
10% Energy Reduction Analysis Land at Climping

**On Behalf of:
Climping Homes**



**CLIMPING
HOMES**

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Executive Summary

- This document supports the proposed development of 300 new dwellings on Land at Climping
- Condition 16 of the outline planning permission requires an on-site energy reduction of 10%
- 'Fabric First' approach is proposed using enhanced construction techniques, combined with photovoltaic modules to achieve a 10% energy reduction.

Dwelling Analysis

A selection of representative house types has been assessed under SAP 2012 to inform potential levels of insulation and additional technologies required to achieve 10% Energy reduction under SAP 2012

SAP 2012 Calculation Performance

In order to achieve a 10% Energy reduction, dwellings will make use of the following:

- Enhanced levels of insulation to walls floors and ceilings
- Windows and doors will have low U-Values
- Non repetitive linear bridges will receive additional attention and adhere to 'LABC' enhanced values
- Low energy bulbs will be used in each light fitting
- High efficiency mains gas boilers
- Photovoltaic modules

The enhanced fabric specification values are given in Table 1

Table 1

Element	Approved Document L1a limit	Enhanced Specification
External Wall	0.30W/m ² K	0.24W/m ² K
Party Wall	0.20W/m ² K	0.00W/m ² K
Floor	0.25W/m ² K	0.12W/m ² K
Roof	0.20W/m ² K	0.10W/m ² K
Windows and Doors	2.00W/m ² K	1.1-1.2W/m ² K
Air Permeability	10.0m ³ /(h.m ²) @ 50Pa	5m ³ /(h.m ²) @ 50Pa

The performance for the dwellings is given in Table 2

Table 2

All figures are kWh unless otherwise stated

Plot No	Total Energy Used	Energy Supplied by PV	% energy Supplied by PV	KWp	Orientation
23	5645.452	561.35	9.943402229	0.65kWp	South
24	4950.7157	474.9908	9.594386525	0.55kWp	South
72	9071.3425	939.902	10.36122272	1.1kWp	South
80	8715.7961	854.4564	9.803538199	1kWp	South
81	8715.7961	854.4564	9.803538199	1kWp	South
82	8861.3883	963.8364	10.87681035	1.2kWp	South East
83	9071.3425	939.902	10.36122272	1.1kWp	West
107	9137.9277	854.4564	9.350658356	1kWp	South
108	9137.9277	854.4564	9.350658356	1kWp	South
109	9137.9277	854.4564	9.350658356	1kWp	South
114	9137.9277	854.4564	9.350658356	1kWp	South
134	6678.8757	682.4239	10.21764636	1kWp	East
135	6678.8757	682.4239	10.21764636	1kWp	West
136	6678.8757	682.4239	10.21764636	1kWp	East
137	6678.8757	682.4239	10.21764636	1kWp	West
138	6678.8757	682.4239	10.21764636	1kWp	East
139	6678.8757	682.4239	10.21764636	1kWp	West
140	6678.8757	682.4239	10.21764636	1kWp	East

141	6678.8757	682.4239	10.21764636	1kWp	West
181	6581.6728	682.4239	10.36854795	1kWp	East
182	6627.2605	682.4239	10.29722462	1kWp	East
198	6627.2605	682.4239	10.29722462	1kWp	West
199	6581.6728	682.4239	10.36854795	1kWp	West
212	9071.3425	939.902	10.36122272	1.1kWp	South
295	5855.4296	647.7148	11.06178102	0.70kWp	South
296	5154.5711	518.17	10.05263076	0.6kWp	South
Total Used Energy		PV Supplied Total	% energy Supplied by PV		
171846.25		17325.35	10.08		

Conclusion

As can be seen from the example dwellings, the development will achieve more than 10% Energy reduction via fabric and Photovoltaic Modules