

Wensley Road – Energy Strategy Review. Hoare Lea Response.

Following receipt of Element Energy's Energy Strategy Review for the Wensley Road Development, Hoare Lea have provided a response.

Whilst the energy strategy is compliant and encouraged in principle, a number of actions are recommended to be undertaken by Hoare Lea prior to planning permission being granted for the development:

- Demonstrate the development achieves the energy consumption level of Passivhaus dwelling design by using the PHPP tool for building energy modelling alongside the SAP calculation process, ensuring that modelled ASHP seasonal efficiency is realistic and not a notional value (i.e. 300% as provided in the energy statement);
- Confirm temperatures of heat generated by the ASHPs and how the units will generate heat in peak heating season if no top-up electric heating generating equipment is in place;
- Considering the above, revisit solar PV provision on rooftops to ensure the designs guarantee zero-carbon homes via on-site renewable generation;
- Confirm strategy for individual ASHP heating provision to townhouses rather than connecting to the communal heating network that serves the apartment block, including supporting documentation such as spatial constraints or increased cost of heat for consumers;
- Provide detailed evidence that a shared ground loop array would not be deployable on the Wensley Road development as a replacement for lower efficiency ASHPs.

1. Demonstrate the development achieves the energy consumption level of Passivhaus dwelling design by using the PHPP tool for building energy modelling alongside the SAP calculation process, ensuring that modelled ASHP seasonal efficiency is realistic and not a notional value (i.e. 300% as provided in the energy statement);

Hoare Lea Response: The proposal for the Wensley Road Development is a very thermally efficient envelope adopting Passivhaus principals (as noted under air permeability section in the report), not full Passivhaus. Therefore, the table below confirms that all of the dwellings have a space heating energy consumption less than the Passivhaus recommended level.

Passivhaus – Space heating energy consumption	Wensley Road – Type 1	Wensley Road – Type 2	Wensley Road – Type 3
<15 kWh/m ² /annum	12.9 kWh/m ² /annum	11.7 kWh/m ² /annum	14.9 kWh/m ² /annum

Hoare Lea Response: Air source heat pump selection is Mitubishi Ecodan unit which achieves sCOP of 3.37.

2. Confirm temperatures of heat generated by the ASHPs and how the units will generate heat in peak heating season if no top-up electric heating generating equipment is in place;

Hoare Lea Response: ASHPs will be providing a heating flow and return temperature of 50/45. The systems are sized to achieve the design condition heat losses for each unit. Top up electric immersion heater is provided to raise the domestic hot water temperatures, but not to top up the heating.

3. Considering the above, revisit solar PV provision on rooftops to ensure the designs guarantee zero-carbon homes via on-site renewable generation;

Hoare Lea Response: The PV provision has been maximised within the available usable roof areas.

4. Confirm strategy for individual ASHP heating provision to townhouses rather than connecting to the communal heating network that serves the apartment block, including supporting documentation such as spatial constraints or increased cost of heat for consumers;

Hoare Lea Response: The current strategy is for the PV arrays to be apportioned so that they each supply an individual apartment and therefore will supply an individual ASHP system. A communal heating network serving all units would result in the PV arrays being supplied to the landlord supply. This would also result in spatial constraints as heat interface units (HIUs) would be required, something which the current utility cupboard size does not allow. The scale of the development is not dense, with a low number of units distributed over a large area and therefore does not suit a centralised system. The apartments are following the same strategy as the townhouses which will provide a scalable solution across the development.

5. Provide detailed evidence that a shared ground loop array would not be deployable on the Wensley Road development as a replacement for lower efficiency ASHPs.

Hoare Lea Response: Ground source heat pumps are not feasible on this site as they would require a shallow loop. This type of loop array is impractical as the chance of it being disturbed or dug into are high and would result in all communal heating being out of action for the, with high costs for repair. Although the ASHPs provide a lower COP than the GSHPs, they are significantly more efficient than a boiler system or direct electric heating and will also be more cost efficient for the development whilst still allowing zero carbon to be achieved.