

Technical Note

Project Title	Templecombe House		
Subject	Energy & Sustainability Statement	Date	4 th September 2026
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1 Introduction

This Technical Note is a supplementary note to the original Energy & Sustainability Statement produced by The PES in October 2022. This note is necessary because subsequent to October 2022 publication, the house has been subject to a significant amount of redesign and remodelling work, meaning that the house being tabled today is materially different to that tabled back in 2022.

As a result, an up-date to the original Energy & Sustainability Statement is required in order re-confirmation that the energy and water consumption targets are still being met, namely that the proposed development will:

- Deliver at least a 10% reduction in carbon emissions through on-site renewable technologies
- Limit water consumption to a maximum of 105ltrs per person per day

2 Proposed Development

The new proposal for Templecombe House is for a new c1,400m² GIA new-build 5-bed single storey house, with lower ground floor parking garage, gym and ancillary rooms.

3 Energy and Carbon Dioxide Emissions

With reference to Wokingham Borough Council's planning policies, we are aware that the scheme will need to deliver at least a 10% reduction in carbon emissions through on-site

renewable or low carbon technologies and ultimately contribute towards the goal of reaching zero-carbon. The team is fully onboard and engaged with this; we intend to adopt a Lean, Clean and Green approach.

Our approach is fully validated through early design stage draft SAP/EPC calculations.

3.1 Reducing energy consumption - Lean

Heating energy consumption will be minimised by adopting a fabric first approach and making significant improvements to the fabric standards, such as, improved insulation, glazing and air tightness beyond the Building Regulations 2021 notional standards. Our proposed design standards are described in Table 3.1.1:

Element	2021 Notional U-values	Proposed design standards
Walls	0.18 W/m ² /K	0.15 W/m ² /K
Floor	0.13 W/m ² /K	0.10 W/m ² /K
Roof	0.11 W/m ² /K	0.10 W/m ² /K
Windows	1.2 W/m ² /K	1.2 W/m ² /K*
Doors	1.0 W/m ² /K	1.2 W/m ² /K
Air perm	5 m ³ /m ² /hr @ 50Pa	3 m ³ /m ² /hr @ 50Pa
G-values	0.4 on unshaded E, SE, S, SW & W windows. 0.62 on NW, N & NE windows and shaded windows. 0.4 on rooflights	
Brise soleil	Provided as part of the roof overhang	

Table 3.1.1: Proposed bulk fabric standards

In addition, cooling demands will be minimised through passive strategies. Extensive roof overhangs will help block out un-wanted summertime solar gains, whilst still allowing useful solar gains and natural daylighting through the shoulder and winter seasons. This all helps to reduce the need for mechanical heating and artificial lighting.

3.2 Reducing carbon dioxide emissions - Clean

Carbon dioxide emissions will be minimised as we do not intend to pursue any traditional fossil fuel type heat generation technologies. Instead heat generators which are consistent with low carbon energy buildings policies (such as heat pumps) will be pursued.

Electric vehicle chargers (EVCs) will also be provided further reducing on-going dependence on traditional fossil fuels.

3.3 Incorporating renewable technologies - Green

Renewable energy technologies will be pursued. The proposed strategy to generate heat, coolth and hot water is to use a Ground Source Heat Pump (GSHP) with a vertical borehole array.

Where mechanical cooling is deemed necessary, cooling will be generated sustainably and predominately passively by using a reversible ground source heat pump and vertical borehole array – the same heat pump that is used to generate low carbon heat in the winter is reversed to generate coolth in the summer. This is known as Interseasonal Heat Transfer whereby heat “collected” in the summer from mechanical cooling systems is stored in the vertical borehole ground array, gently warming the ground up, ready to be used in the winter.

Returning heat back to the ground via Interseasonal Heat Transfer can help with the overall annual energy balance by significantly improving the energy efficiency of a ground source heat pump during the heating season, compared with a heating only ground source heat pump.

3.4 Draft SAP/EPC - Validation

We have fully validated our approach through early design stage draft SAP/EPC calculations, the results of which are:

Target emission rate	Dwelling emission rate	% reduction in CO ₂ emissions against Part L	Draft EPC	Planning condition met?
11.08	2.60	76.5%	83B	Yes

Table 3.4.1: Results of draft SAP/EPC assessment

As seen from Table 3.4.1, the proposed development appears to meet the planning condition as reduction in CO₂ emissions greater than 10% over Building Regulations Part L levels is being achieved.

4 Water Consumption

With reference to Wokingham Borough Council's planning policies, we are aware that the scheme will need to limit water consumption to a maximum of 105ltrs per person per day. The team is fully onboard and engaged with this; our approach is to adopt a water reduction strategy.

Our approach is fully validated through early design stage draft Water Efficiency calculations.

4.1 Conserving water resources - Reduction

Water consumption will be minimised by:

- Specifying aerating taps and showers, as well as dual flush WCs and flow restrictors on appliances, such as showers limited to 9ltrs/min, sinks and wash hand basins to 5ltrs/min. High water use rainhead showers are not proposed
- Developing external landscaping with an inherently low water use planting scheme, such as, drought resistant wild flowers. Water butts will be provided to collect rainwater for limited external irrigation purposes. In addition, a borehole is proposed to extract ground water for more extensive irrigation purposes

4.2 Water efficiency calculations - Validation

We have fully validated our approach through early design stage draft Water Efficiency calculations, the results of which are:

Building Regulations target rate	Local planning target rate	Actual consumption rate	Planning condition met?
125ltrs/person/day	105ltrs/person/day	104ltrs/person/day	Yes

Table 4.2.1: Results of water efficiency calculator

As seen from Table 4.2.1, the proposed development appears to meet the planning condition as the actual water consumption rate is less than both the Building Regulations target rate of 125ltrs/person/day and the local planning condition target rate of 105ltrs/person/day.

5 Summary

This Technical Note is a supplementary note to the original Energy & Sustainability Statement published in 2022. It is necessary as the design for the house being tabled today is materially different to that tabled back in 2022.

This Technical Note re-confirms that the energy and water consumption targets are still being met, namely that the house will:

- Deliver at least a 10% reduction in carbon emissions through on-site renewable technologies
- Limit water consumption to a maximum of 105ltrs per person per day

This has been fully validated through the production of early design stage draft SAP/EPC calculations and Water Efficiency calculations, which are appended to this report.