
MEMORANDUM

From:	Úna Haran, Lead Sustainability Planning Officer		
Service	WBC Sustainability	App No:	250494
Address:	Oak Dale, Lower Wokingham Road, Crowthorne, Wokingham, RG45 6BX.		
Proposal:	Application for submission of details to comply with the following condition of planning consent 223256 (APP/X0360/W/23/3336000) dated 26/09/2024. Condition 12 relates to carbon neutrality.		
Type of Development:			
Site Visit Made:	No		

Summary Of Recommendations

- ☐ No comment
- ☐ No objection
- ☐ No objection subject to conditions (and reasons) **stated below**
- ☒ Request further information before determination as **stated below**
- ☐ Objection due to the reason(s) **stated below**

Comments On Proposal

The application materials are assessed against the following Sustainable Development Condition pursuant to appeal decision APP/X0360/W/23/3336000:

“12. The development hereby permitted shall not progress beyond base course level until a report demonstrating whether it is practicable and viable to provide carbon neutral accommodation is submitted to the local planning authority. Where it cannot be demonstrated that carbon neutrality could be achieved in the development, measures to bring the development closer to this target shall be submitted to and approved in writing by the local planning authority before the development progresses beyond base course level. The development shall be constructed in accordance with the approved targets and maintained as such thereafter.”

1. Carbon emissions.

1.1. The Carbon Neutrality Report authored by Harniss on behalf of Barchester Healthcare¹ partially describes the strategy for carbon emission reduction.

1.2. Baseline emissions are not defined, however it is noted that (regulated) operational energy demand will exceed the generation potential of the proposed 76 panel photovoltaic array which is expected to be 34kWp.

1.3. The specification for the array (panel models, roof mounting plan and total area) is not provided.

1.4. It is stated that the energy hierarchy (Be Lean, Be Clean, Be Green, Be Seen) is used to reduce the operational emissions associated with the development however no details of the Be Lean stage, such as fabric performance specification, are provided. It is therefore assumed that the construction will use specification as outlined in the Hoyle Dean Energy Statement in support of application 223256 as follows, however it is made clear in the Hoyle Dean Statement that the specification provided is “assumed”² rather than being a fixed specification resulting from the detailed design.

1.4.1. Fabric performance:

Building element	Unit	Part L 2021 limiting value	Best practice value	Hoyle Dean specification
External wall	W/m2.K	0.26	0.12	0.21
Roof	W/m2.K	0.16	0.10	0.14
Floor	W/m2.K	0.18	0.10	0.13
Vertical windows	W/m2.K	1.60	0.80	1.4
Doors	W/m2.K	1.60	1.00	1.4
Air permeability	m3/h.m3 @ 50 Pa	8.0	<1.0	5.0
G value of glass	absolute	none	0.4 – 0.3	0.4 assumed

Part L2A 2021

1.4.2. Table 1 illustrates the assumed thermal performance of building elements as provided in the 2022 Energy Statement in comparison with Part L limiting values and best practice. All elements are within the allowable limits but the specification does not approach best practice. The wall insulation in particular could be improved to reduce operational energy demand and stabilise internal conditions.

- 1.5. A feasibility study for low and zero carbon technologies to provide heat and/or power is provided in the Carbon Neutrality Report. This concludes that a strategy consisting of an air-source heat pump (ASHP) and photovoltaic panels (PVPs) is proposed. It appears from the Report that one air source heat pump will be installed to provide space heating to the development, and this will be powered by the photovoltaic array.
- 1.6. The report states that *"The planning stage energy strategy 'Energy Statement – Proposed Class C2 Care Home (#001588)' produced by Hoyle Dean is proposed to be updated as part of the build out by Barchester Healthcare. This is to alter the PV array size so that it can be accommodated within the constraints of the roof plan and to incorporate air source heat pumps into the space heating system... Whilst the updated energy strategy will differ from the planning stage from it will reduce both the carbon emissions and primary energy demand of the development"*³
- 1.7. Regarding the size of the solar array, the Report states that *"As part of the Hoyle Dean energy strategy a 92kWpe photovoltaic array is proposed. An array of this size would require c.217no. photovoltaic panel to be installed which could not be accommodated on the roof. The roof drawing produced by Harris Irwin Architects confirms that there is only available space on the roof for 76no. An array of this size shall contribute towards the electricity usage of the building as based on a typically installed panel this array would be c.34kWpe."*⁴
- 1.8. The Hoyle Dean Energy Statement stated that *"Of the predicted on-site primary energy requirements of 127.13kWh/m2, 25.05kWh/m2 is provided by the proposed 92kWp Photovoltaic array, which results in 19.07% of on-site energy being provided by a zero-carbon source"*.⁵
- 1.9. Without details of updated measures to reduce the primary energy demand of the development, it is clear that reducing the proposed scale of the solar array from 92kWp to 34kWp will reduce the displaced energy from renewable sources by more than 60%.
- 1.10. It is noted that heating energy required by the development will be reduced by approximately 68% by specifying ASHP in place of a gas boiler due to the higher operating efficiency of ASHP compared with gas boilers.
- 1.11. Water heating, a particularly significant energy demand in this building typology, is not mentioned in the Carbon Neutrality Report, therefore it is not clear whether this will be delivered via electric water heating or fossil fuel boilers.
- 1.12. The total energy displaced by the specified low carbon technologies is not defined in the report.
- 1.13. The Report concludes that *"To be a carbon neutral development given the constraints of the site it is not feasible however a number of the systems are electrically including the space heating, comfort cooling and kitchen. All*

¹ Carbon Neutrality Report, Crowthorne, Harniss. Feb. 2025

² Energy Statement – Proposed Class C2 Care Home, Hoyle Dean, September 2022. P.10

³ Ibid. P.4

⁴ Carbon Neutrality Report, Crowthorne, Harniss. Feb. 2025. P.8

⁵ Energy Statement – Proposed Class C2 Care Home, Hoyle Dean, September 2022. P.8

of the electrically driven systems can be considered NET Zero ready as once grid supplied electricity is fully decarbonised through renewable methods of generation the carbon factor of this fuel will be 0 kg/CO₂.kWh, and as such the associated systems will be carbon neutral”⁶

- 1.13.1. This statement does not confirm that all systems will be electrically powered (a fossil-free development).
 - 1.13.2. “Comfort cooling” is refers to powered air conditioning. No information is provided in the report regarding the electrical load of the cooling system, or passive measures to reduce the cooling load under the Be Lean stage of the energy hierarchy.
 - 1.13.3. Sufficient information to support the statement that carbon neutral development is not feasible is not provided.
2. In order to determine whether Condition 12 can be discharged, the following information is required as a minimum:⁷
- 2.1.1. Details of how the proposed Energy Strategy will vary from that defined in the planning stage Energy Statement prepared by Hoyle Dean – particularly the significant reduction in scale of the solar array (why was the previous specification 60% oversized for the available installation space?)
 - 2.1.2. Baseline CO₂e emissions prior to application of the steps outlined in the Report.
 - 2.1.3. Percentage reduction in emissions following application of Energy Hierarchy.
 - 2.1.4. Total regulated operational energy demand.
 - 2.1.5. Total energy displaced through on-site renewable technologies.⁸
 - 2.1.6. Details of water heating system.
 - 2.1.7. Details of passive design measures (such as prioritising a simple built form, enhanced insulation, passive solar design including consideration of glazing and orientation, enhanced airtightness, detailing to minimise thermal bridging, provision of natural ventilation options etc.) to reduce heating, cooling and lighting loads in line with the Be Lean section of the Energy Hierarchy.
 - 2.1.8. Details of solar array including updated roof plan, panel model and area of array.
- 2.2. The use of a photovoltaic array and air source heat pump is supported as a carbon reduction strategy, however there is insufficient information regarding

⁶ Ibid. P.9

⁷ If the application to discharge Condition 12 intends to rely on details provided in the indicative calculations provided in the Hoyle Dean Energy Statement in support of application 223256, this should be made clear, since Condition 12 was applied as a result of the appeal which included the Hoyle Dean Energy Statement and appended SBEM calculations as information, therefore the information required to discharge the condition should supersede the 2022 Energy Statement which made clear that its calculations were based on assumed rather than detailed specifications. The Carbon Neutrality Statement also makes it clear that the Energy Strategy differs from the previously defined approach.

⁸ At an operating efficiency of 300% as stated, an air source heat pump can be considered a renewable energy technology.

steps taken to reduce the fixed energy loading associated with the development in the Carbon Neutrality Report. If sufficient steps to reduce demand have not been taken, it will significantly impair the ability of the on-site renewable energy generation to displace the regulated energy loads and approach carbon neutrality.

- 2.3. In order to support the statement that carbon neutral development as required is not feasible, it must be shown that reasonable steps have been taken to first reduce the energy demand as far as possible through passive design measures (Be Lean), then residual regulated demand has been displaced as far as possible through the efficient and appropriately scaled delivery of renewable energy, with any remaining demand being supplied by grid electricity which will decarbonise over time (Be Clean, Be Green).

2.3.1. N.B. The Carbon Neutrality Statement makes it clear that the proposed Energy Strategy differs from the previously defined approach however if the details provided in the indicative calculations provided in the Hoyle Dean Energy Statement in support of application 223256 are to be used in the fixed design, this should be made clear. Condition 12 was applied as a result of the appeal which included the Hoyle Dean Energy Statement and appended SBEM calculations as information. This means that the information required to discharge the condition should supersede the 2022 Energy Statement, or, if replicating it in certain areas, this should be clearly identified.

- 2.4. If after these steps have been taken, there is a residual regulated energy load, this should be defined both in terms of absolute demand, and as a percentage of the baseline demand. The resultant residual emissions (i.e. from supply of grid electricity) should be defined as an absolute quantity and as a percentage of baseline emissions.

Conditions & Reasons (if required)			
N/A (12 retained pending further information).			
Date:	05.03.2025	Signed:	

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Officer