Building Regulation Compliance

Property Reference: DH-Tannyoky Rd - Upper site
Survey Reference: 001
Property: Tannyoky Rd - Upper site, Newry, Poyntzpass

Issued on Date: 06.May.2022
Prop Type Ref: DDC337

SAP Rating:	81 B	**CO2 Emissions (t/year):**	5.29	**DER:**	19.85 Pass	**Reduction:**	3.4%	**FEE:**	62.1	**ZC8:**	0.00
Environmental:	79 C	**General Requirements Compliance:**	Pass	**TER:**	20.55			**HLP:**	1.32	**Energy cost:**	£ 1103

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

Surveyor: Deniz Gursu, Tel: 02838394090 Surveyor ID: c974-0005
Address: High Street, Portadown, CRAIGAVON, Armagh, BT62 1HZ
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:	Heating oil	
Fuel factor:	1.14 × 1.17 (oil)	
Target Carbon Dioxide Emission Rate (TER)	20.55 kg/m^2	
Dwelling Carbon Dioxide Emission Rate (DER)	19.85 kg/m^2	OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.20 (max. 0.30)	0.29 (max. 0.70)	OK
Floor	0.16 (max. 0.25)	0.16 (max. 0.70)	OK
Roof	0.13 (max. 0.20)	0.17 (max. 0.35)	OK
Openings	1.36 (max. 2.00)	1.40 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated using default y-value of 0.15

3 Air permeability

Air permeability at 50 pascals:	4.00 (design value)	
Maximum	10.0	OK

4 Heating efficiency

Main heating system:	Boiler system with radiators or underfloor - Oil Data from database Firebird Enviromax Heatpac C20kW Efficiency: 91.8% SEDBUK2009 Minimum: 88.0%	OK
Secondary heating system:	Room heaters - Wood Logs RWJ Open fire in grate Efficiency: 37% Minimum: 37%	OK

5 Cylinder insulation

Hot water storage	Nominal cylinder loss: 2.55 kWh/day Permitted by DBSCG 2.86	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 (Thames Valley):	Not significant	OK
Based On:		
Overshading:	Average	
Windows facing North East:	1.83 m^2, No overhang	
Windows facing South East:	15.23 m^2, No overhang	
Windows facing South West:	7.53 m^2, No overhang	
Windows facing North West:	11.79 m^2, No overhang	
Ventilation rate:	4.00	
Blinds/curtains:	None	

10 Key features

Roof U-value	0.11 W/m^2K
Floor U-value	0.16 W/m^2K
Door U-value	1.00 W/m^2K
Window U-value	1.40 W/m^2K
Roof window U-value	1.40 W/m^2K
Air permeability	4.0 m^3/m^2h
Secondary heating (wood logs)	
Secondary heating fuel:	wood logs

Summary Information

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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)

Orientation	South East
1.0 Property Type	House, Detached
2.0 Number of Storeys	2
3.0 Date Built	2022
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:	64	169.49	2.62
1st Storey:	44.8	117.6	2.71

7.0 Living Area	80.68
8.0 Thermal Mass Parameter	Simple calculation - High

9.0 External Walls

Description	Construction	U-Value	Element	Kappa	Gross Area	Nett Area
Cavity Wall	Cavity wall : dense plaster, dense block, filled cavity, any outside structure	0.20		190.00	266.88	229.55
Timber Wall	Timber framed wall (one layer of plasterboard)	0.29		9.00	7.58	7.58

10.0 External Roofs

Description	Construction	U-Value	Element	Kappa	Gross Area	Nett Area
Loft	Plasterboard, insulated at ceiling level	0.11		9	118.44	118.44
Rafter	Plasterboard, insulated slope	0.16		9	56.81	53.76
Flat Roof	Plasterboard, insulated flat roof	0.17		9	4.50	4.50

11.0 HeatLoss Floors

Description	Construction	U-Value	Element	Kappa	Area
Ground Floor	Slab on ground, screed over insulation	0.16		110	169.49

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Argon Filled	Solar Trans	Frame Type	Frame Factor	U value
Window	BFRC data	Window	Double Low-E Soft 0.1			0.63			1.40
Door	Manufacturer	Solid Door							1.00
Rooflight	Manufacturer	Roof Window	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 Window	Window - Window	Cavity Wall	South East	None	0	No	0	0	0	14.47	0
Front Door	Solid Door - Door	Cavity Wall	South East	None	0	No	0	0	0	2.00	0
Front Rooflight	Roof Window - Rooflight	Rafter	South East	None	0	No	0	0	0	0.76	0

Rear Window	Window - Window	Cavity Wall	North West	None	0	No	0	0	0	9.50	0
Rear Rooflight	Roof Window - Rooflight	Rafter	North West	None	0	No	0	0	0	2.29	0
LHS Window	Window - Window	Cavity Wall	South West	None	0	No	0	0	0	7.53	0
RHS Window	Window - Window	Cavity Wall	North East	None	0	No	0	0	0	1.83	0
RHS Door	Solid Door - Door	Cavity Wall	North East	None	0	No	0	0	0	2.00	0

14.0 Conservatory None
15.0 Draught Proofing 100
16.0 Draught Lobby No

17.0 Thermal Bridging Default
Y-value 0.15
Description

18.0 Pressure Testing Yes
Designed q50 4.00
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 half open
Cross ventilation possible Yes
Night Ventilation No
Air change rate 4.00
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	0
Number of open flues	0	1	0	1
Number of intermittent fans				6
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 20
Total number of L.E.L. fittings 20
Percentage of L.E.L. fittings 100.00
External
External lights fitted No
Light and motion sensors

23.0 Electricity Tariff Standard

24.0 Heating Systems
Main Heating 1 Database
Description Oil Boiler
Percentage of Heat 100.00
Main Heating 2 None
Description
Percentage of Heat
Community Heating
Secondary Heating SAP table
Water Heating Main Heating 1
Flue Gas Heat Recovery System No
Waste Water Heat Recovery System 1 No
Waste Water Heat Recovery System 2 No
Solar Panel No

25.0 Main Heating 1
Database Ref. No. 15967
Fuel Type Oil

Main Heating	Oil BOD Condensing
TestMethod	
SAP Code	127
Efficiency (Split Efficiences) %	
Efficiency (Split Efficiences) %	
In Winter	92.9
In Summer	81.2
Model Name	
Manufacturer	
Controls	CBI Time and temperature zone control
Delayed Start Stat	Yes
Sap Code	2110
Burner Control	
Boiler Compensator	None
HETAS approved System	
Oil Pump Inside	Yes
FI Case	
FI Water	
Flue Type	Open
Smoke Control Area	
Fan Assisted Flue	No
Is MHS Pumped	in unheated 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	RWJ
Description	Wood Logs RWJ Open fire in grate
SHS efficiency %	37
SAP Code	631
HETAS Approved System	Yes
Smoke Control Area	Unknown
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	Foam
Insulation Thickness	80
Cylinder Volume	300
Loss (kwh/day)	
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	£334	B 85	B 82

U-value calculator report

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Project: Tannyoky Rd - Upper site, Newry, Poyntzpass

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Environmental:	79 C	**General Requirements Compliance:**	Pass	**TER:**	20.55			**HLP:**	1.32	**Energy cost:**	£ 1103

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

Surveyor: Deniz Gursu, Tel: 02838394090 Surveyor ID: c974-0005
Address: High Street, Portadown, CRAIGAVON, Armagh, BT62 1HZ
Client:

Software Version: Elmhurst Energy Systems Design SAP 2009 version 4.04r04

Building Elements:

Roof 000002 - Loft

Roof Type: Pitched Roof, insulated flat ceiling

Layer	Description	Thickness	Lambda	R	Fraction
Ext surface				0.040	
Layer 1	**Loft Space**				
	Main construction	0 mm	0.100	0.100	100.00 %
Layer 2	**Mineral wool**				
	Main construction	200 mm	0.040	5.000	100.00 %
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 3	**Mineral wool**				
	Main construction	200 mm	0.040	5.000	90.50 %
	Bridging - Timber	200 mm	0.130		9.50 %
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 4	**Plasterboard, standard**				
	Main construction	13 mm	0.210	0.060	100.00 %
Int surface				0.100	

Total resistance: Upper limit = 9.827 m^2 K/W Lower limit = 9.419 m^2 K/W Average = 9.623 m^2 K/W
U-value (unrounded) = 0.11 W/m^2 K

Unheated space: None

Total thickness: 413 mm **U-value: 0.11 W/m^2 K**

U-value calculator report

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Client:

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Building Elements:

Roof 000007 - Rafter

Roof Type: Pitched Roof, insulated sloping ceiling

Layer	Description	Thickness	Lambda	R	Fraction
Ext surface				0.040	
Layer 1	**Tiling, concrete**				
	Main construction	20 mm	1.500	0.013	100.00 %
Layer 2	**airspace/timber battens**				
	Main construction	25 mm	0.100	0.250	89.63 %
	Bridging - Timber	25 mm	0.156		10.37 %
	Corrections - Cavity Unventilated, Emissivity: Normal				
Layer 3	**Sarking felt**				
	Main construction	2 mm	0.230	0.009	100.00 %
Layer 4	**Standard cavity**				
	Main construction	50 mm	0.313	0.160	90.50 %
	Bridging - Timber	50 mm	0.130		9.50 %
	Corrections - Cavity Unventilated, Emissivity: Normal				
Layer 5	**Kooltherm K7 Pitched roof board (100mm)**				
	Main construction	100 mm	0.020	5.000	90.50 %
	Bridging - Timber	100 mm	0.130		9.50 %
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 6	**Kooltherm K18 Insulated Plasterboard (52.5mm)**				
	Main construction	53 mm	0.027	1.950	100.00 %
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Int surface				0.100	

Total resistance: Upper limit = 6.716 m^2 K/W Lower limit = 5.802 m^2 K/W Average = 6.259 m^2 K/W
U-value (unrounded) = 0.16 W/m^2 K

Unheated space: None

Total thickness: 250 mm **U-value: 0.16 W/m^2 K**

U-value calculator report

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Building Elements:

Roof 000004 - Flat Roof

Roof Type: Flat Roof standard (no precipitation)

Layer	Description	Thickness	Lambda	R	Fraction
Ext surface				0.040	
Layer 1	**Felt**				
	Main construction	6 mm	0.030	0.200	100.00 %
Layer 2	**Thermaroof TR26 FM zero ODP**				
	Main construction	120 mm	0.022	5.455	100.00 %
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 3	**Timber decking**				
	Main construction	12 mm	0.130	0.092	100.00 %
Layer 4	**Standard cavity**				
	Main construction	220 mm	1.375	0.160	90.50 %
	Bridging - Timber	220 mm	0.130		9.50 %
	Corrections - Cavity Unventilated, Emissivity: Normal				
Layer 5	**Plasterboard, standard**				
	Main construction	13 mm	0.210	0.060	100.00 %
Int surface				0.100	

Total resistance: Upper limit = 6.225 m^2 K/W Lower limit = 6.121 m^2 K/W Average = 6.173 m^2 K/W
U-value (unrounded) = 0.17 W/m^2 K

Unheated space: None

Total thickness: 371 mm **U-value: 0.17 W/m^2 K**

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Building Elements:

Wall 000001 - Cavity Wall

Layer	Description	Thickness	Lambda	R	Fraction
Ext surface				0.040	
Layer 1	**Plaster, standard**				
	Main construction	20 mm	0.400	0.050	100.00 %
Layer 2	**Blockwork, dense**				
	Main construction	100 mm	1.590	0.063	100.00 %
Layer 3	**CavityTherm CT/PIR**				
	Main construction	100 mm	0.021	4.762	100.00 %
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 4	**Blockwork, dense**				
	Main construction	100 mm	1.590	0.063	100.00 %
Layer 5	**Plaster, standard**				
	Main construction	20 mm	0.400	0.050	100.00 %
Int surface				0.130	

Total resistance: Upper limit = 5.158 m^2 K/W Lower limit = 5.158 m^2 K/W Average = 5.158 m^2 K/W
U-value (unrounded) = 0.2 W/m^2 K

Unheated space: None

Total thickness: 340 mm **U-value: 0.20 W/m^2 K**

Wall 000005 - Timber Wall

Layer	Description	Thickness	Lambda	R	Fraction
Ext surface				0.040	
Layer 1	**Plasterboard, standard**				
	Main construction	13 mm	0.210	0.060	100.00 %
Layer 2	**Xtratherm Thin-R XT/PR**				
	Main construction	100 mm	0.022	4.545	90.50 %
	Bridging - Timber	100 mm	0.130		9.50 %
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 3	**Plasterboard,**				
	Main construction	13 mm	0.210	0.060	100.00 %
Int surface				0.130	

Total resistance: Upper limit = 3.611 m^2 K/W Lower limit = 3.389 m^2 K/W Average = 3.500 m^2 K/W
U-value (unrounded) = 0.29 W/m^2 K

Unheated space: None

Total thickness: 125 mm **U-value: 0.29 W/m^2 K**

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Building Elements:

Floor 000006 - Ground Floor

Floor Type: Slab On Ground Floor
Area = 169.49 m^2, Perimeter = 64.00 m, Wall thickness = 300.00 mm, Soil: Unknown
Horizontal edge insulation: none
Vertical edge insulation: none

Layer	Description	Thickness	Lambda	R	Fraction
Ext surface				0.040	
Layer 1	**Polythene,1000 gauge**				
	Main construction	1 mm	0.000	0.000	100.00 %
Layer 2	**Concrete, dense**				
	Main construction	100 mm	2.000	0.050	100.00 %
Layer 3	**Xtratherm Thin-R XT/UF**				
	Main construction	100 mm	0.022	4.545	100.00 %
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 4	**Polythene,1000 gauge**				
	Main construction	1 mm	0.000	0.000	100.00 %
Layer 5	**Screed**				
	Main construction	100 mm	1.150	0.087	100.00 %
Int surface				0.170	

Total resistance: Upper limit = 4.682 m^2 K/W Lower limit = 4.682 m^2 K/W Average = 4.682 m^2 K/W
U-value (unrounded) = 0.16 W/m^2 K

Unheated space: None

Total thickness: 301 mm **U-value: 0.16 W/m^2 K**