BASIC COMPLIANCE REPORT
Calculation Type: New Build (As Designed)

Property Reference	r13-200414-21	**Issued on Date**	09/12/2020
Assessment Reference	CLEAN	**Prop Type Ref**	Semi House R
Property	Plot 1, 7 High Street, Milton, CAMBRIDGE, CB24 6AJ		

SAP Rating	86 B	**DER**	14.66	**TER**	14.67
Environmental	86 B	**% DER<TER**	0.10		
CO_2 Emissions (t/year)	1.86	**DFEE**	47.56	**TFEE**	50.16
General Requirements Compliance	Pass	**% DFEE<TFEE**	5.20		

Assessor Details	Mr. Peter Thom, Green Heat Limited, Tel: 01223 277278, peter@greenheat.uk.com	**Assessor ID**	1002-0002
Client			

SUMARY FOR INPUT DATA FOR New Build (As Designed)

Criterion 1 – Achieving the TER and TFEE rate

1a TER and DER

Fuel for main heating	Mains gas		
Fuel factor	1.00 (mains gas)		
Target Carbon Dioxide Emission Rate (TER)	14.67	$kgCO_2/m^2$	
Dwelling Carbon Dioxide Emission Rate (DER)	14.66	$kgCO_2/m^2$	Pass
	-0.01 (-0.1%)	$kgCO_2/m^2$	

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	50.16	$kWh/m^2/yr$	
Dwelling Fabric Energy Efficiency (DFEE)	47.56	$kWh/m^2/yr$	
	-2.6 (-5.2%)	$kWh/m^2/yr$	Pass

Criterion 2 – Limits on design flexibility

Limiting Fabric Standards

2 Fabric U-values

Element	Average	Highest	
External wall	0.23 (max. 0.30)	0.23 (max. 0.70)	Pass
Party wall	0.00 (max. 0.20)	-	Pass
Floor	0.15 (max. 0.25)	0.15 (max. 0.70)	Pass
Roof	0.16 (max. 0.20)	0.18 (max. 0.35)	Pass
Openings	1.40 (max. 2.00)	1.40 (max. 3.30)	Pass

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals	7.00 (design value)	
Maximum	10.0	Pass

Limiting System Efficiencies

4 Heating efficiency

BASIC COMPLIANCE REPORT
Calculation Type: New Build (As Designed)

Main heating system	Boiler system with radiators or underfloor - Mains gas Data from database Vaillant ecoFIT sustain 630 VU 306/6-3 (H-GB) Efficiency: 89.8% SEDBUK2009 Minimum: 88.0%		Pass
Secondary heating system	None		

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.18 kWh/day Permitted by DBSCG 2.30		Pass
Primary pipework insulated	Yes		Pass

6 Controls

Space heating controls	Time and temperature zone control		Pass
Hot water controls	Cylinderstat		Pass
	Independent timer for DHW		Pass
Boiler interlock	Yes		Pass

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100	%	
Minimum	75	%	Pass

8 Mechanical ventilation

Not applicable

Criterion 3 – Limiting the effects of heat gains in summer

9 Summertime temperature

Overheating risk (East Anglia)	Slight		Pass

Based on:

Overshading	Average		
Windows facing South East Windows facing South West Windows facing North West	6.60 m², No overhang 2.26 m², No overhang 10.71 m², No overhang		
Air change rate	5.00 ach		
Blinds/curtains	None		

Criterion 4 – Building performance consistent with DER and DFEE rate

Party Walls

Type	U-value		
Filled Cavity with Edge Sealing	0.00	W/m²K	Pass

Air permeability and pressure testing

3 Air permeability

Air permeability at 50 pascals	7.00 (design value)		
Maximum	10.0		Pass

10 Key features

Party wall U-value	0.00	W/m²K	

This report has not been submitted through the Elmhurst Energy members' portal, therefore results are subject to change when the dwelling is completed.

PREDICTED ENERGY ASSESSMENT

Plot 1, 7 High Street,
Milton,
CAMBRIDGE,
CB24 6AJ

Dwelling type:	House, Semi-Detached
Date of assessment:	09/12/2020
Produced by:	Green Heat Ltd
Total floor area:	151.62 m²

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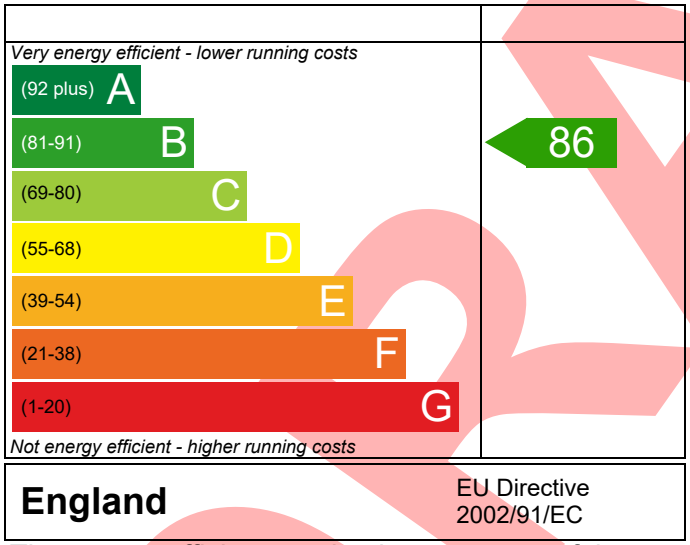
The energy performance has been assessed using the Government approved SAP2012 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO_2) emissions.

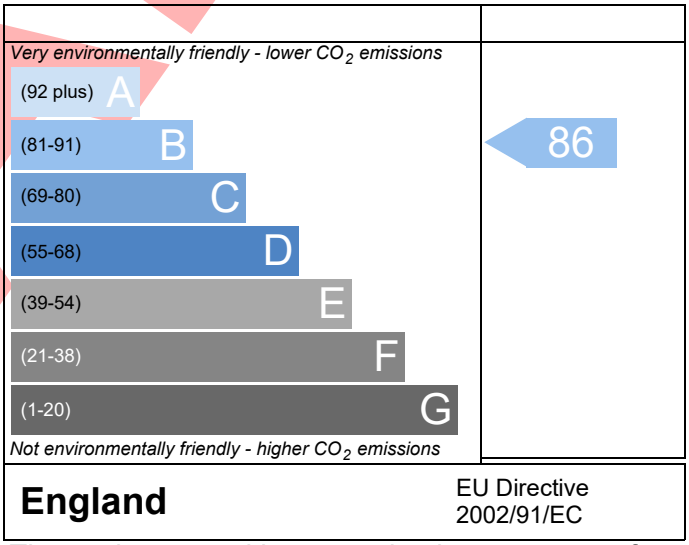
Energy Efficiency Rating



England EU Directive 2002/91/EC

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



England EU Directive 2002/91/EC

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BASIC COMPLIANCE REPORT
Calculation Type: New Build (As Designed)

Property Reference	r13-200414-21	**Issued on Date**	09/12/2020
Assessment Reference	GREEN	**Prop Type Ref**	Semi House R
Property	Plot 1, 7 High Street, Milton, CAMBRIDGE, CB24 6AJ		

SAP Rating	86 B	**DER**	12.91	**TER**	14.67
Environmental	88 B	**% DER<TER**	12.02		
CO_2 Emissions (t/year)	1.66	**DFEE**	43.29	**TFEE**	50.16
General Requirements Compliance	Pass	**% DFEE<TFEE**	13.70		

Assessor Details	Mr. Peter Thom, Green Heat Limited, Tel: 01223 277278, peter@greenheat.uk.com	**Assessor ID**	1002-0002
Client			

SUMARY FOR INPUT DATA FOR New Build (As Designed)

Criterion 1 – Achieving the TER and TFEE rate

1a TER and DER

Fuel for main heating	Mains gas		
Fuel factor	1.00 (mains gas)		
Target Carbon Dioxide Emission Rate (TER)	14.67	$kgCO_2/m^2$	
Dwelling Carbon Dioxide Emission Rate (DER)	12.91	$kgCO_2/m^2$	Pass
	-1.76 (-12.0%)	$kgCO_2/m^2$	

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	50.16	$kWh/m^2/yr$	
Dwelling Fabric Energy Efficiency (DFEE)	43.29	$kWh/m^2/yr$	
	-6.9 (-13.7%)	$kWh/m^2/yr$	Pass

Criterion 2 – Limits on design flexibility

Limiting Fabric Standards

2 Fabric U-values

Element	Average	Highest	
External wall	0.23 (max. 0.30)	0.23 (max. 0.70)	Pass
Party wall	0.00 (max. 0.20)	-	Pass
Floor	0.15 (max. 0.25)	0.15 (max. 0.70)	Pass
Roof	0.16 (max. 0.20)	0.18 (max. 0.35)	Pass
Openings	1.40 (max. 2.00)	1.40 (max. 3.30)	Pass

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals	2.50 (design value)	
Maximum	10.0	Pass

Limiting System Efficiencies

4 Heating efficiency

Main heating system	Boiler system with radiators or underfloor - Mains gas Data from database Vaillant ecoFIT sustain 630 VU 306/6-3 (H-GB) Efficiency: 89.8% SEDBUK2009 Minimum: 88.0%		Pass
Secondary heating system	None		

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.18 kWh/day Permitted by DBSCG 2.30		Pass
Primary pipework insulated	Yes		Pass

6 Controls

Space heating controls	Time and temperature zone control		Pass
Hot water controls	Cylinderstat		Pass
	Independent timer for DHW		Pass
Boiler interlock	Yes		Pass

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100	%	
Minimum	75	%	Pass

8 Mechanical ventilation

Continuous supply and extract system			
Specific fan power	0.72		
Maximum	1.5		Pass
MVHR efficiency	87	%	
Minimum	70	%	Pass

Criterion 3 – Limiting the effects of heat gains in summer

9 Summertime temperature

Overheating risk (East Anglia)	Slight	Pass

Based on:

Overshading	Average
Windows facing South East	6.60 m², No overhang
Windows facing South West	2.26 m², No overhang
Windows facing North West	10.71 m², No overhang
Air change rate	5.00 ach
Blinds/curtains	None

Criterion 4 – Building performance consistent with DER and DFEE rate

Party Walls

Type	U-value		
Filled Cavity with Edge Sealing	0.00	W/m²K	Pass

Air permeability and pressure testing

3 Air permeability

Air permeability at 50 pascals	2.50 (design value)	
Maximum	10.0	Pass

BASIC COMPLIANCE REPORT
Calculation Type: New Build (As Designed)

10 Key features

Party wall U-value	0.00	W/m²K
Air permeability	2.5	m³/m²h

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PREDICTED ENERGY ASSESSMENT

Plot 1, 7 High Street,
Milton,
CAMBRIDGE,
CB24 6AJ

Dwelling type:	House, Semi-Detached
Date of assessment:	09/12/2020
Produced by:	Green Heat Ltd
Total floor area:	151.62 m²

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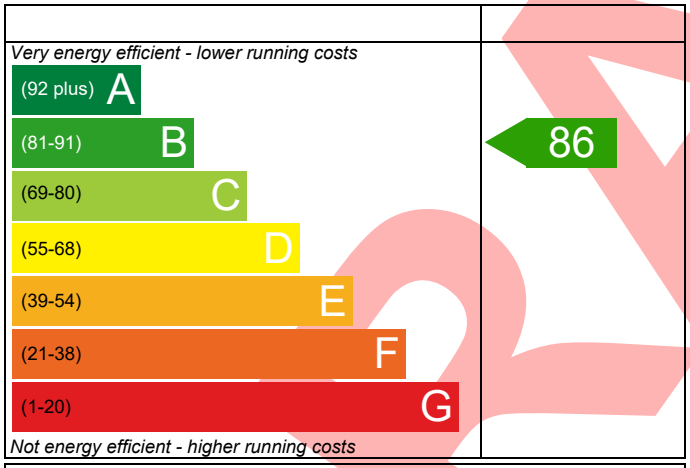
Energy Efficiency Rating



England EU Directive 2002/91/EC

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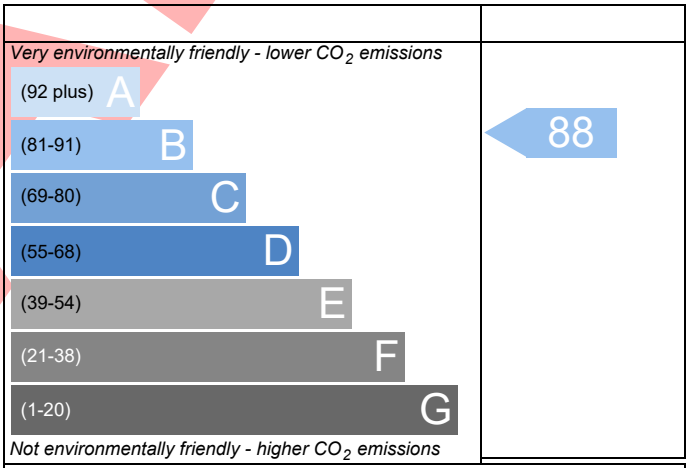
Environmental Impact (CO_2) Rating



England EU Directive 2002/91/EC

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BASIC COMPLIANCE REPORT
Calculation Type: New Build (As Designed)

Property Reference	r13-200414-21	**Issued on Date**	09/12/2020
Assessment Reference	NOTIONAL	**Prop Type Ref**	Semi House R
Property	Plot 1, 7 High Street, Milton, CAMBRIDGE, CB24 6AJ		

SAP Rating	84 B	**DER**	17.23	**TER**	14.67
Environmental	84 B	**% DER<TER**	-17.42		
CO_2 Emissions (t/year)	2.21	**DFEE**	57.83	**TFEE**	50.16
General Requirements Compliance	Fail	**% DFEE<TFEE**	-15.29		

Assessor Details	Mr. Peter Thom, Green Heat Limited, Tel: 01223 277278, peter@greenheat.uk.com	**Assessor ID**	1002-0002
Client			

SUMARY FOR INPUT DATA FOR New Build (As Designed)

Criterion 1 – Achieving the TER and TFEE rate

1a TER and DER

Fuel for main heating	Mains gas		
Fuel factor	1.00 (mains gas)		
Target Carbon Dioxide Emission Rate (TER)	14.67	$kgCO_2/m^2$	
Dwelling Carbon Dioxide Emission Rate (DER)	17.23	$kgCO_2/m^2$	
Excess emissions	2.56 (17.5%)	$kgCO_2/m^2$	Fail

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	50.16	$kWh/m^2/yr$	
Dwelling Fabric Energy Efficiency (DFEE)	57.83	$kWh/m^2/yr$	
Excess energy	7.6 (15.1%)	$kWh/m^2/yr$	Fail

Criterion 2 – Limits on design flexibility

Limiting Fabric Standards

2 Fabric U-values

Element	Average	Highest	
External wall	0.28 (max. 0.30)	0.28 (max. 0.70)	Pass
Party wall	0.00 (max. 0.20)	-	Pass
Floor	0.20 (max. 0.25)	0.20 (max. 0.70)	Pass
Roof	0.18 (max. 0.20)	0.20 (max. 0.35)	Pass
Openings	1.74 (max. 2.00)	1.80 (max. 3.30)	Pass

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals	7.00 (design value)	
Maximum	10.0	Pass

Limiting System Efficiencies

4 Heating efficiency

BASIC COMPLIANCE REPORT
Calculation Type: New Build (As Designed)

Main heating system	Boiler system with radiators or underfloor - Mains gas Data from database Vaillant ecoFIT sustain 630 VU 306/6-3 (H-GB) Efficiency: 89.8% SEDBUK2009 Minimum: 88.0%		Pass
Secondary heating system	None		

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.18 kWh/day Permitted by DBSCG 2.30		Pass
Primary pipework insulated	Yes		Pass

6 Controls

Space heating controls	Time and temperature zone control		Pass
Hot water controls	Cylinderstat		Pass
	Independent timer for DHW		Pass
Boiler interlock	Yes		Pass

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100	%	
Minimum	75	%	Pass

8 Mechanical ventilation

Not applicable

Criterion 3 – Limiting the effects of heat gains in summer

9 Summertime temperature

Overheating risk (East Anglia)	Not significant		Pass

Based on:

Overshading	Average		
Windows facing South East Windows facing South West Windows facing North West	6.60 m², No overhang 2.26 m², No overhang 10.71 m², No overhang		
Air change rate	5.00 ach		
Blinds/curtains	None		

Criterion 4 – Building performance consistent with DER and DFEE rate

Party Walls

Type	U-value		
Filled Cavity with Edge Sealing	0.00	W/m²K	Pass

Air permeability and pressure testing

3 Air permeability

Air permeability at 50 pascals	7.00 (design value)		
Maximum	10.0		Pass

10 Key features

Party wall U-value	0.00	W/m²K	

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PREDICTED ENERGY ASSESSMENT

Plot 1, 7 High Street,
Milton,
CAMBRIDGE,
CB24 6AJ

Dwelling type:	House, Semi-Detached
Date of assessment:	09/12/2020
Produced by:	Green Heat Ltd
Total floor area:	151.62 m²

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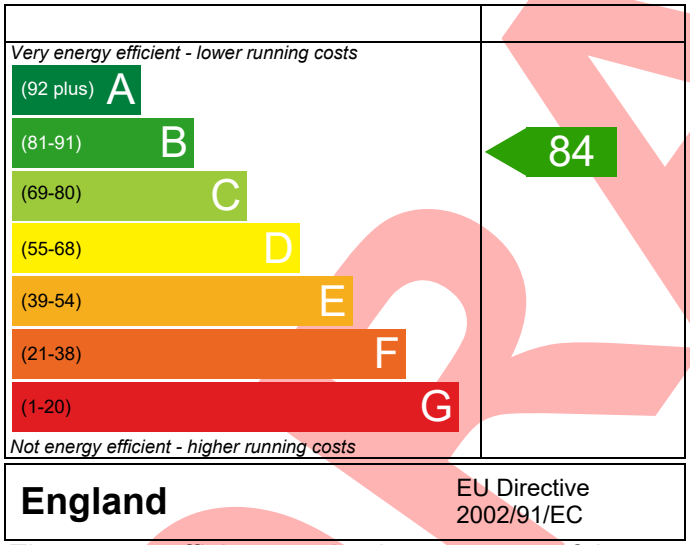
Energy Efficiency Rating



England EU Directive 2002/91/EC

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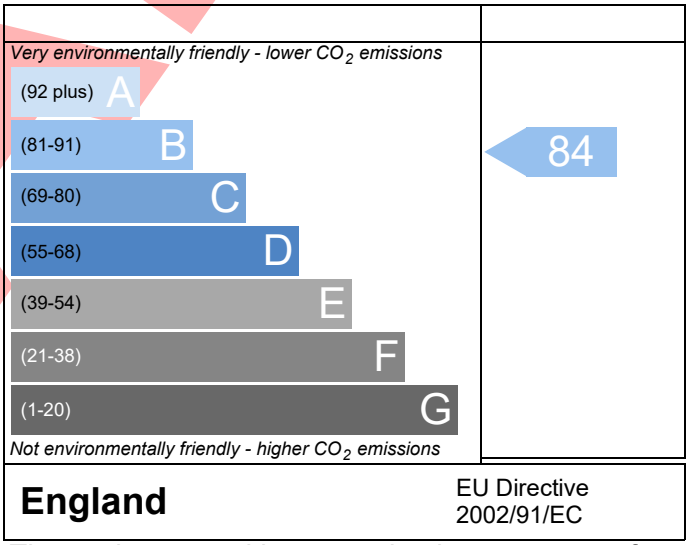
Environmental Impact (CO_2) Rating



England EU Directive 2002/91/EC

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This report has not been submitted through the Elmhurst Energy members' portal, therefore results are subject to change when the dwelling is completed.

BASIC COMPLIANCE REPORT
Calculation Type: New Build (As Designed)

Property Reference	r13-200414-22	**Issued on Date**	09/12/2020
Assessment Reference	CLEAN	**Prop Type Ref**	Semi House R
Property	Plot 2, 7 High Street, Milton, CAMBRIDGE, CB24 6AJ		

SAP Rating	86 B	**DER**	14.82	**TER**	14.83
Environmental	86 B	**% DER<TER**	0.05		
CO_2 Emissions (t/year)	1.89	**DFEE**	48.07	**TFEE**	50.93
General Requirements Compliance	Pass	**% DFEE<TFEE**	5.63		

Assessor Details	Mr. Peter Thom, Green Heat Limited, Tel: 01223 277278, peter@greenheat.uk.com	**Assessor ID**	1002-0002
Client			

SUMARY FOR INPUT DATA FOR New Build (As Designed)

Criterion 1 – Achieving the TER and TFEE rate

1a TER and DER

Fuel for main heating	Mains gas		
Fuel factor	1.00 (mains gas)		
Target Carbon Dioxide Emission Rate (TER)	14.83	$kgCO_2/m^2$	
Dwelling Carbon Dioxide Emission Rate (DER)	14.82	$kgCO_2/m^2$	Pass
	-0.01 (-0.1%)	$kgCO_2/m^2$	

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	50.93	$kWh/m^2/yr$	
Dwelling Fabric Energy Efficiency (DFEE)	48.07	$kWh/m^2/yr$	
	-2.8 (-5.5%)	$kWh/m^2/yr$	Pass

Criterion 2 – Limits on design flexibility

Limiting Fabric Standards

2 Fabric U-values

Element	Average	Highest	
External wall	0.23 (max. 0.30)	0.23 (max. 0.70)	Pass
Party wall	0.00 (max. 0.20)	-	Pass
Floor	0.15 (max. 0.25)	0.15 (max. 0.70)	Pass
Roof	0.16 (max. 0.20)	0.18 (max. 0.35)	Pass
Openings	1.40 (max. 2.00)	1.40 (max. 3.30)	Pass

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals	6.50 (design value)	
Maximum	10.0	Pass

Limiting System Efficiencies

4 Heating efficiency

BASIC COMPLIANCE REPORT
Calculation Type: New Build (As Designed)

Main heating system	Boiler system with radiators or underfloor - Mains gas Data from database Vaillant ecoFIT sustain 630 VU 306/6-3 (H-GB) Efficiency: 89.8% SEDBUK2009 Minimum: 88.0%		Pass
Secondary heating system	None		

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.18 kWh/day Permitted by DBSCG 2.30		Pass
Primary pipework insulated	Yes		Pass

6 Controls

Space heating controls	Time and temperature zone control		Pass
Hot water controls	Cylinderstat		Pass
	Independent timer for DHW		Pass
Boiler interlock	Yes		Pass

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100	%	
Minimum	75	%	Pass

8 Mechanical ventilation

Not applicable

Criterion 3 – Limiting the effects of heat gains in summer

9 Summertime temperature

Overheating risk (East Anglia)	Slight		Pass

Based on:

Overshading	Average		
Windows facing North East Windows facing South East Windows facing North West	2.26 m², No overhang 6.60 m², No overhang 10.71 m², No overhang		
Air change rate	5.00 ach		
Blinds/curtains	None		

Criterion 4 – Building performance consistent with DER and DFEE rate

Party Walls

Type	U-value		
Filled Cavity with Edge Sealing	0.00	W/m²K	Pass

Air permeability and pressure testing

3 Air permeability

Air permeability at 50 pascals	6.50 (design value)		
Maximum	10.0		Pass

10 Key features

Party wall U-value	0.00	W/m²K	

This report has not been submitted through the Elmhurst Energy members' portal, therefore results are subject to change when the dwelling is completed.

PREDICTED ENERGY ASSESSMENT

Plot 2, 7 High Street,
Milton,
CAMBRIDGE,
CB24 6AJ

Dwelling type:	House, Semi-Detached
Date of assessment:	09/12/2020
Produced by:	Green Heat Ltd
Total floor area:	151.62 m²

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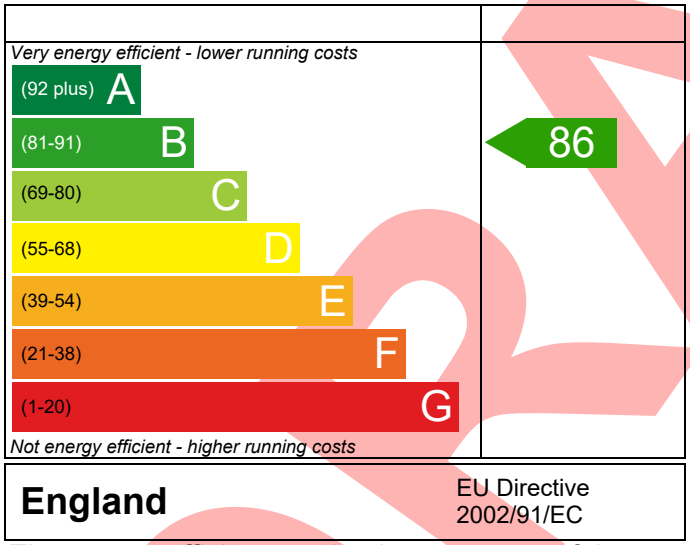
Energy Efficiency Rating



England EU Directive 2002/91/EC

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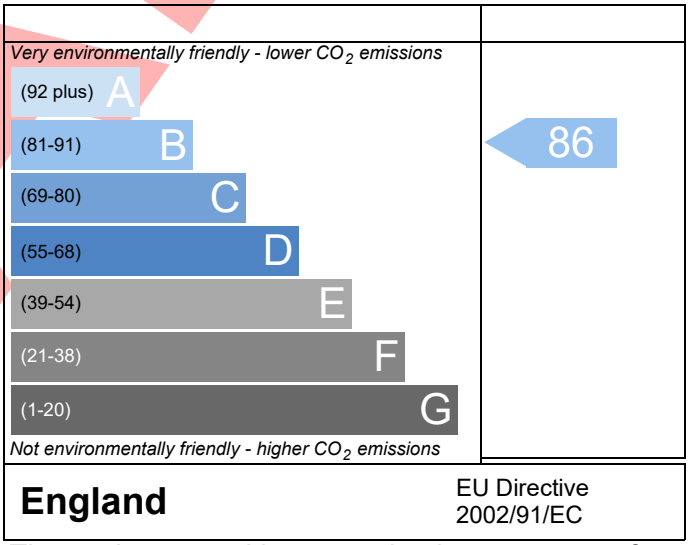
Environmental Impact (CO_2) Rating



England EU Directive 2002/91/EC

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.

This report has not been submitted through the Elmhurst Energy members' portal, therefore results are subject to change when the dwelling is completed.

BASIC COMPLIANCE REPORT
Calculation Type: New Build (As Designed)

Property Reference	r13-200414-22	**Issued on Date**	09/12/2020
Assessment Reference	GREEN	**Prop Type Ref**	Semi House R
Property	Plot 2, 7 High Street, Milton, CAMBRIDGE, CB24 6AJ		

SAP Rating	86 B	**DER**	13.16	**TER**	14.83
Environmental	88 B	**% DER<TER**	11.25		
CO_2 Emissions (t/year)	1.69	**DFEE**	44.40	**TFEE**	50.93
General Requirements Compliance	Pass	**% DFEE<TFEE**	12.83		

Assessor Details	Mr. Peter Thom, Green Heat Limited, Tel: 01223 277278, peter@greenheat.uk.com	**Assessor ID**	1002-0002
Client			

SUMARY FOR INPUT DATA FOR New Build (As Designed)

Criterion 1 – Achieving the TER and TFEE rate

1a TER and DER

Fuel for main heating	Mains gas		
Fuel factor	1.00 (mains gas)		
Target Carbon Dioxide Emission Rate (TER)	14.83	$kgCO_2/m^2$	
Dwelling Carbon Dioxide Emission Rate (DER)	13.16	$kgCO_2/m^2$	Pass
	-1.67 (-11.3%)	$kgCO_2/m^2$	

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	50.93	$kWh/m^2/yr$	
Dwelling Fabric Energy Efficiency (DFEE)	44.40	$kWh/m^2/yr$	
	-6.5 (-12.8%)	$kWh/m^2/yr$	Pass

Criterion 2 – Limits on design flexibility

Limiting Fabric Standards

2 Fabric U-values

Element	Average	Highest	
External wall	0.23 (max. 0.30)	0.23 (max. 0.70)	Pass
Party wall	0.00 (max. 0.20)	-	Pass
Floor	0.15 (max. 0.25)	0.15 (max. 0.70)	Pass
Roof	0.16 (max. 0.20)	0.18 (max. 0.35)	Pass
Openings	1.40 (max. 2.00)	1.40 (max. 3.30)	Pass

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals	2.50 (design value)	
Maximum	10.0	Pass

Limiting System Efficiencies

4 Heating efficiency

Main heating system	Boiler system with radiators or underfloor - Mains gas Data from database Vaillant ecoFIT sustain 630 VU 306/6-3 (H-GB) Efficiency: 89.8% SEDBUK2009 Minimum: 88.0%		Pass
Secondary heating system	None		

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.18 kWh/day Permitted by DBSCG 2.30		Pass
Primary pipework insulated	Yes		Pass

6 Controls

Space heating controls	Time and temperature zone control		Pass
Hot water controls	Cylinderstat		Pass
	Independent timer for DHW		Pass
Boiler interlock	Yes		Pass

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100	%	
Minimum	75	%	Pass

8 Mechanical ventilation

Continuous supply and extract system			
Specific fan power	0.72		
Maximum	1.5		Pass
MVHR efficiency	87	%	
Minimum	70	%	Pass

Criterion 3 – Limiting the effects of heat gains in summer

9 Summertime temperature

Overheating risk (East Anglia)	Slight	Pass

Based on:

Overshading	Average
Windows facing North East	2.26 m², No overhang
Windows facing South East	6.60 m², No overhang
Windows facing North West	10.71 m², No overhang
Air change rate	5.00 ach
Blinds/curtains	None

Criterion 4 – Building performance consistent with DER and DFEE rate

Party Walls

Type	U-value		
Filled Cavity with Edge Sealing	0.00	W/m²K	Pass

Air permeability and pressure testing

3 Air permeability

Air permeability at 50 pascals	2.50 (design value)		
Maximum	10.0		Pass

BASIC COMPLIANCE REPORT
Calculation Type: New Build (As Designed)

10 Key features

Party wall U-value	0.00	W/m²K
Air permeability	2.5	m³/m²h

This report has not been submitted through the Elmhurst Energy members' portal, therefore results are subject to change when the dwelling is completed.

PREDICTED ENERGY ASSESSMENT

Plot 2, 7 High Street,
Milton,
CAMBRIDGE,
CB24 6AJ

Dwelling type:	House, Semi-Detached
Date of assessment:	09/12/2020
Produced by:	Green Heat Ltd
Total floor area:	151.62 m²

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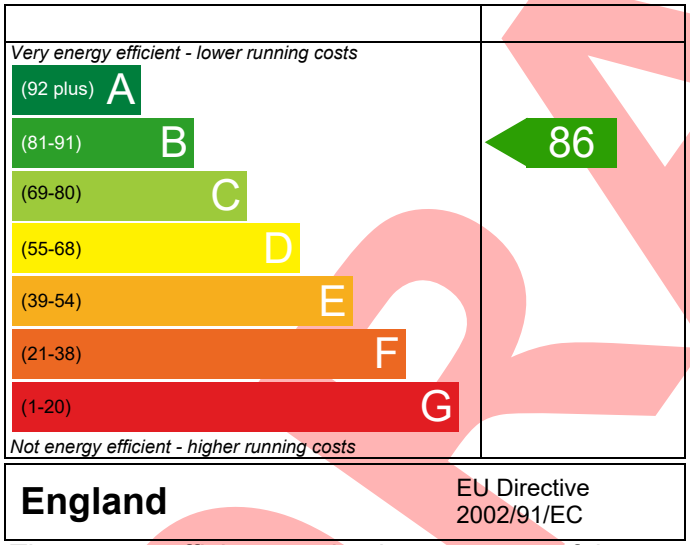
The energy performance has been assessed using the Government approved SAP2012 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO_2) emissions.

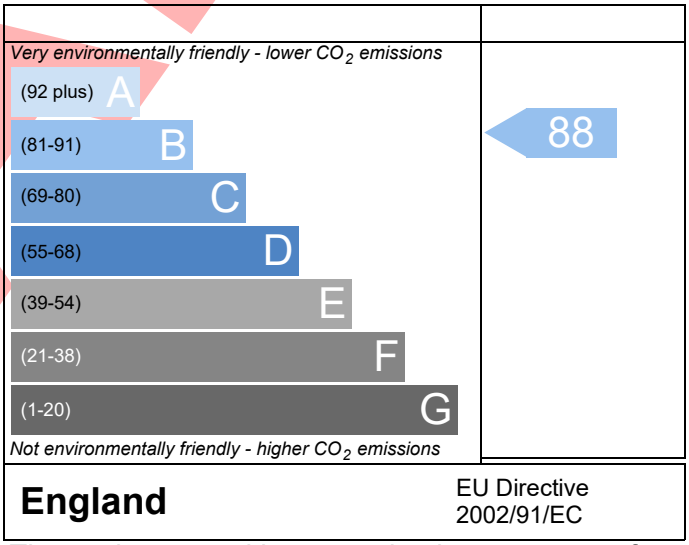
Energy Efficiency Rating



England EU Directive 2002/91/EC

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



England EU Directive 2002/91/EC

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BASIC COMPLIANCE REPORT
Calculation Type: New Build (As Designed)

Property Reference	r13-200414-22	**Issued on Date**	09/12/2020
Assessment Reference	NOTIONAL	**Prop Type Ref**	Semi House R
Property	Plot 2, 7 High Street, Milton, CAMBRIDGE, CB24 6AJ		

SAP Rating	84 B	**DER**	17.31	**TER**	14.83
Environmental	84 B	**% DER<TER**	-16.74		
CO_2 Emissions (t/year)	2.22	**DFEE**	58.01	**TFEE**	50.93
General Requirements Compliance	Fail	**% DFEE<TFEE**	-13.90		

Assessor Details	Mr. Peter Thom, Green Heat Limited, Tel: 01223 277278, peter@greenheat.uk.com	**Assessor ID**	1002-0002
Client			

SUMARY FOR INPUT DATA FOR New Build (As Designed)

Criterion 1 – Achieving the TER and TFEE rate

1a TER and DER

Fuel for main heating	Mains gas		
Fuel factor	1.00 (mains gas)		
Target Carbon Dioxide Emission Rate (TER)	14.83	$kgCO_2/m^2$	
Dwelling Carbon Dioxide Emission Rate (DER)	17.31	$kgCO_2/m^2$	
Excess emissions	2.48 (16.7%)	$kgCO_2/m^2$	Fail

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	50.93	$kWh/m^2/yr$	
Dwelling Fabric Energy Efficiency (DFEE)	58.01	$kWh/m^2/yr$	
Excess energy	7.1 (13.9%)	$kWh/m^2/yr$	Fail

Criterion 2 – Limits on design flexibility

Limiting Fabric Standards

2 Fabric U-values

Element	Average	Highest	
External wall	0.28 (max. 0.30)	0.28 (max. 0.70)	Pass
Party wall	0.00 (max. 0.20)	-	Pass
Floor	0.20 (max. 0.25)	0.20 (max. 0.70)	Pass
Roof	0.18 (max. 0.20)	0.20 (max. 0.35)	Pass
Openings	1.74 (max. 2.00)	1.80 (max. 3.30)	Pass

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals	6.50 (design value)	
Maximum	10.0	Pass

Limiting System Efficiencies

4 Heating efficiency

BASIC COMPLIANCE REPORT
Calculation Type: New Build (As Designed)

Main heating system	Boiler system with radiators or underfloor - Mains gas Data from database Vaillant ecoFIT sustain 630 VU 306/6-3 (H-GB) Efficiency: 89.8% SEDBUK2009 Minimum: 88.0%		Pass
Secondary heating system	None		

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.18 kWh/day Permitted by DBSCG 2.30		Pass
Primary pipework insulated	Yes		Pass

6 Controls

Space heating controls	Time and temperature zone control		Pass
Hot water controls	Cylinderstat		Pass
	Independent timer for DHW		Pass
Boiler interlock	Yes		Pass

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100	%	
Minimum	75	%	Pass

8 Mechanical ventilation

Not applicable

Criterion 3 – Limiting the effects of heat gains in summer

9 Summertime temperature

Overheating risk (East Anglia)	Not significant		Pass

Based on:

Overshading	Average		
Windows facing North East Windows facing South East Windows facing North West	2.26 m², No overhang 6.60 m², No overhang 10.71 m², No overhang		
Air change rate	5.00 ach		
Blinds/curtains	None		

Criterion 4 – Building performance consistent with DER and DFEE rate

Party Walls

Type	U-value		
Filled Cavity with Edge Sealing	0.00	W/m²K	Pass

Air permeability and pressure testing

3 Air permeability

Air permeability at 50 pascals	6.50 (design value)		
Maximum	10.0		Pass

10 Key features

Party wall U-value	0.00	W/m²K	

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PREDICTED ENERGY ASSESSMENT

Plot 2, 7 High Street,
Milton,
CAMBRIDGE,
CB24 6AJ

Dwelling type:	House, Semi-Detached
Date of assessment:	09/12/2020
Produced by:	Green Heat Ltd
Total floor area:	151.62 m²

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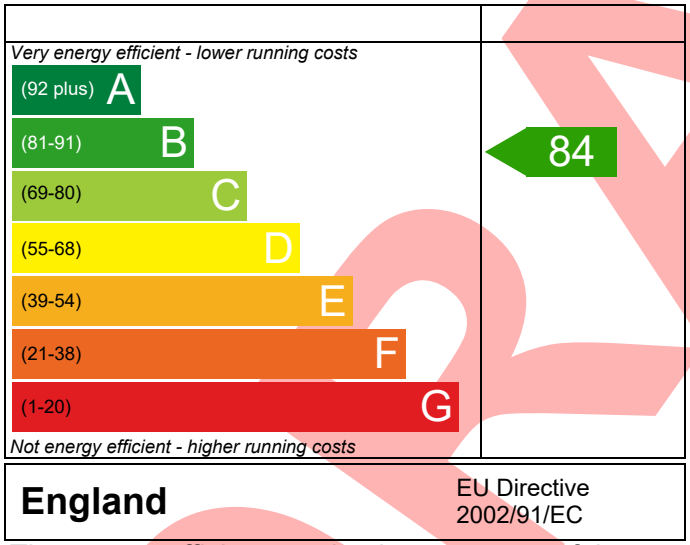
Energy Efficiency Rating



England EU Directive 2002/91/EC

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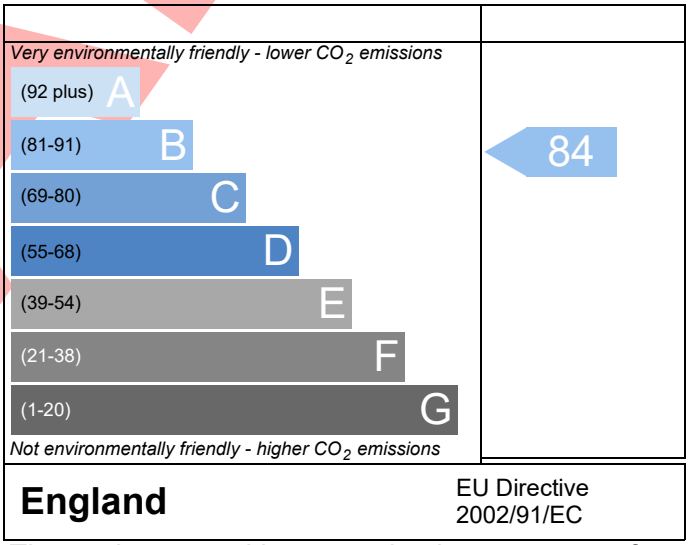
Environmental Impact (CO_2) Rating



England EU Directive 2002/91/EC

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BASIC COMPLIANCE REPORT
Calculation Type: New Build (As Designed)

Property Reference	r13-200414-23	**Issued on Date**	09/12/2020
Assessment Reference	CLEAN	**Prop Type Ref**	Det 3 st House R
Property	Plot 3, 7 High Street, Milton, CAMBRIDGE, CB24 6AJ		

SAP Rating	85 B	**DER**	15.94	**TER**	15.95
Environmental	85 B	**% DER<TER**	0.05		
CO_2 Emissions (t/year)	2.04	**DFEE**	52.92	**TFEE**	56.80
General Requirements Compliance	Pass	**% DFEE<TFEE**	6.82		

Assessor Details	Mr. Peter Thom, Green Heat Limited, Tel: 01223 277278, peter@greenheat.uk.com	**Assessor ID**	1002-0002
Client			

SUMARY FOR INPUT DATA FOR New Build (As Designed)

Criterion 1 – Achieving the TER and TFEE rate

1a TER and DER

Fuel for main heating	Mains gas		
Fuel factor	1.00 (mains gas)		
Target Carbon Dioxide Emission Rate (TER)	15.95	$kgCO_2/m^2$	
Dwelling Carbon Dioxide Emission Rate (DER)	15.94	$kgCO_2/m^2$	Pass
	-0.01 (-0.1%)	$kgCO_2/m^2$	

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	56.80	$kWh/m^2/yr$	
Dwelling Fabric Energy Efficiency (DFEE)	52.92	$kWh/m^2/yr$	
	-3.9 (-6.9%)	$kWh/m^2/yr$	Pass

Criterion 2 – Limits on design flexibility

Limiting Fabric Standards

2 Fabric U-values

Element	Average	Highest	
External wall	0.23 (max. 0.30)	0.23 (max. 0.70)	Pass
Floor	0.15 (max. 0.25)	0.15 (max. 0.70)	Pass
Roof	0.16 (max. 0.20)	0.18 (max. 0.35)	Pass
Openings	1.42 (max. 2.00)	1.60 (max. 3.30)	Pass

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals	6.25 (design value)	
Maximum	10.0	Pass

Limiting System Efficiencies

4 Heating efficiency

Main heating system	Boiler system with radiators or underfloor - Mains gas Data from database Vaillant ecoFIT sustain 630 VU 306/6-3 (H-GB) Efficiency: 89.8% SEDBUK2009 Minimum: 88.0%	Pass

Secondary heating system	None	

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 1.18 kWh/day Permitted by DBSCG 2.30	Pass
Primary pipework insulated	Yes	Pass

6 Controls

Space heating controls	Time and temperature zone control	Pass
Hot water controls	Cylinderstat	Pass
	Independent timer for DHW	Pass
Boiler interlock	Yes	Pass

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100	%	
Minimum	75	%	Pass

8 Mechanical ventilation

Not applicable

Criterion 3 – Limiting the effects of heat gains in summer

9 Summertime temperature

Overheating risk (East Anglia)	Slight	Pass

Based on:

Overshading	Average
Windows facing North East	2.26 m², No overhang
Windows facing South East	6.60 m², No overhang
Windows facing North West	10.71 m², No overhang
Air change rate	5.00 ach
Blinds/curtains	None

Criterion 4 – Building performance consistent with DER and DFEE rate

Air permeability and pressure testing

3 Air permeability

Air permeability at 50 pascals	6.25 (design value)	
Maximum	10.0	Pass

10 Key features

None	N/A

This report has not been submitted through the Elmhurst Energy members' portal, therefore results are subject to change when the dwelling is completed.

PREDICTED ENERGY ASSESSMENT

Plot 3, 7 High Street,
Milton,
CAMBRIDGE,
CB24 6AJ

Dwelling type:	House, Detached
Date of assessment:	09/12/2020
Produced by:	Green Heat Ltd
Total floor area:	151.62 m²

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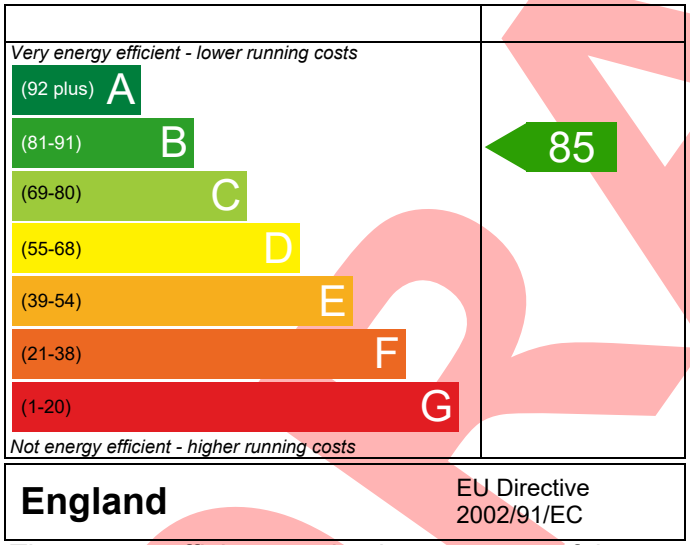
Energy Efficiency Rating



England EU Directive 2002/91/EC

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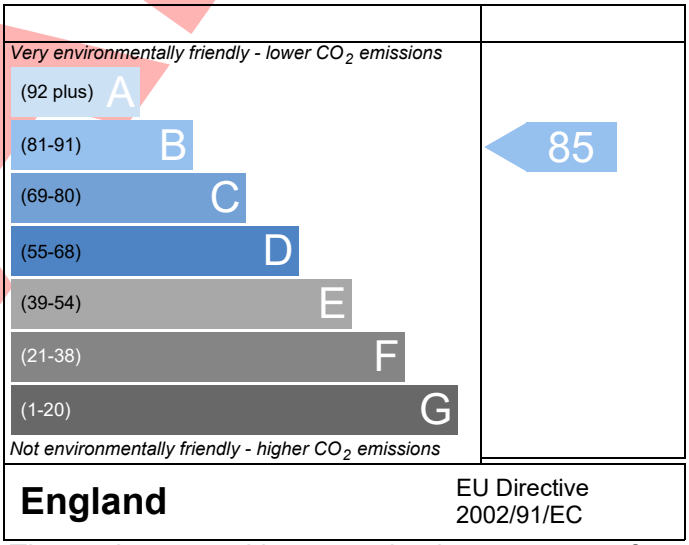
Environmental Impact (CO_2) Rating



England EU Directive 2002/91/EC

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BASIC COMPLIANCE REPORT
Calculation Type: New Build (As Designed)

Property Reference	r13-200414-23	**Issued on Date**	09/12/2020
Assessment Reference	GREEN	**Prop Type Ref**	Det 3 st House R
Property	Plot 3, 7 High Street, Milton, CAMBRIDGE, CB24 6AJ		

SAP Rating	85 B	**DER**	14.34	**TER**	15.95
Environmental	87 B	**% DER<TER**	10.09		
CO_2 Emissions (t/year)	1.85	**DFEE**	49.59	**TFEE**	56.80
General Requirements Compliance	Pass	**% DFEE<TFEE**	12.69		

Assessor Details	Mr. Peter Thom, Green Heat Limited, Tel: 01223 277278, peter@greenheat.uk.com	**Assessor ID**	1002-0002
Client			

SUMARY FOR INPUT DATA FOR New Build (As Designed)

Criterion 1 – Achieving the TER and TFEE rate

1a TER and DER

Fuel for main heating	Mains gas		
Fuel factor	1.00 (mains gas)		
Target Carbon Dioxide Emission Rate (TER)	15.95	$kgCO_2/m^2$	
Dwelling Carbon Dioxide Emission Rate (DER)	14.34	$kgCO_2/m^2$	Pass
	-1.61 (-10.1%)	$kgCO_2/m^2$	

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	56.80	$kWh/m^2/yr$	
Dwelling Fabric Energy Efficiency (DFEE)	49.59	$kWh/m^2/yr$	
	-7.2 (-12.7%)	$kWh/m^2/yr$	Pass

Criterion 2 – Limits on design flexibility

Limiting Fabric Standards

2 Fabric U-values

Element	Average	Highest	
External wall	0.23 (max. 0.30)	0.23 (max. 0.70)	Pass
Floor	0.15 (max. 0.25)	0.15 (max. 0.70)	Pass
Roof	0.16 (max. 0.20)	0.18 (max. 0.35)	Pass
Openings	1.42 (max. 2.00)	1.60 (max. 3.30)	Pass

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals	2.50 (design value)	
Maximum	10.0	Pass

Limiting System Efficiencies

4 Heating efficiency

Main heating system	Boiler system with radiators or underfloor - Mains gas Data from database Vaillant ecoFIT sustain 630 VU 306/6-3 (H-GB) Efficiency: 89.8% SEDBUK2009 Minimum: 88.0%	Pass

Secondary heating system	None		
5 Cylinder insulation			
Hot water storage	Measured cylinder loss: 1.18 kWh/day Permitted by DBSCG 2.30		Pass
Primary pipework insulated	Yes		Pass
6 Controls			
Space heating controls	Time and temperature zone control		Pass
Hot water controls	Cylinderstat		Pass
	Independent timer for DHW		Pass
Boiler interlock	Yes		Pass
7 Low energy lights			
Percentage of fixed lights with low-energy fittings	100	%	
Minimum	75	%	Pass
8 Mechanical ventilation			
Continuous supply and extract system			
Specific fan power	0.72		
Maximum	1.5		Pass
MVHR efficiency	87	%	
Minimum	70	%	Pass

Criterion 3 – Limiting the effects of heat gains in summer

9 Summertime temperature

Overheating risk (East Anglia)	Slight	Pass
Based on:		
Overshading	Average	
Windows facing North East	2.26 m², No overhang	
Windows facing South East	6.60 m², No overhang	
Windows facing North West	10.71 m², No overhang	
Air change rate	5.00 ach	
Blinds/curtains	None	

Criterion 4 – Building performance consistent with DER and DFEE rate

Air permeability and pressure testing

3 Air permeability

Air permeability at 50 pascals	2.50 (design value)		
Maximum	10.0		Pass

10 Key features

Air permeability	2.5	m³/m²h

This report has not been submitted through the Elmhurst Energy members' portal, therefore results are subject to change when the dwelling is completed.

PREDICTED ENERGY ASSESSMENT

Plot 3, 7 High Street,
Milton,
CAMBRIDGE,
CB24 6AJ

Dwelling type:	House, Detached
Date of assessment:	09/12/2020
Produced by:	Green Heat Ltd
Total floor area:	151.62 m²

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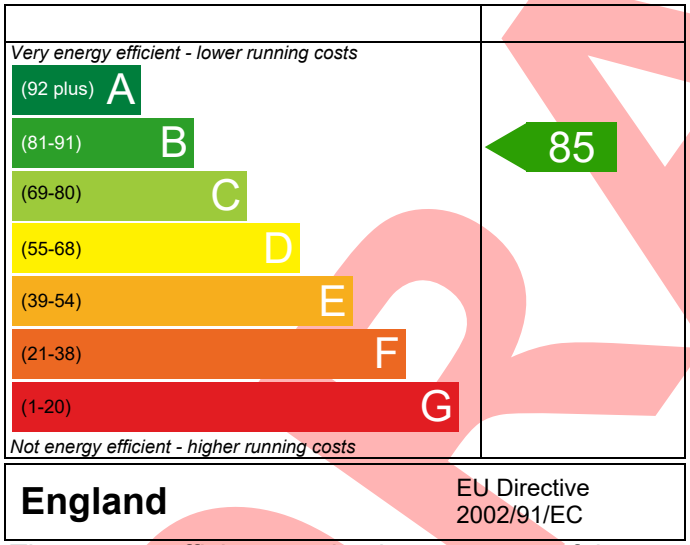
Energy Efficiency Rating



England EU Directive 2002/91/EC

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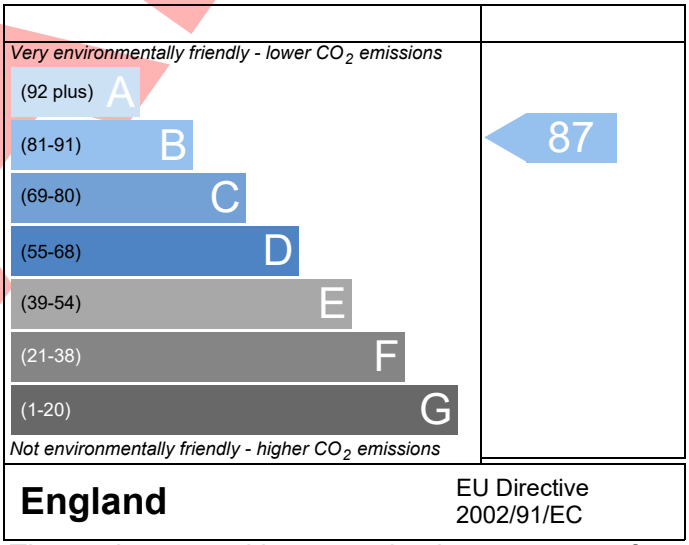
Environmental Impact (CO_2) Rating



England EU Directive 2002/91/EC

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BASIC COMPLIANCE REPORT
Calculation Type: New Build (As Designed)

Property Reference	r13-200414-23	**Issued on Date**	09/12/2020
Assessment Reference	NOTIONAL	**Prop Type Ref**	Det 3 st House R
Property	Plot 3, 7 High Street, Milton, CAMBRIDGE, CB24 6AJ		

SAP Rating	83 B	**DER**	18.47	**TER**	15.95
Environmental	83 B	**% DER<TER**	-15.81		
CO_2 Emissions (t/year)	2.39	**DFEE**	63.07	**TFEE**	56.80
General Requirements Compliance	Fail	**% DFEE<TFEE**	-11.05		

Assessor Details	Mr. Peter Thom, Green Heat Limited, Tel: 01223 277278, peter@greenheat.uk.com	**Assessor ID**	1002-0002
Client			

SUMARY FOR INPUT DATA FOR New Build (As Designed)

Criterion 1 – Achieving the TER and TFEE rate

1a TER and DER

Fuel for main heating	Mains gas		
Fuel factor	1.00 (mains gas)		
Target Carbon Dioxide Emission Rate (TER)	15.95	$kgCO_2/m^2$	
Dwelling Carbon Dioxide Emission Rate (DER)	18.47	$kgCO_2/m^2$	
Excess emissions	2.52 (15.8%)	$kgCO_2/m^2$	Fail

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	56.80	$kWh/m^2/yr$	
Dwelling Fabric Energy Efficiency (DFEE)	63.07	$kWh/m^2/yr$	
Excess energy	6.3 (11.1%)	$kWh/m^2/yr$	Fail

Criterion 2 – Limits on design flexibility

Limiting Fabric Standards

2 Fabric U-values

Element	Average	Highest	
External wall	0.28 (max. 0.30)	0.28 (max. 0.70)	Pass
Floor	0.15 (max. 0.25)	0.15 (max. 0.70)	Pass
Roof	0.18 (max. 0.20)	0.20 (max. 0.35)	Pass
Openings	1.73 (max. 2.00)	1.80 (max. 3.30)	Pass

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals	6.25 (design value)	
Maximum	10.0	Pass

Limiting System Efficiencies

4 Heating efficiency

Main heating system	Boiler system with radiators or underfloor - Mains gas Data from database Vaillant ecoFIT sustain 630 VU 306/6-3 (H-GB) Efficiency: 89.8% SEDBUK2009 Minimum: 88.0%	Pass

Secondary heating system	None		
5 Cylinder insulation			
Hot water storage	Measured cylinder loss: 1.18 kWh/day Permitted by DBSCG 2.30		Pass
Primary pipework insulated	Yes		Pass
6 Controls			
Space heating controls	Time and temperature zone control		Pass
Hot water controls	Cylinderstat		Pass
	Independent timer for DHW		Pass
Boiler interlock	Yes		Pass
7 Low energy lights			
Percentage of fixed lights with low-energy fittings	100	%	
Minimum	75	%	Pass
8 Mechanical ventilation			
Not applicable			

Criterion 3 – Limiting the effects of heat gains in summer

9 Summertime temperature			
Overheating risk (East Anglia)	Not significant		Pass
Based on:			
Overshading	Average		
Windows facing North East	2.26 m², No overhang		
Windows facing South East	6.60 m², No overhang		
Windows facing North West	10.71 m², No overhang		
Air change rate	5.00 ach		
Blinds/curtains	None		

Criterion 4 – Building performance consistent with DER and DFEE rate

Air permeability and pressure testing

3 Air permeability			
Air permeability at 50 pascals	6.25 (design value)		
Maximum	10.0		Pass
10 Key features			
None	N/A		

This report has not been submitted through the Elmhurst Energy members' portal, therefore results are subject to change when the dwelling is completed.

PREDICTED ENERGY ASSESSMENT

Plot 3, 7 High Street,
Milton,
CAMBRIDGE,
CB24 6AJ

Dwelling type:	House, Detached
Date of assessment:	09/12/2020
Produced by:	Green Heat Ltd
Total floor area:	151.62 m²

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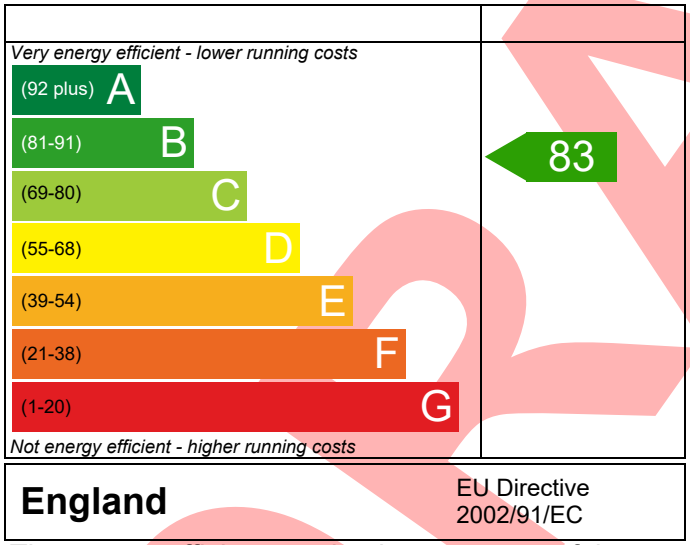
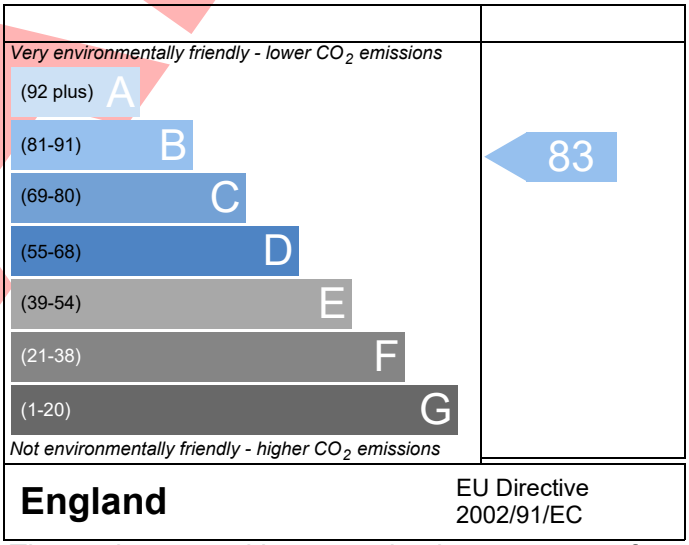
Energy Efficiency Rating



England EU Directive 2002/91/EC

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



England EU Directive 2002/91/EC

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.

This report has not been submitted through the Elmhurst Energy members' portal, therefore results are subject to change when the dwelling is completed.