iTS Consultancy Services Ltd
First Floor, Milton House
Gatehouse Road, Aylesbury
Buckinghamshire, HP19 8EL

Tel: 01442 899141
Web: www.itsconsultancy.co.uk
17/11/2025
Our ref – Job No. 25090

1094 St Mary's

Conversion of an existing non-domestic space to 7no dwellings
New Road Shoreham-by-Sea BN43 6RA

Energy Statement – Planning Submission

This energy statement has been prepared to compliance with Adur Council's Local Plan 2017.

Policies 18 & 19 of the Local Plan state:

Policy 18: Sustainable Design

Residential: All new dwellings must achieve a water efficiency standard of no more than 110 litres/person/day (lpd)...

4.22 …in order help reduce carbon emissions all major development should incorporate renewable and low carbon energy production equipment to meet at least 10% of predicted energy requirements. Such energy generation could take the form of photovoltaic energy, solar-powered and geo-thermal water heating and energy crops and biomass.

Major development is defined in the Town & Country Planning (Development Management Procedure) (England) Order 2010 as 10 or more dwellinghouses, or sites of 0.5 hectares or more where it is not known if the development will have 10 or more dwellinghouses; the provision of a building or buildings where the floorspace to be created is 1,000 sqm floorspace or more, or development on sites of 1 hectare or more.

Policy 19: Decentralised Energy, Stand-alone Energy Schemes and Renewable Energy

An assessment of the opportunities to use low carbon energy, renewable energy and residual heat/ cooling for both domestic and non-domestic developments must be provided with any major planning application. This must include details of:

- *Any new opportunities for providing or creating new heating/cooling networks.*
- *The feasibility of connecting the development to existing heating / cooling / CHP networks where these already exist."*

The proposals comprise 7no converted dwellings on a site under 0.5 hectares, as such the development is seen as not being considered a 'major development'.

General notes

The developer will build the dwellings in line with the requirements of the latest Part L building regulations (Approved Document Part L1A 2010 (2021 edition with 2023 amendments)).

All fabric and controlled services will also be in line with the same latest Part L regulations, and the Domestic Building Services Compliance Guide.

In line with these latest Part L regulations the dwellings have been assessed using the Government's latest Standard Assessment Procedure SAP10.2.

For conversions Approved Document Part L does not set any targets for Dwelling Emission Rate (DER), Dwelling Fabric Energy Efficiency (DFEE) or Dwelling Primary Energy (DPER). Instead, the As Designed dwellings' carbon emissions have been evaluated by comparing them against the performance of an identical theoretical dwelling which uses gas heating.

The assessments utilise data from tables 4.2 'Limiting U-Values for new fabric elements in existing dwellings', and 4.3 'Limiting U-Values for existing elements in existing dwellings' of the approved document. Along with data from Appendix S: Reduced data SAP for existing dwellings (July 2016), information and drawings.

The dwellings will therefore be built to high standards of insulation and incorporate high efficiency glazing products. All controlled services will follow the guidelines for the building services domestic compliance guide and where possible better the minimum efficiency requirements.

Assessment

In line with accepted practise, the primary objective in reducing carbon emissions is to reduce total energy consumption "Be lean". The following tables detail the intended construction in relation to current building regulations compliance levels.

A fabric first approach has been applied to the dwellings to reduce the regulated energy requirement. The intended fabric U-Values are listed below:

Table 1- Design U-Values versus ADL1A 2013 limiting values

Element:	Part L1A 2013 limiting values:	Proposed dwellings
All Upgraded Floors	0.25 w/m²k	0.25 w/m²k
All New Floors (inc. exposed to commercial and exterior)	0.18 w/m²k	0.18 w/m²k
All Upgraded Walls (inc. exposed to commercial and exterior)	0.30 w/m²k	0.30 w/m²k
All New Walls	0.18 w/m²k	0.18 w/m²k
All Upgraded Roofs	0.16 w/m²k	0.16 w/m²k
All New Roofs	0.15 w/m²k	0.15 w/m²k
New Solid Doors	1.40 w/m²k	1.40 w/m²k
New Windows/Glazed doors	1.40 w/m²k	1.40 w/m²k
New Roof Windows (pitched)	1.40 w/m²k	1.40 w/m²k
Window G-Value	n/a	0.63

The heating of the dwellings has not been finalised due to final decisions pertaining to incoming utility connections. The developer wishes to retain some flexibility on whether the dwellings shall use natural gas or electricity as the primary energy source.

An assessment of practical and viable options on energy sources is summarised in the table below.

Technology	Description	Suitability for site
Biomass	Pellet boilers/ heating systems.	Heating by biomass is not intended due to fuel storage/delivery/air pollution and urban location
Solar Hot Water	Solar panels linked to storage cylinder.	The limited benefits for energy reduction versus hot water usage, and roof space has ruled this technology as inappropriate for this site.
PV (photovoltaic panels)	Photovoltaic panels for electric generation.	Limited roof space and the site location being with the Shoreham-by-Sea Conservation area limits the feasibility of this technology.
Wind Turbine	On site electrical generation and possible feed into national grid.	Urban site location makes this unsuitable.
Ground Source Heat Pump (GSHP)	Renewable energy via ground to water heat pump for distribution to heating/hot water system.	Limited suitable external ground for energy collectors makes this technology less favourable in comparison to other options.
Air Source Heat Pump (ASHP)	Renewable energy via air to water heat pump for distribution to heating/hot water system.	Viable low carbon technology dependant on sufficient electrical capacity on the local electricity network.
Direct Electric Panel Heaters, Direct Electric Boiler, or Dry Underfloor Heating	Zero carbon ready tracking the decarbonisation of the National Grid.	Despite electricity being 100% efficient its current high price as a fuel causes the dwelling's EPC grade to drop below the required C grade.
Hot Water Heat Pump Cylinder	Renewable energy from air to hot water supply.	The high efficiency of this technology makes it a suitable choice for all dwellings on site.
Natural Gas	High efficiency condensing gas boiler connected to heating hot water system.	This energy source coupled with a hot water heat pump can provide sufficient low carbon technology to meet planning and building regulation compliance.

Two assessments have been undertaken. One assessment using air source heat pumps, with electricity as the primary energy source, and a second assessment utilising natural gas boilers, together with heat pump hot water systems to provide sufficient low carbon technology to comply with planning and building regulatory requirements.

Option 1 – ASHP Heating and Hot Water

Heating and hot water would be provided by Air Source Heat Pumps, with the hot water being supplied via 200 litre hot water heat pump cylinders. A mix of wet system radiators and underfloor heating will be adopted throughout, with programmers, room thermostats, and TRVs.

Gas DER vs Heat Pump DER (Dwelling Emission Rate)						
	Total Floor Area m2	Gas Heating DER KgCO2/yr/m2	ASHP Heating (As Designed) DER KgCO2/yr/m2	Gas Heating Kg CO2 Per year	ASHP Heating Kg CO2 Per year	Percentage Reduction CO2 Emissions
Flat A	127.21	27.50	5.94	3,498.28	755.63	78.40%
Flat B	98.33	30.84	6.84	3,032.50	672.58	77.82%
House 1	92.32	32.37	6.95	2,988.40	641.62	78.53%
House 2	92.32	28.69	6.34	2,648.66	585.31	77.90%
House 3	92.32	28.69	6.34	2,648.66	585.31	77.90%
House 4	92.32	29.86	6.58	2,756.68	607.47	77.96%
House 5	96.14	37.40	7.32	3,595.64	703.75	80.43%
Total	**690.96**	**215.35**	**46.31**	**21,168.82**	**4,551.67**	**78.50%**

The overall reduction in CO2 emissions for the development is 78.50% compared to the use of gas boilers.

Option 2 – Natural Gas Heating and Heat Pump Hot Water

Heating would be provided by a high efficiency condensing gas boiler connected to a hot water system (designed to be compatible with future ASHP application) and a hot water storage cylinder coupled to an air source heat pump enabling hot water to be generated by low carbon technology.

Gas Only DER vs Gas & Edel DER (Dwelling Emission Rate)						
	Total Floor Area m2	Gas Only DER KgCO2/yr/m2	Gas & Edel (As Designed) DER KgCO2/yr/m2	Gas Only Kg CO2 Per year	Gas & Edel Kg CO2 Per year	Percentage Reduction CO2 Emissions
Flat A	127.21	27.50	21.78	3,498.28	2,770.63	20.80%
Flat B	98.33	30.84	23.59	3,032.50	2,319.60	23.51%
House 1	92.32	32.37	24.14	2,988.40	2,228.60	25.42%
House 2	92.32	28.69	21.14	2,648.66	1,951.64	26.32%
House 3	92.32	28.69	21.14	2,648.66	1,951.64	26.32%
House 4	92.32	29.86	22.33	2,756.68	2,061.51	25.22%
House 5	96.14	37.40	30.27	3,595.64	2,910.16	19.06%
Total	**690.96**	**215.35**	**164.39**	**21,168.82**	**16,193.78**	**23.50%**

The overall reduction in CO2 emissions for the development is 23.50% compared to the use of only gas boilers.

Both options adopt additional measures to reduce energy including efficient LED lighting and limiting water consumption to 110 litres per person per day.

Conclusion

Both options illustrate the site's predicted emission reduction is greater than the 10% stated in Policy 18 of the Local Plan.

This assessment was carried out using Design SAP10.2- Elmhurst Energy Systems Ltd, version 1.7.50.