

Dapper's Lane, Angmering, Littlehampton

Energy Statement

Persimmon Homes

6.3.20

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1. Introduction

This report has been prepared by Persimmon Homes to outline how the proposed development at Dapper's Lane, Angmering will meet the requirements of Arun District Council's planning policy relating to energy.

The proposed development will consist of 84 dwellings; a mix of private and affordable dwellings ranging from two to four bedroom houses. This statement will assess the development against the requirements of national and local planning policy to demonstrate a reduction in regulated carbon emissions of 10% compared to Part L1A 2013 Target Emission Rate

The development will be constructed to meet the following standards;

- All plot show compliance with Part L1A 2013 Target Emission Rate
- All plots show compliance with Part L1A 2013 Target Fabric Energy Efficiency
- A site wide 10% reduction in Emission Rate compared to the Part L 2013 Target Emission Rate, achieved through the use of fabric improvements, service enhancements and renewable energy generation to a number of dwellings.

2 Baseline Carbon Dioxide Emissions.

Baseline CO2 emissions have been calculated using SAP 2012 methodology, the baseline calculations follow the Persimmon Homes "Model Design" or elemental recipe.

Element	Part L 2013	Persimmon Homes Specification
Wall	0.30W/m2K	0.25W/m2K
Party Wall	0.20W/m2K	0.00W/m2K
Cold Roof	0.20W/m2K	0.11W/m2K
Floor	0.25W/m2K	0.18 – 0.22W/m2K
Glazing	2.00W/m2K	1.3W/m2K
Door	2.00W/m2K	1.4W/m2K
Air Permeability	10 m3/(h.m2) @ 50 Pa	5 - 7.0 m3/(h.m2) @ 50 Pa

Other energy efficiency measures incorporated into the Persimmon Homes Group Specification include;

- Masonry construction details. House type designs incorporate thermal bridging calculations thereby significantly reducing this source of heat loss.
- An energy efficient gas condensing boiler will be installed in each property. The heating designs to each house type will include dual zone controls with delayed start thermostats.
- Energy efficient lamps will be installed in every light fitting.
- Each property will be naturally ventilated using efficient extract fans to ensure the internal living environment will be healthy and comfortable.
- The white goods installed in each property or offered to purchasers will be energy efficient with an A/ A+ rating.

SAP calculations have been conducted on the house types plotted onto the proposed development. Based on the notional (TER) specification details as taken from Appendix R of SAP 2012 methodology, the site wide target emissions are estimated to be 144741.36 kg/CO2/yr of regulated CO2 per annum. Based on the preferred Persimmon Homes specification of efficient fabric and services alongside the installation of Solar PV to selected suitable plots, the predicted carbon dioxide emissions for the site are reduced by 14532.94 kg/CO2/yr an improvement of 10.18% over Part L1A 2013.

House Type		SAP Rating	Plot Kg/CO2/yr TER	Plot Kg/CO2/yr DER	Site Wide TER	Site Wide DER
Derwent Det	7	83	1699.66	1685.24	11897.64	11796.71
Lockwood Det	1	83	1726.08	1709.36	1726.08	1709.36
Lockwood Corner	10	83	1708.43	1683.35	17084.31	16833.48
Longthorpe	4	83	2012.89	1994.66	8051.58	7978.66
Coniston	4	84	1966.36	1928.93	7865.42	7715.74
Coniston +	8	84	2005.40	1962.98	16043.23	15703.83
Hollywell	7	85	2173.26	2137.40	15212.84	14961.77
2B3P End	9	83	1540.11	1526.83	13860.98	13741.49
2B3P Mid	5	84	1442.19	1412.32	7210.96	7061.60
3520A+ End	9	84	1682.29	1668.00	15140.62	15012.02
Hanbury +	14	83	1317.83	1299.13	18449.59	18187.82
Warwick	4	84	2178.35	2153.58	8713.38	8614.31
WP2	2	83	1742.36	1728.13	3484.73	3456.26
	84				144741.36	142773.04

10% Target	14474.14	Kg/CO2/yr	10.14%
Fabric	1968.32	Kg/CO2/yr	1.38%
Balance from PV	12505.81	Kg/CO2/yr	8.76%
PV Scheduled	12564.62	Kg/CO2/yr	86.81%
Fabric & PV	14532.94	Kg/CO2/yr	10.18%

PV Allocation

Having reviewed the site layout there are plots in an advantageous orientation for solar PV. A total of 21.6 kWp is estimated to be required to mitigate 12565.62 kg/CO2/yr.

Plot Number	House Type	kWp	Orientation	Pitch	Kk Value	Shading Factor (SF)	kWh Ouput	CO2 0.519	
9	Hanbury	2.16	30.000	35.000	1098	1	2371.68	1230.902	
10	Hanbury	2.16	30.000	35.000	1098	1	2371.68	1230.902	
11	Hanbury	2.16	20.000	35.000	1116	1	2410.56	1251.081	
12	Hanbury	2.16	20.000	35.000	1116	1	2410.56	1251.081	
13	Hanbury	2.16	0.000	35.000	1130	1	2440.8	1266.775	
14	Hanbury	2.16	0.000	35.000	1130	1	2440.8	1266.775	
36	Hanbury	2.16	0.000	35.000	1130	1	2440.8	1266.775	
37	Hanbury	2.16	0.000	35.000	1130	1	2440.8	1266.775	
38	Hanbury	2.16	0.000	35.000	1130	1	2440.8	1266.775	
39	Hanbury	2.16	0.000	35.000	1130	1	2440.8	1266.775	
		21.6							12564.62

3 Conclusions

The strategy adopted by Persimmon Homes incorporates best practice measures with respect to layouts, house type mix, material selection and energy efficiency in order to achieve compliance with the conditions laid out within Arun District Council's supplementary planning documentation.