ATSPACE

DELIVERING BEYOND COMPLIANCE

SAP Report Submission for Building Regulations Compliance

Client: Town & Country Planning Ltd

Project: Plot 1, 31, Beech Hill Avenue
Barnet, Hertfordshire, EN4 0LU

Contact: Paul Whiffin
Paul Whiffin
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Report Issue Date: 14/05/2021

PREDICTED ENERGY ASSESSMENT

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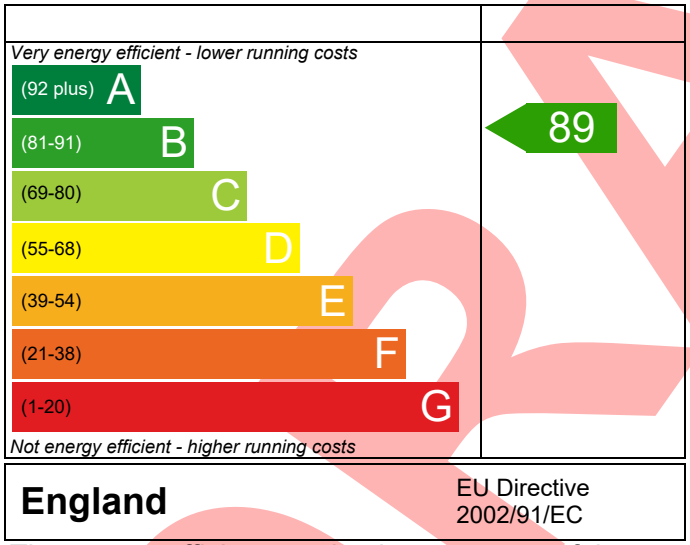
Plot 1, 31, Beech Hill Avenue,
Barnet,
Hertfordshire,
EN4 0LU

Dwelling type:	House, Detached
Date of assessment:	14/05/2021
Produced by:	Paul Whiffin
Total floor area:	525.89 m²

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.

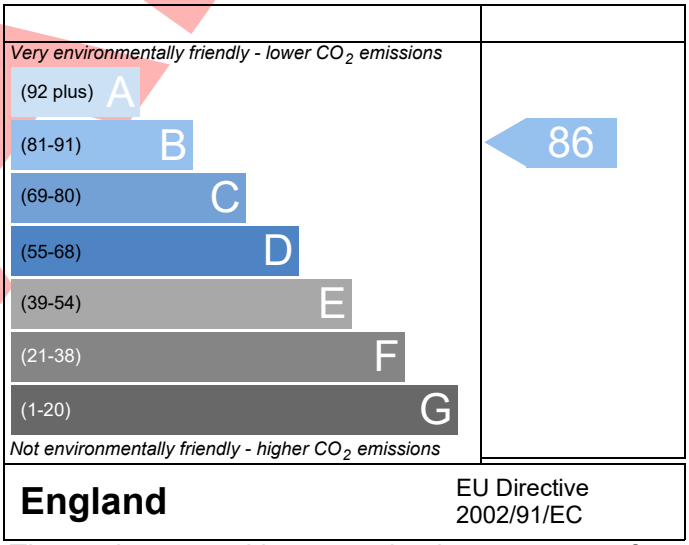
The energy performance has been assessed using the Government approved SAP2012 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO_2) emissions.

Energy Efficiency Rating



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.

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

SUMMARY FOR INPUT DATA
Calculation Type: New Build (As Designed)

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Property Reference	Q-02404 P1	**Issued on Date**	14/05/2021
Assessment Reference	Fabric Improvement	**Prop Type Ref**	New Build
Property	Plot 1, 31, Beech Hill Avenue, Barnet, Hertfordshire, EN4 0LU		

SAP Rating	89 B	**DER**	11.82	**TER**	12.70
Environmental	86 B	**% DER<TER**	6.90		
CO_2 Emissions (t/year)	5.30	**DFEE**	45.55	**TFEE**	56.40
General Requirements Compliance	Pass	**% DFEE<TFEE**	19.23		

Assessor Details	Mr. Paul Whiffin, Paul Whiffin, Tel: 01763 268685, pw@atspaceltd.co.uk	**Assessor ID**	y314-0001
Client	Town & Country Planning Ltd, Q-02404		

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	North East
Property Tenure	Unknown
Transaction Type	New dwelling
Terrain Type	Suburban
1.0 Property Type	House, Detached
2.0 Number of Storeys	3
3.0 Date Built	2021
4.0 Sheltered Sides	2
5.0 Sunlight/Shade	Average or unknown

6.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground Floor:	70.49 m	267.95 m²	2.85 m
1st Storey:	64.05 m	173.36 m²	2.94 m
2nd Storey:	38.89 m	84.58 m²	1.98 m

7.0 Living Area	165.48	m²
8.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	139.66	kJ/m²K

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area (m²)	Nett Area (m²)
External Wall 1	Cavity Wall	Other	0.23	9.00	389.19	299.71
Dormer Cheeks	Timber Frame	Timber framed wall (one layer of plasterboard)	0.30	9.00	14.91	11.50
Ashlar Wall	Timber Frame	Timber framed wall (one layer of plasterboard)	0.13	9.00	35.34	35.34

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud	Plasterboard on timber frame	9.00	166.38
Block	Dense block, plasterboard on dabs	75.00	370.48

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area (m²)	Nett Area (m²)
Flat Roof	External Flat Roof	Plasterboard, insulated flat roof	0.16	9.00	94.59	84.49
Slope Roof	External Slope Roof	Plasterboard, insulated slope	0.18	9.00	80.13	73.82
Dormer Roof	External Flat Roof	Plasterboard, insulated flat roof	0.20	9.00	6.43	6.43
Ashlar Ceiling	External Plane Roof	Plasterboard, insulated at ceiling level	0.13	9.00	88.78	88.78

10.2 Internal Ceilings

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Ceiling 1	Plasterboard ceiling, carpeted chipboard floor	9.00	173.36
Internal Ceiling 2	Plasterboard ceiling, carpeted chipboard floor	9.00	84.58

11.0 Heat Loss Floors

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)
Heat Loss Floor 1	Ground Floor - Solid	Slab on ground, screed over insulation	0.15	110.00	267.95

11.2 Internal Floors

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1	Plasterboard ceiling, carpeted chipboard floor	18.00	173.36
Internal Floor 2	Plasterboard ceiling, carpeted chipboard floor	18.00	84.58

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Argon Filled	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Glazing	BFRC data	Window	Double Low-E Soft 0.05			0.55			1.40
Solid Door	Manufacturer	Solid Door							1.80
Rooflight	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.40

13.0 Openings

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Name	Opening Type	Location	Orientation	Curtain Type	Overhang Ratio	Wide Overhang	Width (m)	Height (m)	Count	Area (m^2)	Curtain Closed
FW	Window	[1] External Wall 1	North East	Dark-coloured curtain or roller blind	0.00					31.31	100
LSW	Window	[1] External Wall 1	South East	Dark-coloured curtain or roller blind	0.00					6.81	100
RW	Window	[1] External Wall 1	South West	Dark-coloured curtain or roller blind	0.00					14.20	100
RSW	Window	[1] External Wall 1	North West	Dark-coloured curtain or roller blind	0.00					4.64	100
RDW	Window	[2] Dormer Cheeks	South West	Dark-coloured curtain or roller blind	0.00					3.41	100
FR	Roof Window	[2] Slope Roof	North East	Dark-coloured curtain or roller blind						1.58	100
LSR	Roof Window	[2] Slope Roof	South East	Dark-coloured curtain or roller blind						1.58	100
RR	Roof Window	[2] Slope Roof	South West	Dark-coloured curtain or roller blind						1.57	100
RSR	Roof Window	[2] Slope Roof	North West	Dark-coloured curtain or roller blind						1.58	100
HR	Roof Window	[1] Flat Roof	Horizontal	Dark-coloured curtain or roller blind						10.10	100
LSGD	Window	[1] External Wall 1	South East	Dark-coloured curtain or roller blind	0.00					1.10	100
RGD	Window	[1] External Wall 1	South West	Dark-coloured curtain or roller blind	0.00					29.42	100
FSD	Solid Door	[1] External Wall 1	North East							2.00	

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

SUMMARY FOR INPUT DATA
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17.0 Thermal Bridging | Calculate Bridges

17.1 List of Bridges

Source Type	Bridge Type	Length	Psi	Imported
Independently assessed	E2 Other lintels (including other steel lintels)	50.39	0.021	No
Independently assessed	E3 Sill	36.40	0.015	No
Independently assessed	E4 Jamb	115.16	0.011	No
Independently assessed	E5 Ground floor (normal)	70.49	0.059	No
Independently assessed	E6 Intermediate floor within a dwelling	102.94	0.000	No
Independently assessed	E10 Eaves (insulation at ceiling level)	51.63	0.107	No
Independently assessed	E12 Gable (insulation at ceiling level)	12.42	0.055	No
Table K1 - Default	E14 Flat roof	48.55	0.080	No
Independently assessed	E16 Corner (normal)	57.32	0.054	No
Independently assessed	E17 Corner (inverted – internal area greater than external area)	24.38	-0.100	No
Table K1 - Default	R1 Head of roof window	13.22	0.080	No
Table K1 - Default	R2 Sill of roof window	13.22	0.060	No
Table K1 - Default	R3 Jamb of roof window	17.92	0.080	No
Table K1 - Default	R4 Ridge (vaulted ceiling)	17.13	0.080	No
Table K1 - Default	R7 Flat ceiling (inverted)	18.03	0.040	No
Table K1 - Default	R8 Roof to wall (rafter)	34.52	0.060	No
Table K1 - Default	R9 Roof to wall (flat ceiling)	13.26	0.040	No

Y-value | 0.026 | W/m²K

18.0 Pressure Testing | Yes

Designed AP_{50} | 5.00 | m³/(h.m²) @ 50 Pa

Property Tested ?

As Built AP_{50} | m³/(h.m²) @ 50 Pa

19.0 Mechanical Ventilation

Summer Overheating

Windows open in hot weather | Windows half open

Cross ventilation possible | Yes

Night Ventilation | Yes

Air change rate | 4.00

Mechanical Ventilation

Mechanical Ventilation System Present | No

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				8
Number of passive vents				0
Number of flueless gas fires				0

21.0 Fixed Cooling System | No

22.0 Lighting

Internal

Total number of light fittings | 100

Total number of L.E.L. fittings | 100

Percentage of L.E.L. fittings | 100.00 | %

External

External lights fitted | Yes

Light and motion sensor | Yes

23.0 Electricity Tariff	Standard	
24.0 Main Heating 1	Manufacturer	
Percentage of Heat	100	%
Main Heating	BGB	
SAP Code	102	
Efficiency (Sedbuk 2009)	90.0	%
Model Name	Gas boiler	
Manufacturer	Design Stage	
Controls	CBI Time and temperature zone control	
PCDF Controls	0	
Delayed Start Stat	Yes	
Sap Code	2110	
Burner Control	On/Off	
Flue Type	None or Unknown	
Fan Assisted Flue	No	
Is MHS Pumped	Pump in heated space	
Heat Emitter	Radiators and Underfloor	
Underfloor Heating	Yes - Pipes in thin screed	
Flow Temperature	36° - 45°C	
25.0 Main Heating 2	None	
Community Heating	None	
28.0 Water Heating	HWP From main heating 1	
Water Heating	Main Heating 1	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	No	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
SAP Code	901	
29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	300.00	L
Loss	2.86	kWh/day
Pipes insulation	Fully insulated primary pipework	
31.0 Thermal Store	None	

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement SAP rating	Environmental Impact
Solar photovoltaic panels, 2.5 kWp	£3,500 - £5,500	£343	B 91	