Zest Energy and Design Services
17 Drumcree Place
Newtownabbey
BT37 9JA

Building Regulation Compliance

Property Reference: 17-128 Site 10
Survey Reference: Design SAP
Property: Meadow View, NEWTOWNABBEY, County Antrim, BT37 0US

Issued on Date: 14.May.2019
Prop Type Ref: Type B

SAP Rating:	85 B	**CO2 Emissions (t/year):**	2.66	**DER:**	15.37 Pass	**Reduction:**	5.5%	**FEE:**	50.9	**ZC8:**	0.00
Environmental:	85 B	**General Requirements Compliance:**	Pass	**TER:**	16.26			**HLP:**	1.18	**Energy cost:**	£ 666

CfSH Results	**Version:**	**ENE1 Credits:**	N/A	**ENE2 Credits:**	N/A	**ENE7 Credits:**	N/A	**CfSH Level:**	N/A

Surveyor: Andrew Hair, Tel: 07742507544 Surveyor ID: H020-0001
Address: Drumcree Place, Newtownabbey, Antrim, BT37 9JA
Client:

Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 4.04r04
SAP version: SAP 2009, Regs Region: Northern Ireland (NI Technical Booklet F1 2011), Calculation Type: New Dwelling As Designed

SUMMARY FOR INPUT DATA FOR New Build (As Designed)

1 TER and DER

Fuel for main heating:	Mains gas	
Fuel factor:	1.00 (mains gas)	
Target Carbon Dioxide Emission Rate (TER)	16.26 kg/m^2	
Dwelling Carbon Dioxide Emission Rate (DER)	15.37 kg/m^2	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.20 (max. 0.30)	0.20 (max. 0.70)	OK
Floor	0.16 (max. 0.25)	0.16 (max. 0.70)	OK
Roof	0.14 (max. 0.20)	0.17 (max. 0.35)	OK
Openings	0.95 (max. 2.00)	1.40 (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 system with radiators or underfloor - Mains gas Data from database Worcester Greenstar 30 CDi Classic System Efficiency: 89.2% SEDBUK2009 Minimum: 88.0%	OK
Secondary heating system:	None	

5 Cylinder insulation

Hot water storage	Measured cylinder loss: 2.10 kWh/day Permitted by DBSCG 2.56	OK
Primary pipework insulated:	Yes	OK

6 Controls

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

7 Low energy lights

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

8 Mechanical ventilation

Not applicable

9 Summertime temperature

Overheating risk (Northern Ireland):	Not significant	OK
Based On:		
Overshading:	Average	
Windows facing North East:	3.06 m^2, No overhang	
Windows facing South East:	9.90 m^2, No overhang	
Windows facing South West:	13.48 m^2, No overhang	
Windows facing North West:	13.48 m^2, No overhang	
Ventilation rate:	8.00	
Blinds/curtains:	None	

10 Key features

Roof U-value	0.12 W/m^2K
Floor U-value	0.16 W/m^2K
Door U-value	1.40 W/m^2K
Door U-value	1.40 W/m^2K
Window U-value	0.90 W/m^2K

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Summary Information

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SUMMARY FOR INPUT DATA FOR New Build (As Designed)

Orientation	South East
1.0 Property Type	House, Detached
2.0 Number of Storeys	3
3.0 Date Built	2019
3.0 Property Age Band	
4.0 Sheltered Sides	2
5.0 Sunlight/Shade	Average or unknown

6.0 Measurements

	Internal Perimeter	Internal Floor Area	Average Storey Height
Ground Floor:	41.14	69.8	2.49
1st Storey:	34.64	61.49	2.8
2nd Storey:	32.57	59.29	2.49

7.0 Living Area 20.43

8.0 Thermal Mass Parameter Simple calculation - High

9.0 External Walls

Description	Construction	U-Value	Element	Kappa	Gross Area	Nett Area
External Walls	Cavity wall : dense plaster, dense block, filled cavity, any outside structure	0.20		190.00	263.22	219.29

10.0 External Roofs

Description	Construction	U-Value	Element	Kappa	Gross Area	Nett Area
Flat Ceiling	Plasterboard, insulated at ceiling level	0.12		9	37.96	37.96
Sloped Ceiling	Plasterboard, insulated slope	0.17		9	30.22	30.22
Flat Roof	Plasterboard, insulated flat roof	0.14		9	10.51	10.51

11.0 HeatLoss Floors

Description	Construction	U-Value	Element	Kappa	Area
Ground Floor	Slab on ground, screed over insulation	0.16		110	69.80

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Argon Filled	Solar Trans	Frame Type	Frame Factor	U value
Windows	Manufacturer	Window	Triple Low-E Soft 0.1			0.57		0.70	0.90
Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.40
Rear Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Curtain Type	Overhang Ratio	Wide Overhang	Width	Height	Count	Area	Curtain Closed
Front Windows	Window - Windows	External Walls	South East	None	0	No	0	0	0	9.90	0
Rear Windows	Window - Windows	External Walls	North West	None	0	No	0	0	0	13.48	0
Left Windows	Window - Windows	External Walls	South West	None	0	No	0	0	0	13.48	0

Right Windows	Window - Windows	External Walls	North East	None	0	No	0	0	0	3.06	0
Front Door	Half Glazed Door - Front Door	External Walls	South East	None	0	No	0	0	0	2.10	0
Side Door	Half Glazed Door - Rear Door	External Walls	South West	None	0	No	0	0	0	1.91	0

14.0 Conservatory: None
15.0 Draught Proofing: 100
16.0 Draught Lobby: No

17.0 Thermal Bridging: Calculate Bridges
17.1 List of Bridges

Source Type	Bridge Type	Length	Psi	Imported
Table K1 - Accredited	E2 Other lintels (including other steel lintels)	27.31	0.3	No
Table K1 - Accredited	E3 Sill	23.72	0.04	No
Table K1 - Accredited	E4 Jamb	48.90	0.05	No
Table K1 - Accredited	E5 Ground floor	41.14	0.16	Yes
Table K1 - Accredited	E6 Intermediate floor within a dwelling	67.21	0.07	Yes
Table K1 - Accredited	E11 Eaves (insulation at rafter level)	21.57	0.04	No
Table K1 - Accredited	E12 Gable (insulation at ceiling level)	7.08	0.24	No
Table K1 - Accredited	E13 Gable (insulation at rafter level)	5.54	0.04	No
Table K1 - Accredited	E14 Flat roof	13.26	0.04	No
Table K1 - Accredited	E16 Corner (normal)	32.32	0.09	No
Table K1 - Accredited	E17 Corner (inverted - internal area greater than external area)	6.29	-0.09	No

18.0 Pressure Testing: Yes
- Designed q50: 5.00
- Property Tested ?
- As Built q50
- Same As Designed ?

19.0 Mechanical Ventilation
- Mechanical Ventilation System Present: No
- Approved Installation
- Windows open in hot weather: Windows fully open
- Cross ventilation possible: Yes
- Night Ventilation: No
- Air change rate: 8.00
- Mechanical Ventilation data Type
- Type
- MV Reference Number
- Configuration
- MVHR Duct Insulated
- Manufacturer SFP
- Duct Type
- MVHR Efficiency
- Wet Rooms
- Brand, Model

20.0 Fans, Open Fireplaces, Flues

	MHS	SHS	Other	Total
Number of Chimneys	0		0	0
Number of open flues	0		0	0
Number of intermittent fans				5
Number of passive vents				0
Number of flueless gas fires				0

21.0 Cooling System: No

22.0 Lighting
- Internal
  - Total number of light fittings: 25
  - Total number of L.E.L. fittings: 25
  - Percentage of L.E.L. fittings: 100.00
- External
  - External lights fitted: Yes
  - Light and motion sensors: Yes

23.0 Electricity Tariff: Standard

24.0 Heating Systems
- Main Heating 1: Database
  - Description: Gas Heating
  - Percentage of Heat: 100.00
- Main Heating 2: None
  - Description

Percentage of Heat	
Community Heating	
Secondary Heating	
Water Heating	Main Heating 1
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery System	No
1	
Waste Water Heat Recovery System	No
2	
Solar Panel	No
25.0 Main Heating 1	
Database Ref. No.	17313
Fuel Type	Mains gas
Main Heating	Mains gas BGB Post 98 Regular condens. with auto ign.
TestMethod	
SAP Code	102
Efficiency (Split Efficiences) %	
Efficiency (Split Efficiences) %	
In Winter	90.2
In Summer	79.5
Model Name	
Manufacturer	
Controls	CBI Time and temperature zone control
Delayed Start Stat	No
Sap Code	2110
Burner Control	
Boiler Compensator	None
HETAS approved System	
Oil Pump Inside	
FI Case	
FI Water	
Flue Type	Balanced
Smoke Control Area	
Fan Assisted Flue	Yes
Is MHS Pumped	Pump in heated space
Heat Emitter	Radiators
Underfloor Heating	
Electric CPSU Temperature	
Combi boiler type	
Combi keep hot type	
Combi store type	
27.0 Community Heating	
Space Community Heating	
Distribution Loss	
Distribution Loss Value	
Controls	
SAP Code	
Water Community Heating	
Distribution Loss	
Distribution Loss Value	
Charging Linked To Heat Use	
28.0 Secondary Heating	
Description	
SHS efficiency %	
SAP Code	
HETAS Approved System	
Smoke Control Area	
Test Method	
Manufacturer	
Model Name	
29.0 Water Heating	HWP From main heating 1
Water use <= 125 litres/person/day	No
SAP Code	901
Immersion Heater	
Summer Immersion	
Suplementary Immersion	
Immersion Only Heating Hot Water	
29.1 Flue Gas Heat Recovery System	
Database ID	
Brand Model	
Details	
29.2 Waste Water Heat Recovery System	
Total rooms with shower and/or bath	
30.0 Hot Water Cylinder	Hot Water Cylinder
Cylinder Stat	Yes

Cylinder In Heated Space	Yes
Independent Time Control	Yes
Insulation Type	Measured Loss
Insulation Thickness	80
Cylinder Volume	250
Loss (kwh/day)	2.1
Pipes insulation	Yes
In Airing Cupboard	
31.0 Solar Panel	
Solar Panel Area	
Area Type	
Panel Type	
n0, a1, A/G ratio	
Orientation	
Elevation	
Overshading	
Solar Storage Volume	
Pump electrically powered	
Combined Cylinder	
32.0 Thermal Store	None
Thermal Store Pipework	within a single casing
33.0 Photovoltaic Unit	
Apportioned KWh/Year	
34.0 Wind Turbines	
Terrain Type	Urban
Wind Turbines	
Count	
Apportioned Kwh/year	
Rotor Diameter	
Hub Height	
35.0 Small-scale Hydro	
Electricity Generated	
Description	
Apportioned kWh/Year	

Recommendations

None

Further measures to achieve even higher standards

Solar photovoltaic panels, 2.5 kWp	£291	B 90	B 90