BUILDING REGULATION COMPLIANCE
Calculation Type: New Build (As Built)

Design SAP
elmhurst energy

Property Reference	97a Nags Head Hill	**Issued on Date**	17/11/2023
Assessment Reference	As built 2	**Prop Type Ref**	Semi
Property	97a, Nags Head Hill, Kingswood, Bristol, BS5 8QN		

SAP Rating	93 A	**DER**	9.37	**TER**	18.49
Environmental	94 A	**% DER<TER**	49.32		
CO_2 Emissions (t/year)	0.35	**DFEE**	53.36	**TFEE**	54.44
General Requirements Compliance	Pass	**% DFEE<TFEE**	1.99		

Assessor Details	Mr. Paul Taylerson, Paul Taylerson, Tel: 07904 120 408, paultaylerson@gmail.com	**Assessor ID**	U796-0001
Client			

SUMARY FOR INPUT DATA FOR New Build (As Built)

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)	18.49	$kgCO_2/m^2$	
Dwelling Carbon Dioxide Emission Rate (DER)	9.37	$kgCO_2/m^2$	Pass
	-9.12 (-49.3%)	$kgCO_2/m^2$	

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	54.44	$kWh/m^2/yr$	
Dwelling Fabric Energy Efficiency (DFEE)	53.36	$kWh/m^2/yr$	
	-1.0 (-1.8%)	$kWh/m^2/yr$	Pass

Criterion 2 – Limits on design flexibility

Limiting Fabric Standards

2 Fabric U-values

Element	Average	Highest	
External wall	0.22 (max. 0.30)	0.22 (max. 0.70)	Pass
Party wall	0.00 (max. 0.20)	-	Pass
Floor	0.10 (max. 0.25)	0.10 (max. 0.70)	Pass
Roof	0.13 (max. 0.20)	0.15 (max. 0.35)	Pass
Openings	1.44 (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	7.85 (measured in this dwelling)	$m^3/(h.m^2)$ @ 50 Pa	
Maximum	10.0	$m^3/(h.m^2)$ @ 50 Pa	Pass

Limiting System Efficiencies

4 Heating efficiency

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Regs Region: England
Elmhurst Energy Systems
SAP2012 Calculator (Design System) version 4.14r19

Main heating system	Boiler system with radiators or underfloor - Mains gas Data from database Ideal ATLANTIC COMBI 30 Combi boiler Efficiency: 89.6% SEDBUK2009 Minimum: 88.0%		Pass
Secondary heating system	None		

5 Cylinder insulation

Hot water storage	No cylinder		

6 Controls

Space heating controls	Programmer, room thermostat and TRVs		Pass
Hot water controls	No cylinder		
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 (Severn Valley)	Not significant		Pass

Based on:

Overshading	Average		
Windows facing North Windows facing South	12.20 m², No overhang 6.68 m², No overhang		
Air change rate	8.00 ach		
Blinds/curtains	None		

Criterion 4 – Building performance consistent with DER and DFEE rate

Party Walls

Type	U-value		
Solid Wall	0.00	W/m²K	Pass

Air permeability and pressure testing

3 Air permeability

Air permeability at 50 pascals	7.85 (measured in this dwelling)	m³/(h.m²) @ 50 Pa	
Maximum	10.0	m³/(h.m²) @ 50 Pa	Pass

10 Key features

Party wall U-value	0.00	W/m²K
Floor U-value	0.10	W/m²K
Photovoltaic array	2.00	kW