

Land East of Showell Farm, Chippenham

Sustainability, Energy and Waste Statement

PREPARED ON BEHALF OF HALLAM LAND

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1.0 INTRODUCTION

1.1. This Sustainability, Energy and Waste Statement is prepared by David Lock Associates (“DLA”) to support an Outline Planning Application (“OPA”) submitted to Wiltshire Council (“WC”), on behalf of Hallam Land, for a residential-led development of up to 400 dwellings on Land East of Showell Farm, Chippenham.

1.2. The formal description of development is as follows:

Outline Planning Application for up to 400 dwellings (Class C3 use), land for a Local Centre, accommodating commercial, business and service uses (Class E use), drinking establishment and hot food takeaway (Sui Generis); and local community uses (Class F2); open space and landscaping to include natural green space, amenity green space, area of formal play, allotments and community orchard, sustainable drainage infrastructure and ground remodelling. All matters reserved except for the formation of a new vehicular access and cycle and pedestrian access including emergency access onto the B4528.

1.3. The planning application is submitted in outline, with all matters reserved except for the formation of access via Patterdown Road. Consequently, specific design details for the scheme are yet to be finalised. This Statement therefore provides a high-level overview of how sustainability and energy has influenced and is embedded in the masterplan for the site and how waste arising during the demolition, construction and occupation of the proposed development could be minimised and managed, with additional information to be provided at the appropriate detailed stage of the scheme.

2.0 THE SITE AND ITS CONTEXT

Site Location

- 2.1. The site is located east of Showell Farm and the Patterdown Road (B4528) and west of the River Avon and north of the Lackham Roundabout. The site sits adjacent to land subject to significant change through the consenting of new mixed-use development at Rowden Park, allocated through the Chippenham Site Allocations DPD (2017). Rowden Park was granted outline permission (ref: 14/12118/OUT) for 1,000 new homes, local centre, and 2 form-entry primary school. The northern boundary of this application site wraps around the southern and eastern edge of Phase 5 of the Rowden Park development. Rowden Park is now under construction and homes are occupied.
- 2.2. Further development has been approved immediately north of the site at the former Showell Nursery, for some 120 dwellings (ref: 17/08554/OUT). This development is also under construction.
- 2.3. West of the site, adjacent to the A350 is Southpoint Business Park. Construction of some 50,000 sqm of employment space was completed in December 2025 for occupation by Siemens.
- 2.4. The site falls within Lacock Parish, although its northern boundary is contiguous with the administrative town boundary of Chippenham.
- 2.5. The site sits at the southern edge of Chippenham, a strategically important town within the administrative area of Wiltshire, located some 38km east of Bristol and 23km southeast of Swindon, some 10km from the M4.
- 2.6. Chippenham Railway Station is located approximately 3.9km to the northeast of the site and therefore can be reached within a 'reasonable' cycling distance of the site.
- 2.7. There are 10 primary schools located within a 3.2 kilometre (2miles) distance of the site, the majority of which identify some capacity. The nearest primary schools to the site and with capacity, are St Mary's Catholic, Charter Primary and Kings Lodge Primary, all within 1.5 km from the site. It is understood that a full 2FE primary school will be brought forward at Rowden Park, which would be the closest primary school, and this will be delivered by Wiltshire Council. The s106 for the Rowden Park development requires the transfer of the school land to take place at 150 occupations.
- 2.8. There are 3 secondary schools within 3.5 kilometres of the site, all incorporate 6th form provision and all have some capacity. The nearest school (in distance terms) is Abbeyfield School at some 2.4 kilometres from the site, albeit Hardenhuish and Sheldon are understood to be the designated schools, all three serve the area. A planning application for its expansion to provide an additional 450 school places (ref. PL/2023/01340) was resolved to be approved at strategic planning committee meeting on 24 March 2026.

- 2.9. The Wiltshire School Places Strategy 2023-2027 sets out the Council's approach to education provision over the next 5 years, having regard to demand including that arising from new development. It identifies the new 2 FE primary school at Rowden Park, which is to be located just to the north of the site, within 1.5 kilometres walking distance. It also refers to the extension to Abbeyfield secondary school to accommodate additional capacity, as well as a potential creation of a new secondary school.

Site Characteristics

- 2.10. The site comprises 5 fields of some 30 hectares of semi-improved grassland and arable land, with hedgerows and trees defining the field boundaries within the site.
- 2.11. Several mature hedgerows with trees form a linear feature running southwest to northeast through the site, culminating in a small copse on the northern boundary. A single structure lies to the north-western edge.
- 2.12. The two eastern fields sit adjacent to the River Avon, the eastern most parts of which fall within the floodplain, which is proposed to form an extension of the new riverside park being delivered as a feature of the Rowden Park development.
- 2.13. To the west, the site is bound by Patterdown Road (B4528), with the Grade II Listed Showell Farm complex located on the opposite side of this road to the west of the site.
- 2.14. The site includes a small agricultural shelter shed (non-designated heritage asset) and boundary wall along the western boundary, adjacent to a farm access. A rectangular enclosure defined by a young hedgerow sits at the site frontage.
- 2.15. The site is generally flat, due to its relationship with the Avon valley. The highest point of the site is in the southwestern corner at 51 AOD, sloping down in a broadly northern eastern direction towards the River Avon at 41 AOD.
- 2.16. There are two public rights of way that cross through the site, centrally and along the River Avon. To the south of the site, Footpath LACO9 terminates at the A350 whilst Footpath LACO39 connects to Lackham College and the wider PRoW network providing access to Lacock village and rural Wiltshire. To the north the footpaths connect with Footpath CHIP1 providing access to Chippenham town centre.
- 2.17. There are two overhead electricity lines that cross the site. A 33kV line that crosses from the southwest corner to the top of the site, and a 132kV line that crosses over the southeast corner.

3.0 THE PROPOSED DEVELOPMENT

Development Summary and Concept

- 3.1. The proposed development is shown on the submitted Parameter Plan (ref: edp2272_d024ab).
- 3.2. This outline application reserves all matters for future determination, except for access to the site. The development concept is discussed in more detail in the submitted Planning Statement. However, the development comprises;
- up to 400 dwellings;
 - a local centre accommodating commercial business and service uses (within class E), drinking establishment and hot food takeaway (Sui Generis) with a GIA limit of 675 sq m of which no more than 200 sq m (GIA) shall be used for retail (Class E(a)) drinking establishment and hot food takeaway (Sui Generis); and F2 (local community uses);
 - public open space, including natural green space, amenity green space, parks, play space, allotments and community orchard;
 - creation of new vehicular access onto B4528, and cycle and pedestrian access including emergency access onto B4528;
 - internal vehicular, cycle and pedestrian routes;
 - drainage infrastructure including attenuation basins;
 - utilities infrastructure; and
 - ground remodelling.
- 3.3. The proposals for the site include a range of sustainable measures including those set out below. A landscape-led masterplanning approach has been undertaken to ensure that existing vegetation including hedgerows, trees and scrub will be retained and enhanced and that the masterplan responds sensitively to the site's environmental context. The development seeks to ensure the green infrastructure delivers for the climate, people and nature. The development seeks to deliver a biodiversity net gain of at least 10% on-site, creating a nature rich landscape throughout the development.



Active Travel

The masterplan includes an extensive network of walking and cycling trails to encourage active and sustainable transport choices. Routes proposed through the Riverside Park provide a predominantly traffic-free connection to central Chippenham.



Community Wellbeing

Access to nature is a key aspect of community wellbeing, and every home will have open spaces on the doorstep. A wide range of outdoor spaces and community focused facilities such as orchards, amenity green spaces, allotments and play spaces will foster a sense of belonging, healthy lifestyles and enhanced wellbeing.



All Electric

The development will be heated with electricity and with potential to incorporate solar photovoltaic generation. There will be no gas-heated buildings.



Green Infrastructure

Over 60% of the site is proposed as green infrastructure (public open space), providing a nature-rich environment to live, work and play. The Riverside Park links northwards to Chippenham, allowing for the best of both town and country.



Economic and Social Sustainability

The mixed-use centre has flexibility to deliver a mixture of uses, including the potential for community uses and local shops, helping support economic and social sustainability at a community level.



Water Management

A sustainable water strategy will include technologies incorporated in the development to reduce water consumption. A sustainable drainage strategy utilising infiltration and attenuation areas is designed as an ecologically-rich integrated landscape.

Extract from DAS (Credit EDP)

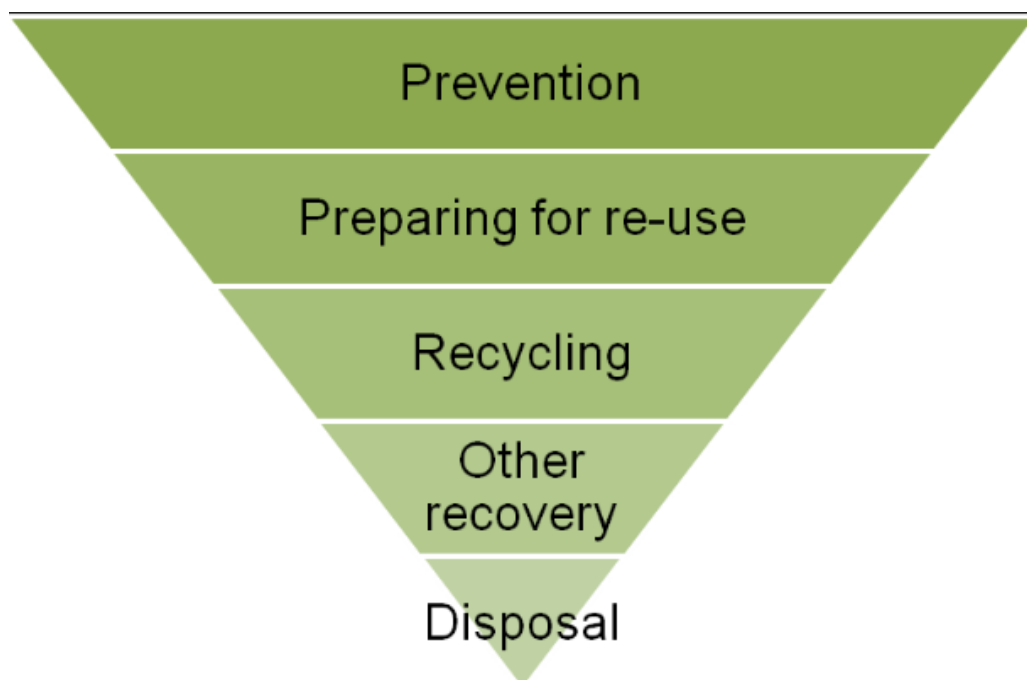
4.0 PLANNING POLICY CONTEXT

National Planning Policy Framework

- 4.1 The NPPF is the overarching national tier of planning policy setting out the Government's economic, environmental and social planning policies for England and articulating a vision for sustainable growth. The NPPF is supplemented by the Planning Practice Guidance (PPG).
- 4.2 The NPPF explains (paragraph 7) that the purpose of the planning system is to contribute to sustainable development including the provision of new homes, commercial development, and supporting infrastructure in a sustainable manner. It explains (paragraph 8) that sustainable development has three overarching objectives, economic, social and environmental, which are interdependent and need to be pursued in mutually supportive ways, including the need to mitigate and adapt to climate change and support the move to a low carbon economy. The environmental objective seeks to protect and enhance the natural, built and historic environment, including through the minimisation of waste and pollution.
- 4.3 NPPF paragraph 164 states that new development should be planned for in ways that:
- avoid increased vulnerability to the range of impacts arising from climate change through suitable adaptation measures such as green infrastructure and sustainable drainage systems; and
 - help to reduce greenhouse gas (GHG) emissions, such as through its location, orientation and design.
- 4.4 The NPPF does not contain any specific waste-related policies for non-waste development. However, Paragraph 4 states that the NPPF should be read in conjunction with the Government's planning policy for waste.
- 4.5 Planning Practice Guidance (PPG) explains how well-designed places address both climate change mitigation and climate change resilience.

National Planning Policy for Waste

- 4.6 The National Planning Policy for Waste (NPPW) (October 2014) provides detailed waste planning policies and sets out the Government's ambition to work towards a more sustainable approach to resource use and management.
- 4.7 The NPPW reflects the waste hierarchy set out in the Waste Management Plan for England (WMPE), stating that "the most effective environmental solution is often to reduce the generation of waste, including the re-use of products [prevention]", while the least desirable solution is disposal (where none of the other options is appropriate).

Figure 1 The Waste Hierarchy

Source: National Planning Policy for Waste (NPPW)

4.8 Paragraph 8 sets out the policy approach for determining planning applications for non-waste development. Local planning authorities should seek to ensure that:

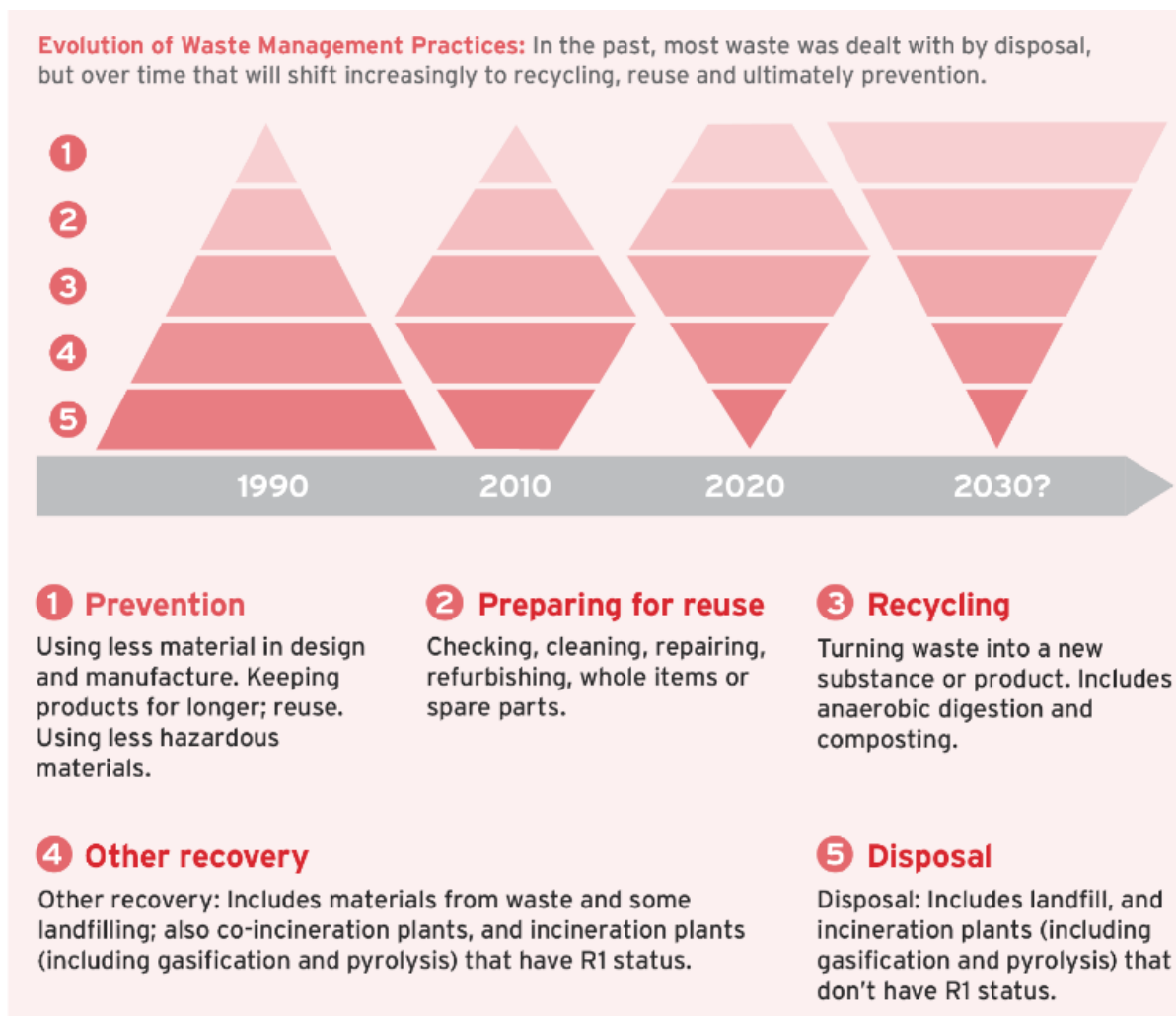
- likely impact of proposed development on existing and allocated waste management facilities is acceptable and does not prejudice the implementation of the waste hierarchy and/or the efficient operation of such facilities;
- new development makes sufficient provision for waste management and promotes good design to secure the integration of waste management facilities with the rest of the development and, in less developed areas, with the local landscape. This includes providing adequate storage facilities at residential premises; and
- the handling of waste arising from the construction and operation of development maximises reuse/recovery opportunities and minimises off-site disposal.

Waste Management Plan for England

4.9 The Waste Management Plan for England (WMPE) (January 2021) provides an analysis of current waste management in England and supports the implementation of the objectives set out in the Waste (England and Wales) Regulations 2011. This includes to “protect the environment and human health by preventing or reducing the generation of waste, the adverse impacts of the generation and management of waste, and by reducing overall impacts of resource use and improving the efficiency of such use”.

- 4.10 The WMPE sets out a waste hierarchy, which is “both a guide to sustainable waste management and a legal requirement, enshrined in law through the Waste Regulations 2011”. The WMPE is clear that the Government’s focus is on moving up the waste hierarchy and minimising the amount of waste produced by improving resource efficiency and keeping products in circulation for longer.

Figure 2 Evolution of waste management practices



Source: Waste Management Plan for England (WMPE)

- 4.11 Under the waste hierarchy, priority is given to preventing the creation of waste in the first place. Conversely, disposal (such as in landfill) is regarded as the least favourable option.

Other relevant policy, legislation or guidance

Climate Change Act

- 4.12 The Climate Change Act 2008 sets the basis for the UK's approach to tackling climate change, established the Committee on Climate Change, committed the UK to an 80% reduction in GHG

emissions by 2050 compared to 1990 levels, and required Government to set legally-binding 'carbon budgets' to act as stepping-stones towards this 2050 target. The Act was amended in 2019 to commit the UK to 'net zero' (i.e. a 100% GHG emissions reduction) by 2050.

Future Homes Standard & Future Buildings Standard / Building Regulations Part L: Conservation of Fuel & Power

- 4.13 In March 2026 the Government published the response to the Future Homes and Buildings Standards: 2023 consultation. This confirms that the Future Homes Standard (FHS) and Future Buildings Standard (FBS) will come into force from March 2027, subject to transitional arrangements. All new buildings from March 2028 will need to meet the FHS and FBS and the updated Building Regulations Part L 2026.
- 4.14 The FHS and FBS will require new homes and non-residential buildings to provide high fabric performance (insulation, air tightness etc), low-carbon heating, Solar PV and 'zero-carbon ready' buildings, meaning no further work is needed for these buildings to have zero operational GHG emissions once the UK electricity grid has fully decarbonised.

Building Regulations Part O: Overheating

- 4.15 Building Regulations Part O Overheating came into effect in June 2022, requiring new residential buildings (e.g. schools, nursing homes etc) to address risk of summertime through a combination of prevention and remedy:
- Prevention: by limiting the amount of direct sunlight through windows and glazing; and
 - Remedy: through provision to quickly remove excess heat from inside a room when it gets too hot.

Building Regulations Part A: Structure

- 4.16 Building Regulations Part A: Structure covers the structural elements of new buildings in England. It includes the requirement for ground movement caused by swelling and shrinkage, which can be exacerbated by climate change, to be appropriately considered.

Make Britain a Clean Energy Superpower

- 4.17 Make Britain a Clean Energy Superpower sets out the Labour Government's plans to cut energy bills, create jobs and deliver energy security with cheaper, virtually zero carbon grid electricity (i.e. 95%) by 2030. The National Energy System Operator (NESO) has recently been established to pursue this target.

ISEP Guidance – GHG Emissions

- 4.18 ISEP's EIA Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance (ISEP, 2022) (ISEP's GHG Assessment Guidance) – provides guidance on the assessment of GHG emissions.

ISEP Guidance – Climate Adaptation

- 4.19 ISEP's EIA Guide to: Climate Change Resilience & Adaptation (ISEP's Climate Adaptation Guidance) – provides guidance on the assessment of climate resilience and adaptation.

RIBA 2030 Climate Challenge

- 4.20 RIBA 2030 Climate Challenge – provides good and best practice guidance on reducing energy demand and embodied carbon for residential and non-residential development.

LETI Design Guidance

- 4.21 LETI Climate Emergency Design Guide (2020) and LETI's Embodied Carbon Target Alignment (2021)– provide good and best practice for upfront embodied carbon and operational energy for residential and non-residential buildings.

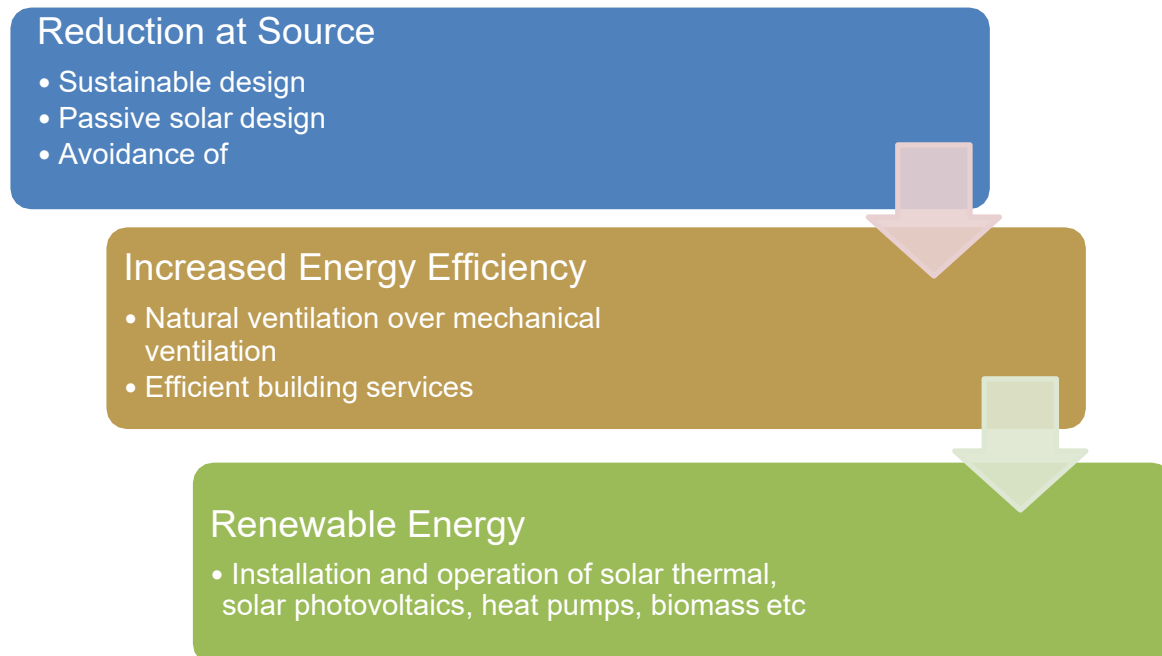
Energy Hierarchy

- 4.22 The Energy Hierarchy is a widely adopted and recognised set of principles to guide design, planning and development decisions to optimise energy provision. The hierarchy prioritises minimising the need for energy consumption through firstly design and energy efficiency and then through generating the reduced energy demand via renewables. The hierarchy can also help to balance the economic and environmental dimensions of sustainability, supporting choices which are both environmentally and economically sustainable.
- 4.23 The industry is broadly in agreement that the energy efficiency and low carbon technologies have the greatest impact offsetting CO2 emissions. Therefore, it is logical to encourage enhanced mitigation through energy efficiency and low carbon technologies in the first instance, as opposed to applying renewables as the first option at a significantly greater cost.

Wiltshire Sustainability and Waste Policy

- 4.24 The Wiltshire Core Strategy (2015) contains Policy 41: Sustainable Construction and Low Carbon Energy. The Wiltshire and Swindon Waste Core Strategy 2006-2026 (2009) contains WSC6: Waste Reduction and Auditing

- 4.25 Core Policy 41: Sustainable Construction and Low-Carbon Energy encourage design measures to reduce energy demand. The age of the plan results in reference to level 4 of the Code for Sustainable Homes which was withdrawn in 2015. The policy requires a low-carbon strategy to be set out along with safeguarding heritage assets.



- 4.26 WSC6: Waste Reduction and Auditing require developments to design and provide for recycling/compost and waste facilities with a waste audit that includes:
- a) the type and volume of waste that the development process will generate);
 - b) the steps to be taken to reduce, re-use and recycle any waste that is produced through the development process;
 - c) the steps to be taken to reduce the production of hazardous wastes in the development process;
 - d) the steps to be taken to minimise the use of raw materials in the development process;
 - e) the steps to be taken to reduce the use of hazardous materials in the development process;
 - f) the steps to be taken to minimise the pollution potential of unavoidable waste;
 - g) the steps to be taken to dispose of unavoidable waste in an environmentally acceptable manner;
 - h) the steps to be taken to ensure maximum waste recovery (e.g. recycling and composting) once the development is completed/occupied; and
 - i) proposals for the transport of waste created during the development process and subsequent use of the site.

- 4.27 This is more applicable to detailed or reserved matters applications but broad principles can be explored at this outline stage.

5.0 WASTE MINIMISATION

Project Planning and Design Stage

- 5.1 The proposals seek to support the efficient use and recovery of resources throughout the life of the development. This includes through inherent design principles and a layout that complements sustainable waste management by providing appropriate storage and segregation facilities.
- 5.2 As the application is submitted in outline, it is considered premature to specify the storage and segregation facilities for the site. However, it is anticipated that provision of this detail will be secured by condition on any planning permission.

Construction Activities

- 5.3 The Core Strategy seeks to ensure that proposals for major development identify measures to support implementation of the waste hierarchy during construction and demolition. Proposals should consider construction methods that minimise the use of primary minerals and encourage the use of building materials made from recycled and alternative materials. Construction methods should also minimise waste production, maximise the re-use and recovery of materials (as far as practicable) on-site and minimise off-site disposal.
- 5.4 As the application is submitted in outline and no detailed design proposals have been established, it is considered premature to specify the tonnage of construction and demolition waste or the material types to be used on site.
- 5.5 However, a Site Waste Management Plan, which could be incorporated as part of a Construction Environment Management Plan (CEMP), can be developed to set out the method for auditing waste, a monitoring scheme of agreed waste management procedures and details of how waste materials will be segregated. This is a reasonable and proportionate approach to outline applications where this level of detail is not yet known, and an appropriately worded planning condition could be agreed to secure this provision.
- 5.6 Whilst on site, contractors will be encouraged to manage recycling and waste efficiently. The aim is to reduce the waste arising from the start of the construction process and encouraging waste to be diverted from landfill.
- 5.7 The developer will be committed to a policy framework for waste management with the best approach considered to be reducing the amount of waste that arises in the first place through efficient design and construction processes. Where possible and practical, any material generated from construction activities will be reused elsewhere on the site or recycled. The

principles of the waste hierarchy will be followed, by that, emphasis is placed on re-use followed by recycling and composting before energy recovery and disposal is considered.

- 5.8 Where possible, all materials will be sourced as locally as possible to reduce carbon cost of transport. Where timber is used in the development, in the first instance the developer will seek to specify it from sustainable sources and FSC- or PEFC- certified whenever possible. A decision on the materials will be made in respect of their BRE Green Guide Rating.
- 5.9 If hazardous waste materials are identified on site, a specific Hazardous Waste Management Plan would need to be developed. This would set out how this waste will be handled and how it could be minimised.

Operational Activities

- 5.10 Residential and employment waste storage space will be developed at reserved matters stage in consultation with the Council. However, it is anticipated that this provision will align with local guidance as appropriate.
- 5.11 Provisions will be made for the collection of refuse, general waste and recycling. Wiltshire actively recycles so the local council will be able to provide bins for general waste as well as methods to recycle paper/cardboard, plastic/metals and glass.
- 5.12 Composting of green waste will be actively encouraged. For owners/occupants of houses this will be through green waste bins or composting of occupants own waste for use within their gardens. For blocks of flats and commercial premises removal of green waste will be housed in the municipal waste facilities.
- 5.13 For any hazardous waste residential or business owners will need to contact and arrange collection of any potential hazardous waste.
- 5.14 The planning application is supported by a Transport Assessment which confirms that all internal roads will be designed to accommodate access by larger vehicles, include refuse vehicles. Tracking of the internal layout will be undertaken at the reserved matters stage, when the scheme design is fixed.

6.0 SUSTAINABLE ENERGY STRATEGY

- 6.1 The energy performance of a building is affected by its position, layout and design, construction and use and whilst occupant behaviour is beyond the remit of this statement, good design and construction methods can significantly reduce the life cycle emissions of a building and assist the occupant to reduce consumption.
- 6.2 Buildings will be designed at the outset to provide suitable environmental conditions for the occupants whilst also consuming as little energy as practical meeting the expected requirements of the FHS and FBS, through a range of fabric and energy efficiency measures, as well as low carbon renewable energy technology.
- 6.3 Passive design is a key principle of sustainable design and can be used to reduce a building's energy demand. Passive design responds to local climate and site conditions to maximise the building users' comfort and health while minimising energy use.
- 6.4 At the earliest stage the development will be designed using a fabric first approach as to initially minimise energy and resulting CO₂ emissions. Particular attention will be paid to thermal envelope and a high level of insulation will be specified to all thermal elements to minimise heat losses.
- 6.5 Passive solar gain reduces the amount of energy required for space heating during the winter months. The development will be designed to maximise passive solar gain by the specification of fenestrations where possible. Utilising the south elevation will render the best results for solar gains, easterly elevations will maximise morning daylight hours and westerly elevation will utilise afternoon/evening sunlight.
- 6.6 The development will be designed to improve daylighting in all habitable spaces, as a way of improving the health and wellbeing of its occupants. The majority of the habitable rooms, such as living rooms, will benefit from large windows to increase the amount of daylight within the internal spaces. Blinds will be installed for minimizing glare and regulating solar gains during hottest summer months.
- 6.7 A proportion of the buildings heat loss occurs due to poor air tightness. Good construction detailing and the use of best practice construction techniques will minimise the amount of air infiltration. Extra attention to detail will be paid, with adequate sealing to all junctions in the thermal envelope, service penetrations and window casements. This will ensure an air test target of 5m³/m² at 50Pa or better is achieved.

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- 6.8 Natural ventilation will be used to provide fresh air to all units to minimise energy demand for mechanical ventilation plant. Openable windows is the most cost effective measure to prevent overheating during hottest summer months.
- 6.9 A review of available renewable technologies follows and the feasibility as to whether these technologies could be implemented at site.
- 6.10 A high level evaluation of the following possible renewable technologies is undertaken below:
- Solar Photovoltaic Cells (PV)
 - Solar Hot Water
 - Wind Turbines
 - Biomass
 - Ground Source Heat Pump
 - Air Source Heat Pump
- 6.11 Solar photovoltaics (PVs) convert energy from daylight into electricity using a semiconductor material. When light hits the semiconductor, the energy in the light is absorbed, 'exciting' the electrons in the semiconductor so that they break free from their atoms. The resultant flow of electrons through the semiconductor material produces electricity.
- 6.12 The proposed development will have large areas of pitched roofs/flat roofs or a combination of the two where solar PV panels could be installed on to frames and orientated towards the best direction.
- 6.13 Solar water heating systems convert solar radiation to heat carried by water for use in space heating or the provision of domestic hot water. Solar water heating systems normally operate with a back-up source of heat, such as gas condensing boilers. The solar water heating preheats the incoming water, which is topped up by the back-up heat source when there is insufficient solar energy to reach the target water temperature. Gas boilers will not be used at this development.
- 6.14 As with photovoltaic panels there is potential to install panels to the pitched and flat roofs. However, this technology requires a hot water cylinder or a thermal store for dwellings/commercial areas that increase costs. Hot water demand is lower in the summer when hot water production is at its optimum.
- 6.15 Wind turbines use the kinetic energy of wind to turn a turbine to generate electricity. There are two types of wind turbine; a) horizontal- axis type which faces up or downstream of the wind and where the rotational movement of the blade is connected to a generator to create electricity.
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- And b) vertical-axis design, which is by far the most flexible type of wind turbine being best suited to more urban sites and operates with wind coming from any direction.
- 6.16 The primary constraints for this technology include the character of the development, the local surroundings and relatively low wind speeds in this area, averaging $\sim 4.4 \text{ ms}^{-1}$ at 10m above ground level. (<http://www.rensmart.com/Weather/BERR>).
- 6.17 Wind turbines are also likely to have a significant visual impact on local environment, as well as potential disturbance implications for occupiers or users on-site and on adjacent areas as a result of noise and light flicker associated with the wind turbines.
- 6.18 Biomass boilers are an alternative to conventional fossil fuel heating. They burn woodchip, wood pellets, cereal waste or a combination of organic fuels, and are a carbon neutral option. Using biomass as an energy source creates a 'closed carbon cycle' – i.e. as a biomass energy source grows it absorbs CO₂ from the atmosphere, when it is burnt the CO₂ stored by the biomass is released.
- 6.19 Frequent deliveries are required for this system as well as presenting significant storage implications. Noise, dust and odour problems are associated with the deliveries as well as air quality issues from the burning of the fuel. The fuel is however considered to be carbon neutral when sourced from sustainable forestry with due consideration given to the emissions associated in the transport and distribution of the fuel.
- 6.20 Individual boilers for each dwelling/building or several community boilers providing heating and hot water to multiple dwellings have been considered. Fuel price is dependent on the quantity purchased at any time. Storage on site may be challenging given the quantum required along with subsequent high NO_x emissions.
- 6.21 Ground source heating takes advantage of the stable ground temperature of 12°C to heat either air or water to provide energy efficient heating (and optional comfort cooling) to a building. The energy flow is driven by the temperature difference between the ground and the circulating fluid which can then be used to deliver heating (and optional cooling) to the building.
- 6.22 The direct bore hole type of installation requires a number of boreholes with a depth of up to 100m and a minimum centreline distance of 6m separating each bore hole. Alternatively, closed loops can be installed along with the piles and or pad foundations of the building to take advantage of the foundation excavations to maximise the earth-connectivity of the system.
- 6.23 Ground Source Heat Pumps at the application site require the extraction of the heat from the ground via boreholes. Heat pumps are efficient due to the ground having a more constant temperature throughout the year when compared to heating with an air source heat pump. It is possible to have ground source run at 400% efficient, meaning for every 1kW of electricity

supplied to the system it will provide 4kW in heat. There is however limited space on site to use horizontal collectors. The costs of works is therefore high and likely to be cost prohibitive.

- 6.24 An air source heat pump (ASHP) is a system which transfers heat from outside to inside a building. Under the principles of vapour compression refrigeration, an ASHP uses a refrigerant system involving a compressor and a condenser to absorb heat at one place and release it at another. In domestic heating use, an ASHP absorbs heat from outside air and releases it inside the building, as hot air, hot water-filled radiators, under floor heating and/or domestic hot water supply. Heat pumps can run at over 300% efficiency over the course of a year meaning for every 1kW of electricity used to run the compressor it will produce 3kW of heat. This means that running cost can be lower when compared to conventional systems.
- 6.25 The review of technology feasibility above identifies that, in line with FHS expectations, the most pragmatic technologies would be solar photovoltaics and ASHP.
- 6.26 The incorporation of water saving measures in dwellings is required in order to meet building regulation water consumption targets of 125litres per person per day. SAP 2021 methodology recognises a 5% reduction in domestic hot water heating energy if the dwelling is designed to achieve a water use.
- 6.27 This scheme will aim to reduce potable water consumption in the dwellings to below 125 litres per person per day to meet Approved Document Part G standards, with a target of 11litres per person per day. This will be achieved through the use of internal potable water fixtures and fittings which utilise low flow rates and capacities without reducing an individual's ability to enjoy their property. An example of potential flow rates and fixtures is outlined in the table below:

Internal Potable Water Fixing	Flow Rate / Capacity
Toilet	Dual Flush 6 and 4 litres / min
Basin Taps	6 litres / min
Bath	190 litre capacity to overflow
Shower	10 litres / min
Kitchen Taps	8 litres / min

Table 4: Flow Rates and Capacities to Achieve Part G

7.0 CONCLUSIONS

- 7.1. The planning application is submitted in outline form, with additional detail to come forward at reserved matters stage. However, the site location, outline design of the site and commitment to the national sustainability and renewable energy technologies will ensure a highly sustainable development.
- 7.2. In March 2026 the Government published the response to the Future Homes and Buildings Standards: 2023 consultation. This confirms that the Future Homes Standard (FHS) and Future Buildings Standard (FBS) will come into force from March 2027, subject to transitional arrangements. All new buildings from March 2028 will need to meet the FHS and FBS and the updated Building Regulations Part L 2026.
- 7.3. The FHS and FBS will require new homes and non-residential buildings to provide high fabric performance (insulation, air tightness etc), low-carbon heating, solar PV and 'zero-carbon ready' buildings, meaning no further work is needed for these buildings to have zero operational GHG emissions once the UK electricity grid has fully decarbonised. It is envisaged that FHS and FBS standard will be in place at the time of construction and so the proposed development will be built to these new standards. There will be no gas supply to the site.
- 7.4. A Site Waste Management Plan, which could be incorporated as part of a Construction Environment Management Plan (CEMP), can be developed to set out the method for auditing waste, a monitoring scheme of agreed waste management procedures and how waste materials will be segregated. However, where possible and practical, any material generated from construction activities will be reused elsewhere on the site or recycled.
- 7.5. For the operational stage of the scheme, it is envisaged that residential and employment waste storage space will be developed at reserved matters stage in consultation with the Council. However, it is anticipated that this provision will align with local guidance as appropriate. In addition, this application is supported by a Transport Assessment which confirms that all internal roads will be designed to accommodate access by larger vehicles, include refuse vehicles.
- 7.6. This Statement demonstrates a commitment to sustainability and waste minimisation and that both have been considered throughout the scheme, from design to operation, with a commitment to providing further detail at the more appropriate reserved matters stage of the scheme.

