



Forest Farm, Chippenham

Energy & Sustainability Statement

June 2026

Key Features of the Proposals

Highly energy efficient buildings, adopting a 'fabric first' approach

Low carbon community energy hub and heat network

Renewable energy generation via photovoltaic panels

Zero carbon ready

100%
of properties with associated parking to have dedicated EV charging

Adapted to anticipated future changes in the climate

25%
reduction in potable water use against the national average

100%
of properties to have fibre-to-the-home enabled

Future Homes Standard compliant

The sustainable approach described within this Statement demonstrates that the proposals will meet the relevant requirements of the Wiltshire planning framework, creating a low carbon development which is adapted to future changes in the climate.

Contents

1	Introduction	4
1.1	This Statement	4
1.2	The Site	5
1.3	Description of Development	6
2	Sustainability Policy Review	9
2.1	National Planning Policy	9
2.2	Local Planning Policy	12
3	Energy Statement	16
3.1	Introduction	16
3.2	The Energy Hierarchy	17
3.3	Site Layout and Property Orientation	17
3.4	Highly Efficient Building Envelope	18
3.5	Lighting, Fixtures and Fittings	19
3.6	Low Carbon Heating and Hot Water	20
3.7	Indicative Specification	22
4	Reducing Carbon Emissions from Transport	23
4.1	Introduction	23
4.2	Avoiding Travel	23
4.3	Shifting Away from Private Car Use	23
4.4	Improving Technology	25
5	Climate Resilience and Adaptation	26
5.1	Adapting to the Future	26
5.2	Reducing Overheating Risk Through Design	26
5.3	The Multiple Benefits of Open Space and Vegetation	27
5.4	Managing Water in a Changing Climate	27
6	Water Efficiency	28
6.1	The Water Hierarchy	28
6.2	Water Reduction Measures	28
7	Embodied Carbon and Waste Management	31
7.1	Introduction	31
7.2	Sustainable Building Materials	31
7.3	Designing for Durability and Flexibility	32
7.4	Sustainable Waste Management	32
8	Summary	34
9	Appendix A – Key Recommendations	36
10	Appendix B – Chippenham Neighbourhood Plan Policy SCC2 Checklist	37

1 Introduction

1.1 This Statement

- 1.1.1 This *Energy & Sustainability Statement* supports the outline planning application for the proposed development of up to 600 dwellings on land at Forest Farm, Chippenham in Wiltshire. It has been commissioned by Gleeson Land (the Applicant).
- 1.1.2 The Statement describes how the development proposals address the issue of sustainability, with a focus on climate change mitigation and adaptation, in line with national and local policies and regulations.
- 1.1.3 In particular, the Statement demonstrates how the proposals respond to the relevant requirements of the *Wiltshire Core Strategy (Adopted January 2015)*, the *Chippenham Neighbourhood Plan 2023-2038 (May 2024)* and current Building Regulations while confirming a commitment to achieve the Future Homes and Building Standards which will apply to the development:

Energy Statement

- The buildings will be 'zero carbon ready', and will be futureproofed to become operationally zero carbon over time;
- High fabric standards will be specified for thermal efficiency;
- There will be no natural gas connection to the proposed development;
- Energy demand will instead be met using low and zero carbon sources;
- The feasibility of a low carbon community energy hub and heat network is being investigated;
- Renewable energy will be generated on-site via solar photovoltaic panels.

Reducing Carbon Emissions from Transport

- High quality broadband will be provided as set out in Approved Document R;
- Accessibility to local services and sustainable transport options will encourage residents to prioritise active travel and public transport over private car use;
- Comprehensive electric vehicle charging infrastructure will be incorporated in line with the requirements of Approved Document S.

Climate Resilience and Adaptation

- The development designs will anticipate future changes in the climate;
- Overheating risk will be reduced through passive design measures as required by Approved Document O;
- Open space and landscaping will provide multiple benefits;
- Surface water will be managed with the integration of SuDS.

Domestic Water Efficiency

- Water use will be reduced compared to a standard development through the adoption of water efficient design and rainwater harvesting.

Embodied Carbon and Waste Management

- Embodied carbon will be reduced by applying sustainable design principles, including informed material selection and the use of re-used and recycled materials during construction;
- Construction and operational waste will be managed in accordance with the principles of the Waste Hierarchy.

1.1.4 In February 2019, Wiltshire Council passed a resolution to acknowledge the Climate Emergency and subsequently committed to supporting Wiltshire to work towards becoming carbon neutral by 2030. The comprehensive approach to carbon reduction, climate change mitigation and adaptation described in this document clearly aligns with these aspirations.

1.1.5 The recommendations provided are described in as much detail as is possible at this planning stage. Where specifics are not available, the overall approach and standards to be achieved have been set out to ensure that sustainability remains a central feature of the development as the designs develop and the application proceeds.

1.2 The Site

1.2.1 The proposed Application Site comprises seven grassland fields which are associated with Forest Farm. The centrally located farm buildings are excluded from the planning application boundary.

1.2.2 Hedgerows, a small watercourse and a number of ditches run along the Site boundaries and between the fields, and an access track runs across the Site from the A4 London Road to the farm buildings. Public footpath CHIP16 runs through the west of the Site, connecting the public footpath CALW83 in the south.

1.2.3 The Site is bordered by dwellings to the north, and the A4 London Road, Wedmore Farm, Stanley Park sports ground and fields to the north east. An area of grassland lies to the north west, beyond which are the A4 Pewsham Way and the residential area of Pewsham. More fields lie to the south and south east while an area of woodland is to the west of the Site.

1.3 Description of Development

1.3.1 The outline planning application has the following description of development:

Outline planning application with all matters reserved except access from the A4/London Road for up to 600 dwellings, together with land for a local centre (Use Classes E and F), areas of open space and landscaping, and associated infrastructure.

1.3.2 Wiltshire Council submitted a draft Local Plan for examination in November 2024. Following examination hearings in 2025, the Inspectors raised fundamental concerns regarding the soundness of the plan, including in relation to insufficient housing allocations, uncertainty over the deliverability of the plan's major housing proposals, and the risk that the plan would become out of date shortly after adoption.

1.3.3 Following further discussions, the draft Local Plan was withdrawn at Full Council on 19 May 2026.

1.3.4 Notwithstanding its withdrawal, the draft plan previously identified the Application Site as forming part of the South Chippenham allocation (Policy 7), which proposed a mixed-use development comprising approximately 2,520 dwellings, approximately 15ha of employment land, a district and local centre, education provision, and a transport corridor linking the A4 and the A350 (the Southern Distributor Road).

1.3.5 The withdrawal of the draft Local Plan was not attributable to any specific concerns relating to Policy 7 but instead reflected wider issues concerning the overall soundness and deliverability of the plan as a whole. The initial feasibility and technical work undertaken by the Council and the landowners confirm both the need, availability, and general acceptability of development at Forest Farm and the wider site for a mixed-use development.

1.3.6 This outline planning application has been prepared to bring forward development on this part of the site, previously identified and assessed by Wiltshire Council in the withdrawn Local Plan Review as suitable for housing-led development.

1.3.7 Land has been safeguarded within the Application Site to accommodate a section of the potential Southern Distributor Road. The safeguarded corridor has been retained to ensure that the proposed development would not prejudice its future provision.

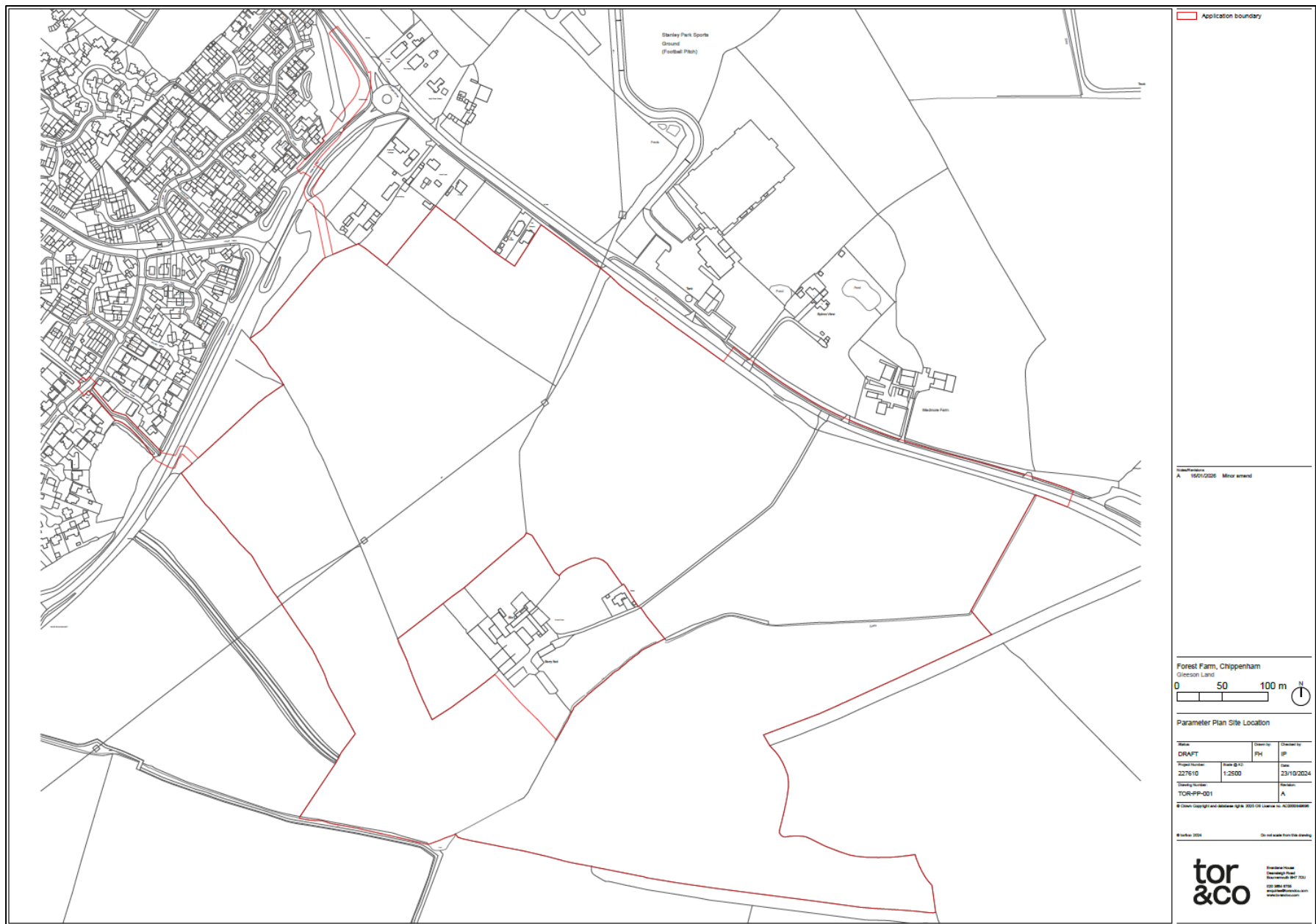




Figure 2: Illustrative Masterplan (tor&co)

2 Sustainability Policy Review

2.1 National Planning Policy

The National Planning Policy Framework December 2024 (NPPF)

- 2.1.1 The NPPF Section 2 states that the purpose of the planning system is to contribute to the achievement of sustainable development, and it includes three overarching objectives 'to be pursued in mutually supportive ways':
- An economic objective, contributing to a strong, responsive and competitive economy;
 - A social objective, supporting vibrant and healthy communities and;
 - An environmental objective, protecting and enhancing our natural, built and historic environment.
- 2.1.2 As such, the NPPF at its heart contains a 'presumption in favour of sustainable development'. Emphasising the need to achieve well designed places, the NPPF states that "*Good design is a key aspect of sustainable development, creates better places in which to live and work and helps make development acceptable to communities*".
- 2.1.3 The NPPF sets out a number of principles which should underpin both plan-making and decision-taking, and of which many are particularly relevant to this document. In this context, planning should:
- Promote healthy and inclusive places that encourage social interaction, enhance healthy lifestyles, and which are safe and accessible;
 - Seek to secure a high-quality of design and a good standard of amenity for occupants;
 - Support the transition to a low-carbon future, avoid increased vulnerability to climate change impacts, take account of flood risk and coastal change and seek to reduce greenhouse gas emissions. Plans should include a positive strategy to help increase the use and supply of renewable and low carbon energy;
 - Help conserve and enhance the natural environment, achieve net gains in biodiversity and reduce the impact of all forms of pollution;
 - Plan and manage development to make full use of public transport, walking and cycling, and take into account the need to ensure an adequate provision of spaces for charging plug-in and other ultra-low emission vehicles;
 - Support the expansion of electronic communications networks, including next generation mobile technology (such as 5G) and full fibre broadband connections, which are seen as essential for economic growth and social wellbeing.

The Climate Change Act

- 2.1.4 The Climate Change Act 2008 is the basis for the UK's approach for tackling and responding to climate change. It commits the UK government to reducing greenhouse gas emissions by at least 100% of 1990 levels by 2050.

Building Regulations

- 2.1.5 *Approved Document L: Conservation of Fuel and Power 2021 Edition*, which includes a Volume 1 for dwellings and a Volume 2 for buildings other than dwellings, came into force in June 2022. It sets out the Building Regulation standards for energy performance in new developments, placing a greater emphasis on reducing primary energy use, in addition to achieving carbon and fabric efficiency targets, compared to the previous standards. The tightening of fabric energy efficiency standards, air tightness and carbon performance targets are accompanied by updated calculation and modelling requirements within the compliance mechanism (SAP10.2 for dwellings and SBEM or other approved software tools for buildings other than dwellings).
- 2.1.6 *Approved Document F: Ventilation*, which also includes a Volume 1 for dwellings and a Volume 2 for buildings other than dwellings, details requirements for maintaining indoor air quality. It places an emphasis on managing ventilation to ensure that the increased air tightness of new buildings as required by Approved Document L does not impact internal air quality.
- 2.1.7 *Approved Document O: Overheating* has been put into place to limit overheating risk in new residential buildings. It expands on the provision in the previous Approved Document L and requires the use of passive methods where feasible. Compliance can be demonstrated through a prescriptive or thermal simulation compliance path.
- 2.1.8 *Approved Document S: Infrastructure for Charging Electric Vehicles (December 2021)* details regulations for the installation of electric vehicle charging points and cable routes. Requirement S1 from Part S of Schedule 1 and Regulation 44D of the Building Regulations states that every new home with an associated parking space must have access to an EV charging point.
- 2.1.9 Where the building is not residential or is a mixed-use building with more than 10 parking spaces, one of these must have access to one electric vehicle charge point and cable routes must be installed for a minimum of one fifth of the total number of remaining parking spaces.
- 2.1.10 Water efficiency targets for new dwellings are described within *Approved Document G: Sanitation, Hot Water Safety and Water Efficiency*. Within a domestic setting, the requirement is to limit water use to either 125 litres per person per day or, if required by the planning permission, an enhanced standard of 110 litres per person per day.
- 2.1.11 Building Regulations do not require limits to water use in a non-domestic setting, although there are frameworks and guidance from professional bodies that recommend different approaches depending on the nature of the building.

The Future Homes and Buildings Standards

- 2.1.12 On 24 March 2026, regulations were laid in Parliament to amend the Building Regulations 2010 and the Building (Registered Building Control Approvers etc.) (England) Regulations in order to implement the Future Homes and Buildings Standards. Updated Approved Documents, which provide the statutory guidance accompanying the Building Regulations, were also published.
- 2.1.13 The Future Homes and Buildings Standards will make sure that new homes and non-domestic buildings are futureproofed with low carbon heating and high levels of energy efficiency. Homes and buildings constructed to these standards will not require retrofitting to become zero carbon in use once the electricity grid is fully decarbonised.
- 2.1.14 The regulations and amended guidance will come into force on 24 March 2027 (for non-higher-risk building work) followed by a 12 month transition period. For such building work to be completed to the *current* Part L (2021) standards, relevant Building Regulations documents will need to be submitted to the relevant authority by 24 March 2027 and construction will need to commence by 24 March 2028 (unless other transitional provisions apply).
- 2.1.15 An updated version of the Standard Assessment Procedure (SAP), known as SAP 10.3, will soon be available as an approved calculation methodology to demonstrate compliance with the FHS.
- 2.1.16 It is then expected that the new Home Energy Model (HEM) will be available as an approved calculation methodology later in 2026. Once HEM is approved, it will be possible to use either HEM or SAP 10.3 to demonstrate compliance with the FHS during a 'dual running' period of approximately 24 months, after which the SAP will be phased out.

2.2 Local Planning Policy

Wiltshire Core Strategy (Adopted January 2015)

- 2.2.1 The Wiltshire Core Strategy (Adopted January 2015) sets out the Council's spatial vision, key objectives and overall principles for development in the county. It forms the main basis for assessment in planning terms and this Statement has therefore been designed to address its requirements.
- 2.2.2 Addressing climate change is one of the strategic objectives identified within the Core Strategy, highlighting it as a key consideration for Wiltshire Council.
- 2.2.3 Policy extracts from the Core Strategy which are of most relevance to this document are provided within the following table:

Core Policy	Extract
41	Sustainable Construction and Low Carbon Energy Climate change adaptation New development, building conversions, refurbishments and extensions will be encouraged to incorporate design measures to reduce energy demand. Development will be well insulated and designed to take advantage of natural light and heat from the sun and use natural air movement for ventilation, whilst maximising cooling in the summer. Sustainable construction New homes (excluding extensions and conversions) will be required to achieve at least Level 4 (in full) of the Code for Sustainable Homes*. (...) All non-residential development will be required to achieve the relevant BREEAM "Very Good" standards, rising to the relevant BREEAM "Excellent" standards from 2019. Renewable and low-carbon energy All proposals for major development will be required to submit a Sustainable Energy Strategy alongside the planning application outlining the low-carbon strategy for the proposal.
57	Ensuring High Quality Design and Place Shaping A high standard of design is required in all new developments (...) Applications for new development must be accompanied by appropriate information to demonstrate how the proposal will make a positive contribution to the character of Wiltshire through: (...) ii. the retention and enhancement of existing important landscaping and natural features, (e.g. trees, hedges, banks and watercourses), in order to take opportunities to enhance biodiversity, create wildlife and recreational corridors, effectively integrate the development into its setting and to justify and mitigate against any losses that may occur through the development; (...) v. the maximisation of opportunities for sustainable construction techniques, use of renewable energy sources and ensuring buildings and spaces are orientated to gain maximum benefit from sunlight and passive solar energy, in accordance with Core Policy 41 (Sustainable Construction and Low Carbon Energy); (...) xiv. meeting the requirements of Core Policy 61 (Transport and New Development).

61	Transport and New Development New development should be located and designed to reduce the need to travel particularly by private car, and to encourage the use of sustainable transport alternatives. As part of a required transport assessment, the following must be demonstrated: i. That consideration has been given to the needs of all transport users, where relevant, according to the following hierarchy: a. Visually impaired and other disabled people b. Pedestrians c. Cyclists d. Public transport e. Goods vehicles f. Powered two-wheelers g. Private cars (...) Where appropriate, contributions will be sought towards sustainable transport improvements, and travel plans will be required to encourage the use of sustainable transport alternatives and more sustainable freight movements.
67	Flood Risk (...) All new development will include measures to reduce the rate of rainwater run-off and improve rainwater infiltration to soil and ground (sustainable urban drainage) unless site or environmental conditions make these measures unsuitable.

* Code for Sustainable Homes was withdrawn in 2015 and has been largely superseded by Building Regulations standards.

2.2.4 Core Policy 41 requires non-domestic buildings to achieve the relevant BREEAM 'Excellent' standards. BREEAM (Building Research Establishment Environmental Assessment Method) is an assessment tool for evaluating infrastructure and buildings, rewarding designs and operations that take positive steps to minimise environmental impact within a series of specific categories:

- Energy and Water Use
- Land Use and Ecology
- Internal Environment
- Pollution
- Transport
- Materials
- Waste
- Management

2.2.5 The assessment itself consists of two stages – Design and Post Construction. There is also an optional Post Occupancy stage.

2.2.6 Should a BREEAM assessment be required for the non-domestic elements of this proposal, then a certified BREEAM Assessor will need to be brought in at the earliest opportunity post submission. The Assessor will gather evidence at each stage of the design process and compile this into a report which will then go to the Building Research Establishment (BRE) for final certification.

Chippenham Neighbourhood Plan 2023-2038 (May 2024)

- 2.2.7 The Chippenham Neighbourhood Plan was made on 29 May 2024. It now forms part of the Wiltshire Council Development Plan, and its policies will be given full weight when assessing planning applications that affect land in Chippenham Parish.
- 2.2.8 As set out in the table below, the Plan includes policies which seek to encourage net zero carbon emissions for operational energy from new development and the adoption of sustainable construction principles.
- 2.2.9 It should be noted however that achieving net zero is not a mandatory target, with Paragraph 5.11 stating: *The Neighbourhood Plan must ensure that at least minimum local standards are achieved in all developments and encourage development to exceed these standards voluntarily.*
- 2.2.10 Paragraph 5.19 goes on to state: *The Policy does not require fabric energy efficiency standards that go beyond the minimum standards set out in Building Regulations. Its expectations can be satisfied as long as the development achieves net zero carbon in its regulated operational emissions overall, or future paths to net zero have been addressed.*

Policy	Extract
SCC1	Net Zero Carbon Development Major development proposals for all new buildings will include an Energy Statement. This should demonstrate whether a development will achieve an annual operational net zero carbon emissions balance, by modelling each building's estimated regulated energy consumption and the site's overall renewable energy (electricity and heat) generation. (...) (...) In seeking to achieve net zero carbon development, fabric energy efficiency should be prioritised as far as possible, in accordance with the Energy Hierarchy shown on Figure 5.1. Where net zero carbon emissions are not being achieved through fabric energy efficiency, proposals will demonstrate the extent to which remaining energy demand will be supplied from any of the following sources below, or it may be demonstrated that these are economically unviable or technically unfeasible (e.g. where there is an insurmountable constraint on grid capacity): a) renewable and/or low carbon heat supply (e.g. via connection to a low carbon district heating network where available and/or air or ground source heat pumps); b) on-site renewable electricity generation (e.g. roof mounted or ground mounted solar photovoltaic); or c) off-site renewable energy sources as part of an allowable solution, such as an approved community energy scheme or carbon offset fund, in agreement with the Local Planning Authority through a planning obligation. It should also be demonstrated that the development has been designed to, as far as possible, enable future occupiers to adopt low carbon technologies that it has not been possible to incorporate during construction (e.g. due to grid capacity constraints).
SCC2	Sustainable Design and Construction Proposals for all major developments will demonstrate optimised sustainability credentials in terms of a) design, b) construction materials and c) methods of construction, minimising or avoiding emissions and other environmental impacts. All major non-residential developments will additionally be required to meet BREEAM 'Excellent' standards.

- 2.2.11 The Neighbourhood Plan includes a summary of the aspects that should be addressed in order to demonstrate compliance with Policy SCC2. These have been addressed throughout this Statement in as much detail as is possible at this planning stage and a summary checklist is provided in Appendix B.

Wiltshire and Swindon Waste Core Strategy 2006-2026 (Adopted 2009)

- 2.2.12 The *Wiltshire and Swindon Waste Core Strategy* sets out the strategic policy framework for waste management and forms one element of the Wiltshire and Swindon Minerals and Waste Development Framework. It includes a set of policies designed to meet identified issues for waste management in the area, relevant extracts of which are included below:

Policy	Extract
WCS5	The Wiltshire and Swindon Waste Hierarchy and Sustainable Waste Management In the interest of sustainable waste management, the Councils will seek to drive waste up the hierarchy by ensuring that developers demonstrate that the most sustainable option for waste management in Wiltshire and Swindon has been promoted.
WCS6	Waste Reduction and Auditing Proposals for developments (...) will be required to design and provide facilities for occupiers of the development to recycle / compost waste (bring systems) and / or facilities within individual or groups of properties or premises for the source separation and storage of different types of waste for recycling and / or composting. (...) Such provision will be expected to have regard to the existing capacity of facilities already available and to the existing Recycling Plan or Municipal Waste Management Strategy relevant to the area. (...)

Additional Planning Policy Documents

- 2.2.13 Further guidance exists relating to transport, parking, flood risk and ecology. These are covered in more detail in the other reports accompanying this submission. This Statement does however summarise the outputs of these reports where relevant to give a rounded picture of the approach to sustainable design and construction issues.

3 Energy Statement

3.1 Introduction

- 3.1.1 This Energy Statement describes the design principles which will be applied at the proposed development to ensure that it achieves the Future Homes and Building Standards. In doing so, the development will also exceed the requirements of Core Policy 41 of the Wiltshire Core Strategy while satisfying many of the core themes of the Chippenham Neighbourhood Plan:
- The development will be 'zero carbon ready', and will be futureproofed to become operationally zero carbon over time as the Grid decarbonises;
 - Space heating demand will be reduced by:
 - Balancing solar gain against overheating risk;
 - Applying 'fabric first' principles and adopting a highly efficient thermal specification.
 - Operational energy use will be reduced by:
 - Providing high efficiency lighting and appliances;
 - Installing a low carbon community heating solution.
 - Energy will be generated on site via photovoltaic panels.
- 3.1.2 Due to the fact that elements of this application are in outline, there are areas within this section where a definitive solution cannot be provided. The approach described will therefore continue to be refined and adapted to ensure the development complies with the local planning framework in place at the point of determination.
- 3.1.3 Further detail, accompanied by compliance calculations to demonstrate performance, can therefore be provided at Reserved Matters and be secured by Condition if necessary.
- 3.1.4 The proposals for this Site include domestic dwellings and a local centre (Use Class E / Class F). While the detailed specifications will differ due to the varying nature of the buildings, the fundamental principles behind the low carbon approach will remain the same.

3.2 The Energy Hierarchy

- 3.2.1 The Energy Hierarchy underpins the entire approach to building performance for this development, thus prioritising a reduction in the demand for energy as far as possible through thermally efficient, easily controlled, well designed and oriented buildings.
- 3.2.2 This 'fabric first' approach is in line with the requirements of Core Policy 41 of the Wiltshire Core Strategy and Policy SCC1 of the Chippenham Neighbourhood Plan.

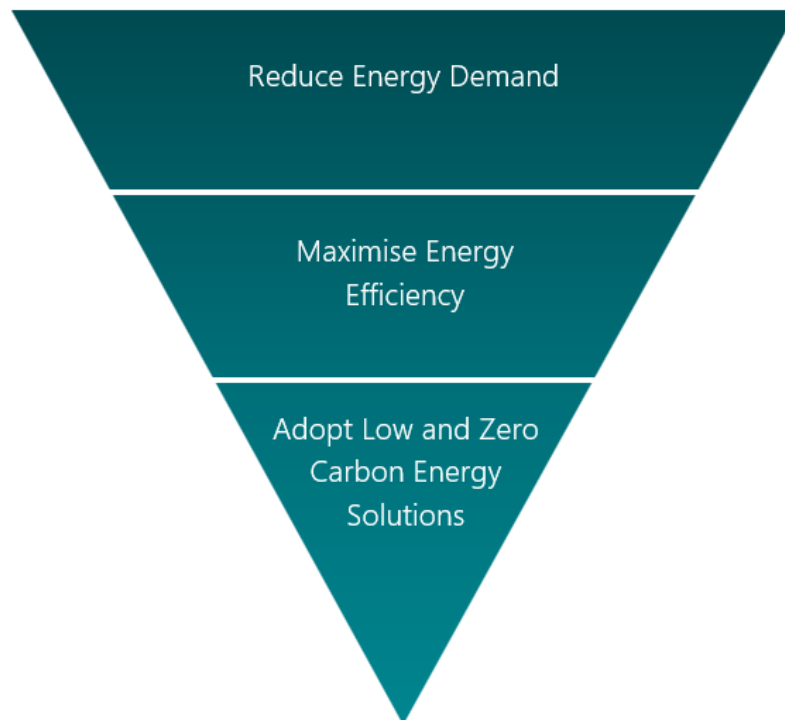


Figure 3: The Energy Hierarchy

3.3 Site Layout and Property Orientation

- 3.3.1 The orientation of buildings, along with the size and location of glazing and the extent of overshadowing, plays an important role in energy performance. Improving a dwelling's orientation so that the main living spaces benefit from the heat and light of the Sun can reduce the requirement to use fuels to perform the same function thus reducing costs, energy use and associated carbon emissions.
- 3.3.2 When buildings have a southerly orientation, they can benefit from the Sun during the middle portion of the day without suffering from potential overheating later in the afternoon. This orientation can also help to ensure that they still benefit as much as possible from sunlight during the winter when the Sun's path is shortened.
- 3.3.3 However, there is a balance to be struck between maximising solar gain and the risk of overheating. Section 5 of this Statement discusses approaches to addressing and managing this risk which align with the requirements of Building Regulations Approved Document O.

- 3.3.4 The proposed layout of the Site will be developed with respect to identified spatial, topological and visual constraints, all of which need to be carefully considered. Within these parameters, a proportion of the dwellings will have a southerly orientation. Furthermore, the relatively low density of the development will ensure appropriate spaces around dwellings, reducing overshadowing.
- 3.3.5 The non-domestic buildings will have different periods of occupancy and internal environmental needs compared to the dwellings, so the ability to control solar gain and ensure temperatures conducive to working may require an alternative approach. Careful orientation of offices (away from south) for example, and high quality fenestration which secures lots of natural light but without the associated glare or gain, will be important.
- 3.3.6 Orientation and the viability of photovoltaic panels is discussed in paragraphs 3.6.7 – 3.6.8.

3.4 Highly Efficient Building Envelope

Thermal Mass

- 3.4.1 The 'thermal mass' of a material refers its capacity to absorb, store and release heat. A dwelling with a high thermal mass has the ability to absorb heat from the sun during the day. This heat can then be slowly released during the night when temperatures fall, helping maintain a consistent internal air temperature.
- 3.4.2 As the residential and non-residential elements of the application are in outline, no final decision has been made about the choice of construction materials to be used on-site, so it is not possible to be specific about this aspect of the development's design.
- 3.4.3 However, optimising the thermal mass of the buildings on the development will be considered later in the design process.

Thermal Elements

- 3.4.4 A 'fabric first' building specification will be developed to ensure that the envelope of each building, including the walls, roofs, floors, glazing and doors, will be highly energy efficient. This will reduce energy demand and increase comfort.
- 3.4.5 Thermal bridges will be minimised through the application of design details and products that provide continuous insulation, such as insulated lintels.
- 3.4.6 The specification will be confirmed at a later stage in the planning process once house and building types have been finalised. It will be designed to ensure that the buildings meet the Future Homes and Building Standards as a minimum, with the option of further refining the specification should this be required by local policy.
- 3.4.7 Table 1 in Section 3.7 provides an illustration of the levels of performance that may be required, including u-values for different thermal elements.

Air Tightness

- 3.4.8 The air tightness of a building is important in reducing heat loss and in the prevention of draughts. It is also an important factor in managing interstitial condensation and reducing sound transmission through the structures.
- 3.4.9 The current target for the development will be to ensure the dwellings are constructed with an air permeability level of c. $4\text{m}^3/\text{m}^2@50\text{Pa}$ to align with the requirements of the Future Homes Standard.
- 3.4.10 The air tightness of the building(s) in the local centre will be determined later in the planning process and will be appropriate to the building design and end use.

Controlled Ventilation

- 3.4.11 As the air tightness standard for the development currently targets a figure of $4\text{m}^3/\text{m}^2@50\text{Pa}$, Approved Document F will require the installation of a high efficiency mechanical extract ventilation unit (dMEV), ideally with heat recovery, in each dwelling to ensure sufficient controlled ventilation.
- 3.4.12 The dwellings will also benefit from natural cross ventilation via openable windows which will enable rapid purges of air and will contribute to good levels of internal air quality.
- 3.4.13 The building(s) at the local centre will have ventilation systems designed which are specific to their end use. Systems will be compliant with Approved Document F Volume 2 (2021 Edition), with heat recovery included wherever possible to further minimise energy loss and reduce operational energy costs.

3.5 Lighting, Fixtures and Fittings

- 3.5.1 Further energy savings will be made by maximising the efficiency of appliances, lighting, fixtures and fittings.
- 3.5.2 All internal and external fixed electric lighting will be categorised as 'energy efficient' in line with regulations to minimise lifetime energy use and associated emissions.
- 3.5.3 Any installed appliances will be high efficiency, further minimising the use of both electricity and hot water. Where these are not installed by the developer, they will be offered to incoming residents within the list of optional extras. There will be space in all gardens for clothes drying to discourage the use of tumble dryers
- 3.5.4 Taps and shower fixtures and fittings that reduce hot water consumption with low and/or aerated flows will be specified; more detail in relation to potable water management is provided in Section 6.

3.6 Low Carbon Heating and Hot Water

Community Energy Hub and Heat Network

- 3.6.1 The Applicant is investigating the feasibility of installing a Future Homes and Buildings Standards compliant community energy hub and heat network at the proposed development.
- 3.6.2 The energy hub will house large scale, highly efficient, electrically powered heat pumps which will generate and deliver heat and hot water to all of the buildings on the development via a highly insulated flow and return pipe network.
- 3.6.3 Thermal stores within the energy hub will be charged during the night when demand and costs are lower. This will reduce the overall site peak demand on the Grid and therefore represents an effective way of managing identified electrical capacity constraints.
- 3.6.4 A Heat Interface Unit (HIU) with an integrated smart meter will be installed in each building to control and measure the heat and hot water being transferred from the network into the building's heating and hot water system. The HIU is a similar size to a conventional gas boiler and this network approach does away with the need for a hot water tank, thus saving on space within each property.



Figure 4: Community Heat Hub (GTC)

- 3.6.5 The community energy hub and heat network solution proposed will ensure the buildings are 'zero-carbon ready' and on a trajectory to net zero emissions over time: the rapid expansion in renewable and low carbon energy supply within the Grid in recent years means that Grid electricity is considerably cleaner per unit than natural gas, and will continue to decarbonise over time:

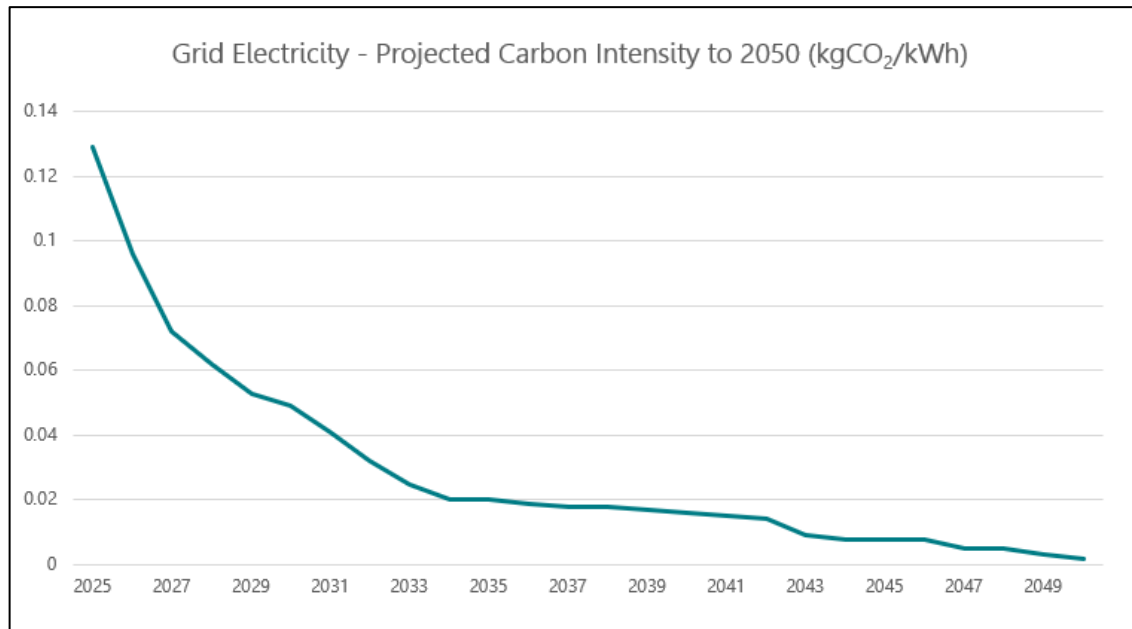


Figure 5: Projected Grid Decarbonisation
(Source: UK Government Green Book, Supplementary Guidance, November 2023)

Solar Photovoltaics

- 3.6.6 Solar photovoltaic (PV) panels will be installed at the proposed development at a level to be determined later at the Reserved Matters stage once housetypes and building types have been designed. It should be noted that, under the Future Homes Standard, PV systems will need to be equivalent to around 40% of the ground floor area of each property, unless specified exemptions apply.
- 3.6.7 The installed PV panels will be roof integrated to minimise visual impact as far as possible, so the orientation and design of the buildings and roofscapes will be carefully considered. For example, the designs will seek to avoid roof features on southerly orientations that significantly limit the installation of PV, such as hipped roofs and dormers.
- 3.6.8 Certain elevations will also be avoided where possible, including those facing WNW or ENE (although it is recognised that orientation to maximise solar PV potential is just one of many considerations when determining residential development layouts). Increasingly, east-west facing split systems are being adopted, providing a more even amount of generation through the day, without any significant loss in annual output. It should not therefore be assumed that all roofs need to face between south east and south west when finalising the layout.
- 3.6.9 The introduction of domestic energy storage (battery) systems will also be considered, potentially as an optional extra for incoming residents. The use of battery technology provides

far greater flexibility and control for residents, enabling them to benefit from the value of the energy generated and to capitalise on flexible tariffs designed for heat pump users.

3.7 Indicative Specification

Domestic

- 3.7.1 The outline nature of this application means it is not possible to provide an exact specification for the dwellings for the proposed development. Instead, the illustrative dwelling specification presented below has been developed using the Future Homes Standard notional dwelling:

Element Type	Indicative Specification for the Proposed Development
Roof / Sloped Roof	0.11 W/(m ² .K)
External walls	0.18 W/(m ² .K)
Ground floor	0.13 W/(m ² .K)
Glazing	1.2 W/(m ² .K)
Doors	1.0 W/(m ² .K)
Air permeability	4.0m ³ /m ² /hour@50Pa
Ventilation system	dMEV
Heating system	Community Energy Hub and Heat Network
Renewable energy system	Photovoltaic panels

Table 1: Summary of Indicative U-Values and Specifications

- 3.7.2 The precise specification to be applied at the Site will be for determination as part of a Reserved Matters application. At that point, detailed energy calculations can be provided, demonstrating more accurately the impact of the proposed approach and how it complies with local policies and national regulations.

Non- Domestic

- 3.7.3 Policy 41 of the Core Strategy requires developers to achieve the relevant BREEAM 'Excellent' standards for non-domestic buildings.
- 3.7.4 It remains too early in the process to undertake any detailed pre-assessment of the opportunity to achieve these ratings. However, in line with the wider sustainable construction aspirations and targets outlined in this report, achieving 'Excellent' should, provided the issues and opportunities are considered early enough, be technically achievable.
- 3.7.5 The BREEAM Framework will continue to evolve to reflect Building Regulations updates, including the Future Buildings Standards. However, the approach described above, including highly efficient buildings and a low carbon heat network, will contribute to higher performance and credits under the energy section of BREEAM.

4 Reducing Carbon Emissions from Transport

4.1 Introduction

- 4.1.1 This section provides a summary of how reducing transport related carbon emissions has been considered during the early design stages for the proposed development, within the 'avoid, shift, improve' framework.
- 4.1.2 These issues are comprehensively addressed in the Transport Assessment and associated Travel Plan completed by i-Transport which accompany this application, and which should be referred to for full details.

4.2 Avoiding Travel

Provision of Fibre to the Premises

- 4.2.1 Enabling residents to access services and employment from their own homes via high-quality, reliable broadband infrastructure can reduce the need to travel. Indeed, such provision is increasingly viewed as critical to the functioning of a development and its continued attractiveness to incoming residents.
- 4.2.2 The availability of high quality, reliable internet connections also has broader social ramifications, reducing the risk of exclusion from services and enabling people to better connect with society as a whole.
- 4.2.3 The provision at the development will align with Approved Document R Volume 1 (2022 Edition) which sets out requirements to ensure that, during construction, all new homes are installed with the fastest broadband connections available.

4.3 Shifting Away from Private Car Use

Accessibility

- 4.3.1 Accessibility is a key aspect of sustainability and is described as such in the NPPF. Any new development needs to have easy to use, safe and obvious links into the surrounding community to prevent isolation and disconnection, to encourage the use of existing amenities and to facilitate commuting.
- 4.3.2 Core policies 60 and 61 of the Wiltshire Core Strategy reinforce this, stating that developments should be planned in accessible locations, and that they should be located and designed to reduce the need to travel, particularly by private car.

4.3.3 The proposed development at Forest Farm is in an accessible location, in terms of both its position as part of a wider site, and its proximity to the existing community in and around Chippenham:

- The proposals include formal and informal open space and a small local retail centre;
- The wider site proposes the delivery of employment land, district and local centres and nursery, primary and secondary schools which will provide valuable facilities for both incoming residents to the development and the existing community of Chippenham;
- There are a number of existing local facilities in the adjacent residential development of Pewsham, including a supermarket, community centre, pub, medical centre and school. These are less than 1km away and are therefore within a comfortable and safe walking/cycling distance of the proposed Site;
- The majority of the Site lies within the catchment area of Kings Lodge Primary School and Abbeyfield School, while the south eastern edge is within the catchment area of Kingsbury Green Academy. The whole Site is within the catchment areas of Sheldon School and Hardenhuish School.

Sustainable Transport Options

- 4.3.4 As described in the Transport Assessment, the Site is well situated to make the most of existing road networks, public transport provision and public rights of way (PROW).
- 4.3.5 The streets and paths in the proposed development will connect to the existing network to provide safe and accessible routes to facilities within neighbouring residential areas and onwards into Chippenham town centre. This will include public footpath CHIP16 which runs through the west of the Site, and which connects to footpath CALW83, providing safe access into Pewsham.
- 4.3.6 The Avon Valley Walk can also be accessed from the southern Site boundary via the proposed internal walking and cycling infrastructure. This provides a traffic-free route with an all-weather surface through Westmead Open Space, connecting to Avenue La Fleche and providing pedestrian and cycle access onwards to the High Street and the wider town centre.
- 4.3.7 While final designs will be detailed as part of a Reserved Matters planning application, all of the proposed properties will include a secure and weatherproof means of cycle storage: for example, some of the houses will have garages and those that do not can have sheds provided. Any flats will have access to a secure communal cycle store.
- 4.3.8 Regular bus services can be accessed from the bus stops adjacent to the Site on the A4 London Road. These include the 55/55A Bus between Chippenham and Swindon, the 44P Bus between Chippenham and Pewsham and the 33/X33 Bus between Chippenham and Devizes.
- 4.3.9 Chippenham Railway Station is approximately 2.3km to the north west and can be accessed via the 55 Bus or the X33 Bus. Alternatively, it is a 14-minute cycle ride from the centre of the Site,

via the Avon Valley Walk. Regular services run from this station to Bath, Bristol, Swindon, Reading and London Paddington.

- 4.3.10 The draft Travel Plan for the development completed by i-Transport encourages modal shift away from private vehicles towards more sustainable forms of travel, as required by Core Policy 61. The Plan outlines a number of measures including the production of a Travel Information Pack for residents to inform and promote public transport, walking and cycling, and the promotion of local car share databases to reduce car journeys from the Site.

4.4 Improving Technology

Provision of Electric Vehicle Charging Points

- 4.4.1 Increasingly, energy and transport systems are becoming interlinked as the nation transitions from the use of petrol and diesel vehicles to zero emission solutions based around electric charging.
- 4.4.2 There is therefore a need to provide charging infrastructure to support this wholesale shift to cleaner vehicle technology and this is supported by policy: Approved Document S of the Building Regulations described in Section 2 sets out the comprehensive standards and detailed specifications required at new residential development.
- 4.4.3 The Applicant will design and manage the power network to provide the level of EV charging infrastructure required by Approved Document S. To this end, each dwelling with associated parking will have EV charging infrastructure installed, and any car parks for the local centre will include the charging points and cable routes required by policy.
- 4.4.4 The full details of the EV charging provision to be installed on the proposed development will be confirmed at the appropriate stage in the planning and design process.

5 Climate Resilience and Adaptation

5.1 Adapting to the Future

- 5.1.1 The ability of the development to adapt to anticipated future changes in the climate is an important aspect of its longevity, and ultimate habitability. The principle of adaptation applies to both the built and external environment, and indeed how they interact.
- 5.1.2 This section discusses ways in which the Applicant is addressing climate resilience and adaptation on-site in line with Core Policy 41 of the Core Strategy, which requires that developments consider climate change adaptation through careful and considered design.

5.2 Reducing Overheating Risk Through Design

- 5.2.1 The risk of the overheating of living spaces is of increasing concern, given our knowledge of future climate. Approved Document O details requirements for mitigating the risk of overheating in new dwellings and methods for demonstrating compliance, including the use of a compliance checklist or the *CIBSE Guide TM59 Design Methodology for the Assessment of Overheating Risk in Homes* (CIBSE, June 2017).
- 5.2.2 Approved Document L Volume 2 includes guidance on limiting the effects of solar gain in non-domestic buildings to reduce the need for air conditioning, or to reduce the capacity of any air conditioning system that is installed. It provides reference glazing system details for solar gain calculations which apply to each space in a building that is occupied and/or mechanically cooled.
- 5.2.3 It is recommended that the designs for both the dwellings and the non-domestic buildings undergo overheating risk modelling at the appropriate detailed design or Reserved Matters stage using the appropriate methodology.
- 5.2.4 Acceptable strategies for reducing overheating risk described in Approved Document O focus on passive design features and include:
- Limiting solar gains:
 - Fixed shading devices such as shutters, external blinds, overhangs or awnings;
 - Glazing design including size, orientation, glass g-value and depth of window reveal;
 - Shading provided by adjacent permanent structures.
 - Removing excess heat:
 - Opening windows and ideally cross ventilation;
 - Ventilation louvres in external walls;
 - A mechanical ventilation system;
 - A mechanical cooling system as a last resort.

5.3 The Multiple Benefits of Open Space and Vegetation

- 5.3.1 The proposals feature large areas of open space including natural and semi-natural greenspace, woodland, orchards and play spaces. These areas will provide a range of valuable habitats, including grassland, wildflower meadow and native shrub. Many of the existing mature trees and hedgerows around the Site boundaries will be retained and enhanced with additional planting, and attenuation basins will provide opportunities for wetland marginal species.
- 5.3.2 This landscape led approach will provide multiple benefits in a changing climate:
- The trees will provide shading in the summer months, reducing heat gain into dwellings and therefore reducing the need for mechanical cooling;
 - Trees throughout the Site will also help maintain a comfortable external environment in hot periods by providing shading in gardens and shared spaces and reducing any urban heat island effect;
 - The trees, hedges and shrubs will contribute to the reduction of wind speeds, improving comfort levels and reducing air infiltration into buildings on windier days;
 - Vegetation acts as a 'carbon sink' and improves air quality through dry deposition of gases (including NO_x, SO_x, PM₁₀ and O₃);
 - Trees, hedges and shrubs also help reduce levels of ambient noise.
- 5.3.3 This landscape led approach will also result in biodiversity gains through ecosystem improvement. The Preliminary Ecological Appraisal for the Site completed by EAD Ecology should be referred to for full details in this regard.

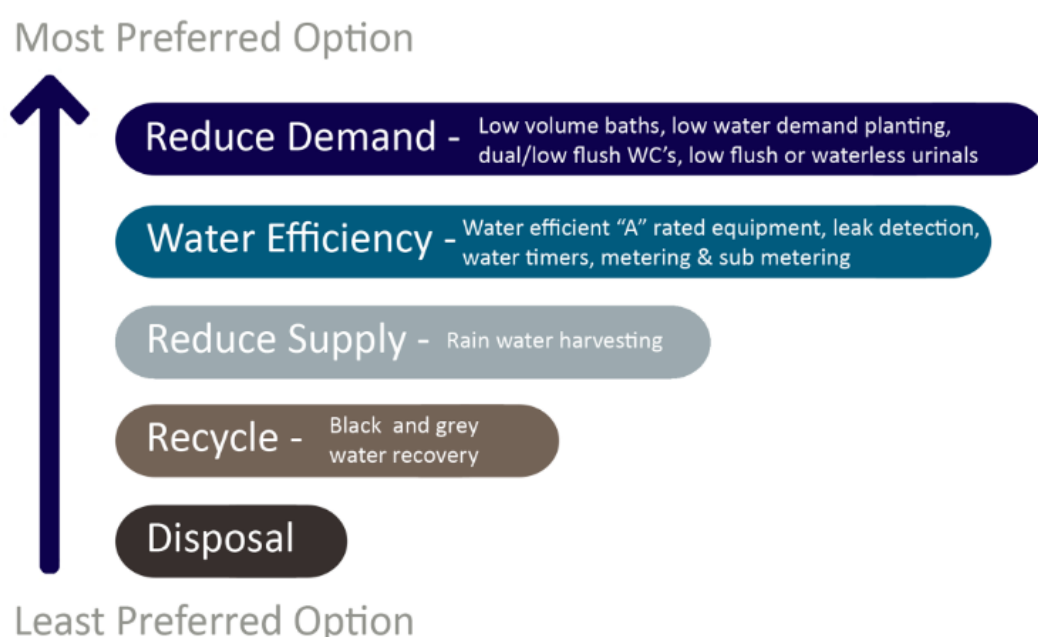
5.4 Managing Water in a Changing Climate

- 5.4.1 Any new development on a previously undeveloped site will inevitably increase the amount of hard standing (roofs, roads, pavements) and therefore the amount of surface water run-off. The integration of different Sustainable Urban Drainage (SuDS) features into the landscape layout will therefore be pivotal in its development, in order to enable the necessary storage volumes associated with a 1 in 100 year storm event, plus a 40% allowance for the impacts of climate change on rainfall distribution throughout the year.
- 5.4.2 The Flood Risk Assessment (FRA) which accompanies this application provides further details in relation to the level of flood risk and the management of surface water flows at the proposed development and this should be referred to for full details in this regard.
- 5.4.3 As housetypes and building designs are developed later in the planning process, consideration should also be given to design features such as increased diameter guttering and downpipes to cope with additional intensity of storm water.

6 Water Efficiency

6.1 The Water Hierarchy

- 6.1.1 Water efficiency becomes increasingly important in a changing climate with diminishing water resources.
- 6.1.2 The national average for water consumption is around 143 l/p/d. In order to reduce this figure, the management of water in the proposed development will follow the principles of the Water Hierarchy:



© Daedalus Environmental Limited

Figure 6: The Water Hierarchy

6.2 Water Reduction Measures

Dwellings

- 6.2.1 Policy 41 of the Core Strategy refers to the *Code for Sustainable Homes* Level 4 which required all new residential developments to achieve a water efficiency equivalent of 105 litres per person per day (l/p/d). When the *Code for Sustainable Homes* was withdrawn, this water efficiency target was replaced by the enhanced standard set out in Approved Document G, which requires a water use of 110 l/p/d.
- 6.2.2 With the vast majority of water consumed in the domestic sector being used for toilet flushing and personal washing (see Figure 8), significant savings can be made by employing efficient fixtures, fittings and appliances.



Figure 7: Domestic Water Consumption by End Use

6.2.3 Water efficient fixtures, fittings and appliances plus rainwater recycling (water butts) will be specified in all dwellings so that daily water use will be calculated to not exceed the 110 l/p/d target. The following table is an illustrative list of specifications which typically achieve this standard:

	Measure	Unit	Performance / Specification
1	Showers	Litres per minute	10
2	Aerated taps	Litres per minute	3
3	Kitchen sink taps	Litres per minute	4
4	Bath	Litre capacity to overflow	140
5	WC	Litres per flush	4 / 2.6 (dual flush)
6	Washing machine	Litres per kg dry load	7
7	Dishwasher	Litres per place setting	1.08

Table 2: Illustrative Water Specifications

6.2.4 The final specification will be confirmed at detailed design stage, at which point the accredited calculation methodology for Part G can be used to demonstrate that it will meet the required target.

Non-Domestic Buildings

- 6.2.5 While not bound by the same requirements as the domestic sector, there is an opportunity to ensure that water efficiency fixtures and fittings are installed in the non-domestic buildings to reduce water consumption.
- 6.2.6 The buildings at the local centre will require water for drinking, food preparation areas and WC facilities. Appropriate water efficient fixtures and fittings including aerated taps, automatic (sensor-enabled) tap controls and low/dual flush cisterns can be specified throughout to align with the appropriate requirements of BREEAM Excellent.

7 Embodied Carbon and Waste Management

7.1 Introduction

- 7.1.1 Embodied carbon refers to the 'upfront' emissions associated with building construction, including the extraction and processing of materials, and the energy and water consumption in the production, assembly, and construction of the building. It also includes the 'in-use' stage (e.g. maintenance, replacement), and the 'end of life' stage (demolition, disassembly, and disposal) plus any transportation. Broadly speaking, these, alongside the operational emissions described in Section 3, make up the Whole Life Carbon (WLC) associated with a development.
- 7.1.2 As this is an outline application, there are no building or infrastructure designs which can be assessed. Instead, this section sets out the overarching principles which the Applicant will apply at later stages of the planning and development process to ensure that the issue of embodied carbon is addressed, and that waste arising from the development (both during its construction and operation) is appropriately managed.

7.2 Sustainable Building Materials

- 7.2.1 The extraction, manufacturing, refinement and transportation of a raw material will all contribute to its embodied carbon. The sourcing of materials used on the development will therefore be a key consideration.
- 7.2.2 Materials with low embodied carbon will be prioritised where possible:
- The embodied carbon of each material type will be considered to ensure that informed decisions can be made about the types and quantities of each to be used on-site;
 - Materials derived from recycled, repurposed or reused products will be specified where possible;
 - Low carbon concrete mixes will be used where appropriate;
 - Less carbon-intensive materials will be used in place of more carbon intensive materials where possible;
 - Robust systems and products with long lifespans will be prioritised;
 - Local suppliers of materials (within the south west region) will be used where viable to reduce transportation.
- 7.2.3 The homes will be designed with a palette of materials that is both appropriate and in keeping with the local architectural vernacular. As such the form of construction will not require the use of unusual materials, those with significant environmental impact or those that require significant off-site processing and development before use on-site.
- 7.2.4 In addition, suppliers that have recognised environmentally focused accreditations and management systems such as ISO:14001 will be used, and all timber will be sustainably sourced with full FSC or PEFC accreditation.

7.3 Designing for Durability and Flexibility

7.3.1 Later in the design process, the durability, flexibility and adaptability of the dwellings can be considered:

- Ensuring there is synchronicity between materials selected and building life expectancy reduces waste and the need for replacement (and reduces in-use costs);
- Ensuring the building is adapted now to future climate scenarios means it is futureproofed without the need for future intervention;
- Flexible layouts will allow homes to be reconfigured over time to suit residents' changing needs.

7.3.2 By designing homes in this way from the outset ensures building longevity and minimises the need for extensive refurbishment which has implications for waste minimisation and embodied carbon.

7.3.3 Adapting a building to future climate scenarios is discussed in more detail in Section 5.

7.4 Sustainable Waste Management

7.4.1 Waste generation, storage, treatment and disposal before, during and after construction will be managed in accordance with the Waste Hierarchy. This is in line with the Wiltshire and Swindon Waste Core Strategy Policy WCS5 which requires developers to demonstrate that the most sustainable option for waste management has been promoted.



Figure 8: The Waste Hierarchy

- 7.4.2 The *Outline Waste Management Strategy and Audit* which accompanies the application should be referred to for details regarding the proposed approach to construction and operational waste management.

8 Summary

- 8.1.1 This *Energy & Sustainability Statement* describes how the proposed development on land at Forest Farm, Chippenham in Wiltshire will adopt sustainable construction principles with a focus on climate change mitigation and adaptation. It has been commissioned by Gleeson Land (the Applicant).
- 8.1.2 Throughout the Statement, national and local planning policy objectives and standards have been addressed to demonstrate the Applicant's commitment to these issues.
- 8.1.3 In particular, the Statement provides as much detail as is possible at this stage in the planning process to demonstrate that the proposals will achieve the Future Homes Standard, and will meet the relevant requirements of Wiltshire's adopted planning framework and the *Chippenham Neighbourhood Plan* to create a highly sustainable development:
- The dwellings will be highly energy efficient, adopting a fabric first approach. They will be orientated to maximise solar gain where possible;
 - There will be no natural gas connection to the Site;
 - Heating and hot water will be supplied via a highly efficient low carbon community energy hub and heat network;
 - Roof integrated solar PV panels will be installed as required by regulations;
 - High quality broadband will be provided in line with Approved Document R;
 - Accessibility to local services and sustainable transport options will encourage residents to prioritise active travel and public transport;
 - Electric vehicle charging points will be installed in line with policy requirements;
 - Buildings designs will consider the impact of a changing climate:
 - Overheating will be managed through considered design;
 - The retention of existing trees and additional planting will provide more comfortable microclimates in warmer weather;
 - The landscape design will provide multi-functional benefits, supporting increased biodiversity and enhancing the overall aesthetic;
 - Surface water will be managed via the integration of SuDS into the development.
 - The development will employ a combination of highly efficient fixtures, fittings and appliances to reduce domestic water use to achieve the 110 l/p/d target and to minimise water use at the buildings in the Local Centre;
 - Embodied carbon will be reduced by applying sustainable design principles, including informed material selection and the use of re-used and recycled materials during construction;
 - Construction and operational waste will be managed in accordance with the principles of the Waste Hierarchy.

- 8.1.4 As the planning and development process progresses, and as the wider regulatory environment develops, the approach proposed will be kept under review. The final design solution and associated detail will be provided at the Reserved Matters stage.
- 8.1.5 A summary of the recommendations made in order to achieve policy requirements is provided in Appendix A.

9 Appendix A – Key Recommendations

Section		District Plan Policies Addressed	Key Recommendations
3	Energy Statement	Wiltshire Core Strategy Policy 41 Policy 57	- Follow the priorities of the Energy Hierarchy - Ensure building orientation is such that dwellings maximise solar gain as far as possible - Minimise energy consumption with a highly efficient building envelope - Air permeability levels should be c.4m³/m²@50Pa or less - Install a high efficiency mechanical extract ventilation unit to each dwelling to ensure sufficient ventilation - Install efficient ventilation systems in the non-residential buildings - Install energy efficient lighting and appliances - Investigate the installation of a low carbon community heat network - Install PV systems as required by the FHS
4	Reducing Carbon Emissions from Transport	Wiltshire Core Strategy Policy 61	- Provide broadband infrastructure in line with the requirements of Approved Document R - Implement the Travel Plan for the Site - Provide EV charging points to all properties with associated parking in line with the requirements of Approved Document S
5	Climate Resilience and Adaptation	Wiltshire Core Strategy Policy 41	- Control overheating risk by applying requirements of Approved Document O: Overheating where overheating is identified as an issue - Include street trees, shrubbery and open spaces on the Site - Incorporate SuDS into the Site design to manage surface water drainage as recommended in the FRA
6	Water Efficiency	Wiltshire Core Strategy Policy 41 Policy 67	- Specify fixtures, appliances and fittings that reduce potable water use including aerated taps, low/dual flush WCs, low capacity baths - Provide opportunities for rainwater recycling i.e. rainwater butts
7	Embodied Carbon and Waste Management	Wiltshire Core Strategy Policy 57 Waste Core Strategy Policy WCS5 Policy WCS6	- Source materials with low embodied carbon from suppliers with environmental accreditations, using local suppliers where possible - Design buildings for durability and flexibility - Follow the priorities of the Waste Hierarchy - Ensure contractors implement strict waste management processes and commit to Considerate Constructor Scheme - Consider opportunistic on-site reuse of materials where feasible - Provide sufficient and accessible bin storage to facilitate waste management and recycling

10 Appendix B – Chippenham Neighbourhood Plan Policy SCC2 Checklist

	Objective to Demonstrate	Areas to be Covered	Further Explanation	Document Reference
Sustainable Design	Buildings should be designed to minimise greenhouse gas (GHG) emissions associated with their operational energy consumption. Designs should also aim to make the most efficient use of resources, avoiding non-renewable natural resources, and to maximise positive impact on biodiversity.	Insulation	Heat loss should be prevented by applying high levels of insulation to roof, walls and floors. Heat loss from windows should be reduced through double or triple glazing	Section 3.2 Section 3.4.4 - 3.4.7 Section 3.7
		Thermal mass	Internally exposed materials with a high specific heat capacity should be used to absorb solar radiation received during the winter months and to store cool air absorbed during the night in the summer months	Section 3.4.1 - 3.4.3
		Solar gain	Designs should aim to maximise passive solar gain through consideration of the orientation of glazed windows, doors or rooflights to help heat the building internally	Section 3.3 Section 5.2
		Natural lighting	Natural lighting should be optimised via exterior glazing (windows, skylights) reducing artificial lighting requirements and saving energy	Section 3.3
		Natural ventilation	Natural ventilation costs less to build, operate and maintain than mechanical ventilation	Section 3.4.11-3.4.13
		Water conservation	Water management should be planned to prevent waste, overuse, and exploitation of the resource. Effective water efficiency planning seeks to “do more with less” without sacrificing comfort or performance	Section 6
		Landscaping	Landscaping should be considered to both support solar gain and help avoid overheating (achieving a balance between the two)	Section 5.3
		Renewable energy generation	Renewable energy generation (electricity and heat) should be incorporated and optimised at the design stage, along with thermal and electrical storage, and electric vehicle integration, to allow flexible energy management and mitigate peak demand	Section 3.6
Sustainable Construction Materials	Building materials should be selected to minimise embodied GHG emissions and other environmental impacts, whilst optimising the durability of the materials and their contribution to lowering emissions over the lifetime of the building. High embodied carbon materials should be avoided and materials sourced locally where possible.	Embodied GHG emissions from the extraction of raw materials		Section 7
		Embodied GHG emissions from the processing and manufacturing of raw materials		Section 7
		Embodied GHG emissions from the transportation of raw materials from source to site		Section 7
		Environmental impacts of construction materials	This may include degradation of natural habitat, consumption of natural resources, generation of waste materials, and the pollution of land, water and air	Section 7.2
		Durability of materials	How long materials will last before having to be replaced	Section 7.3
		Locally sourced materials	This would usually mean construction materials that are produced locally within the south west region	Section 7.2
		Sustainably sourced	Materials which have Environmental Product	Section 7.2

		materials	Declarations (EPDs) will measure that material's environmental impact	
Sustainable Construction Methods	Building methods used during the construction phase of the development should minimise GHG emissions and other environmental impacts	Transport emissions associated with the movement of materials and waste		Section 7.4
		Re-use and refurbishment of buildings on the site to prevent unnecessary demolition		n/a
		Pre-fabrication methods		n/a
		Re-use/recycling of materials on site		Section 7.2 Section 7.4
		Construction waste management		Section 7.4

Completed on behalf of:

Gleeson Land

By:

Daedalus Environmental Limited
61 London Road
Maidstone
Kent
ME16 8TX

E: enquiries@daedalusenvironmental.co.uk
W: www.daedalusenvironmental.co.uk

© Daedalus Environmental Limited (2026)

This document has been prepared in accordance with the scope of the Daedalus Environmental's appointment with its client and is subject to the terms of that appointment. It is for the sole use of Daedalus Environmental's client and for the purposes, stated herein, for which it was prepared. As such Daedalus Environmental accepts no liability, howsoever incurred, by any third party, through the use of this document. No person other than the client may copy (in whole or in part) use or rely on the contents of this document, without prior written permission of Daedalus Environmental Limited. Even with the granting of said permission, the document may still only be used for the purpose for which it was originally intended, i.e. to support the planning application for the development named herein. The contents of this document are not to be construed as providing legal, commercial, financial, business, tax advice or opinion.