

AndersonOrr

SUSTAINABILITY STATEMENT
WARREN CREST FARM

Sustainability Statement Warren Crest Farm

JOB NO	PROJECT
23046	Warren Crest Farm, Wick Hill Lane, Finchampstead, RG40 3PY
REVISION	DATE
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1.0 Introduction

- 1.1. This Sustainability Statement accompanies an application to Wokingham Borough Council to obtain planning permission for a replacement main dwelling, two residential units and a garage at Warren Crest Farm, Finchampstead.
- 1.2. Sustainability and energy efficiency are core elements of the proposed design. Sustainable sub-categories such as location, layout, biodiversity and materials have all been described previously. However, the following sections will highlight the other measures included within the scheme that are not always visible externally.

2.0 Sustainable Policies

- 2.1. The proposed development has been designed to meet energy and sustainable policies set out by the local and national planning requirements. It demonstrates the client and the design team's commitment to sustainability.
- 2.2. The referenced documents are as follows:
 - Wokingham Borough, Local Development Framework - Sustainable Design Construction, 2010
 - Wokingham Borough, Local Development Framework - Core Strategy Development Plan, Policies CP1, CP3 & CP11, 2010
 - The National Planning Policy Framework (NPPF) December 2023
- 2.3. At this stage of the development, detailed construction practices have not been determined; however, a construction management plan will be required upon instruction of a high-end, quality contractor, and so this document will outline how necessary sustainable policies of the above are met.

3.0 Sustainable Design

The following outlines the principles incorporated into the architectural design to minimise the environmental impact of the proposal:

- 3.1. A replacement dwelling is proposed to significantly improve the building's environmental performance, as the existing 1970s structure is not viable for retrofit. It has no architectural merit, uses poor-quality materials (aluminium windows, uninsulated fabric & concrete tiles), and lacks energy efficiency features. With an EPC rating of D, the existing structure suffers from no cavity walls, low insulation, and significant air leakage. Effective retrofitting would require near-total reconstruction, including rebuilding an internal insulated shell, replacing openings, and sealing the envelope. Additionally, the simple conversion to an ASHP installation would be inefficient due to persistent thermal bridging and poor airtightness, making replacement more sustainable.
- 3.2. A key aspect of the applicant's brief was to create a lifelong family home. As a result, longevity, durability and sustainability have guided the proposed design, construction, and anticipated dwelling occupation, taking precedence over timescales and cost-only decisions. This long-term approach enhances this sustainable proposal by having a flexible design suitable for multi-generational living that can easily adapt to changing health needs. Using durable materials and well-designed spaces ensures long-term efficiency and minimises environmental impact, ultimately reducing the building's carbon footprint over its anticipated long lifespan.
- 3.3. Where possible, the design maximises the accommodation within the building's envelope, ensuring efficient use of the built form, materials and overall site area. Specifically, the two residential

outbuildings and primary dwellings entirely use the roof space with bedrooms and living areas set within the eaves.

- 3.4. The purpose-built cottages offer significant environmental advantages over converting the existing agricultural cattle sheds and barns. Designed specifically for residential use, they allow for the integration of modern, energy-efficient materials and systems that far exceed the sustainability performance of the current structures. As such, it is considered that the environmental impact of the new dwellings will be considerably lower than that of the permitted conversions.
- 3.5. There is also an intention to dismantle the existing concrete-framed farm building and repurpose its materials for utilisation in another location. This approach aligns strongly with sustainable development principles by reducing construction waste, minimising the demand for new raw materials, and extending the lifecycle of existing resources.
- 3.6. Within reason, areas of glazing have been maximised to benefit from passive heat gain and natural light, reducing energy bills. Architectural design features such as roof and eaves overhangs, verandas, and inset balconies are seamlessly incorporated into the design, allowing low winter sun to filter natural light into living spaces while shielding glazing from excessive solar gains during the hotter months and limiting the potential for overheating.
- 3.7. To benefit the environment further, a carefully considered landscaping plan has been proposed by Portus & Whitton. The landscape design retains all mature high-quality trees and grassland areas that are to be wild and long and avoid conversion to domestic lawns. The design enhances biodiversity by retaining rich habitats and introducing new native hedgerows, scrub, and screening plants. A large composting area is also included to manage plant waste sustainably.

4.0 Building Fabric

- 4.1. Following the NPPF's emphasis on promoting sustainable development and delivering low-carbon living, a 'Fabric First' approach has been adopted, making the external envelope of the building highly insulated and air-tight to minimise heat loss.
- 4.2. The current EPC rating of the existing dwelling is rating D. The proposed buildings will aim to be energy rating A.
- 4.3. Building fabric will exceed all Building Regulation U-values through masonry cavity insulated walls, solid concrete insulated floors and warm roof construction.
- 4.4. All materials have been selected for suitability, appropriateness, sustainability, robustness, and longevity, and they are to be obtained and sourced locally and from sustainable sources where possible.
- 4.5. All doors and windows will be highly specified with double or triple-glazed units. As such, we expect the buildings to deliver an excellent thermal performance with minimal heat loss.
- 4.6. Air leakage from the building will also be minimised with good detailing (robust details where possible) and responsible workmanship. By adopting these principles, heating demand and, consequently, the size of the heat source will be minimised.
- 4.7. Furthermore, sustainability and energy efficiency are core elements of the proposed design with the ambition to emulate aspects of the Passivhaus standard, including:
 - Super insulated envelope
 - Airtight construction
 - High performance glazing
 - Thermal bridge free detailing

5.0 Natural Ventilation & Daylight

- 5.1. The buildings will be naturally ventilated with openable doors, windows and roof lights to provide both purge and rapid ventilation. Combined with the high thermal mass of the masonry envelopes, this will help reduce the need for mechanical overheating mitigation.
- 5.2. A key objective is to maximise natural light and reduce the buildings' energy demand. The main dwelling achieves this through well-proportioned size glazing, with floor-to-ceiling windows and doors ensuring all key rooms receive ample natural daylight. In the other residential buildings, all habitable rooms have windows, while rooms within the roof space of all buildings feature roof lights and dormer windows for a constant supply of natural light.
- 5.3. The use of LED light fittings can significantly reduce electricity usage and last considerably longer than other bulbs, which, in turn, reduces landfill waste.

6.0 Renewable Technologies

- 6.1. Air Source Heat Pumps (ASHP) are low-carbon sources of energy generation that will be used to generate heating and hot water within buildings. As such, high-performance ASHP will provide heating and hot water to enable the building to provide a large portion of the energy consumed through a low-carbon technology.
- 6.2. The ASHP will connect to underfloor heating to space heat the property, making the ASHP technology more efficient than wall-hung radiators.
- 6.3. Energy usage and demand will be monitored by smart meters.
- 6.4. All appliances are to be A+ rated. When required during winter, an immersion heater may support renewable energy sources.

7.0 Water & Flooding

- 7.1. Besides the desire to reduce energy consumption, it is also necessary to reduce both the consumption and waste of water. The following measures will be adopted that will assist in achieving this:
 - Flow restrictors fitted to all taps
 - Dual flush cisterns
 - Baths with smaller profiles, requiring less water to fill
- 7.2. A Flood Risk Assessment has been prepared in support of this application. The report concludes that the site is at very low risk from all sources of flooding, including allowance for the potential effects of climate change. It has been confirmed that this development will not increase flood risk to the site and the surrounding area.
- 7.3. The design adopts water-saving and efficient use of water where appropriate. All new paving and gravel areas will be permeable, forming a sustainable and natural drainage system.
- 7.4. The proposed surface water drainage strategy incorporates sustainable drainage methods, combining permeable paving and geo-cellular soakaway.
- 7.5. Rainwater harvesting is proposed through water butts to collect greywater for garden irrigation and maintenance.

8.0 Pollutants

- 8.1. The proposed dwellings are thoughtfully designed to mitigate light pollution through several key strategies:
- Natural Screening: The site is surrounded by mature trees and shrubs, serving as a natural barrier that minimises light spill into the surrounding neighbours and environment.
 - Architectural Design: Incorporating overhanging roofs above expansive glazed areas and external louvres directs interior lighting downward, reducing upward light emission and preventing skyglow.
 - External Lighting: Outdoor illumination is minimised and aligns with ecological recommendations to further reduce environmental impact.
- 8.2. The proposed residential development is not anticipated to cause noise, air, water, or contamination pollution, as it is designated for residential, domestic use and not any harmful commercial activities.

9.0 Reuse & Resilience

- 9.1. A Construction Management Plan will be required before construction. This document will aim to minimise waste and maximise recycling opportunities during construction. A key aspect will be to use the poor-quality materials from the existing house and barns; specifically, masonry rubble from the demolition will be crushed and processed for on-site use as the base hardcore for the dwellings. This practice reduces the need for new materials and exemplifies sustainable construction by diverting waste from landfills and conserving resources already on site.
- 9.2. Garden composting for a generous site is essential for the environment and capturing carbon. Composting promotes the reuse of garden waste to improve the soils (enrichment, structure and moisture retention).
- 9.3. Utilising water butts to capture rainwater for garden irrigation and maintenance is a sustainable practice that conserves water and reduces waste.

10.0 Summary

- 10.1. The proposed scheme at Warren Crest Farm, Finchampstead, embodies a comprehensive commitment to sustainability and energy efficiency.
- 10.2. The design ensures long-term environmental benefits and a carbon life cycle by replacing the inefficient 1970s house and disrepair farm barns with a highly insulated, airtight dwelling constructed from durable materials.
- 10.3. The purpose-built cottages provide clear environmental benefits over converting the existing agricultural structures, enabling modern, energy-efficient materials and systems tailored for sustainable residential use, alongside possible dismantling and reuse of the concrete-framed farm building.
- 10.4. The project incorporates renewable technologies, including high-performance Air Source Heat Pumps connected to underfloor heating, and emphasises water conservation through features like rainwater harvesting and permeable landscaping.
- 10.5. In construction, waste from existing structures will be reused from materials from the existing building, such as processing masonry rubble for on-site use. These integrated strategies collectively reduce the carbon footprint and promote a sustainable living environment.