A				
efficiency					
Heat recovery efficiency	N/A		N/A		
Manufacturer/Model			-		
Commissioning					
-	I				
9 Local generation N/A					
10 Heat networks					
N/A					
11 Supporting documentary evidence					
N/A					
12 Declarations					
a. Assessor Declaration	ofirmation that the ac	entents of this PREL Compliance Penert			
		ntents of this BREL Compliance Report			
		nformation submitted for this dwelling for and that the supporting documentary			
evidence (SAP Conventions, Append					
documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.					
Signed:		Assessor ID:			
Name:		Date:			
b. Client Declaration		I			
N/A					



Dwelling type: Date of assessment: Produced by: Total floor area: DRRN: House, Detached 12/10/2023 Alexandru Ardelean 137.85 m<sup>2</sup>

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.



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.

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

Date: Thu 12 Oct 2023 14:47:44

Project Information				
Assessed By	Alexandru Ardelean	Building Type	House, Detached	
OCDEA Registration	EES/022722	Assessment Date	2023-10-12	

Dwelling Details				
Assessment Type	As designed	Total Floor Area	146 m <sup>2</sup>	
Site Reference	Plot 25	Plot Reference	001	
Address Plot 1 Priory Road, Fressingfield				

Client Details	
Name	Paul Sweeney
Company	studio303
Address	Priory Road, Fressingfield, IP21 5PH

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	10.13 kgCO <sub>2</sub> /m <sup>2</sup>		
Dwelling carbon dioxide emission rate	3.7 kgCO <sub>2</sub> /m <sup>2</sup>	OK	
1b Target primary energy rate and dwelling primary energy			
Target primary energy	53.15 kWh <sub>PE</sub> /m <sup>2</sup>		
Dwelling primary energy	38.39 kWh <sub>PE</sub> /m <sup>2</sup>	ОК	
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	44.7 kWh/m <sup>2</sup>		
Dwelling fabric energy efficiency	41.3 kWh/m <sup>2</sup>	OK	

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m <sup>2</sup> K]	Dwelling average U-Value [W/m <sup>2</sup> K]	Element with highest individual U-Value	
External walls	0.26	0.15	Walls (1) (0.15)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	0.08	Heatloss Floor 1 (0.08)	OK
Roofs	0.16	0.12	Roof (3) (0.19)	OK
Windows, doors,	1.6	1.4	Windows-side (1.4)	OK
and roof windows				
Rooflights	2.2	N/A	N/A	N/A

2b Envelope elements (better than typically expected values		
Name	Net area [m <sup>2</sup> ]	U-Value [W/m <sup>2</sup> K]
Exposed wall: Walls (1)	184.61	0.15
Exposed wall: Walls (2)	10.07	0.14 (!)
Ground floor: Heatloss Floor 1, Heatloss Floor 1	76.98	0.08 (!)
Exposed roof: Roof (1)	73.09	0.12
Exposed roof: Roof (2)	4.29	0.16
Exposed roof: Roof (3)	1.13	0.19

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m <sup>2</sup> ]	Orientation	Frame factor	U-Value [W/m <sup>2</sup> K]
Windows-side, Window	0.57	North West	0.7	1.4
Door-entrance, Door	2.14	South West	N/A	1.4
Windows-side, Window	2.99	South East	0.7	1.4
Windows-rear, Window	12.87	North East	0.7	1.4
Windows-front, Window	9.74	South West	0.7	1.4

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Main element	Junction detail		Source	Psi value [W/mK]	Drawing / reference
External wall	E2: Other lintels (includin steel lintels)	ng other	Not government-approved scheme	0.222	RCD
External wall	E3: Sill		Not government-approved scheme	0.023 (!)	RCD
External wall	E4: Jamb		Not government-approved scheme	0.018 (!)	RCD
External wall	E5: Ground floor (normal)		Not government-approved scheme	0.044	RCD
External wall	E10: Eaves (insulation at level)	t ceiling	Not government-approved scheme	0.054	RCD
External wall	E12: Gable (insulation at level)	ceiling	Not government-approved scheme	0.027 (!)	RCD
External wall	E16: Corner (normal)		Not government-approved scheme	0.031 (!)	RCD
External wall	E6: Intermediate floor wit dwelling		Not government-approved scheme	0 (!)	RCD
External wall	E24: Eaves (insulation at level - inverted)		SAP table default	0.15	
External wall	E17: Corner (inverted - in area greater than externa		Not government-approved scheme	-0.064	RCD
External wall	E14: Flat roof		SAP table default	0.16	
Roof	R6: Flat ceiling		SAP table default	0.12	
Roof	R8: Roof to wall (rafter)		SAP table default	0.12	
<i>Maximum permi</i> Dwelling air perr	<i>tted air permeability at 50P</i> neability at 50Pa		values are flagged with a sub 8 m <sup>3</sup> /hm <sup>2</sup> 5 m <sup>3</sup> /hm <sup>2</sup> , Design value	sequent (: <i>))</i>	ОК
Air permeability	test certificate reference				
· · ·	test certificate reference				
4 Space heating	g				
4 Space heating Main heating sy	g <b>/stem 1</b> : Heat pump with ra		r underfloor heating - Electricity		
4 Space heating Main heating sy Efficiency	g <b>ystem 1</b> : Heat pump with ra 2	275.7%			·
4 Space heating Main heating sy Efficiency Emitter type	g <b>/stem 1</b> : Heat pump with ra 2 B	275.7% Both radiat	r underfloor heating - Electricity		·
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur	g <b>/stem 1</b> : Heat pump with ra 2 B e 5	275.7% Both radiat 55°C	tors and underfloor		
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type	g <b>/stem 1</b> : Heat pump with ra 2 B re 5 H	275.7% Both radiat 55°C Heat Pump	tors and underfloor		
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type Manufacturer	g <b>/stem 1</b> : Heat pump with ra 2 B re 5 H V	275.7% Both radiat 55°C Heat Pump /aillant Gro	tors and underfloor		
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type Manufacturer Model	g <b>/stem 1</b> : Heat pump with ra 2 B re 5 H V	275.7% Both radiat 55°C Heat Pump /aillant Gro	tors and underfloor		
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type Manufacturer Model Commissioning	g ystem 1: Heat pump with ra 2 B re 5 H V v	275.7% Both radiat 55°C Heat Pump /aillant Gro aroTHERM	tors and underfloor		
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type Manufacturer Model Commissioning Secondary hea	g ystem 1: Heat pump with ra 2 B e 5 H V a ting system: Closed room	275.7% Both radiat 55°C Heat Pump /aillant Gru aroTHERM heater	tors and underfloor o oup UK Ltd 1 plus 3.5kW + Al		
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type Manufacturer Model Commissioning Secondary hea Fuel	g ystem 1: Heat pump with ra 2 B e 5 4 V 4 V a v ting system: Closed room	275.7% Both radiat 55°C Heat Pump /aillant Gro aroTHERM heater Vood logs	tors and underfloor o oup UK Ltd 1 plus 3.5kW + Al		
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency	g ystem 1: Heat pump with ra 2 B e 5 4 V 4 V a v ting system: Closed room	275.7% Both radiat 55°C Heat Pump /aillant Gru aroTHERM heater	tors and underfloor o oup UK Ltd 1 plus 3.5kW + Al		
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning	g ystem 1: Heat pump with ra 2 B e 5 4 V 4 V a v ting system: Closed room	275.7% Both radiat 55°C Heat Pump /aillant Gro aroTHERM heater Vood logs	tors and underfloor o oup UK Ltd 1 plus 3.5kW + Al		
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water	g ystem 1: Heat pump with ra 2 B re 5 H V v a ting system: Closed room V 6	275.7% Both radiat 55°C Heat Pump /aillant Gro aroTHERM heater Vood logs	tors and underfloor o oup UK Ltd 1 plus 3.5kW + Al		
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store	g ystem 1: Heat pump with ra 2 B 8 9 9 9 9 9 9 9 9 9 9 9 9 9	275.7% Both radiat 55°C Heat Pump /aillant Gro aroTHERM heater Vood logs 55.0%	tors and underfloor o oup UK Ltd 1 plus 3.5kW + Al		
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity	g ystem 1: Heat pump with ra 2 B 8 9 9 9 9 0 1 1 1 1 1 1 1 1 1 1 1 1 1	275.7% Both radiat 55°C Heat Pump /aillant Gro aroTHERM heater Vood logs 55.0% 50 litres	tors and underfloor oup UK Ltd 1 plus 3.5kW + Al		
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Capacity Declared heat lo	9 ystem 1: Heat pump with ra 2 B B P P P P S S S S S S S S S S S S S	275.7% Both radiat 55°C Heat Pump /aillant Gro aroTHERM heater Vood logs 55.0% 50 litres .88 kWh/c	tors and underfloor oup UK Ltd 1 plus 3.5kW + Al		
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Capacity Declared heat lo Primary pipewor	9 ystem 1: Heat pump with ra 2 B B P P P P S S S S S S S S S S S S S	275.7% Both radiat 55°C Heat Pump /aillant Gro aroTHERM heater Vood logs 55.0% 50 litres	tors and underfloor oup UK Ltd 1 plus 3.5kW + Al		
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity Declared heat lo Primary pipewor Manufacturer	9 ystem 1: Heat pump with ra 2 B B P P P P S S S S S S S S S S S S S	275.7% Both radiat 55°C Heat Pump /aillant Gro aroTHERM heater Vood logs 55.0% 50 litres .88 kWh/c	tors and underfloor oup UK Ltd 1 plus 3.5kW + Al		
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity Declared heat lo Primary pipewor Manufacturer Model	9 ystem 1: Heat pump with ra 2 B B P P P P S S S S S S S S S S S S S	275.7% Both radiat 55°C Heat Pump /aillant Gro aroTHERM heater Vood logs 55.0% 50 litres .88 kWh/c	tors and underfloor oup UK Ltd 1 plus 3.5kW + Al		
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning	g ystem 1: Heat pump with ra 2 B 9 9 9 1 1 1 1 1 1 1 1 1 1 1 1 1	275.7% Both radiat 55°C Heat Pump /aillant Gro- aroTHERM heater Vood logs 55.0% 50 litres .88 kWh/o /es	tors and underfloor oup UK Ltd 1 plus 3.5kW + Al		
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water heat	9 ystem 1: Heat pump with ra 2 B B P P P P S S S S S S S S S S S S S	275.7% Both radiat 55°C Heat Pump /aillant Gro- aroTHERM heater Vood logs 55.0% 50 litres .88 kWh/o /es	tors and underfloor oup UK Ltd 1 plus 3.5kW + Al		
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity Declared heat loc Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency	g ystem 1: Heat pump with ra 2 B 9 9 9 1 1 1 1 1 1 1 1 1 1 1 1 1	275.7% Both radiat 55°C Heat Pump /aillant Gro- aroTHERM heater Vood logs 55.0% 50 litres .88 kWh/o /es	tors and underfloor oup UK Ltd 1 plus 3.5kW + Al		
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity Declared heat loc Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer	g ystem 1: Heat pump with ra 2 B 9 9 9 1 1 1 1 1 1 1 1 1 1 1 1 1	275.7% Both radiat 55°C Heat Pump /aillant Gro- aroTHERM heater Vood logs 55.0% 50 litres .88 kWh/o /es	tors and underfloor oup UK Ltd 1 plus 3.5kW + Al		
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model	g ystem 1: Heat pump with ra 2 B 9 9 9 1 1 1 1 1 1 1 1 1 1 1 1 1	275.7% Both radiat 55°C Heat Pump /aillant Gro- aroTHERM heater Vood logs 55.0% 50 litres .88 kWh/o /es	tors and underfloor oup UK Ltd 1 plus 3.5kW + Al		
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store - Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model Commissioning Waste water he Efficiency Manufacturer Model	g ystem 1: Heat pump with ra 2 B e 5 H V 4 ting system: Closed room V 6 • type: Cylinder • type: Cylinder 1 vss 1 k insulated Y • type: a 1 k insulated Y • type: cylinder 1 • type: cylin	275.7% Both radiat 55°C Heat Pump /aillant Gro- aroTHERM heater Vood logs 55.0% 50 litres .88 kWh/o /es pe: N/A	tors and underfloor		
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water hea Efficiency Manufacturer Model Commissioning Waste water hea Efficiency Manufacturer Model 6 Controls Main heating 1	g ystem 1: Heat pump with ra 2 B e 5 H V 4 ting system: Closed room V 6 • type: Cylinder • type: Cylinder 1 vss 1 k insulated Y • type: a 1 k insulated Y • type: cylinder 1 • type: cylin	275.7% Both radiat 55°C Heat Pump /aillant Gro- aroTHERM heater Vood logs 55.0% 50 litres .88 kWh/o /es pe: N/A	tors and underfloor oup UK Ltd 1 plus 3.5kW + Al	ing and electrical s	ervices
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water hea Efficiency Manufacturer Model Commissioning Waste water hea Efficiency Manufacturer Model 6 Controls Main heating 1 Function	g ystem 1: Heat pump with ra 2 B e 5 H V 4 ting system: Closed room V 6 ting system: Closed room V 6 ting system: Closed room V 6 ting system: Closed room V 6 - type: Cylinder 1 ss 1 k insulated Y - type: Time and temperatu	275.7% Both radiat 55°C Heat Pump /aillant Gro- aroTHERM heater Vood logs 55.0% 50 litres .88 kWh/o /es pe: N/A	tors and underfloor	ing and electrical s	ervices
4 Space heating Main heating sy Efficiency Emitter type Flow temperatur System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity Declared heat lo Primary pipewor Manufacturer Model Commissioning Waste water hea Efficiency Manufacturer Model Commissioning Waste water hea Efficiency Manufacturer Model 6 Controls Main heating 1	g ystem 1: Heat pump with ra 2 B e 5 H V 4 ting system: Closed room V 6 ting system: Closed room V 6 ting system: Closed room V 6 ting system: Closed room V 6 - type: Cylinder 1 ss 1 k insulated Y - type: Time and temperatu	275.7% Both radiat 55°C Heat Pump /aillant Gro- aroTHERM heater Vood logs 55.0% 50 litres .88 kWh/o /es pe: N/A	tors and underfloor	ing and electrical s	

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	75 lm/W		ОК
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	N/A		
efficiency			
Heat recovery efficiency	N/A		N/A
Manufacturer/Model			ļ
Commissioning			
9 Local generation			
N/A			
10 Heat networks			
N/A			
11 Supporting documentary evidence N/A			
12 Declarations			
a. Assessor Declaration			
		ntents of this BREL Compliance Report	
		formation submitted for this dwelling for	
		and that the supporting documentary	
evidence (SAP Conventions, Append			
documentary evidence required) has	been reviewed in the	course of preparing this BREL	
Compliance Report.		1	
O'ment			
Signed:		Assessor ID:	
Name:		Date:	
b. Client Declaration		1	
N/A			

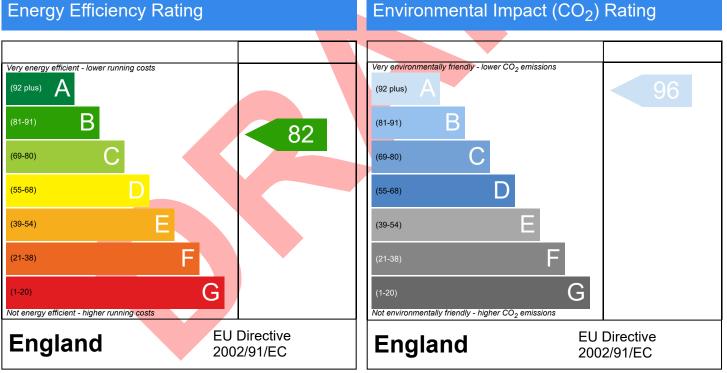


Dwelling type: Date of assessment: Produced by: Total floor area: DRRN:

House, Detached 12/10/2023 Alexandru Ardelean 145.79 m<sup>2</sup>

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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.



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.

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

#### Date: Thu 12 Oct 2023 14:47:45

Project Information			
Assessed By	Alexandru Ardelean	Building Type	House, Detached
OCDEA Registration	EES/022722	Assessment Date	2023-10-12

Dwelling Details			
Assessment Type	As designed	Total Floor Area	146 m <sup>2</sup>
Site Reference	Plot 26	Plot Reference	001
Address	Plot 1 Priory Road, Fressingfie	ld	

Client Details	
Name	Paul Sweeney
Company	studio303
Address	Priory Road, Fressingfield, IP21 5PH

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	10.13 kgCO <sub>2</sub> /m <sup>2</sup>			
Dwelling carbon dioxide emission rate	3.7 kgCO <sub>2</sub> /m <sup>2</sup>	OK		
1b Target primary energy rate and dwelling primary energy	1b Target primary energy rate and dwelling primary energy			
Target primary energy	53.15 kWh <sub>PE</sub> /m <sup>2</sup>			
Dwelling primary energy	38.39 kWh <sub>PE</sub> /m <sup>2</sup>	OK		
1c Target fabric energy efficiency and dwelling fabric energy efficiency				
Target fabric energy efficiency	44.7 kWh/m <sup>2</sup>			
Dwelling fabric energy efficiency	41.3 kWh/m <sup>2</sup>	OK		

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m <sup>2</sup> K]	Dwelling average U-Value [W/m <sup>2</sup> K]	Element with highest individual U-Value	
External walls	0.26	0.15	Walls (1) (0.15)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	0.08	Heatloss Floor 1 (0.08)	OK
Roofs	0.16	0.12	Roof (3) (0.19)	OK
Windows, doors,	1.6	1.4	Windows-side (1.4)	OK
and roof windows				
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 <sup>2</sup> ]	U-Value [W/m <sup>2</sup> K]		
Exposed wall: Walls (1)	184.61	0.15		
Exposed wall: Walls (2)	10.07	0.14 (!)		
Ground floor: Heatloss Floor 1, Heatloss Floor 1	76.98	0.08 (!)		
Exposed roof: Roof (1)	73.09	0.12		
Exposed roof: Roof (2)	4.29	0.16		
Exposed roof: Roof (3)	1.13	0.19		

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m <sup>2</sup> ]	Orientation	Frame factor	U-Value [W/m <sup>2</sup> K]
Windows-side, Window	0.57	North West	0.7	1.4
Door-entrance, Door	2.14	South West	N/A	1.4
Windows-side, Window	2.99	South East	0.7	1.4
Windows-rear, Window	12.87	North East	0.7	1.4
Windows-front, Window	9.74	South West	0.7	1.4

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Main element	Junction detail		Source	Psi value [W/mK]	Drawing / reference
External wall	E2: Other lintels (includi steel lintels)	ng other	Not government-approved scheme	0.222	RCD
External wall	E3: Sill		Not government-approved scheme	0.023 (!)	RCD
External wall	E4: Jamb		Not government-approved scheme	0.018 (!)	RCD
External wall	E5: Ground floor (normal)		Not government-approved scheme	0.044	RCD
External wall	E10: Eaves (insulation a level)	at ceiling	Not government-approved scheme	0.054	RCD
External wall	E12: Gable (insulation a level)	at ceiling	Not government-approved scheme	0.027 (!)	RCD
External wall	E16: Corner (normal)		Not government-approved scheme	0.031 (!)	RCD
External wall	E6: Intermediate floor w dwelling	ithin a	Not government-approved scheme	0 (!)	RCD
External wall	E24: Eaves (insulation a level - inverted)	at ceiling	SAP table default	0.15	
External wall	E17: Corner (inverted - i area greater than extern		Not government-approved scheme	-0.064	RCD
External wall	E14: Flat roof		SAP table default	0.16	
Roof	R6: Flat ceiling		SAP table default	0.12	
Roof	R8: Roof to wall (rafter)		SAP table default	0.12	
			values are flagged with a sub	sequent (!))	
	itted air permeability at 50	Pa	$8 m^3/hm^2$		i
Dwelling air permeability at 50Pa		5 m <sup>3</sup> /hm <sup>2</sup> , Design value OK			
			5 m <sup>3</sup> /hm <sup>2</sup> , Design value		OK
	meability at 50Pa test certificate reference		5 m <sup>3</sup> /hm <sup>2</sup> , Design value		OK
Air permeability	test certificate reference		5 m <sup>3</sup> /hm <sup>2</sup> , Design value		OK
Air permeability 4 Space heatin	test certificate reference	radiators o	-		OK
Air permeability 4 Space heatin Main heating s	test certificate reference g ystem 1: Heat pump with		5 m <sup>3</sup> /hm <sup>2</sup> , Design value r underfloor heating - Electricity		OK
Air permeability 4 Space heatin Main heating s Efficiency	test certificate reference g ystem 1: Heat pump with	275.7%	r underfloor heating - Electricity		OK
Air permeability <b>4 Space heatin</b> <b>Main heating s</b> Efficiency Emitter type	test certificate reference g ystem 1: Heat pump with	275.7% Both radiat	-		OK
Air permeability <b>4 Space heatin</b> <b>Main heating s</b> Efficiency Emitter type Flow temperatu	test certificate reference g ystem 1: Heat pump with re	275.7% Both radiat 55°C	r underfloor heating - Electricity tors and underfloor		OK
Air permeability <b>4 Space heatin</b> <b>Main heating s</b> Efficiency Emitter type Flow temperatu System type	test certificate reference g ystem 1: Heat pump with re	275.7% Both radiat 55°C Heat Pump	r underfloor heating - Electricity tors and underfloor		OK
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer	test certificate reference g ystem 1: Heat pump with re	275.7% Both radiat 55°C Heat Pump Vaillant Gr	r underfloor heating - Electricity tors and underfloor		OK
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer Model	test certificate reference g ystem 1: Heat pump with re	275.7% Both radiat 55°C Heat Pump Vaillant Gr	r underfloor heating - Electricity tors and underfloor		OK
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer Model Commissioning	test certificate reference g ystem 1: Heat pump with re	275.7% Both radiat 55°C Heat Pump Vaillant Gr aroTHERM	r underfloor heating - Electricity tors and underfloor		
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer Model Commissioning Secondary heat	test certificate reference g ystem 1: Heat pump with re ting system: Closed roon	275.7% Both radiat 55°C Heat Pump Vaillant Gr aroTHERM n heater	r underfloor heating - Electricity tors and underfloor oup UK Ltd 1 plus 3.5kW + Al		
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer Model Commissioning Secondary hea Fuel	test certificate reference g ystem 1: Heat pump with re re ting system: Closed roon	275.7% Both radiat 55°C Heat Pump Vaillant Gr aroTHERM n heater Wood logs	r underfloor heating - Electricity tors and underfloor oup UK Ltd 1 plus 3.5kW + Al		
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency	test certificate reference g ystem 1: Heat pump with re re ting system: Closed roon	275.7% Both radiat 55°C Heat Pump Vaillant Gr aroTHERM n heater	r underfloor heating - Electricity tors and underfloor oup UK Ltd 1 plus 3.5kW + Al		
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning	test certificate reference g ystem 1: Heat pump with re re ting system: Closed roon	275.7% Both radiat 55°C Heat Pump Vaillant Gr aroTHERM n heater Wood logs	r underfloor heating - Electricity tors and underfloor oup UK Ltd 1 plus 3.5kW + Al		
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency	test certificate reference g ystem 1: Heat pump with re ting system: Closed roon	275.7% Both radiat 55°C Heat Pump Vaillant Gr aroTHERM n heater Wood logs	r underfloor heating - Electricity tors and underfloor oup UK Ltd 1 plus 3.5kW + Al		
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water	test certificate reference g ystem 1: Heat pump with re ting system: Closed roon - type: Cylinder	275.7% Both radiat 55°C Heat Pump Vaillant Gr aroTHERM n heater Wood logs	r underfloor heating - Electricity tors and underfloor oup UK Ltd 1 plus 3.5kW + Al		
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store	test certificate reference g ystem 1: Heat pump with re ting system: Closed roon - type: Cylinder	275.7% Both radiat 55°C Heat Pump Vaillant Gr aroTHERM n heater Wood logs 65.0%	r underfloor heating - Electricity tors and underfloor ooup UK Ltd 1 plus 3.5kW + Al		
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity	test certificate reference g ystem 1: Heat pump with re ting system: Closed roon - type: Cylinder	275.7% Both radiat 55°C Heat Pump Vaillant Gr aroTHERM n heater Wood logs 65.0% 150 litres	r underfloor heating - Electricity tors and underfloor ooup UK Ltd 1 plus 3.5kW + Al		
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity Declared heat lo	test certificate reference g ystem 1: Heat pump with re ting system: Closed roon - type: Cylinder	275.7% Both radiat 55°C Heat Pump Vaillant Gr aroTHERM n heater Wood logs 65.0% 150 litres 1.88 kWh/c	r underfloor heating - Electricity tors and underfloor ooup UK Ltd 1 plus 3.5kW + Al		
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity Declared heat lo Primary pipewo	test certificate reference g ystem 1: Heat pump with re ting system: Closed roon - type: Cylinder	275.7% Both radiat 55°C Heat Pump Vaillant Gr aroTHERM n heater Wood logs 65.0% 150 litres 1.88 kWh/c	r underfloor heating - Electricity tors and underfloor ooup UK Ltd 1 plus 3.5kW + Al		
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity Declared heat lo Primary pipewo Manufacturer	test certificate reference g ystem 1: Heat pump with re ting system: Closed roon - type: Cylinder	275.7% Both radiat 55°C Heat Pump Vaillant Gr aroTHERM n heater Wood logs 65.0% 150 litres 1.88 kWh/c	r underfloor heating - Electricity tors and underfloor ooup UK Ltd 1 plus 3.5kW + Al		
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity Declared heat lo Primary pipewo Manufacturer Model Commissioning	test certificate reference g ystem 1: Heat pump with re ting system: Closed roon - type: Cylinder	275.7% Both radiat 55°C Heat Pump Vaillant Gr aroTHERM n heater Wood logs 65.0% 150 litres 1.88 kWh/o Yes	r underfloor heating - Electricity tors and underfloor ooup UK Ltd 1 plus 3.5kW + Al		
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity Declared heat lo Primary pipewo Manufacturer Model Commissioning	test certificate reference g ystem 1: Heat pump with re ting system: Closed roon - type: Cylinder pss rk insulated	275.7% Both radiat 55°C Heat Pump Vaillant Gr aroTHERM n heater Wood logs 65.0% 150 litres 1.88 kWh/o Yes	r underfloor heating - Electricity tors and underfloor ooup UK Ltd 1 plus 3.5kW + Al		
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity Declared heat lo Primary pipewo Manufacturer Model Commissioning Waste water hea Efficiency	test certificate reference g ystem 1: Heat pump with re ting system: Closed roon - type: Cylinder pss rk insulated	275.7% Both radiat 55°C Heat Pump Vaillant Gr aroTHERM n heater Wood logs 65.0% 150 litres 1.88 kWh/o Yes	r underfloor heating - Electricity tors and underfloor ooup UK Ltd 1 plus 3.5kW + Al		
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity Declared heat lo Primary pipewo Manufacturer Model Commissioning Waste water hea	test certificate reference g ystem 1: Heat pump with re ting system: Closed roon - type: Cylinder pss rk insulated	275.7% Both radiat 55°C Heat Pump Vaillant Gr aroTHERM n heater Wood logs 65.0% 150 litres 1.88 kWh/o Yes	r underfloor heating - Electricity tors and underfloor ooup UK Ltd 1 plus 3.5kW + Al		
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity Declared heat lo Primary pipewo Manufacturer Model Commissioning Waste water hea Efficiency Manufacturer Model	test certificate reference g ystem 1: Heat pump with re ting system: Closed roon - type: Cylinder pss rk insulated	275.7% Both radiat 55°C Heat Pump Vaillant Gr aroTHERM n heater Wood logs 65.0% 150 litres 1.88 kWh/o Yes	r underfloor heating - Electricity tors and underfloor ooup UK Ltd 1 plus 3.5kW + Al		
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity Declared heat lo Primary pipewo Manufacturer Model Commissioning Waste water hea Efficiency Manufacturer Model Commissioning Maste water hea Efficiency Manufacturer Model	test certificate reference g ystem 1: Heat pump with re ting system: Closed roon - type: Cylinder - type: Cylinder pss rk insulated eat recovery system 1 - t	275.7% Both radiat 55°C Heat Pump Vaillant Gr aroTHERM n heater Wood logs 65.0% 150 litres 1.88 kWh/o Yes ype: N/A	r underfloor heating - Electricity tors and underfloor oup UK Ltd 1 plus 3.5kW + Al		
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity Declared heat lo Primary pipewo Manufacturer Model Commissioning Waste water hea Efficiency Manufacturer Model Commissioning Waste water hea Efficiency Manufacturer Model Commissioning Maste water hea Efficiency Manufacturer Model 6 Controls Main heating 1	test certificate reference g ystem 1: Heat pump with re ting system: Closed roon - type: Cylinder - type: Cylinder pss rk insulated eat recovery system 1 - t	275.7% Both radiat 55°C Heat Pump Vaillant Gr aroTHERM n heater Wood logs 65.0% 150 litres 1.88 kWh/o Yes ype: N/A	r underfloor heating - Electricity tors and underfloor ooup UK Ltd 1 plus 3.5kW + Al	ing and electrical s	
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity Declared heat lo Primary pipewo Manufacturer Model Commissioning Waste water hea Efficiency Manufacturer Model Commissioning Waste water hea Efficiency Manufacturer Model Commissioning Waste water hea Efficiency Manufacturer Model Commissioning Maste water hea Efficiency Manufacturer Model Commissioning Maste water hea Efficiency Manufacturer Model Commissioning Function	test certificate reference g ystem 1: Heat pump with re ting system: Closed room - type: Cylinder - type: Cylinder - type: Cylinder - type: Time and temperar	275.7% Both radiat 55°C Heat Pump Vaillant Gr aroTHERM n heater Wood logs 65.0% 150 litres 1.88 kWh/o Yes ype: N/A	r underfloor heating - Electricity tors and underfloor oup UK Ltd 1 plus 3.5kW + Al	ing and electrical s	
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer Model Commissioning Secondary heat Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity Declared heat lo Primary pipewo Manufacturer Model Commissioning Waste water heat Efficiency Manufacturer Model Commissioning Waste water heat Efficiency Manufacturer Model Commissioning Maste water heat Efficiency Manufacturer Model Commissioning Maste water heat Efficiency Manufacturer Model Controls Main heating 1 Function Ecodesign class	test certificate reference g ystem 1: Heat pump with re ting system: Closed room - type: Cylinder - type: Cylinder - type: Cylinder - type: Time and temperar	275.7% Both radiat 55°C Heat Pump Vaillant Gr aroTHERM n heater Wood logs 65.0% 150 litres 1.88 kWh/o Yes ype: N/A	r underfloor heating - Electricity tors and underfloor oup UK Ltd 1 plus 3.5kW + Al	ing and electrical s	
Air permeability 4 Space heatin Main heating s Efficiency Emitter type Flow temperatu System type Manufacturer Model Commissioning Secondary hea Fuel Efficiency Commissioning 5 Hot water Cylinder/store Capacity Declared heat lo Primary pipewo Manufacturer Model Commissioning Waste water hea Efficiency Manufacturer Model Commissioning Waste water hea Efficiency Manufacturer Model Commissioning Maste water hea Efficiency Manufacturer Model Commissioning 1 Function	test certificate reference g ystem 1: Heat pump with re ting system: Closed room - type: Cylinder - type: Cylinder - type: Cylinder - type: Time and temperar	275.7% Both radiat 55°C Heat Pump Vaillant Gr aroTHERM n heater Wood logs 65.0% 150 litres 1.88 kWh/o Yes ype: N/A	r underfloor heating - Electricity tors and underfloor oup UK Ltd 1 plus 3.5kW + Al	ing and electrical s	

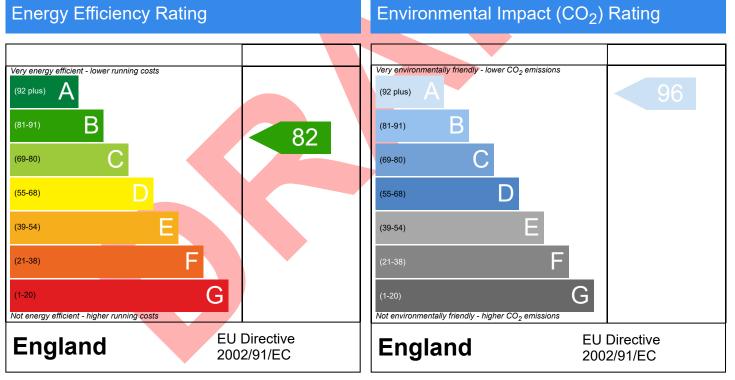
Water heating - type: Cylinder thermostat and HW separately timed				
Manufacturer				
Model				
7 Lighting				
Minimum permitted light source efficacy	75 lm/W			
Lowest light source efficacy	75 lm/W		ОК	
External lights control	N/A			
8 Mechanical ventilation				
System type: N/A				
Maximum permitted specific fan power	N/A			
Specific fan power	N/A		N/A	
Minimum permitted heat recovery	N/A			
efficiency				
Heat recovery efficiency	N/A		N/A	
Manufacturer/Model			ļ	
Commissioning				
9 Local generation				
N/A				
10 Heat networks				
N/A				
11 Supporting documentary evidence N/A				
12 Declarations				
a. Assessor Declaration				
		ntents of this BREL Compliance Report		
		formation submitted for this dwelling for		
		and that the supporting documentary		
evidence (SAP Conventions, Append				
documentary evidence required) has	been reviewed in the	course of preparing this BREL		
Compliance Report.		1		
Signed:		Assessor ID:		
Name:		Date:		
b. Client Declaration		1		
N/A				



Dwelling type: Date of assessment: Produced by: Total floor area: DRRN: House, Detached 12/10/2023 Alexandru Ardelean 145.79 m<sup>2</sup>

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.



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.

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

### Date: Thu 12 Oct 2023 14:47:45

Project Information			
Assessed By	Alexandru Ardelean	Building Type	House, Detached
OCDEA Registration	EES/022722	Assessment Date	2023-10-12

Dwelling Details			
Assessment Type	As designed	Total Floor Area	127 m <sup>2</sup>
Site Reference	Plot 27	Plot Reference	001
Address	Plot 1 Priory Road, Fressingfie	ld	

Client Details	
Name	Paul Sweeney
Company	studio303
Address	Priory Road, Fressingfield, IP21 5PH

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	10.48 kgCO <sub>2</sub> /m <sup>2</sup>			
Dwelling carbon dioxide emission rate	3.91 kgCO <sub>2</sub> /m <sup>2</sup>	OK		
1b Target primary energy rate and dwelling primary energy	IY			
Target primary energy	54.92 kWh <sub>PE</sub> /m <sup>2</sup>			
Dwelling primary energy	40.66 kWh <sub>PE</sub> /m <sup>2</sup>	OK		
1c Target fabric energy efficiency and dwelling fabric ene	1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	44.8 kWh/m <sup>2</sup>			
Dwelling fabric energy efficiency	43.0 kWh/m <sup>2</sup>	OK		

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m <sup>2</sup> K]	Dwelling average U-Value [W/m <sup>2</sup> K]	Element with highest individual U-Value	
External walls	0.26	0.15	Walls (1) (0.15)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	0.08	Heatloss Floor 1 (0.08)	OK
Roofs	0.16	0.12	Roof (1) (0.12)	OK
Windows, doors,	1.6	1.43	Folding Door (1.6)	OK
and roof windows				
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 <sup>2</sup> ]	U-Value [W/m <sup>2</sup> K]		
Exposed wall: Walls (1)	152.9	0.15		
Ground floor: Heatloss Floor 1, Heatloss Floor 1	69.69	0.08 (!)		
Exposed roof: Roof (1)	69.69	0.12		

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m <sup>2</sup> ]	Orientation	Frame factor	U-Value [W/m <sup>2</sup> K]
Windows-side, Window	3.02	North West	0.7	1.4
Door-entrance, Door	2.14	South West	N/A	1.4
Windows-side, Window	1.7	South East	0.7	1.4
Windows-rear, Window	9.81	North East	0.7	1.4
Windows-front, Window	10.98	South West	0.7	1.4
Folding Door, Folding Door	5	North East	0.7	1.6

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         Drawing /           [W/mK]         reference					
External wall	E2: Other lintels (including other steel lintels)	Not government-approved scheme	0.222	RCD	

Main element	Junction detail S		Source	Psi value [W/mK]	Drawing / reference	
External wall	E3: Sill		Not government-approved scheme	0.023 (!)	RCD	
External wall	E4: Jamb		Not government-approved scheme	0.018 (!)	RCD	
External wall	E5: Ground floor (normal)		Not government-approved scheme	0.044	RCD	
External wall	E10: Eaves (insulation at ceiling level)		Not government-approved scheme	0.054	RCD	
External wall	E12: Gable (insulation level)	at ceiling	Not government-approved scheme	0.027 (!)	RCD	
External wall	E16: Corner (normal)		Not government-approved scheme	0.031 (!)	RCD	
External wall	E6: Intermediate floor	within a	Not government-approved scheme	0 (!)	RCD	
External wall	E24: Eaves (insulation level - inverted)	at ceiling	SAP table default	0.15		
External wall	E17: Corner (inverted area greater than exte		Not government-approved scheme	-0.064	RCD	
3 Air permeabil			values are flagged with a sub	sequent (!))		
	itted air permeability at 5		$8 m^3/hm^2$			
	meability at 50Pa		5 m <sup>3</sup> /hm <sup>2</sup> , Design value		OK	
	test certificate reference				I	
4 Space heating	a		•			
		n radiators o	or underfloor heating - Electricity			
Efficiency	<b>ystem 1</b> . Heat pump with	274.9%				
Emitter type			tors and underfloor			
Flow temperatur	е	55°C				
System type	-	Heat Pum	0			
Manufacturer			oup UK Ltd			
Model aroTHERM			/ plus 3.5kW + AI-Not valid			
Commissioning						
	ting system: Closed roo					
Fuel		Wood logs	3			
Efficiency		65.0%				
Commissioning						
5 Hot water						
Cylinder/store -	- type: Cylinder					
Capacity		150 litres				
Declared heat lo		1.88 kWh/	day			
Primary pipewor	k insulated	Yes				
Manufacturer						
Model						
Commissioning	of room over 4					
Efficiency	at recovery system 1 -	type: N/A				
Manufacturer						
Manufacturer						
		I				
6 Controls						
	- type: Time and temper	ature zone (	control by arrangement of plumbi	ng and electrical s	ervices	
Function						
Ecodesign class						
Manufacturer Model						
	type: Cylinder thermost	l at and HW/	separately timed			
Manufacturer			soparately linea			
Model						
		1				

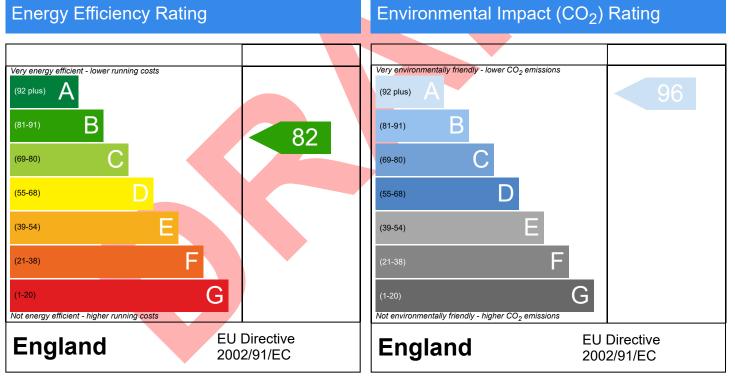
7 Lighting					
Minimum permitted light source efficacy	75 lm/W				
Lowest light source efficacy	75 lm/W		OK		
External lights control	N/A				
8 Mechanical ventilation					
System type: N/A					
Maximum permitted specific fan power	N/A				
Specific fan power	N/A		N/A		
Minimum permitted heat recovery	N/A				
efficiency					
Heat recovery efficiency	N/A		N/A		
Manufacturer/Model					
Commissioning					
9 Local generation					
N/A					
10 Heat networks					
N/A					
11 Supporting documentary evidence					
N/A					
12 Declarations					
a. Assessor Declaration	- Constant de la Colora de	alasta afikia DDEL Osmalianas Danari			
-		ntents of this BREL Compliance Report			
		formation submitted for this dwelling for			
evidence (SAP Conventions, Appendi		and that the supporting documentary			
documentary evidence required) has					
Compliance Report.					
Signed:		Assessor ID:			
Name:		Date:			
b. Client Declaration					
N/A					



Dwelling type: Date of assessment: Produced by: Total floor area: DRRN: House, Detached 12/10/2023 Alexandru Ardelean 127.04 m<sup>2</sup>

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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.



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.

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

Date: Thu 12 Oct 2023 14:47:45

Project Information					
Assessed By	Alexandru Ardelean	Building Type	House, Detached		
OCDEA Registration	EES/022722	Assessment Date	2023-10-12		

Dwelling Details					
Assessment Type	As designed	Total Floor Area	138 m <sup>2</sup>		
Site Reference	Plot 28	Plot Reference	001		
Address	Plot 1 Priory Road, Fressingfield				

Client Details	
Name	Paul Sweeney
Company	studio303
Address	Priory Road, Fressingfield, IP21 5PH

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	10.38 kgCO <sub>2</sub> /m <sup>2</sup>			
Dwelling carbon dioxide emission rate	3.82 kgCO <sub>2</sub> /m <sup>2</sup>	OK		
1b Target primary energy rate and dwelling primary energy				
Target primary energy	54.35 kWh <sub>PE</sub> /m <sup>2</sup>			
Dwelling primary energy	39.7 kWh <sub>PE</sub> /m <sup>2</sup>	OK		
1c Target fabric energy efficiency and dwelling fabric energy efficiency				
Target fabric energy efficiency	44.3 kWh/m <sup>2</sup>			
Dwelling fabric energy efficiency	42.5 kWh/m <sup>2</sup>	OK		

2a Fabric U-values					
Element	Maximum permitted average U-Value [W/m <sup>2</sup> K]	Dwelling average U-Value [W/m <sup>2</sup> K]	Element with highest individual U-Value		
External walls	0.26	0.15	Walls (2) (0.17)	OK	
Party walls	0.2	N/A	N/A	N/A	
Curtain walls	1.6	N/A	N/A	N/A	
Floors	0.18	0.08	Heatloss Floor 1 (0.08)	OK	
Roofs	0.16	0.13	Roof (3) (0.19)	OK	
Windows, doors,	1.6	1.4	Windows-side (1.4)	OK	
and roof windows					
Rooflights	2.2	N/A	N/A	N/A	

Name	Net area [m <sup>2</sup> ]	U-Value [W/m <sup>2</sup> K]
Exposed wall: Walls (1)	177.65	0.15
Exposed wall: Walls (2)	0.49	0.17
Ground floor: Heatloss Floor 1, Heatloss Floor 1	69.76	0.08 (!)
Exposed roof: Roof (1)	63.31	0.12
Exposed roof: Roof (2)	7.44	0.16
Exposed roof: Roof (3)	1.66	0.19

2c Openings (better than typically expected values are flagged with a subsequent (!))					
Name	Area [m <sup>2</sup> ]	Orientation	Frame factor	U-Value [W/m <sup>2</sup> K]	
Windows-side, Window	4.21	South East	0.7	1.4	
Door-entrance, Door	2.14	South West	N/A	1.4	
Windows-side, Window	2.27	North West	0.7	1.4	
Windows-rear, Window	10.79	North East	0.7	1.4	
Windows-front, Window	9.17	South West	0.7	1.4	
Door-side, Half Glazed Door	1.91	North West	N/A	1.4	

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Main element	Junction detail		Source	Psi value [W/mK]	Drawing / reference
External wall	E2: Other lintels (includ steel lintels)	ing other	Not government-approved scheme	0.222	RCD
External wall	E3: Sill		Not government-approved scheme	0.023 (!)	RCD
External wall	E4: Jamb		Not government-approved scheme	0.018 (!)	RCD
External wall	E5: Ground floor (normal)		Not government-approved scheme	0.044	RCD
External wall	E10: Eaves (insulation a level)	at ceiling	Not government-approved scheme	0.054	RCD
External wall	E12: Gable (insulation a level)	at ceiling	Not government-approved scheme	0.027 (!)	RCD
External wall	E16: Corner (normal)		Not government-approved scheme	0.031 (!)	RCD
External wall	E6: Intermediate floor w dwelling		Not government-approved scheme	0 (!)	RCD
External wall	E24: Eaves (insulation a level - inverted)	at ceiling	SAP table default	0.15	
External wall	E17: Corner (inverted - area greater than extern	nal area)	Not government-approved scheme	-0.064	RCD
External wall	E11: Eaves (insulation a level)		SAP table default	0.15	
External wall	E13: Gable (insulation a level)	at rafter	SAP table default	0.25	
External wall	E14: Flat roof		SAP table default	0.16	
Roof	R6: Flat ceiling		SAP table default	0.12	
			values are flagged with a sub-	sequent (!))	
	tted air permeability at 50	Pa	8 m <sup>3</sup> /hm <sup>2</sup>		
Dwelling air perm Air permeability	neability at 50Pa test certificate reference		5 m <sup>3</sup> /hm <sup>2</sup> , Design value		OK
4 Space heating	n and a second se				
		radiators o	r underfloor heating - Electricity		
Efficiency		275.6%	<u></u>		
Emitter type		Both radiat	tors and underfloor		
Flow temperatur	е	55°C			
System type		Heat Pump	)		
Manufacturer		Vaillant Gr	oup UK Ltd		
Model		aroTHERM	1 plus 3.5kW + AI-Not valid		
Commissioning	_				
	ting system: Closed roor				
Fuel		Wood logs			
Efficiency		65.0%			
Commissioning					
5 Hot water					
Cylinder/store -	type: Cylinder	450.00			
Capacity 150 litres					
Declared heat loss 1.88 kWh/c		Jay			
Primary pipework insulated Yes					
Manufacturer Madel					
Commissioning	Model Commissioning				
	at recovery system 1 - t	VDA. NI/A			
Efficiency	at recovery system 1 - t	ype. IV/A			
Manufacturer					
Model					

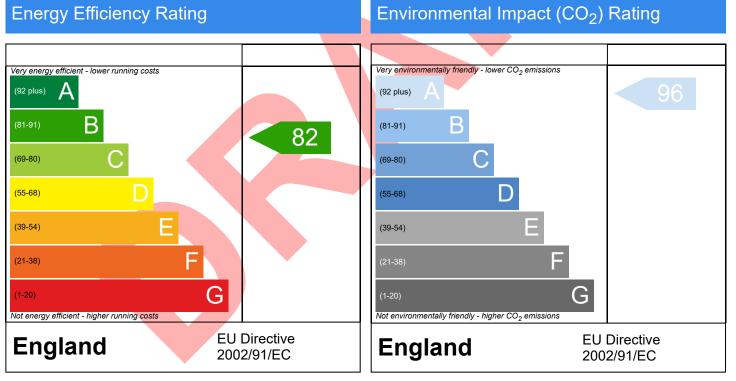
6 Controls					
Main heating 1 - type: Time and temper	ature zone control by	arrangement of plumbing and electrical se	ervices		
Function					
Ecodesign class					
Manufacturer					
Model					
Water heating - type: Cylinder thermosta	at and HW separately	/ timed			
Manufacturer					
Model					
7 Lighting					
Minimum permitted light source efficacy	75 lm/W				
Lowest light source efficacy	75 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		N/A		
Minimum permitted heat recovery	N/A		IN/A		
efficiency	/W/A				
Heat recovery efficiency	N/A		N/A		
Manufacturer/Model			IN/A		
Commissioning					
-					
9 Local generation					
N/A					
10 Heat networks					
N/A					
44. Or was and in an descent set (see a solid set of					
11 Supporting documentary evidence					
N/A					
12 Declarations					
a. Assessor Declaration			-		
		ontents of this BREL Compliance Report			
		nformation submitted for this dwelling for			
		, and that the supporting documentary			
evidence (SAP Conventions, Append	ix 1 (documentary ev	idence) schedules the minimum			
documentary evidence required) has been reviewed in the course of preparing this BREL					
Compliance Report.					
Signed:		Assessor ID:			
Name:		Date:			
b. Client Declaration					
N/A					



Dwelling type: Date of assessment: Produced by: Total floor area: DRRN: House, Detached 12/10/2023 Alexandru Ardelean 137.85 m<sup>2</sup>

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.



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.