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

2nd January 2024

Building Regulations England Part L (BREL) Compliance Report

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^2
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

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	*9.32 kgCO_2/m^2*	
Dwelling carbon dioxide emission rate	4.28 kgCO_2/m^2	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*50.45 kWh$_{PE}$/m^2*	
Dwelling primary energy	44.63 kWh$_{PE}$/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*47.1 kWh/m^2*	
Dwelling fabric energy efficiency	44.3 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.15	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, and roof windows	*1.6*	1.48	Folding Door (1.6)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	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^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
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 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 **(!)**	RCD
External wall	E16: Corner (normal)	Not government-approved scheme	0.031 **(!)**	RCD
External wall	E17: Corner (inverted - internal area greater than external area)	Not government-approved scheme	-0.064	RCD
External wall	E11: Eaves (insulation at rafter level)	SAP table default	0.15	
External wall	E13: Gable (insulation at rafter level)	SAP table default	0.25	
Roof	R6: Flat ceiling	SAP table default	0.12	

3 Air permeability (better than typically expected values are flagged with a subsequent (!))		
Maximum permitted air permeability at 50Pa	*8 m^3/hm^2*	
Dwelling air permeability at 50Pa	5 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	264.7%
Emitter type	Underfloor
Flow temperature	55°C
System type	Heat Pump
Manufacturer	Vaillant Group UK Ltd
Model	aroTHERM plus 3.5kW + AI-Not valid
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	150 litres
Declared heat loss	1.88 kWh/day
Primary pipework insulated	Yes
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: N/A	
Efficiency	
Manufacturer	
Model	

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	
Water heating - type: Cylinder thermostat and HW separately timed	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	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 efficiency	*N/A*	
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 are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Predicted Energy Assessment

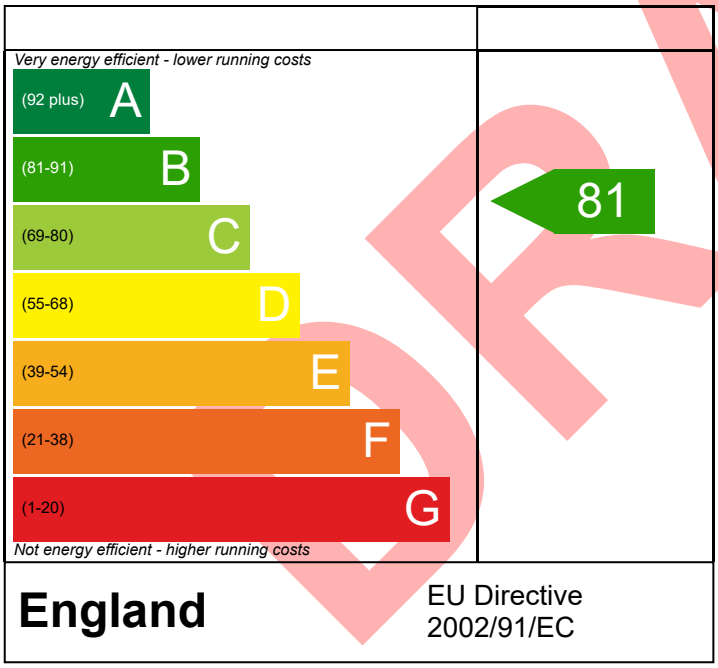
Plot 1, Priory Road, Fressingfield, Suffolk

Dwelling type:	Bungalow, Detached
Date of assessment:	12/10/2023
Produced by:	Alexandru Ardelean
Total floor area:	101.52 m²
DRRN:	

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

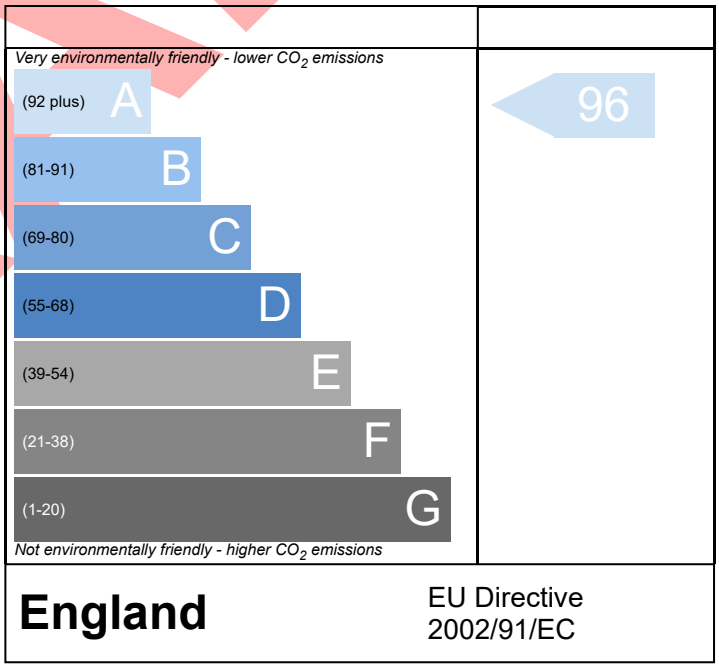
The energy performance has been assessed using the Government approved SAP 10 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO2) emissions.

Energy Efficiency Rating



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

Environmental Impact (CO_2) Rating



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

Building Regulations England Part L (BREL) Compliance Report

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^2
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

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	*10.27 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	4.7 $kgCO_2/m^2$	**OK**
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*55.1 kWh_{PE}/m^2*	
Dwelling primary energy	49.13 kWh_{PE}/m^2	**OK**
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*46.6 kWh/m^2*	
Dwelling fabric energy efficiency	44.8 kWh/m^2	**OK**

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.15	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, and roof windows	*1.6*	1.49	Folding Door (1.6)	**OK**
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	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^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
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 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 **(!)**	RCD
External wall	E16: Corner (normal)	Not government-approved scheme	0.031 **(!)**	RCD
External wall	E17: Corner (inverted - internal area greater than external area)	Not government-approved scheme	-0.064	RCD
External wall	E18: Party wall between dwellings	Not government-approved scheme	0.046	RCD
Party wall	P1: Ground floor	Not government-approved scheme	0.172	RCD
Party wall	P4: Roof (insulation at ceiling level)	Not government-approved scheme	0.19	RCD

3 Air permeability (better than typically expected values are flagged with a subsequent (!))		
Maximum permitted air permeability at 50Pa	*8 m^3/hm^2*	
Dwelling air permeability at 50Pa	5 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	255.1%
Emitter type	Underfloor
Flow temperature	55°C
System type	Heat Pump
Manufacturer	Vaillant Group UK Ltd
Model	aroTHERM plus 3.5kW + AI-Not valid
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	150 litres
Declared heat loss	1.88 kWh/day
Primary pipework insulated	Yes
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: N/A	
Efficiency	
Manufacturer	
Model	

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	
Water heating - type: Cylinder thermostat and HW separately timed	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	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 efficiency	*N/A*	
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 are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Predicted Energy Assessment

Plot 1, Priory Road, Fressingfield, Suffolk

Dwelling type:	Bungalow, Semi-Detached
Date of assessment:	12/10/2023
Produced by:	Alexandru Ardelean
Total floor area:	80.24 m²
DRRN:	

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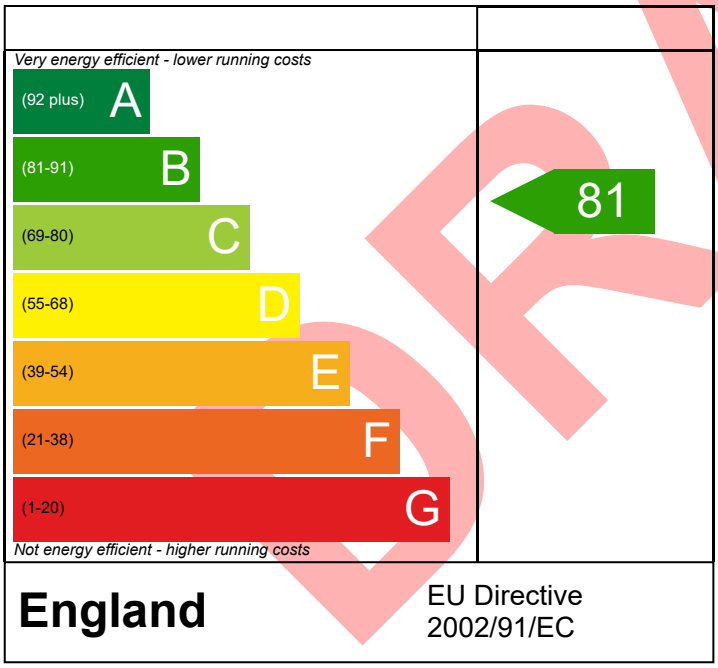
Energy Efficiency Rating



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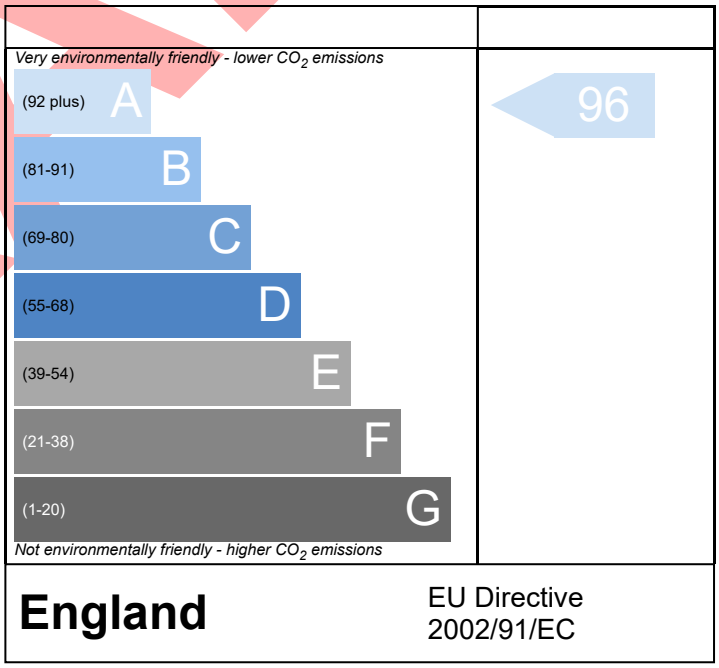
Environmental Impact (CO_2) Rating



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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^2
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

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	*10.12 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	4.66 $kgCO_2/m^2$	**OK**
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*54.27 kWh_{PE}/m^2*	
Dwelling primary energy	48.68 kWh_{PE}/m^2	**OK**
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*45.9 kWh/m^2*	
Dwelling fabric energy efficiency	44.1 kWh/m^2	**OK**

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.15	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, and roof windows	*1.6*	1.49	Folding Door (1.6)	**OK**
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	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^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
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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
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Party wall	P1: Ground floor	Not government-approved scheme	0.172	RCD
Party wall	P4: Roof (insulation at ceiling level)	Not government-approved scheme	0.19	RCD

3 Air permeability (better than typically expected values are flagged with a subsequent (!))		
Maximum permitted air permeability at 50Pa	*8 m^3/hm^2*	
Dwelling air permeability at 50Pa	5 m^3/hm^2, Design value	OK
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4 Space heating	
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Efficiency	255.1%
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Flow temperature	55°C
System type	Heat Pump
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Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	150 litres
Declared heat loss	1.88 kWh/day
Primary pipework insulated	Yes
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: N/A	
Efficiency	
Manufacturer	
Model	

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	
Water heating - type: Cylinder thermostat and HW separately timed	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	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 efficiency	*N/A*	
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	
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Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Predicted Energy Assessment

Plot 1, Priory Road, Fressingfield, Suffolk

Dwelling type:	Bungalow, Semi-Detached
Date of assessment:	12/10/2023
Produced by:	Alexandru Ardelean
Total floor area:	80.24 m²
DRRN:	

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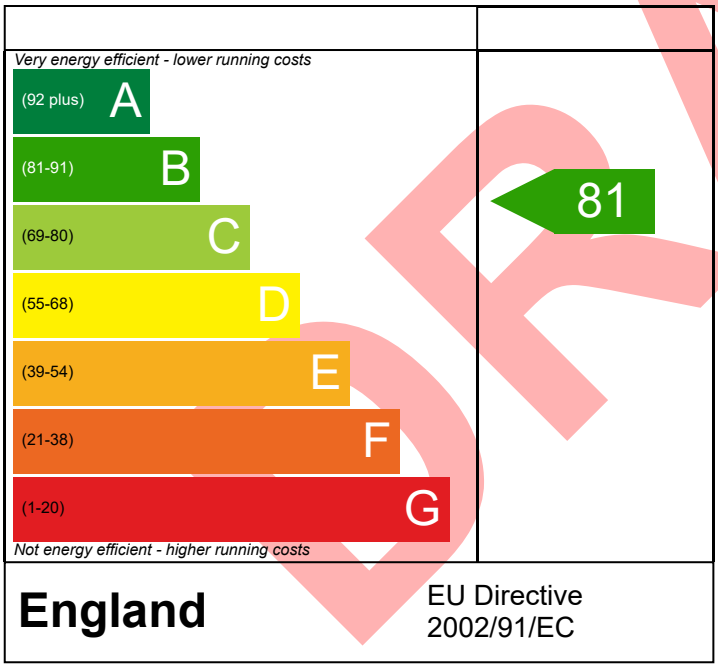
Energy Efficiency Rating



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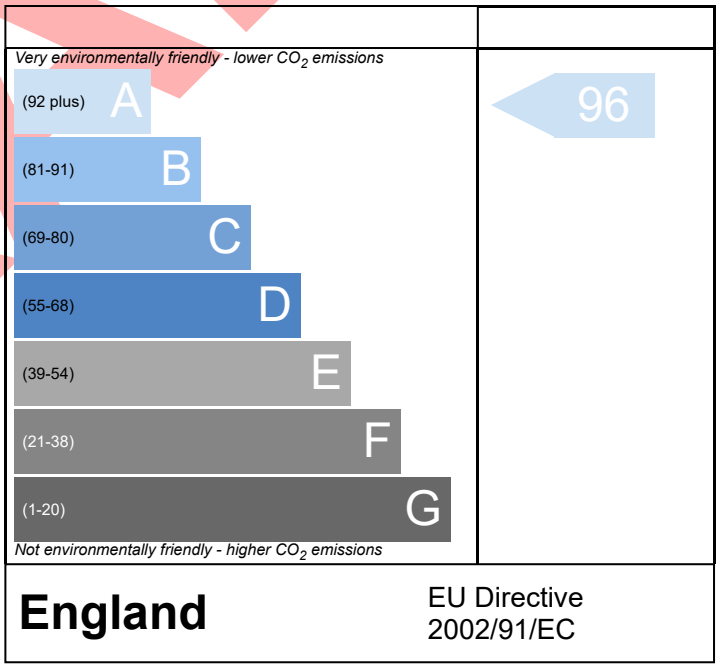
Environmental Impact (CO_2) Rating



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Building Regulations England Part L (BREL) Compliance Report

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^2
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

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	*10.28 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.86 $kgCO_2/m^2$	**OK**
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*53.84 kWh_{PE}/m^2*	
Dwelling primary energy	40.08 kWh_{PE}/m^2	**OK**
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*43.9 kWh/m^2*	
Dwelling fabric energy efficiency	42.1 kWh/m^2	**OK**

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.15	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, and roof windows	*1.6*	1.43	Folding Door (1.6)	**OK**
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	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^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
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

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 **(!)**	RCD
External wall	E16: Corner (normal)	Not government-approved scheme	0.031 **(!)**	RCD
External wall	E6: Intermediate floor within a 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 - internal area greater than external area)	Not government-approved scheme	-0.064	RCD

3 Air permeability (better than typically expected values are flagged with a subsequent (!))		
Maximum permitted air permeability at 50Pa	*8 m^3/hm^2*	
Dwelling air permeability at 50Pa	5 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	274.9%
Emitter type	Both radiators and underfloor
Flow temperature	55°C
System type	Heat Pump
Manufacturer	Vaillant Group UK Ltd
Model	aroTHERM plus 3.5kW + AI-Not valid
Commissioning	
Secondary heating system: Closed room heater	
Fuel	Wood logs
Efficiency	65.0%
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	150 litres
Declared heat loss	1.88 kWh/day
Primary pipework insulated	Yes
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: N/A	
Efficiency	
Manufacturer	
Model	

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	
Water heating - type: Cylinder thermostat and HW separately timed	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	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 efficiency	*N/A*	
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 are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Predicted Energy Assessment

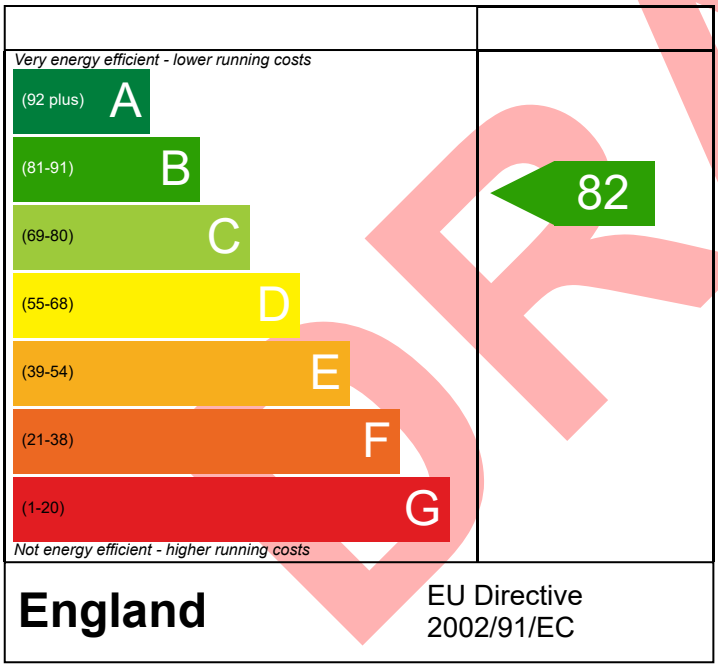
Plot 1, Priory Road, Fressingfield, Suffolk

Dwelling type:	House, Detached
Date of assessment:	12/10/2023
Produced by:	Alexandru Ardelean
Total floor area:	127.04 m²
DRRN:	

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

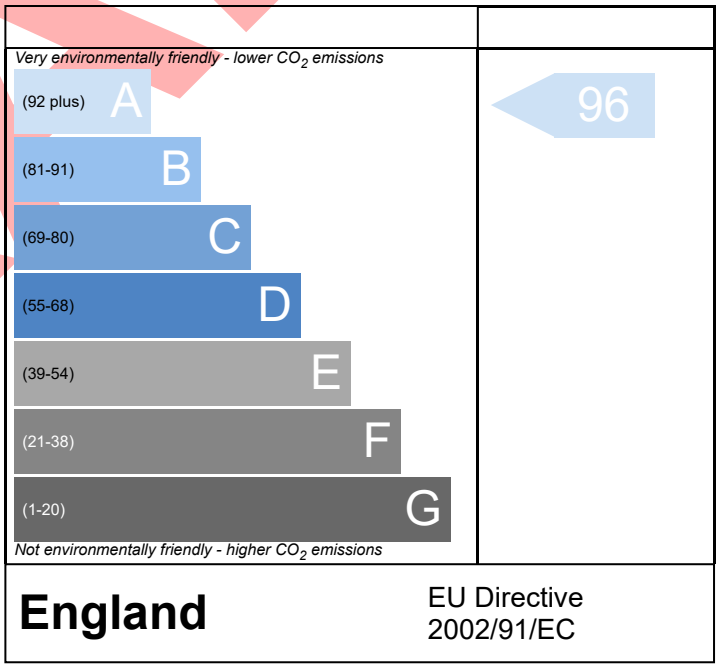
The energy performance has been assessed using the Government approved SAP 10 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO2) emissions.

Energy Efficiency Rating



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

Environmental Impact (CO_2) Rating



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

Building Regulations England Part L (BREL) Compliance Report

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^2
Site Reference	Plot 19	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	*12.99 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	4.64 $kgCO_2/m^2$	**OK**
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*68.3 kWh_{PE}/m^2*	
Dwelling primary energy	49.06 kWh_{PE}/m^2	**OK**
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*32.4 kWh/m^2*	
Dwelling fabric energy efficiency	29.0 kWh/m^2	**OK**

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.15	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, and roof windows	*1.6*	1.4	Windows-front (1.4)	**OK**
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	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^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
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

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
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	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 dwellings	Not government-approved scheme	0.046	RCD
Party wall	P1: Ground floor	Not government-approved scheme	0.172	RCD
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 **(!)**	

3 Air permeability (better than typically expected values are flagged with a subsequent (!))		
Maximum permitted air permeability at 50Pa	*8 m^3/hm^2*	
Dwelling air permeability at 50Pa	5 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	231.0%
Emitter type	Underfloor
Flow temperature	55°C
System type	Heat Pump
Manufacturer	Vaillant Group UK Ltd
Model	aroTHERM plus 3.5kW + AI-Not valid
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	150 litres
Declared heat loss	1.88 kWh/day
Primary pipework insulated	Yes
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: N/A	
Efficiency	
Manufacturer	
Model	

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	
Water heating - type: Cylinder thermostat and HW separately timed	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	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 efficiency	*N/A*	
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 are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Predicted Energy Assessment

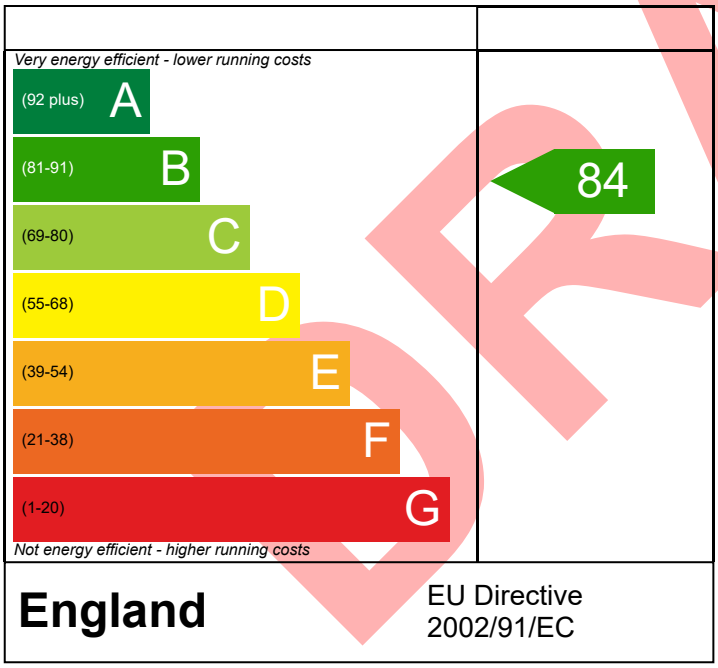
Plot 1, Priory Road, Fressingfield, Suffolk

Dwelling type:	Maisonette, Semi-Detached
Date of assessment:	12/10/2023
Produced by:	Alexandru Ardelean
Total floor area:	49.95 m²
DRRN:	

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

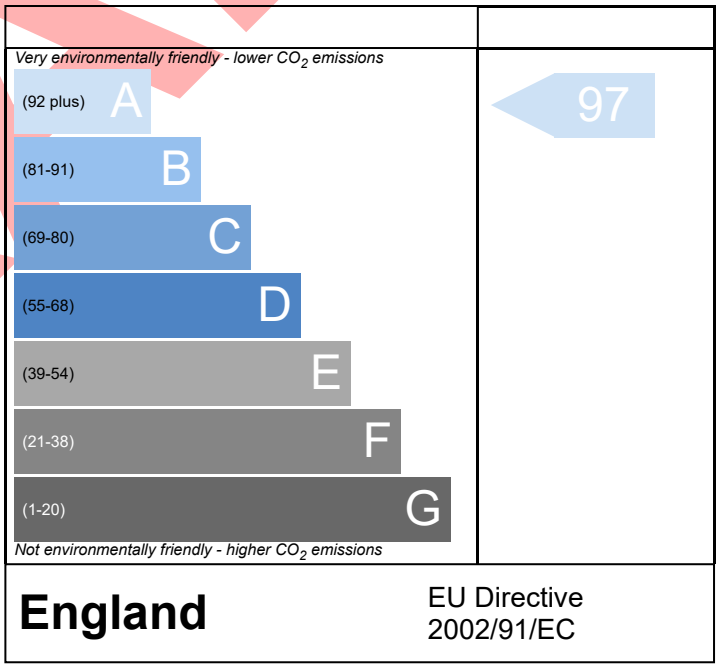
The energy performance has been assessed using the Government approved SAP 10 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO2) emissions.

Energy Efficiency Rating



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

Environmental Impact (CO_2) Rating



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

Building Regulations England Part L (BREL) Compliance Report

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^2
Site Reference	Plot 20	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	*10.28 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.86 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*53.85 kWh_{PE}/m^2*	
Dwelling primary energy	40.08 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*43.9 kWh/m^2*	
Dwelling fabric energy efficiency	42.1 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.15	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, and roof windows	*1.6*	1.43	Folding Door (1.6)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	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^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
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 (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 **(!)**	RCD
External wall	E16: Corner (normal)	Not government-approved scheme	0.031 **(!)**	RCD
External wall	E6: Intermediate floor within a 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 - internal area greater than external area)	Not government-approved scheme	-0.064	RCD

3 Air permeability (better than typically expected values are flagged with a subsequent (!))		
Maximum permitted air permeability at 50Pa	*8 m^3/hm^2*	
Dwelling air permeability at 50Pa	5 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	274.9%
Emitter type	Both radiators and underfloor
Flow temperature	55°C
System type	Heat Pump
Manufacturer	Vaillant Group UK Ltd
Model	aroTHERM plus 3.5kW + AI-Not valid
Commissioning	
Secondary heating system: Closed room heater	
Fuel	Wood logs
Efficiency	65.0%
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	150 litres
Declared heat loss	1.88 kWh/day
Primary pipework insulated	Yes
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: N/A	
Efficiency	
Manufacturer	
Model	

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	
Water heating - type: Cylinder thermostat and HW separately timed	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	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 efficiency	*N/A*	
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 are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Predicted Energy Assessment

Plot 1, Priory Road, Fressingfield, Suffolk

Dwelling type:	House, Detached
Date of assessment:	12/10/2023
Produced by:	Alexandru Ardelean
Total floor area:	127.04 m²
DRRN:	

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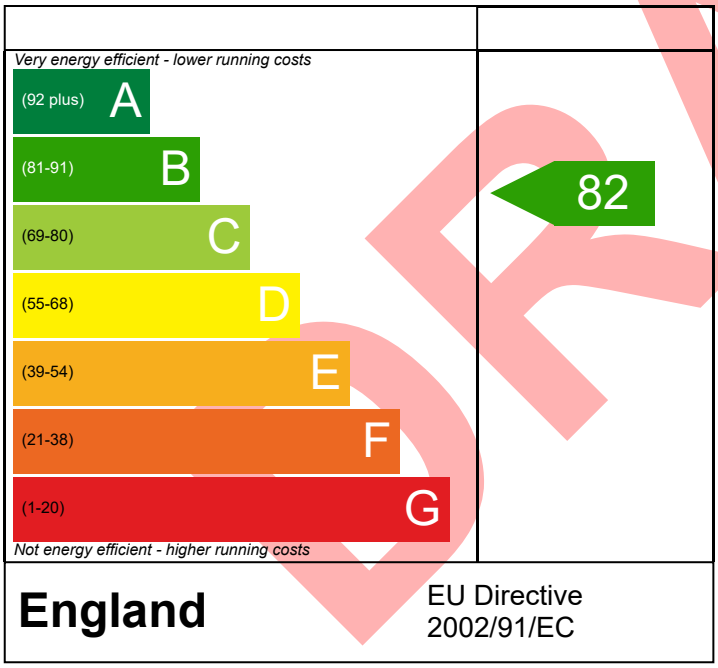
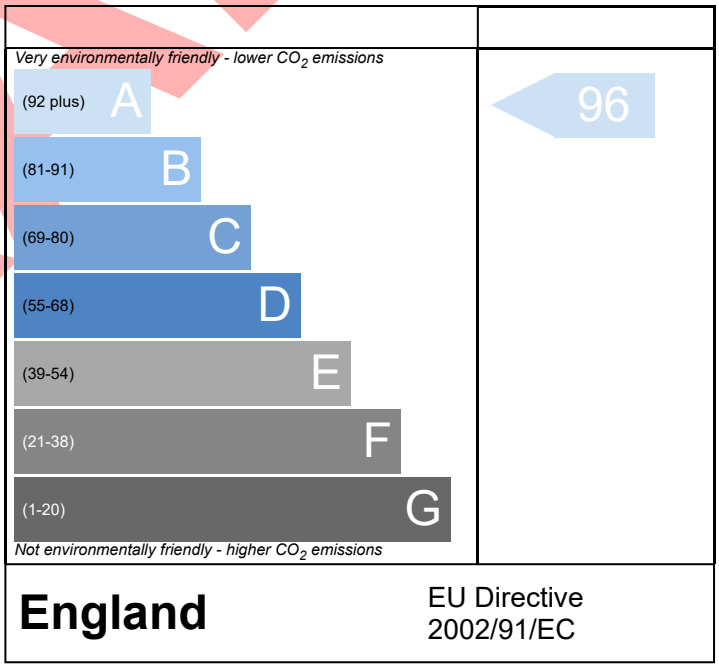
Energy Efficiency Rating



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

Environmental Impact (CO_2) Rating



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Building Regulations England Part L (BREL) Compliance Report

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^2
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

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	*12.52 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	5.03 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*65.8 kWh_{PE}/m^2*	
Dwelling primary energy	52.9 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*37.4 kWh/m^2*	
Dwelling fabric energy efficiency	39.2 kWh/m^2	FAIL

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.15	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, and roof windows	*1.6*	1.4	Windows-front (1.4)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	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^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
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	**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	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 dwellings	Not government-approved scheme	0.046	RCD
Party wall	P1: Ground floor	Not government-approved scheme	0.172	RCD
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 **(!)**	
External wall	E6: Intermediate floor within a dwelling	Not government-approved scheme	0 **(!)**	RCD
External wall	E10: Eaves (insulation at ceiling level)	Not government-approved scheme	0.054	RCD
External wall	E11: Eaves (insulation at rafter level)	SAP table default	0.15	
External wall	E12: Gable (insulation at ceiling level)	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 rafter level)	SAP table default	0.48	
Roof	R6: Flat ceiling	SAP table default	0.12	

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

4 Space heating	
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	246.8%
Emitter type	Both radiators and underfloor
Flow temperature	55°C
System type	Heat Pump
Manufacturer	Vaillant Group UK Ltd
Model	aroTHERM plus 3.5kW + AI-Not valid
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	150 litres
Declared heat loss	1.88 kWh/day
Primary pipework insulated	Yes
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: N/A	
Efficiency	
Manufacturer	
Model	

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: Cylinder thermostat and HW separately timed		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	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 efficiency	*N/A*	
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 are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Predicted Energy Assessment

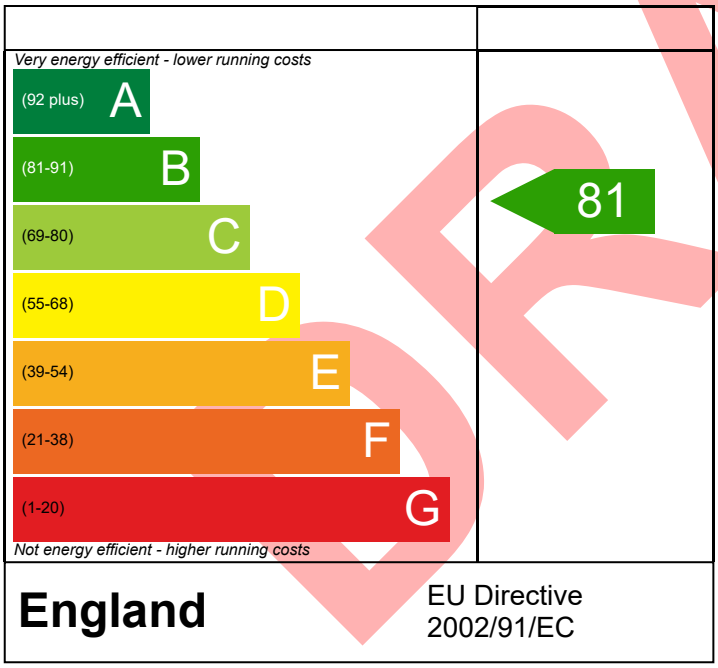
Plot 1, Priory Road, Fressingfield, Suffolk

Dwelling type:	Maisonette, Semi-Detached
Date of assessment:	12/10/2023
Produced by:	Alexandru Ardelean
Total floor area:	68.24 m²
DRRN:	

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

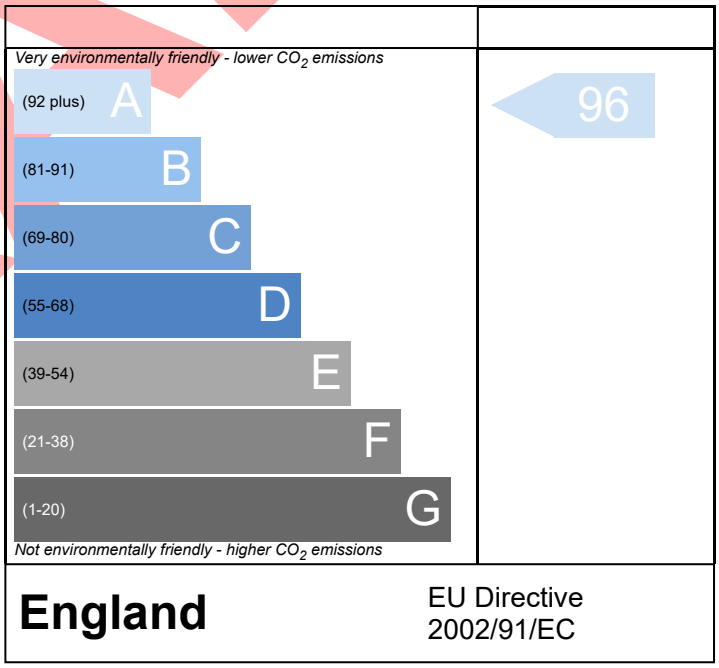
The energy performance has been assessed using the Government approved SAP 10 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO2) emissions.

Energy Efficiency Rating



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

Environmental Impact (CO_2) Rating



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

Building Regulations England Part L (BREL) Compliance Report

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^2
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

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	*12.52 kgCO_2/m^2*	
Dwelling carbon dioxide emission rate	5.03 kgCO_2/m^2	**OK**
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*65.8 kWh$_{PE}$/m^2*	
Dwelling primary energy	52.9 kWh$_{PE}$/m^2	**OK**
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*37.4 kWh/m^2*	
Dwelling fabric energy efficiency	39.2 kWh/m^2	**FAIL**

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.15	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, and roof windows	*1.6*	1.4	Windows-front (1.4)	**OK**
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	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^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
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	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	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 dwellings	Not government-approved scheme	0.046	RCD
Party wall	P1: Ground floor	Not government-approved scheme	0.172	RCD
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 **(!)**	
External wall	E6: Intermediate floor within a dwelling	Not government-approved scheme	0 **(!)**	RCD
External wall	E10: Eaves (insulation at ceiling level)	Not government-approved scheme	0.054	RCD
External wall	E11: Eaves (insulation at rafter level)	SAP table default	0.15	
External wall	E12: Gable (insulation at ceiling level)	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 rafter level)	SAP table default	0.48	
Roof	R6: Flat ceiling	SAP table default	0.12	

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

4 Space heating	
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	246.8%
Emitter type	Both radiators and underfloor
Flow temperature	55°C
System type	Heat Pump
Manufacturer	Vaillant Group UK Ltd
Model	aroTHERM plus 3.5kW + AI-Not valid
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	150 litres
Declared heat loss	1.88 kWh/day
Primary pipework insulated	Yes
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: N/A	
Efficiency	
Manufacturer	
Model	

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: Cylinder thermostat and HW separately timed		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	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 efficiency	*N/A*	
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 are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Predicted Energy Assessment

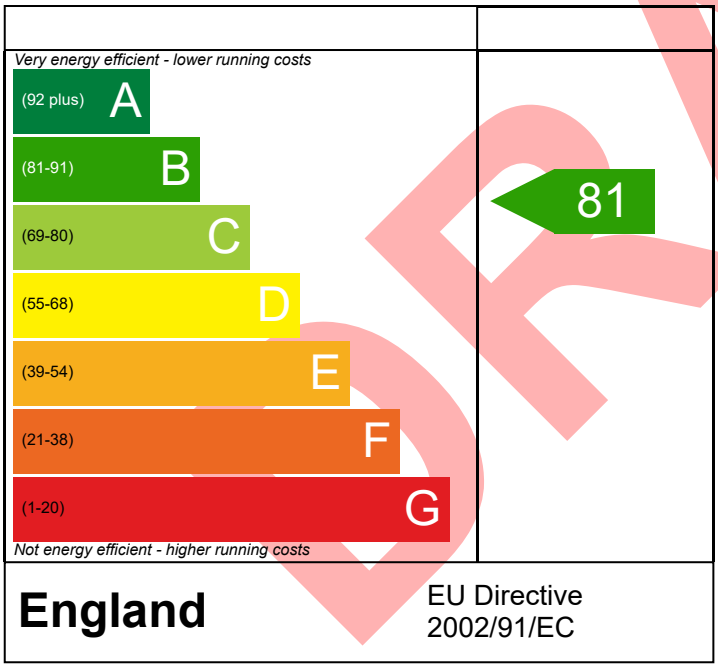
Plot 1, Priory Road, Fressingfield, Suffolk

Dwelling type:	Maisonette, Semi-Detached
Date of assessment:	12/10/2023
Produced by:	Alexandru Ardelean
Total floor area:	68.24 m²
DRRN:	

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

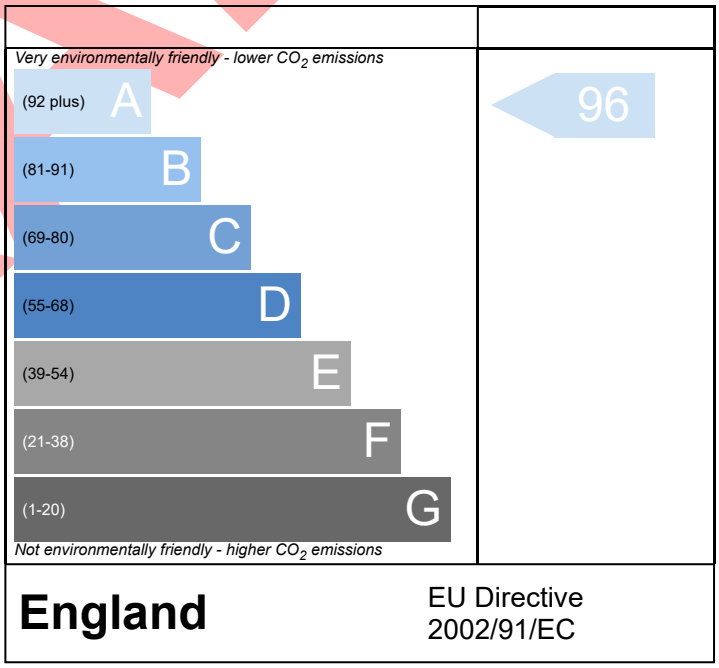
The energy performance has been assessed using the Government approved SAP 10 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO2) emissions.

Energy Efficiency Rating



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

Environmental Impact (CO_2) Rating



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

Building Regulations England Part L (BREL) Compliance Report

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^2
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

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	*10.11 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.8 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*52.92 kWh_{PE}/m^2*	
Dwelling primary energy	39.54 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*42.9 kWh/m^2*	
Dwelling fabric energy efficiency	41.0 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.15	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, and roof windows	*1.6*	1.43	Folding Door (1.6)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	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^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
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 **(!)**	RCD
External wall	E16: Corner (normal)	Not government-approved scheme	0.031 **(!)**	RCD
External wall	E6: Intermediate floor within a 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 - internal area greater than external area)	Not government-approved scheme	-0.064	RCD

3 Air permeability (better than typically expected values are flagged with a subsequent (!))		
Maximum permitted air permeability at 50Pa	*8 m^3/hm^2*	
Dwelling air permeability at 50Pa	5 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	274.9%
Emitter type	Both radiators and underfloor
Flow temperature	55°C
System type	Heat Pump
Manufacturer	Vaillant Group UK Ltd
Model	aroTHERM plus 3.5kW + AI-Not valid
Commissioning	
Secondary heating system: Closed room heater	
Fuel	Wood logs
Efficiency	65.0%
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	150 litres
Declared heat loss	1.88 kWh/day
Primary pipework insulated	Yes
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: N/A	
Efficiency	
Manufacturer	
Model	

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	
Water heating - type: Cylinder thermostat and HW separately timed	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	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 efficiency	*N/A*	
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 are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Predicted Energy Assessment

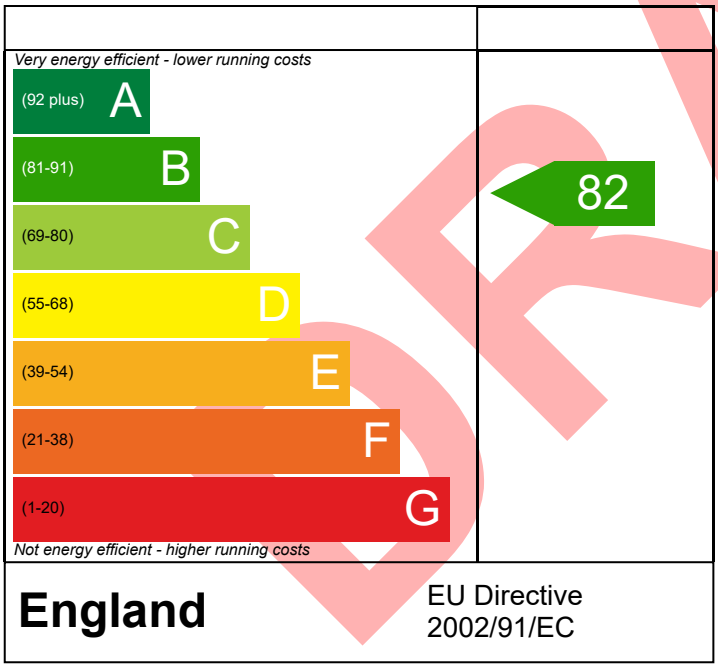
Plot 1, Priory Road, Fressingfield, Suffolk

Dwelling type:	House, Detached
Date of assessment:	12/10/2023
Produced by:	Alexandru Ardelean
Total floor area:	127.04 m²
DRRN:	

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

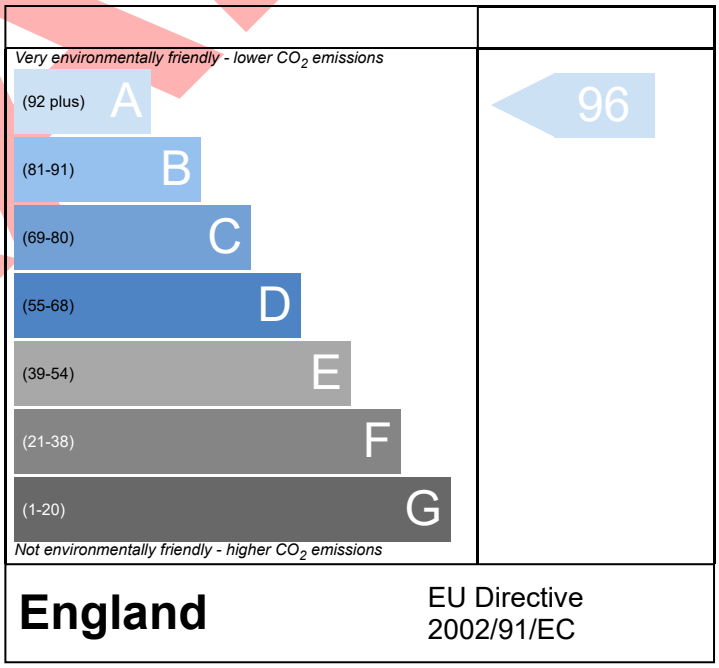
The energy performance has been assessed using the Government approved SAP 10 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO2) emissions.

Energy Efficiency Rating



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

Environmental Impact (CO_2) Rating



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

Building Regulations England Part L (BREL) Compliance Report

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^2
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 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.83 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*54.44 kWh_{PE}/m^2*	
Dwelling primary energy	39.75 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*44.4 kWh/m^2*	
Dwelling fabric energy efficiency	42.5 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.15	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, and roof windows	*1.6*	1.4	Windows-side (1.4)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	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^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
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 (!))
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
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 **(!)**	RCD
External wall	E16: Corner (normal)	Not government-approved scheme	0.031 **(!)**	RCD
External wall	E6: Intermediate floor within a 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 - internal area greater than external area)	Not government-approved scheme	-0.064	RCD
External wall	E11: Eaves (insulation at rafter level)	SAP table default	0.15	
External wall	E13: Gable (insulation at rafter level)	SAP table default	0.25	
External wall	E14: Flat roof	SAP table default	0.16	
Roof	R6: Flat ceiling	SAP table default	0.12	

3 Air permeability (better than typically expected values are flagged with a subsequent (!))		
Maximum permitted air permeability at 50Pa	*8 m^3/hm^2*	
Dwelling air permeability at 50Pa	5 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	275.6%
Emitter type	Both radiators and underfloor
Flow temperature	55°C
System type	Heat Pump
Manufacturer	Vaillant Group UK Ltd
Model	aroTHERM plus 3.5kW + AI
Commissioning	
Secondary heating system: Closed room heater	
Fuel	Wood logs
Efficiency	65.0%
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	150 litres
Declared heat loss	1.88 kWh/day
Primary pipework insulated	Yes
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: N/A	
Efficiency	
Manufacturer	
Model	

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: Cylinder thermostat and HW separately timed		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	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 efficiency	*N/A*	
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 are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Predicted Energy Assessment

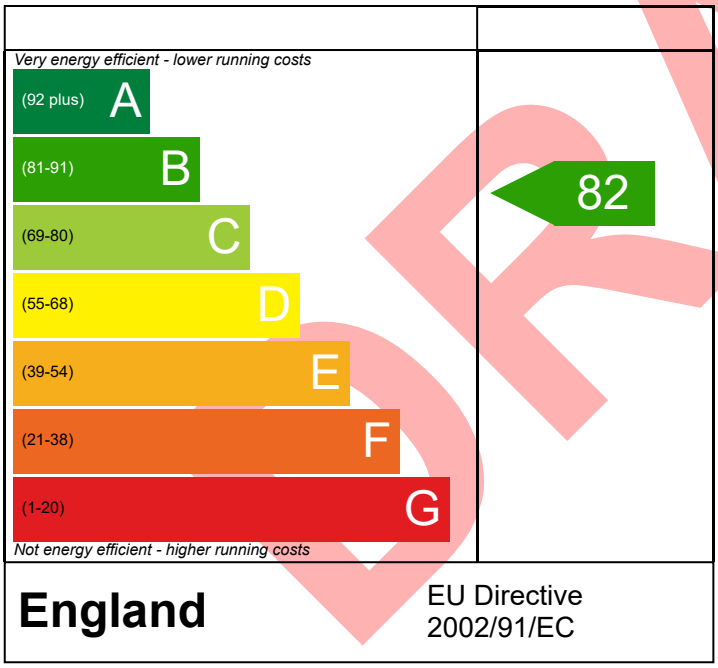
Plot 1, Priory Road, Fressingfield, Suffolk

Dwelling type:	House, Detached
Date of assessment:	12/10/2023
Produced by:	Alexandru Ardelean
Total floor area:	137.85 m²
DRRN:	

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

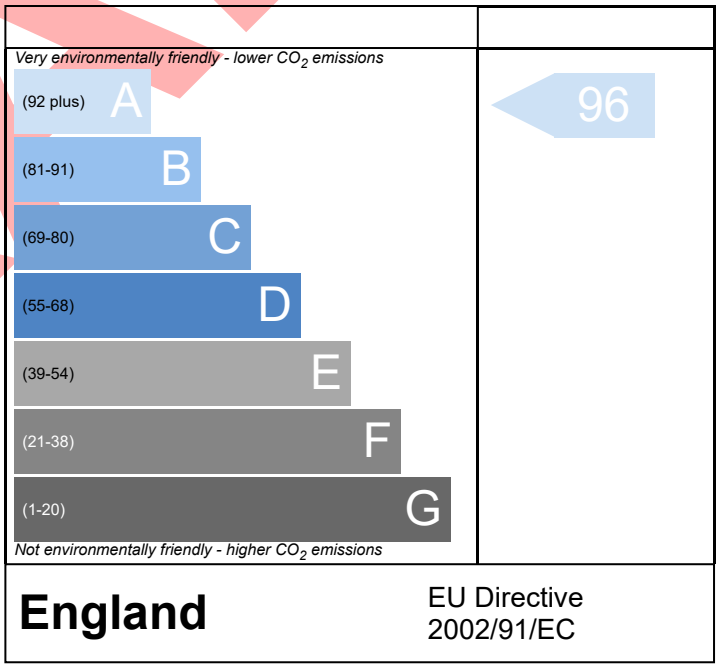
The energy performance has been assessed using the Government approved SAP 10 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO2) emissions.

Energy Efficiency Rating



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

Environmental Impact (CO_2) Rating



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

Building Regulations England Part L (BREL) Compliance Report

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^2
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 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.7 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*53.15 kWh_{PE}/m^2*	
Dwelling primary energy	38.39 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*44.7 kWh/m^2*	
Dwelling fabric energy efficiency	41.3 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.15	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, and roof windows	*1.6*	1.4	Windows-side (1.4)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	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^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
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 (!))
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
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 **(!)**	RCD
External wall	E16: Corner (normal)	Not government-approved scheme	0.031 **(!)**	RCD
External wall	E6: Intermediate floor within a 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 - internal area greater than external area)	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	

3 Air permeability (better than typically expected values are flagged with a subsequent (!))		
Maximum permitted air permeability at 50Pa	*8 m^3/hm^2*	
Dwelling air permeability at 50Pa	5 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	275.7%
Emitter type	Both radiators and underfloor
Flow temperature	55°C
System type	Heat Pump
Manufacturer	Vaillant Group UK Ltd
Model	aroTHERM plus 3.5kW + AI
Commissioning	
Secondary heating system: Closed room heater	
Fuel	Wood logs
Efficiency	65.0%
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	150 litres
Declared heat loss	1.88 kWh/day
Primary pipework insulated	Yes
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: N/A	
Efficiency	
Manufacturer	
Model	

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	

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

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	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 efficiency	*N/A*	
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 are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Predicted Energy Assessment

Plot 1, Priory Road, Fressingfield, Suffolk

Dwelling type:	House, Detached
Date of assessment:	12/10/2023
Produced by:	Alexandru Ardelean
Total floor area:	145.79 m²
DRRN:	

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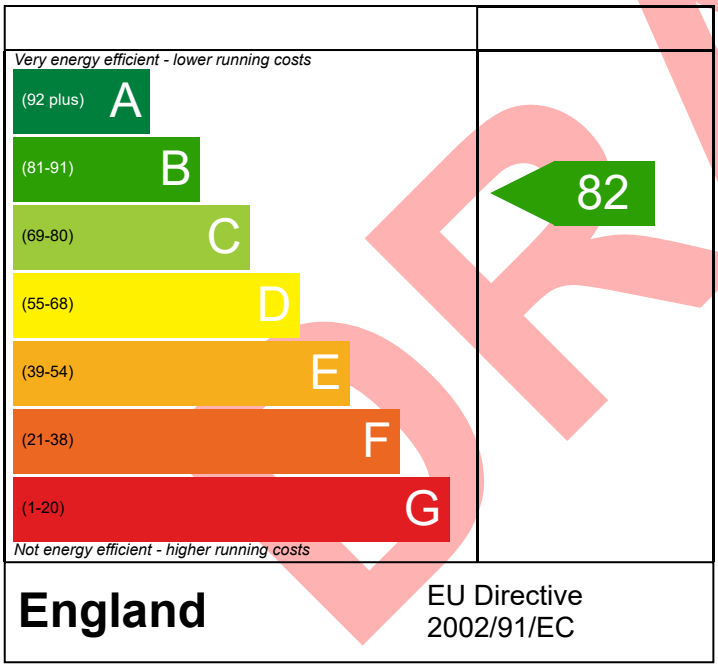
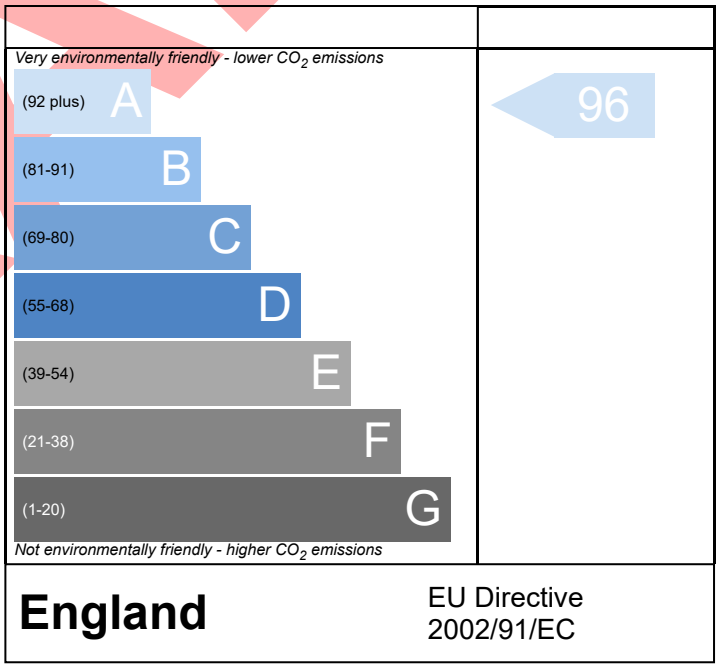
The energy performance has been assessed using the Government approved SAP 10 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO2) emissions.

Energy Efficiency Rating



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

Environmental Impact (CO_2) Rating



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Building Regulations England Part L (BREL) Compliance Report

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^2
Site Reference	Plot 26	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 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.7 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*53.15 kWh_{PE}/m^2*	
Dwelling primary energy	38.39 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*44.7 kWh/m^2*	
Dwelling fabric energy efficiency	41.3 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.15	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, and roof windows	*1.6*	1.4	Windows-side (1.4)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	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^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
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 (!))
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
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 **(!)**	RCD
External wall	E16: Corner (normal)	Not government-approved scheme	0.031 **(!)**	RCD
External wall	E6: Intermediate floor within a 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 - internal area greater than external area)	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	

3 Air permeability (better than typically expected values are flagged with a subsequent (!))		
Maximum permitted air permeability at 50Pa	*8 m^3/hm^2*	
Dwelling air permeability at 50Pa	5 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	275.7%
Emitter type	Both radiators and underfloor
Flow temperature	55°C
System type	Heat Pump
Manufacturer	Vaillant Group UK Ltd
Model	aroTHERM plus 3.5kW + AI
Commissioning	
Secondary heating system: Closed room heater	
Fuel	Wood logs
Efficiency	65.0%
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	150 litres
Declared heat loss	1.88 kWh/day
Primary pipework insulated	Yes
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: N/A	
Efficiency	
Manufacturer	
Model	

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	

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

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	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 efficiency	*N/A*	
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 are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Predicted Energy Assessment

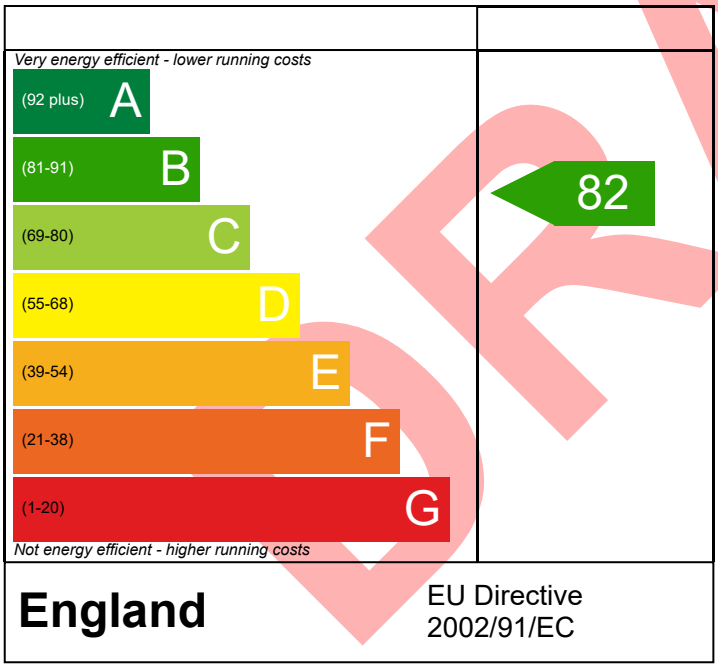
Plot 1, Priory Road, Fressingfield, Suffolk

Dwelling type:	House, Detached
Date of assessment:	12/10/2023
Produced by:	Alexandru Ardelean
Total floor area:	145.79 m²
DRRN:	

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

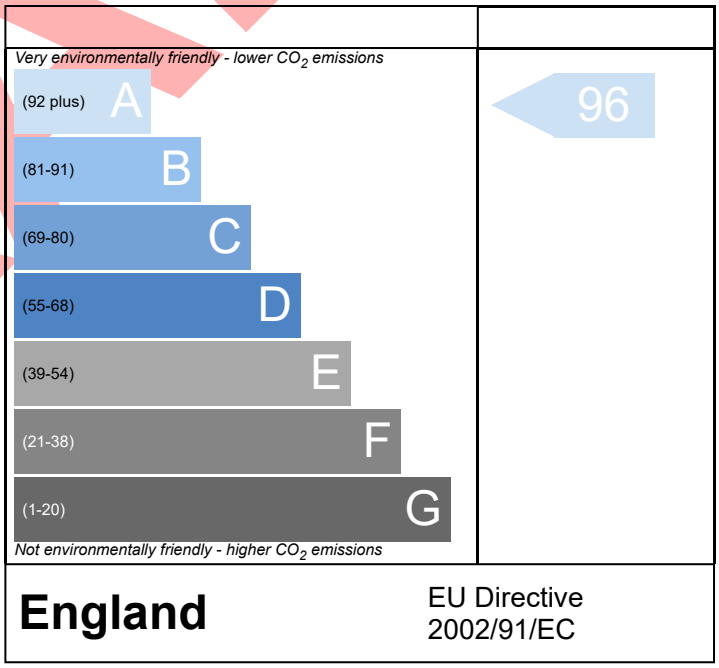
The energy performance has been assessed using the Government approved SAP 10 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO2) emissions.

Energy Efficiency Rating



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

Environmental Impact (CO_2) Rating



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

Building Regulations England Part L (BREL) Compliance Report

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^2
Site Reference	Plot 27	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	*10.48 kgCO_2/m^2*	
Dwelling carbon dioxide emission rate	3.91 kgCO_2/m^2	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*54.92 kWh$_{PE}$/m^2*	
Dwelling primary energy	40.66 kWh$_{PE}$/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*44.8 kWh/m^2*	
Dwelling fabric energy efficiency	43.0 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.15	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, and roof windows	*1.6*	1.43	Folding Door (1.6)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	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^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
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 [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 **(!)**	RCD
External wall	E16: Corner (normal)	Not government-approved scheme	0.031 **(!)**	RCD
External wall	E6: Intermediate floor within a 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 - internal area greater than external area)	Not government-approved scheme	-0.064	RCD

3 Air permeability (better than typically expected values are flagged with a subsequent (!))		
Maximum permitted air permeability at 50Pa	*8 m^3/hm^2*	
Dwelling air permeability at 50Pa	5 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	274.9%
Emitter type	Both radiators and underfloor
Flow temperature	55°C
System type	Heat Pump
Manufacturer	Vaillant Group UK Ltd
Model	aroTHERM plus 3.5kW + AI-Not valid
Commissioning	
Secondary heating system: Closed room heater	
Fuel	Wood logs
Efficiency	65.0%
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	150 litres
Declared heat loss	1.88 kWh/day
Primary pipework insulated	Yes
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: N/A	
Efficiency	
Manufacturer	
Model	

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	
Water heating - type: Cylinder thermostat and HW separately timed	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	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 efficiency	*N/A*	
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 are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Predicted Energy Assessment

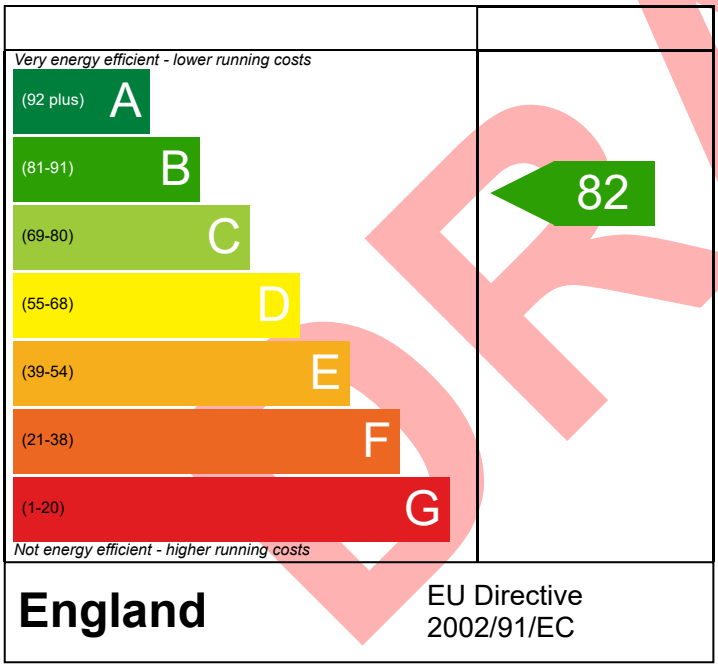
Plot 1, Priory Road, Fressingfield, Suffolk

Dwelling type:	House, Detached
Date of assessment:	12/10/2023
Produced by:	Alexandru Ardelean
Total floor area:	127.04 m²
DRRN:	

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

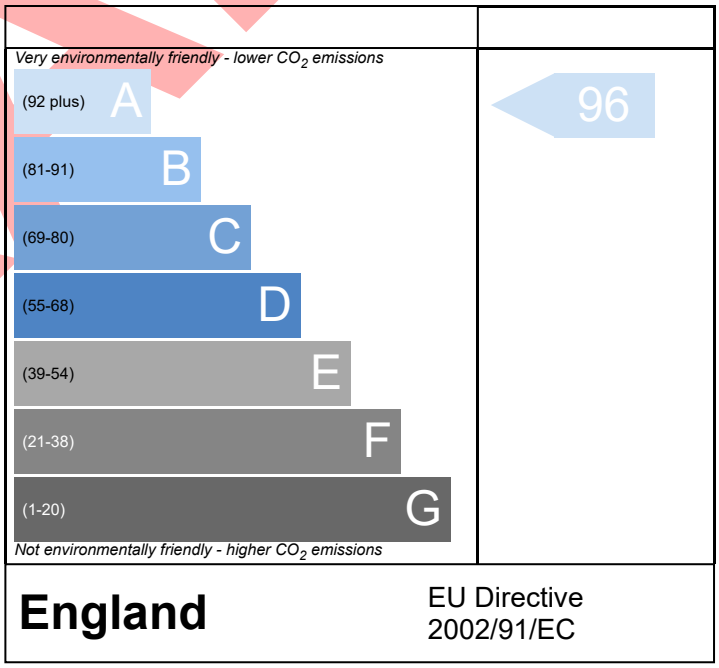
The energy performance has been assessed using the Government approved SAP 10 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO2) emissions.

Energy Efficiency Rating



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

Environmental Impact (CO_2) Rating



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

Building Regulations England Part L (BREL) Compliance Report

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^2
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 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.82 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*54.35 kWh_{PE}/m^2*	
Dwelling primary energy	39.7 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*44.3 kWh/m^2*	
Dwelling fabric energy efficiency	42.5 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.15	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, and roof windows	*1.6*	1.4	Windows-side (1.4)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	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^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
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 (!))
Building part **1 - Main Dwelling**: Thermal bridging calculated from linear thermal transmittances for each junction

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External wall	E24: Eaves (insulation at ceiling level - inverted)	SAP table default	0.15	
External wall	E17: Corner (inverted - internal area greater than external area)	Not government-approved scheme	-0.064	RCD
External wall	E11: Eaves (insulation at rafter level)	SAP table default	0.15	
External wall	E13: Gable (insulation at rafter level)	SAP table default	0.25	
External wall	E14: Flat roof	SAP table default	0.16	
Roof	R6: Flat ceiling	SAP table default	0.12	

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Dwelling air permeability at 50Pa	5 m^3/hm^2, Design value	OK
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Minimum permitted heat recovery efficiency	*N/A*	
Heat recovery efficiency	N/A	**N/A**
Manufacturer/Model		
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N/A

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N/A

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Predicted Energy Assessment

Plot 1, Priory Road, Fressingfield, Suffolk

Dwelling type:	House, Detached
Date of assessment:	12/10/2023
Produced by:	Alexandru Ardelean
Total floor area:	137.85 m²
DRRN:	

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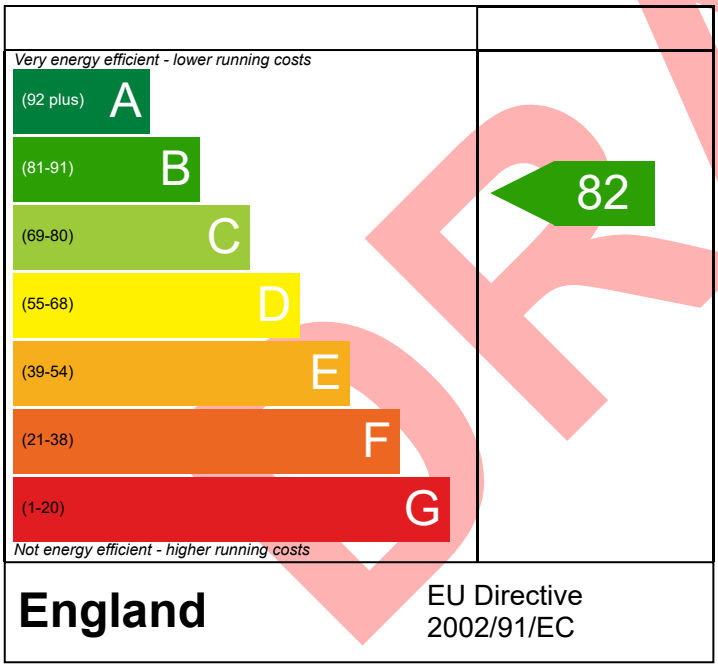

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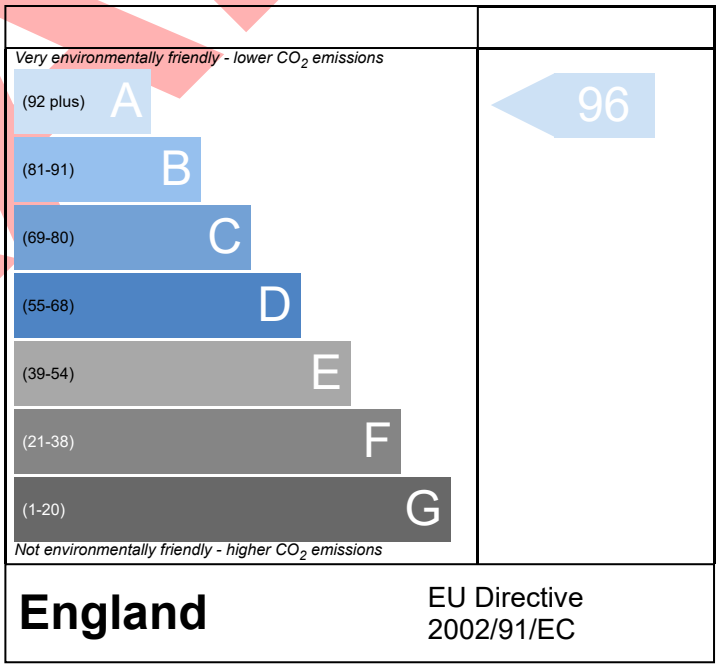

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