2023

manor oak HOMES

Sustainability and Energy Statement

for

Land at Dukes Meadow Drive, Banbury

August 2023

Contents

1.0 Introduction

Manor Oak Homes Ltd are committed to the delivery of a sustainable new development. Achieving Sustainable Development has been a key objective of the design team throughout the design process, ensuring that the development responds to site constraints and makes the most of the significant opportunities the development can provide for existing and future residents of Banbury.

The Proposed Development at Dukes Meadow Drive, Banbury has been designed to respond positively to national and local planning policy as detailed in the Armstrong Rigg Planning Statement. However, this Statement also seeks to commit the Proposed Development to a number of key sustainable design and construction measures that go beyond the current policy and building regulation requirements. As such, the Development Proposals boast significant Social, Economic and Environmental benefits that weigh in their favour.

This Sustainability and Energy Statement has been prepared to demonstrate how the Proposed Development at Dukes Meadow Drive, Banbury responds to the need for Environmental Sustainability with a positive vision and proposals that address the increasing need for new homes to be sustainable. Further information on the social and economic sustainability of the proposals can be found in the Planning Statement and Design and Access Statement also accompanying this application.

2.0 Site Context

The site, extending to approximately 6.02ha including the land required for access and drainage, comprises the eastern extent of a larger field lying to the immediate north of Dukes Meadow Drive and the 3.4ha of land subject of the first phase of our client's proposed development, which will ultimately accommodate up to 78 new dwellings. It represents an approximate 45% portion of the larger field which comprises set aside agricultural land.

The field is bound by a prominent established hedgerow and treeline along its northern and eastern edges and then by the Dukes Meadow Drive corridor to the south, a route which represents Banbury's northern distributor road and one of the town's principal locations for residential growth. The western boundary of the application site is currently undefined on the ground due to the site comprising the eastern portion of a larger field (it will essentially split the field approximately 1/3 to 2/3). The site is then separated from the main carriageway of Dukes Meadow Drive by a combination of the first phase land and a grassy embankment which comprises highways land.

The site lies immediately to the north of the built-up area of Banbury and opposite a substantial area of modern housing, community facilities and open space comprising the recent Hanwell Fields development at the town. The existing development is characterised by a range of contemporary housing styles featuring a mixture of terraces, townhouses and predominantly apartments, many of which comprise 'landmark' building fronting onto Dukes Meadow Drive including those opposite the site, themes which have been incorporated into the first phase proposal. To this end it sits in the context of existing recent residential development.

Furthermore, it is then well related to two current and significant Local Plan allocations at the town – Banbury 2 to the east and Banbury 5 to the west – which clearly establish the northern approaches to the town as an established direction of both current and future growth. The approximate extent of the application site and its relationship with the first phase land (demarcated in blue) is shown in Figure 1 below:

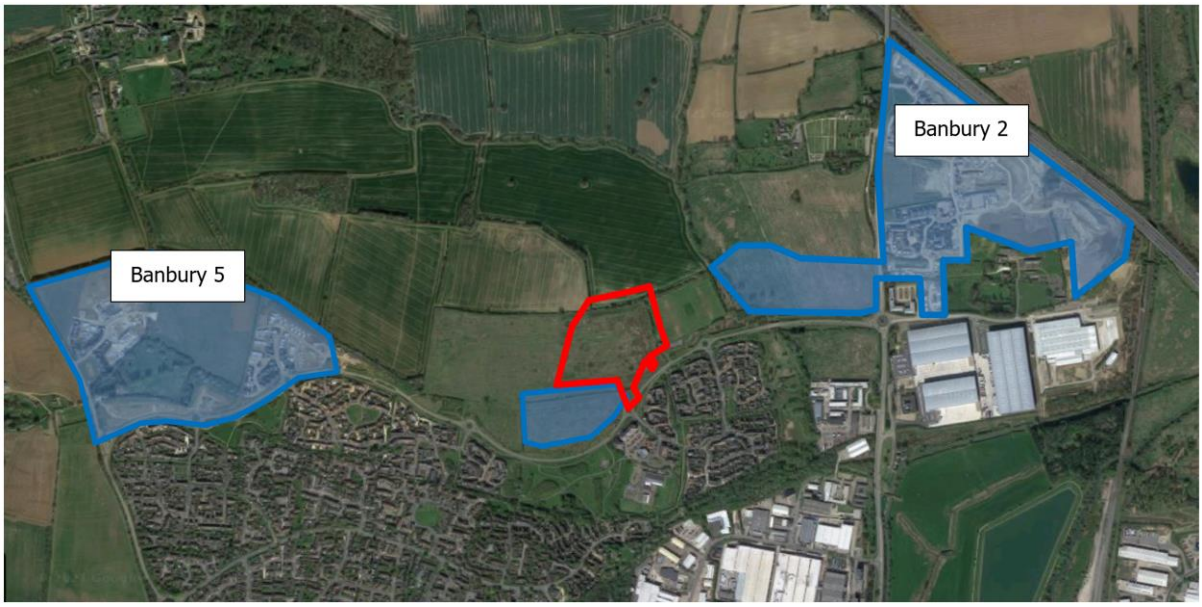

Figure 1 – Site Location & Context Plan

In terms of access the site is well related to an existing three-spur roundabout affording access from Dukes Meadow Drive to the existing Hanwell Fields development to the south. A fourth spur of the roundabout will then be implemented pursuant to the approval of the first phase proposal which will also deliver a new bus stop and public footpath improvements.

The site is then in a highly accessible location in all respects offering walking and cycling links to a wide range of shops, amenities, and facilities as well as onward public transport services. Along with the site lying within an 800m walking distance of the nearest bus stop at Ferriston (which is

adjacent to the nearest doctor's surgery) to the south it also lies immediately adjacent to a range of services at Hanwell Fields local centre.

3.0 The Proposed Development

As with the first phase of development it is Manor Oak Homes intention to deliver a sensitively designed residential development that would respect the landscape setting of the site whilst forming a natural extension to the built-up area of Banbury. The proposal will serve as a natural extension to the 78-dwelling first phase and will present a similar form of development consisting of a variety of development parcels all accessible from a main spine road which would gently curve and climb with the contours.

The development subject of this application will be led by the following key principles:

- The delivery of up to 117 dwellings in total of a range of sizes, types and tenures;
- Development at an approximate density of 20dph (gross) which is lower than that of nearby proposals at Sites Banbury 2 and Banbury 5 as well as the first phase of development immediately to the south;
- Consequently, a development that incorporates approximately 40% TBC of the site as open space and public amenity land;
- The provision of just over 30% affordable housing on site (36 dwellings) with an overall mix in line with the general requirements of the Oxfordshire Strategic Housing Market Assessment 2014 (SHMA) and the more specific comments provided by the Council's Housing Strategy team towards the previous withdrawn application;
- A layout characterised by a combination of formal and informal planting representative of the settlement edge character of the site and reflective of the first phase of development to the immediate south;
- Vehicular access drawn from the adjacent Dukes Meadow Drive / Lapsley Drive roundabout via the first phase (as already approved);
- A secondary emergency access at the southeast corner of the site directly on to Duke's Meadow Drive;
- Then, opportunities for additional cycle and pedestrian links to and from the first phase of development along the southwestern boundary;
- Both a LAP and a LEAP are integrated as part of the open space which provides a buffer between the northern edge of the developable area and the open countryside to the north;
- A proposed perimeter block style layout in keeping with the existing development on the southern side of Dukes Meadow Drive and taking cues from the emerging developments at Sites Banbury 2, Banbury 5 and of course the first phase; and

- An integrated SUDS drainage system using a series of surface attenuation ponds to ensure discharge can be maintained at greenfield rates. This is designed to link in with the first phase of development.

Figure 2 – Illustrative Master Plan

3.0 Planning Policy for Sustainable Development

Both local and national policy aims to ensure the delivery of sustainable and well-designed homes which mitigate and adapt to the increasingly urgent impacts of climate change. The Cherwell Local Plan demonstrates the District's commitment to the creation of sustainable new developments in the District, bolstered by the Climate Emergency declaration and the Climate Action Framework 2020. Latest national planning policy and guidance confirms the Government's approach to sustainable development is being driven through the updates to the Building Regulations. Manor Oak Homes have focussed the sustainability strategy for the site on meeting targets present in the local plan and through achievement of the Interim Future Homes Standard, which is a 31% improvement beyond current Building Regulations. The adopted Local Plan and Design Guide SPD requires development to consider a range of sustainable design measures, including sustainable construction and resource management, green infrastructure, SuDS, energy efficient and low carbon buildings, water efficiency, access for all and enhancing biodiversity; and health and wellbeing of a community. It is noted that the Local Plan includes a need to align with Government policy which has evolved since the plan was adopted in 2015.

The sustainable design measures incorporated into the development masterplan at the outline application stage are set out under headings which reflect the key Cherwell Local Plan policies listed below;

- Mitigating and Adapting to Climate Change (Policy ESD 1, 6 and 7)
- Sustainable Construction and Energy Strategy (Policy ESD 2,3, 4 and 5)
- Resource Efficiency and Materials (Policy ESD 3)
- Environment Protection and Enhancement (Policy ESD 3)
- Waste Management (Policy ESD 3)

To ensure the sustainability strategy reflects the current ambition of Cherwell's sustainability approach in light of the Climate Emergency declaration, Manor Oak Homes have focused their sustainability strategy on the targets present in the local plan and achievement of the Interim Future Homes Standard, which will require all new homes to reduce CO2 emissions by at least 31% lower than the current Building Regulations required. Meeting the Interim FHS target through an all-electric strategy will allow homeowners to operate Net Zero through the purchase of renewable electricity.

The following sections of this Sustainability and Energy Statement set out the measures incorporated into the design and construction of the development to ensure the delivery of sustainable new homes that address and go beyond the requirements of local and national policy.

4.0 Mitigating and Adapting to Climate Change

Adopted Policy ESD 1: Mitigating and Adapting to Climate Change provides guidance on measures to be taken to mitigate the impact of development within the District on climate change. These measures include;

- Taking into account the known physical and environmental constraints when identifying locations for development;
- Delivering development that seeks to reduce the need to travel and which encourages sustainable travel options including walking, cycling and public transport to reduce dependence on private cars;
- Demonstration of design approaches that are resilient to climate change impacts including the use of passive solar design for heating and cooling and;
- Minimising the risk of flooding and making use of sustainable drainage methods and reducing the effects of development on the microclimate.

Specialist consultants have been commissioned to assess the site's physical and environmental constraints to demonstrate that the site is sustainably located and to ensure that site's opportunities and constraints are all carefully considered throughout the master planning of the site (see accompanying application reports). Further to this, the development will incorporate a range of measures to reduce carbon emissions, mitigating the effects of climate change, and adaptation measures to ensure the long term resilience of the development to the effects of climate change. Measures will include:

- Development designed to incorporate climate resilience measures including passive solar gains to maximise natural daylight and natural ventilation to minimise the risk of overheating.
- Development designed to prioritise sustainable and active modes of travel including walking and cycling (See Transport Statement and Framework Travel Plan for further details):
    - The Development will include potential pedestrian and cycle routes through the site, linking the site to the key services and facilities available in Banbury.
    - Cycle parking will be provided at a level of at least one space per one bed dwellings and at least two spaces per dwelling of two or more bedrooms.
    - To further promote sustainable travel each household will be provided with a Travel Welcome Pack. The pack will contain a high-quality map of the area, showing cycle, walking and public transport routes, and up-to-date timetables for local bus and connecting train services.
- Electric Vehicle Charging – The development will include provision for electric vehicle charging, details of which will be agreed with the Local Planning Authority (LPA).
- Specification of water efficient fittings to reduce water consumption to 110 litres per person per day through measures including incorporation into the design of dual flush WCs, water meters, low flow fittings and where appropriate, water efficient equipment.
- Development of new homes in Flood Zone 1 and provision of a surface water drainage system designed to manage a 1 in 100 annual probability plus 40% climate change rainfall event. The detention basin will be in the form of a habitat which will provide landscape and wildlife benefits (See Flood Risk Assessment, Design & Access Statement and Preliminary Ecology Appraisal for further details).
- Homes designed to take into account increasing annual temperatures set out in the UKCP18 climate projections to minimise the risk of overheating.
- The development will include tree lined streets that can assist in reducing the temperature of streets, encourage wildlife and biodiversity and improve mental welfare amongst other benefits.

- A significant quantum of the site will be planted up as a high quality Public Open Space. The masterplan incorporates a landscaping strategy that seeks to retain all the existing hedgerows and trees around its perimeter whilst introducing additional verges along the northern and western boundaries which will accommodate a new circular footpath link around the perimeter of the site along with complementary areas of both formal (a NEAP will be included at the western end of the site closest to the first phase) and informal public open space. The delivery of this green fringe to the site will then be further complemented by the provision of an extensive landscaped corridor running east to west through the heart of the development. Once again this will include public open space (including a LAP) with a public footpath dissecting the corridor and providing an additional walking link to the entrance of the site. This will provide significant local recreational benefits to the Parish thus reducing the need for existing and future residents to travel to other recreational areas further afield.

5.0 Sustainable Construction and Energy Strategy

Adopted Policy ESD3 Sustainable Construction confirms that all new residential development will be expected to incorporate sustainable design and construction technology to achieve net zero carbon development through a combination of fabric energy efficiency, carbon compliance and allowable solutions in line with government policy. Policy ESD3 confirms that all development proposals will be encouraged to reflect high quality design and high environmental standards, demonstrating sustainable construction methods including but not limited to:

- Minimising both energy demands and energy loss;
- Maximising passive solar lighting and natural ventilation;
- Maximising resource efficiency
- Incorporating the use of recycled and energy efficient materials and use of locally sourced building materials;
- Reducing waste and pollution and making adequate provision for the recycling of waste;
- Making use of sustainable drainage methods;
- Reducing the impact on the external environment and maximising opportunities for cooling and shading (by the provision of open space and water, planting, and green roofs, for example);
- Making use of the embodied energy within buildings wherever possible and re-using materials where proposals involve demolition or redevelopment.

Interim Future Home Standards

The new homes will be designed to meet the Interim FHS target through an all-electric strategy which will allow home owners to operate at Net Zero. This reflects the Council's policy which includes a need to align with Government policy which has evolved since the plan was adopted. Through meeting the Interim FHS the new dwellings will achieve at least a 31% carbon reduction, beyond Current Building Regulations.

Central to the delivery of low carbon and energy efficient buildings is the 'Fabric First' principle which recognises the most effective way of minimising carbon emissions is to reduce the demand for heat and power through a well-insulated, energy efficient building fabric and services. The design of the new homes will reduce thermal energy demand by the achievement of improved insulation levels and air leakage and fabric u-values in line with the Interim FHS. The following measures to reduce energy use and carbon emissions will be considered during the detailed design of individual buildings:

- Design to promote passive solar gains, maximise natural daylight, sunlight and ventilation;
- Design which aims to optimise natural daylight;
- Buildings which target better u-values and air tightness than current Building Regulations;
- An All-Electric heating strategy;
- New homes within the development will include lighting that provides for a minimum efficacy for lighting to be 95 luminaire lumens per circuit watt for general lighting 80 luminaire lumens per circuit watt for display lighting.
- Specification of high energy efficient equipment that will use less energy and water.

Decentralised Energy Systems

Policy ESD4 Decentralised energy systems states that decentralised energy systems are encouraged for new development. The inclusion of a decentralised heating system has been investigated in terms of its appropriateness to the proposed development as it can help to provide reductions in CO2 emissions.

Figure 3 shows no proposed District Heating Schemes or potential Heat Source in the area. The site is largely surrounded by agricultural land and low rise residential buildings and therefore there is no anchor load for a District Heat Network to connect into. Given the lack of existing nearby district heating or community heating infrastructure to connect to, a Decentralised Energy System is not considered feasible for the proposed development.

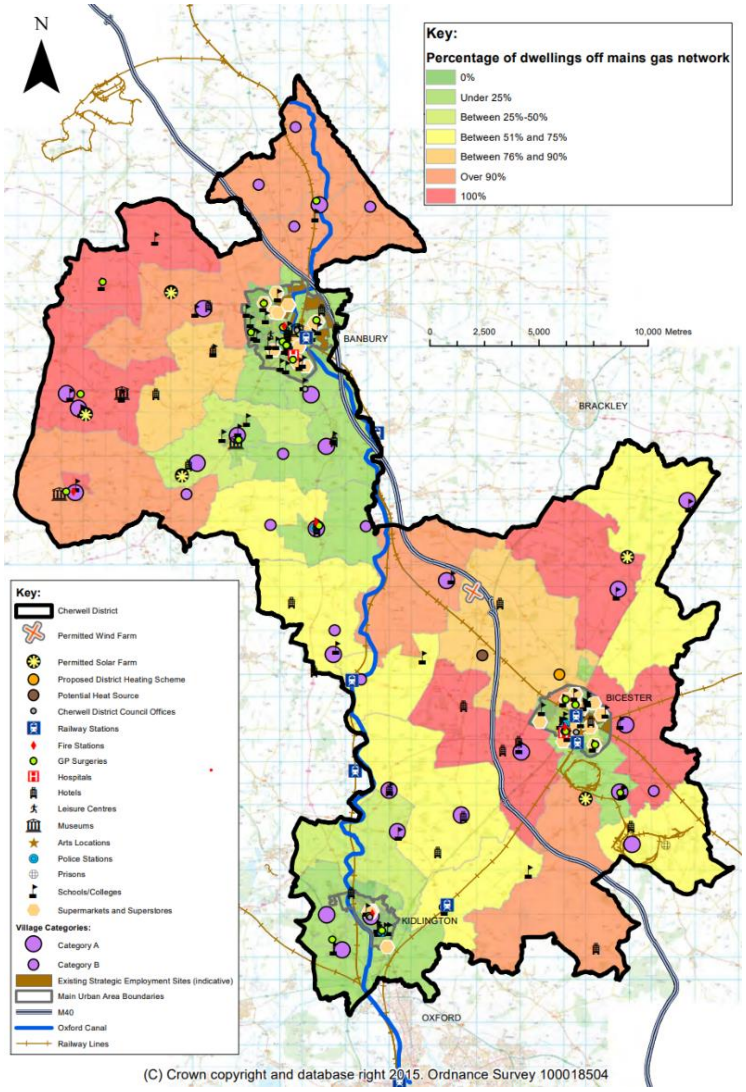

Figure 3 - Cherwell Renewable & Low Carbon Energy Map

On-site Low Carbon Renewable Energy

Policy ESD 5 Renewable Energy states that a feasibility assessment for onsite renewable energy provision will be required for residential developments over 50 dwellings in off-gas areas. As the development proposes an all-electric energy strategy Manor Oak Homes are going beyond the current Building Regulation requirements and future proofing the site as off gas.

The Development will utilise the generation of on-site low carbon renewable energy to provide a further reduction in carbon emissions. Technologies to be considered will include:

- Air Source Heat Pumps
- Ground Source Heat Pumps
- Solar Photovoltaics
- Solar Thermal

A review of potential low carbon renewable energy technologies and their suitability for inclusion in the development will be undertaken at the detailed design stage where the final design of individual homes will be subject to further energy modelling carried out. However, it is anticipated that the development will predominantly utilise Air Source Heat Pumps and Solar Photovoltaics.

Summary

To summarise, through a range of design measures the development will ensure the homes will minimise carbon emissions and achieve a high standard of energy efficiency.

- Buildings designed to achieve the Interim Future Homes and Buildings Standard delivering at least 31% less carbon emissions than homes delivered under current regulations through the use of a fabric first approach and all electric energy strategy.
- The Development will incorporate low carbon renewable energy technologies including Air Source Heat Pumps. Roof spaces across the site designed to accommodate Solar Photovoltaics.
- The development will include provision for smart electric vehicle charging for each dwelling.
- Incorporating high efficiency lighting targeting 100% of all light fittings as low energy lighting;

6.0 Resource Efficiency and Materials

Policy ESD 3, Sustainable Construction, confirms the following points new developments should take into account in relation to resource efficiency and materials;

- Maximising resource efficiency incorporating the use of recycled and energy efficient materials and use of locally sourced building materials;
- Making use of the embodied energy within buildings wherever possible and re-using materials where proposals involve demolition or redevelopment.

Considering the substantial carbon impacts of the construction process and building materials, as a part of the detailed design of the dwellings lower embodied carbon materials will be selected where possible. This includes locally sourced materials which will have lower transport emissions.

The development will support resource efficiency and use low embodied carbon materials where possible. Measures include;

- Buildings which will be designed to make use of sustainable materials to reduce environmental impacts of construction including sustainable timber from FSC (or equivalent) sources and materials specified using the BRE Green Guide to construction.
- Reduce waste through an ambitious site waste management strategy that avoids overordering to reduce offcuts and identifies materials that can be reused and recycled.
- Use locally sourced and recycled materials where feasible.
- Insulation materials containing substances known to contribute to stratospheric ozone depletion or with the potential to contribute to global warming will not be used.

7.0 Environmental Protection and Enhancement

Policy ESD 3 confirms that new developments are to reduce the impact on the external environment and maximising opportunities for cooling and shading.

Supporting and Enhancing the Environment

The Proposed Development will incorporate measures to support and enhance the environment through consideration of the existing site ecology, including measures to maximise opportunities for cooling and shading, enhance site biodiversity, as well as incorporate measures to reduce pollution from the development.

Through a range of design measures the development aims to protect and enhance the local environment, including;

- Provision of measures to protect on-site ecology during the construction phase and such as badger and hedgehog safeguards.
- Hedgehog highways, bird boxes, bat boxes and bee bricks will all be introduced by the development.
- The design of the development will ensure the retention, where possible, of medium and high quality arboriculture and the sensitive lighting to protect bat populations.
- The development will incorporate a range of ecology enhancement measures through an open space strategy and offsite enhancements that seeks to achieve a 10% net gain in biodiversity through a net increase in habitat and hedgerow units (see Figure 3, further information available in the Preliminary Ecology Appraisal).

Unit type	*Existing baseline 'value'*	*Calculated 'value' under the proposals*	Identified net unit change	Identified net % change
Habitat units	*23.87 units onsite* *23.20 units offsite*	*23.34 units onsite* *31.32 units offsite*	*+8.12 units overall change*	*+35.01 %*
Hedgerow units *(Based on minimum provision of 150m species-rich native hedgerow)*	*5.70 units*	*6.28 units*	*+0.58 units*	*+10.25%*
River units	*N/A – No Rivers or Streams present/affected*			

Figure 3 - Summary results of consideration using Biodiversity Metric 4.0 based on the current proposed land use parameters and associated landscape strategy plan.

Environmental Protection

The Proposed Development will include measures through construction and operation of the site to reduce pollution, minimise waste and encourage recycling, targeting zero avoidable waste to landfill. The Proposed Development will aim to minimise any negative impacts on the natural environment considering the impacts of water use, materials, and air quality in line with Adopted Policy ESD 3 which confirms the importance of reducing waste and pollution and making adequate provision for the recycling of waste.

Measures will include:

- Maintaining and improving air quality by ensuring skips and trucks loaded with construction materials are covered and continually damped down with low levels of water;
- Segregate, tightly cover and monitor toxic substances to prevent spills and possible site contamination;
- Use non-toxic paints, solvents and other hazardous materials wherever possible;
- The construction works will be carried out in such a manner as to avoid adverse effects on nearby surface water drainage to prevent pollution;
- Directional lighting / lighting regime during construction, with no unnecessary task lighting left on overnight;
- Construction Environmental Management Plan (CEMP) to manage noise and light pollution during construction.
- Site Waste Management Plan (SWMP) to minimise waste and encourage recycling, targeting zero avoidable waste to landfill. All contractors will be required to investigate opportunities to minimise waste arisings at source and, where such waste generation is unavoidable, set out the procedures to sort, reuse and recycle construction waste.

- Full consideration will be given to the Council's waste management infrastructure and services to ensure that the occupiers have the necessary infrastructure to participate in any kerbside recycling services.

8.0 Conclusion

Manor Oak Homes Ltd are committed to the delivery of a sustainable new development at land at Dukes Meadow Drive, Banbury that will ensure the delivery of homes that are sustainably constructed, energy efficient and mitigate and adapt to the long term effects of climate change. The Proposed Development has been designed to respond positively to national and local planning policy and is committed to a number of key sustainable design and construction measures that go beyond the current policy and building regulation requirements. As such, the Development Proposals boast significant Social, Economic and Environmental benefits that weigh in its favour.

This Sustainability and Energy Statement demonstrates how the Proposed Development at land at Dukes Meadow Drive, Banbury responds to the need for Environmental Sustainability with a positive vision and proposals that address the increasing need for new homes to be sustainable.