Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.4.16
Printed on 25 March 2019 at 10:44:47

Project Information:

Assessed By: Mark Heptonstall (STRO004925) **Building Type:** Detached House

Dwelling Details:

NEW DWELLING DESIGN STAGE Total Floor Area: 186.7m²
Site Reference : 8635 - Mellor Brook **Plot Reference:** House B
Address : House B, Mellor Brook, Blackburn, BB2 7PL

Client Details:

Name:
Address :

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

1a TER and DER

Fuel for main heating system: Mains gas
Fuel factor: 1.00 (mains gas)

Target Carbon Dioxide Emission Rate (TER)	16.51 kg/m²	
Dwelling Carbon Dioxide Emission Rate (DER)	14.74 kg/m²	**OK**

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	64.0 kWh/m²	
Dwelling Fabric Energy Efficiency (DFEE)	56.9 kWh/m²	
		OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	**OK**
Floor	0.17 (max. 0.25)	0.17 (max. 0.70)	**OK**
Roof	0.14 (max. 0.20)	0.14 (max. 0.35)	**OK**
Openings	1.60 (max. 2.00)	1.60 (max. 3.30)	**OK**

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals	5.00 (design value)	
Maximum	10.0	**OK**

4 Heating efficiency

Main Heating system: Boiler systems with radiators or underfloor heating - mains gas
Data from manufacturer
Combi boiler
Efficiency 89.0 % SEDBUK2009
Minimum 88.0 % **OK**

Secondary heating system: None

5 Cylinder insulation

Hot water Storage: No cylinder

N/A

Regulations Compliance Report

6 Controls

Space heating controls	TTZC by plumbing and electrical services	**OK**
Hot water controls:	No cylinder	
	No cylinder	
Boiler interlock:	Yes	**OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100.0%	
Minimum	75.0%	**OK**

8 Mechanical ventilation

Not applicable

9 Summertime temperature

Overheating risk (West Pennines):	Not significant	**OK**

Based on:

Overshading:	Average or unknown
Windows facing: South East	7.46m²
Windows facing: South East	2.43m²
Windows facing: North West	19.16m²
Windows facing: North East	12.48m²
Ventilation rate:	8.00
Blinds/curtains:	
	Closed 100% of daylight hours

10 Key features

Photovoltaic array

Predicted Energy Assessment

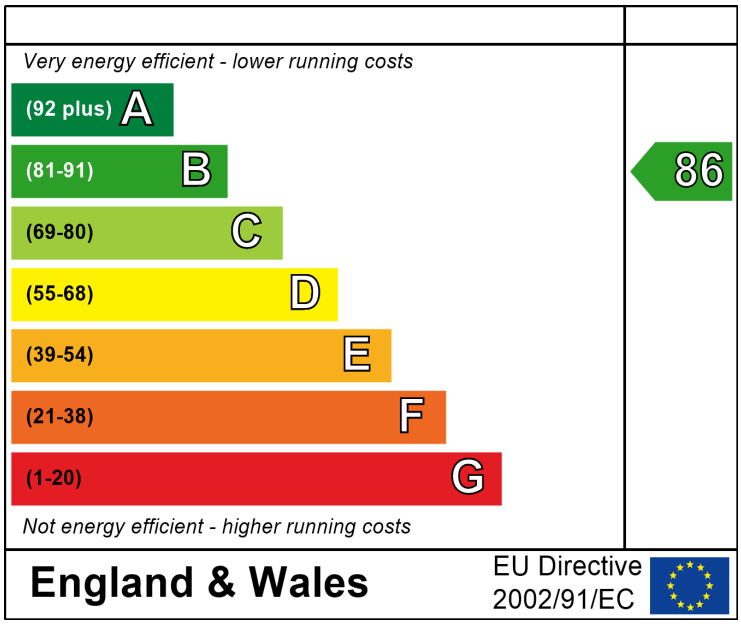
House B
Mellor Brook
Blackburn
BB2 7PL

Dwelling type: Detached House
Date of assessment: 14 March 2019
Produced by: Mark Heptonstall
Total floor area: 186.7 m^2

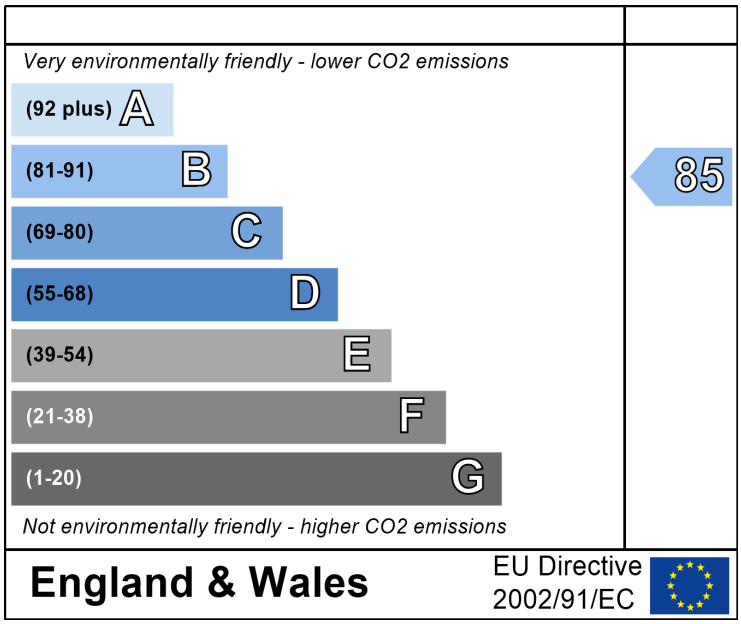
This is a Predicted Energy Assessment for a property which is not yet complete. It includes a predicted energy rating which might not represent the final energy rating of the property on completion. Once the property is completed, an Energy Performance Certificate is required providing information about the energy performance of the completed property.

Energy performance has been assessed using the SAP 2012 methodology and is rated in terms of the energy use per square metre of floor area, energy efficiency based on fuel costs and environmental impact based on carbon dioxide (CO2) emissions.

Energy Efficiency Rating



Environmental Impact (CO_2) 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.

The environmental impact rating is a measure of a home's impact on the environment in terms of carbonn dioxide (CO2) emissions. The higher the rating the less impact it has on the environment.

SAP Input

Property Details: House B

Address:	House B, Mellor Brook, Blackburn, BB2 7PL
Located in:	England
Region:	West Pennines
UPRN:	
Date of assessment:	14 March 2019
Date of certificate:	25 March 2019
Assessment type:	New dwelling design stage
Transaction type:	New dwelling
Tenure type:	Unknown
Related party disclosure:	No related party
Thermal Mass Parameter:	Indicative Value Low
Water use <= 125 litres/person/day:	True
PCDF Version:	440

Property description:

Dwelling type:	House
Detachment:	Detached
Year Completed:	2019

Floor Location:	Floor area:	Storey height:
Floor 0	82.85 m²	2.93 m
Floor 1	103.85 m²	2.2 m

Living area:	22.83 m² (fraction 0.122)
Front of dwelling faces:	South East

Opening types:

Name:	Source:	Type:	Glazing:	Argon:	Frame:
SE	Manufacturer	Half glazed	low-E, En = 0.15, hard coat	Yes	PVC-U
SE	Manufacturer	Windows	low-E, En = 0.15, hard coat	Yes	PVC-U
SED	Manufacturer	Windows	low-E, En = 0.15, hard coat	Yes	PVC-U
NW	Manufacturer	Windows	low-E, En = 0.15, hard coat	Yes	PVC-U
NE	Manufacturer	Windows	low-E, En = 0.15, hard coat	Yes	PVC-U

Name:	**Gap:**	**Frame Factor:**	**g-value:**	**U-value:**	**Area:**	**No. of Openings:**
SE	16mm or more mm	0.7	0.72	1.6	1.94	1
SE	16mm or more	0.7	0.72	1.6	7.46	1
SED	16mm or more	0.7	0.72	1.6	2.43	1
NW	16mm or more	0.7	0.72	1.6	19.16	1
NE	16mm or more	0.7	0.72	1.6	12.48	1

Name:	Type-Name:	Location:	Orient:	Width:	Height:
SE		External Walls	South East	0	0
SE		External Walls	South East	0	0
SED		Dormer	South East	0	0
NW		External Walls	North West	0	0
NE		External Walls	North East	0	0

Overshading:	Average or unknown

Opaque Elements:

Type:	Gross area:	Openings:	Net area:	U-value:	Ru value:	Curtain wall:	Kappa:
External Elements							
External Walls	208.45	41.04	167.41	0.17	0	False	N/A
Exposed Garage	33.54	0	33.54	0.17	0	False	N/A
Exposed Loft	3.47	0	3.47	0.14	0	False	N/A
Dormer	4.6	2.43	2.17	0.14	0	False	N/A

SAP Input

Rafters	17.95	0	17.95	0.14	0	N/A
Joists	86.62	0	86.62	0.14	0	N/A
Exposed Loft	3.46	0	3.46	0.14	0	N/A
Dormer	3.57	0	3.57	0.14	0	N/A
Ground Floor	82.85			0.17		N/A
Exposed Garage	24.46			0.17		N/A

Internal Elements

Party Elements

Thermal bridges:

Thermal bridges: User-defined (individual PSI-values) Y-Value = 0.0762

	Length	Psi-value		
[Approved]	26.56	0.5	E1	Steel lintel with perforated steel base plate
[Approved]	17.2	0.04	E3	Sill
[Approved]	46.12	0.05	E4	Jamb
	37.74	0.08	E5	Ground floor (normal)
	21.08	0.32	E20	Exposed floor (normal)
[Approved]	39.62	0.07	E6	Intermediate floor within a dwelling
[Approved]	29.97	0.06	E10	Eaves (insulation at ceiling level)
[Approved]	19.67	0.04	E11	Eaves (insulation at rafter level)
	20.66	0.12	E12	Gable (insulation at ceiling level)
[Approved]	8.37	0.04	E13	Gable (insulation at rafter level)
[Approved]	39.41	0.09	E16	Corner (normal)
[Approved]	22.65	-0.09	E17	Corner (inverted internal area greater than external area)

Ventilation:

Pressure test: Yes (As designed)
Ventilation: Natural ventilation (extract fans)
Number of chimneys: 0
Number of open flues: 0
Number of fans: 5
Number of passive stacks: 0
Number of sides sheltered: 2
Pressure test: 5

Main heating system:

Main heating system:
Boiler systems with radiators or underfloor heating
Gas boilers and oil boilers
Fuel: mains gas
Info Source: Manufacturer Declaration
Manufacturer's data
Efficiency: 89.0% (SEDBUK2009)
Condensing combi with automatic ignition
Fuel Burning Type: Unknown
Systems with radiators
Central heating pump : 2013 or later
Design flow temperature: Design flow temperature<=35°C
Room-sealed
Boiler interlock: Yes
Delayed start

Main heating Control:

Main heating Control:
Time and temperature zone control by suitable arrangement of plumbing and electrical services
Control code: 2110

Secondary heating system:

Secondary heating system: None

SAP Input

Water heating:

Water heating:	From main heating system Water code: 901 Fuel :mains gas No hot water cylinder Solar panel: False

Others:

Electricity tariff:	Standard Tariff
In Smoke Control Area:	Unknown
Conservatory:	No conservatory
Low energy lights:	100%
Terrain type:	Low rise urban / suburban
EPC language:	English
Wind turbine:	No
Photovoltaics:	Photovoltaic 1 Installed Peak power: 0.6 Tilt of collector: 30° Overshading: None or very little Collector Orientation: South
Assess Zero Carbon Home:	No

SAP 2012 Overheating Assessment

Calculated by Stroma FSAP 2012 program, produced and printed on 25 March 2019

Property Details: House B

Dwelling type:	Detached House
Located in:	England
Region:	West Pennines
Cross ventilation possible:	Yes
Number of storeys:	2
Front of dwelling faces:	South East
Overshading:	Average or unknown
Overhangs:	None
Thermal mass parameter:	Indicative Value Low
Night ventilation:	False
Blinds, curtains, shutters:	
Ventilation rate during hot weather (ach):	8 (Windows fully open)

Overheating Details:

Summer ventilation heat loss coefficient:	1244.02	**(P1)**
Transmission heat loss coefficient:	170.1	
Summer heat loss coefficient:	1414.11	**(P2)**

Overhangs:

Orientation:	**Ratio:**	**Z_overhangs:**
South East (SE)	0	1
South East (SED)	0	1
North West (NW)	0	1
North East (NE)	0	1

Solar shading:

Orientation:	**Z blinds:**	**Solar access:**	**Overhangs:**	**Z summer:**	
South East (SE)	1	0.9	1	0.9	**(P8)**
South East (SED)	1	0.9	1	0.9	**(P8)**
North West (NW)	1	0.9	1	0.9	**(P8)**
North East (NE)	1	0.9	1	0.9	**(P8)**

Solar gains:

Orientation		**Area**	**Flux**	**g_**	**FF**	**Shading**	**Gains**	
South East (SE)	0.9 x	7.46	112.1	0.72	0.7	0.9	341.4	
South East (SED)	0.9 x	2.43	112.1	0.72	0.7	0.9	111.21	
North West (NW)	0.9 x	19.16	89.66	0.72	0.7	0.9	701.27	
North East (NE)	0.9 x	12.48	89.66	0.72	0.7	0.9	456.78	
						Total	1610.66	**(P3/P4)**

Internal gains:

	June	**July**	**August**	
Internal gains	634.49	607.79	618.71	
Total summer gains	2395.43	2218.45	1934.99	**(P5)**
Summer gain/loss ratio	1.69	1.57	1.37	**(P6)**
Mean summer external temperature (West Pennines)	14.7	16.4	16.3	
Thermal mass temperature increment	1.3	1.3	1.3	
Threshold temperature	17.69	19.27	18.97	**(P7)**
Likelihood of high internal temperature	**Not significant**	**Not significant**	**Not significant**	

SAP 2012 Overheating Assessment

Assessment of likelihood of high internal temperature: Not significant