University of Reading – September 2025

REPORT
Savills Earth

Loddon Garden Village Sustainability Statement for Outline Planning Application

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Document revision

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Contents

01. Executive summary

Overview of the project and results

Savills Earth has been appointed by the University of Reading to prepare a Sustainability Statement to support the outline planning application for the proposed development of Loddon Garden Village (LGV), in Wokingham.

This outline planning application seeks permission for the phased development of LGV, a new sustainable community comprising up to 2,800 homes (including 100 custom and self-build plots), education facilities including two primary schools and one secondary school, a district and local centre with commercial, community and healthcare uses, a sports hub, 20 gypsy and traveller pitches, and extensive green infrastructure including a country park, Suitable Alternative Natural Greenspace (SANG), and biodiversity enhancements.

This report provides detail on the sustainable design features of the development and demonstrates how they relate to relevant planning policy guidance as listed below:

- National Planning Policy Framework (2024)
- Wokingham Borough Council Development Plan (2014)
- Arborfield and Barkham Neighbourhood Plan (2019)
- Wokingham Borough Council emerging Local Plan (2023-2040)

A comprehensive sustainability framework has been developed for LGV to guide the design process and ensure the delivery of a future-ready, environmentally responsible community. The proposals demonstrate a strong commitment to sustainable development, meeting and, where appropriate, exceeding national and local policy requirements.

The Loddon Garden Village (LGV) Sustainability Framework

Sustainability, placemaking and inclusive development are the foundation for creating communities that thrive. To bring these principles to life, a comprehensive sustainability framework has been designed to ensure the project is thoughtfully planned, responsibly built and future-ready.

The framework provides the foundation for the design process, guiding each stage of the journey, from initial concepts and planning through to construction and occupation. Built on a set of measurable and ambitious sustainability targets, this approach ensures that each phase not only meets but exceeds the standards needed to drive real benefits to local communities.

Energy
The project aspires to achieve net zero emissions through a 'fabric first' approach in addition to implementing energy-efficient systems. The scheme will utilise fossil fuel-free heating and hot water solutions and renewable energy generation technologies will generate clean energy on-site, offsetting the site's energy consumption.

Whole Life Carbon
The scheme will also assess and minimise whole life carbon, comprising regulated, unregulated and embodied carbon emissions. Resource efficiency and circular economy principles will be prioritised.

Resources
Waste management and water conservation strategies will be implemented. The design will also focus on protecting green spaces, preventing soil erosion to reduce environmental impact.

Human-centric Design
The residents' wellbeing will be prioritised with a human-centric approach. Accessibility and safety will be promoted. Sustainable food production and green infrastructure to improve air quality will also be encouraged. The plan will include a range of housing options supporting diverse socio-economic backgrounds and multigenerational living.

Landscape & Ecology
Sustainable drainage and flood risk has been accounted for, including an allowance for climate related changes to rainfall patterns.
A biodiversity strategy will promote biodiversity net gain, enhance ecosystems by creating diverse habitats and use drought-resistant plants. Native species will be prioritised to support local wildlife.

Sustainable Transport
The plan aims to enhance active travel by ensuring amenities are within walking or cycling distance. The scheme will promote electric vehicle ownership through strategically located charging stations and integrated charging infrastructure. Public transport hubs and a cycling network will decrease reliance on private cars.

02. Introduction

Short introduction and objectives of the report

Savills Earth has been appointed by the University of Reading to prepare a Sustainability Statement report to support the outline planning application for the proposed development of Loddon Garden Village in Wokingham.

Site location

The University of Reading will deliver a thriving new community within the proposed development site, which currently is comprised of farmland with semi-natural and amenity grassland, copses and woodland, and associated buildings.

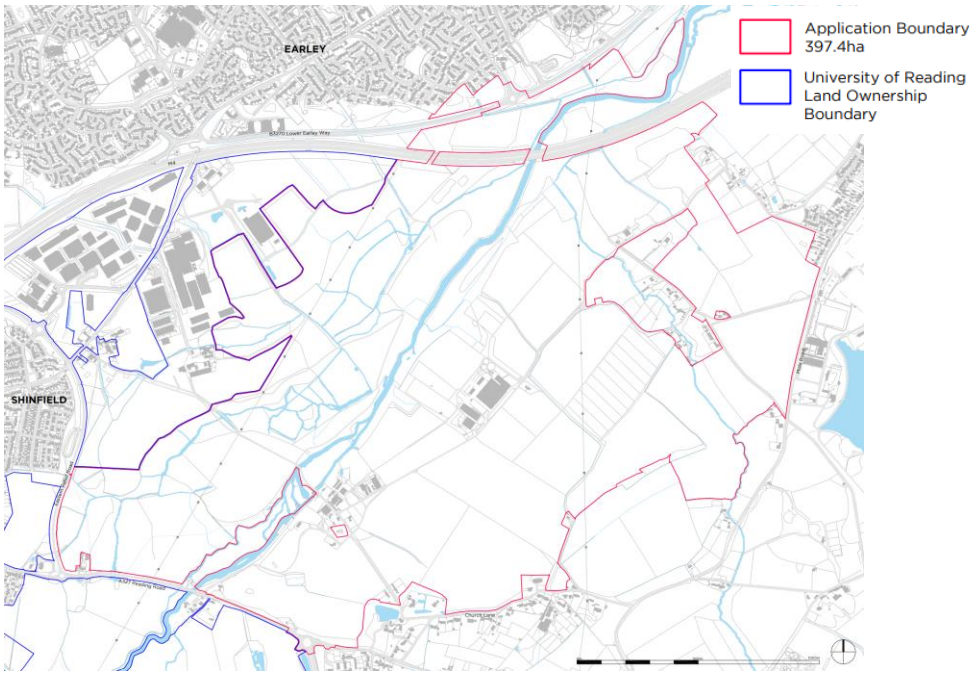
The site is situated north of Arborfield and west of Wokingham, with Shinfield bordering it to the west. The Thames Valley Science Park is located northwest, and it is close to existing employment hubs, including Reading International Business Park and Green Park Business Park. The M4 motorway to the south provides excellent connections, along with nearby roads such as Shinfield Eastern Relief Road, Arborfield Relief Road, and Winnersh Relief Road. The nearest rail station is Winnersh, about 3km northeast, with Reading station approximately 7km north and Green Park station 6km west. Access is available from the A327 Reading Road to the south and Mole Road to the east. The surrounding area is mostly rural or suburban, except for the Thames Valley Science Park with its larger buildings.

Application

The outline application for the phased development of a new community at Loddon Garden Village comprises:

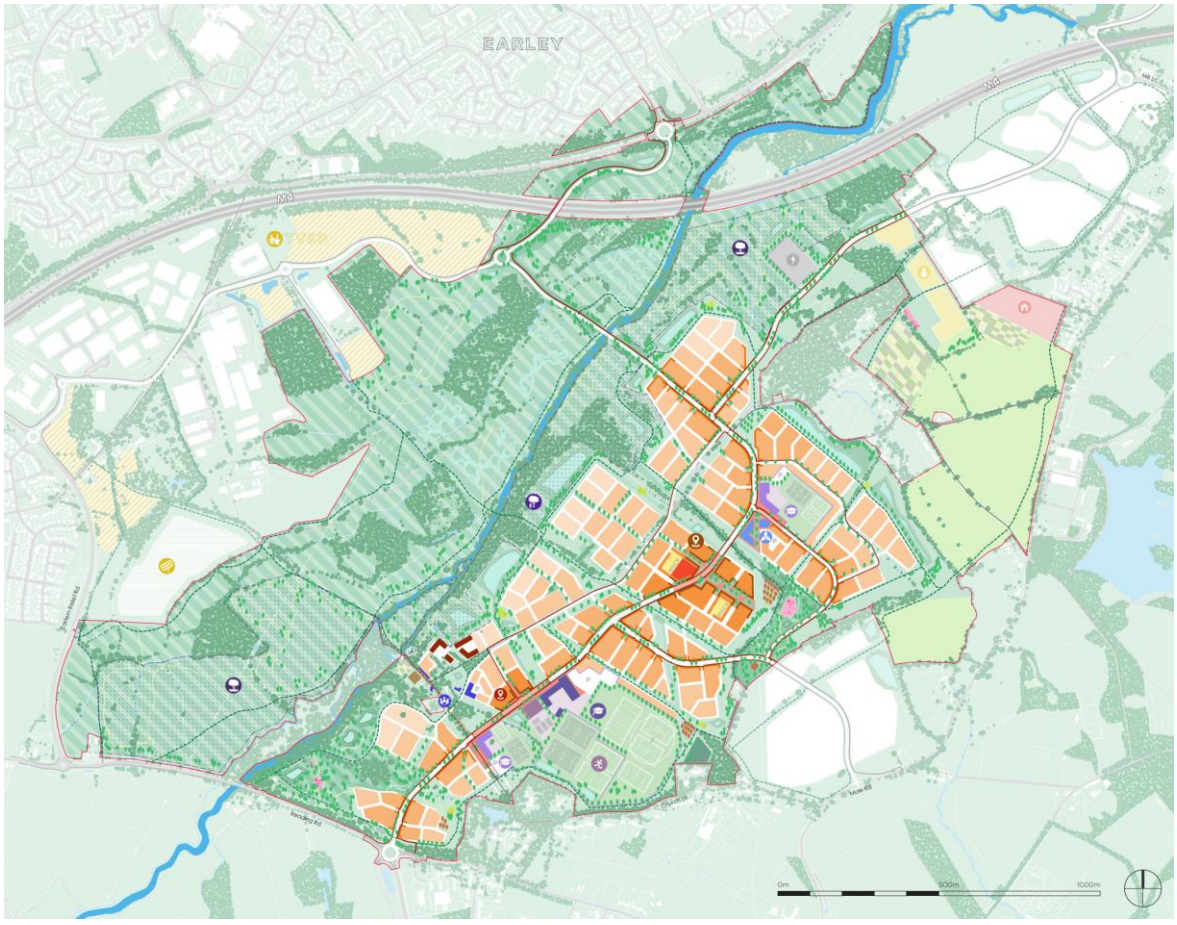
- Up to 2,800 residential dwellings to include 100 custom and self-build plots;
- 2 primary schools (up to 3 forms of entry) to include early years provision and 1 secondary school (up to 12 forms of entry);

Location of the site



- One District Centre, to incorporate up to 11,000m^2 of Class E (Commercial, Business and Service, to include a food store of around 2,500m^2), and Class F (Local Community and Learning)
- One Local Centre; to incorporate up to 2,400m^2 of Class E
- A Sports Hub to include sports pitches and pavilion space;
- Up to 4,250m^2 of further Class E, Class F, and sui generis development to include commercial, health care and public house;
- Comprehensive green infrastructure including a Country Park, landscaping and public open space, and ecological enhancement measures;
- 20 gypsy and traveller pitches;
- Comprehensive drainage and flood alleviation measures to include Sustainable Urban Drainage Systems (SUDS) and engineering measures within Loddon Valley for the River Loddon;
- Internal road network including spine road with pedestrian and cycle connections and associated supporting infrastructure;
- New and modified public rights of way;
- Associated utilities, infrastructure, and engineering works, including the undergrounding of overhead lines.
- Ground reprofiling to accommodate infrastructure, flood alleviation and development parcels
- Up to 0.5ha of land adjoining St Bartholomew's church for use as cemetery
- Electricity substation (up to 1.5ha)

Illustrative masterplan of the proposed development



All matters reserved other than access, incorporating:

- A new pedestrian, cycle and vehicular access to Lower Earley Way via a new 4th arm to the Meldreth Way roundabout;
- A new pedestrian, cycle and vehicular bridge over the M4;
- A new pedestrian, cycle and vehicular bridge over the River Loddon;
- A new vehicular access to the A327 Reading Road, via a new arm to the Observer Way roundabout;
- A new pedestrian, cycle and vehicular access to Thames Valley Science Park;
- An initial phase of internal roads with associated drainage, landscape and engineering works and ground reprofiling, between the A327 and the south eastern boundary of the site.

Application includes full permission for the change of use of 40.4 hectares of agricultural land to Suitable Alternative Natural Greenspace (SANG), 18.35 hectares of SANG link, and provision of Biodiversity Net Gain measures, the demolition and clearance of 20,809 m^2 of buildings and structures at the Centre for Dairy Research (CEDAR) and at Hall Farm, the demolition of 2 existing dwellings on Carter's Hill Lane, and the retention of specified buildings at Hall Farm.

Report Objectives

- Demonstrate how the proposed development will exceed the sustainability standards set by the existing Wokingham Borough Development Plan, emerging Wokingham Borough Local Plan and the National Planning Policy Framework (NPPF);
- Identify areas for consideration at the early stages of this project to facilitate the incorporation of the principles of sustainable design and construction into the design of the proposed development;
- Draw on technical arrangements and conclusions of the project consultancy team, where these are relevant to the issues of sustainability to enable this complex issue to be adopted fully; and
- Develop the Sustainability Statement in line with the NPPF and alongside the suite of documents submitted as part of this application to demonstrate how the proposal fulfils the planning requirements.

03. Planning context

Outlining planning context and requirements

National Planning Policy Framework (December 2024)

The National Planning Policy Framework sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally prepared plans for housing and other development can be produced. At the heart of the NPPF is a presumption in favour of sustainable development. Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives).

An economic objective

To help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure.

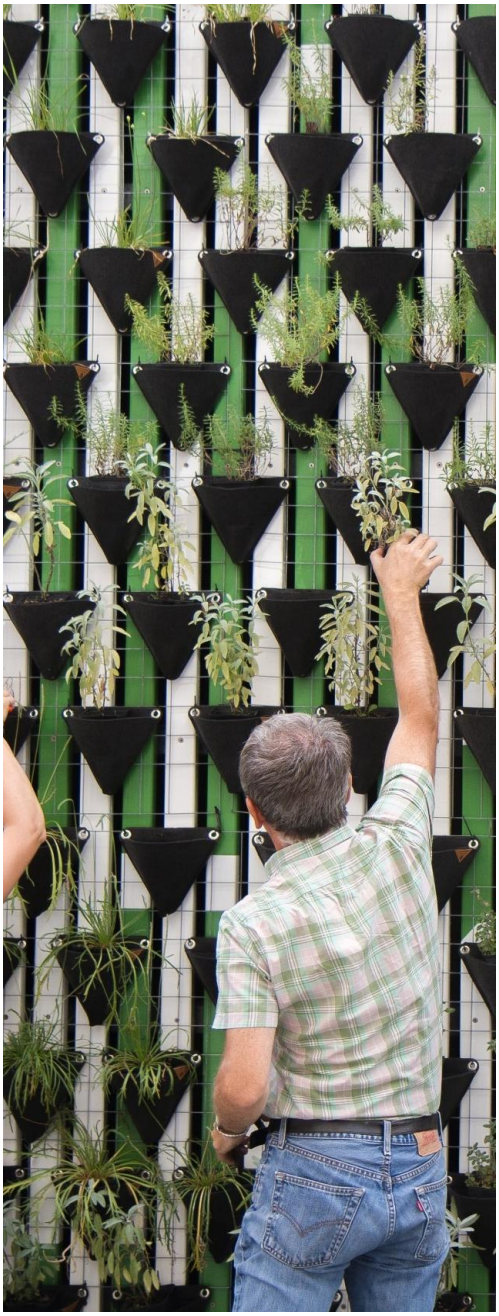
A social objective

To support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being.

An environmental objective

To contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating adapting to climate change, including moving to a low carbon economy.

This sustainability statement has been developed in line with the NPPF and alongside the suite of documents submitted as part of this application fulfils the requirements.



Wokingham Borough Development Plan (2014)

Policy CC04: Sustainable Design and Construction

The policy states that planning permission will only be granted for proposals that demonstrate high-quality, sustainable design and construction. New homes must target Code for Sustainable Homes Level 4 with a water use limit of 105 litres per person per day, non-residential developments over 100 sqm must meet BREEAM standards and statutory water requirements, and all developments must include appropriate on-site waste and recycling facilities.

Policy CC05: Renewable Energy

Support for local renewable energy is encouraged, with a minimum 10% reduction in carbon emissions required for projects over 10 dwellings or 1,000 sqm.

Policy CC06: Noise

The policy states that proposals must evaluate noise impacts and conduct assessments to protect sensitive areas.

Policy CC09: Development and Flood Risk

Flood risk must be considered at all planning stages to avoid unsuitable developments. Projects in Flood Zones 2 or 3 need to assess flood vulnerability, employing a sequential approach to minimise risk.

Policy CC10: Sustainable Drainage

All developments should manage surface water sustainably, incorporating Sustainable Drainage Systems (SuDS) and ensuring no adverse effects on the public sewer system.

Policy TB08: Open Space Standards

Development that reduces open space must comply with the National Planning Policy Framework, providing on-site recreational areas. Residential standards include specific green space and facility requirements per population.

Policy TB23: Biodiversity and Development

The Policies Map identifies sites of national or international significance. Development proposals must adhere to policy CP7 – Biodiversity of the Core Strategy and incorporate design features that promote biodiversity.

Right Homes, Right Places – Wokingham Borough emerging Local Plan (2023 - 2040)

Policy SS1: Sustainable development principles

The policy sets out key sustainable development principles to encourage proposals to contribute across economic, social and environmental objectives.

Policy SS13: Loddon Valley Garden Village

The policy includes the allocation at Loddon Valley Garden Village, and sets out development, place shaping and delivery principles.

Policy CE1: Design principles for efficient buildings

The policy lists a sequence of considerations that must be made and demonstrated through an Energy and Sustainability Statement, to ensure developments effectively apply the energy hierarchy. These considerations include in priority order:

- building orientation to optimise solar gain and minimise heat loss; efficient building form to enhance thermal performance;
- use of low-impact, durable materials to reduce both operational and embodied carbon;
- heat supply systems that avoid direct fossil fuel use;
- and on-site renewable energy generation sufficient to meet total annual energy demand

Policy CE2: Environmental standards for non-residential development

The policy is seeking to secure net zero non-residential developments through detailing energy and water standards. Non-residential development proposals are expected to:

- generate at least the same amount of renewable electricity on-site as it demands over the course of a year;
- achieve a site average space heating demand of around 15-20 kWh/m^2/year;
- a site average total energy demand of no more than 70 kWh/m^2/year through a 'fabric first' approach to construction. No individual unit is to have a total energy demand in excess of 90 kWh/m^2/year, irrespective of amount of on-site renewable energy production.
- minimise their impact on the water environment by incorporating practical measures such as greywater recycling, rainwater harvesting, water-saving technologies, permeable surfacing, and, where appropriate, green roofs or walls.

Policy CE3: Environmental standards for residential development

The policy is seeking to secure net zero residential developments through detailing energy and water standards. Residential development is expected to

- generate at least the same amount of renewable electricity on-site as it demands over the course of a year;
- achieve a site average space heating demand of around 15-20kWh/m^2/year;
- achieve a site average total energy demand of 35 kWh/m^2/year, through a 'fabric first' approach to construction. No single dwelling is to have a total energy demand in excess of 60 kWh/m^2/year, irrespective of amount of on-site renewable energy production.
- minimise their impact on the water environment by incorporating practical measures such as greywater recycling, rainwater harvesting, water-saving technologies, permeable surfacing, and, where appropriate, green roofs or walls.

Policy CE4: Supporting a circular economy

The policy states that residential development proposals of 10 dwellings or more, or non-residential development proposals of 1,000m^2 or greater, will be required to submit a circular economy strategy as part of the Energy and Sustainability Statement. Where proposals includes the demolition of existing buildings or structures, the circular economy strategy should include a pre-demolition audit.

Policy CE5: Embodied carbon

The policy states that residential development proposals of 50 dwellings or more, or non-residential development proposals of 5,000m^2 or greater, must demonstrate what measures have been taken to reduce embodied carbon, and major new build schemes should identify steps taken to reduce the development's impact on embodied carbon (for example regarding design and materials), through a whole-life carbon assessment following a nationally recognised Whole Life-Cycle Carbon Assessment methodology.

Policy CE7: Low carbon and renewable energy generation

The policy defines conditions for energy generating schemes, supporting those of appropriate size and scale, with no unacceptable impacts on landscape, biodiversity, agricultural land quality and food production, heritage assets, the character of the area and residential amenity. It also requires a minimum 10% biodiversity net gain and an end-of-life strategy.

Policy C1: Active and Sustainable Transport and Accessibility

Development proposals should promote active and sustainable transport, prioritising walking, cycling, and public transport. They should include inclusive infrastructure and support electric vehicle use. An accessible transport system for all ages and abilities is a priority, optimising connectivity and making active travel the first choice for short trips.

Policy C3: Active Travel

Proposals must encourage active travel, focusing on walking, wheeling and cycling. They should enhance pedestrian routes to ensure safety and accessibility, improve wayfinding and support cycling through better public spaces and facilities.

Policy C5: Parking and Electric Vehicle Charging

Development proposals should provide adequate vehicle and cycle parking, considering accessibility needs.

Electric vehicle charging points must be included, and retrofitting in existing areas is encouraged. Residential developments of 10 or more units must submit an Electric Vehicle Charging Strategy.

Policy FD1: Development and Flood Risk

Proposals must address all flood risks, including historic flooding and climate change, aligning with national policy and the Strategic Flood Risk Assessment. Developments in Flood Zones 2 or 3 must consider vulnerability, and a site-specific Flood Risk Assessment is required for areas with known flooding issues.

Policy FD2: Sustainable drainage

Proposals should manage surface water sustainably and replicate greenfield runoff characteristics. SuDS must be included in residential developments of 10 or more dwellings, unless infeasible.

Policy NE1: Biodiversity and geodiversity

Development must protect and enhance valuable biodiversity and geodiversity features, incorporating ecological surveys and management plans while avoiding habitat fragmentation.

Policy NE4: Trees, woodland, hedges and hedgerows

Proposals must protect existing trees and hedgerows and ensure their integration into the landscape, with sufficient space for growth. Any affected trees must be assessed, and mitigation is required for visual or conservation value losses.

Policy HC4: Open Space, Sports, Recreation, and Play Facilities

Development affecting open space and recreation facilities will only be permitted where existing provision is surplus, suitable alternatives are available, or the proposal supports the site's primary use, with new developments encouraged to support shared community use. Residential schemes must provide or contribute to open space and recreation in line with policy standards, with off-site financial contributions and long-term maintenance arrangements agreed with the council where on-site provision is not feasible.

Policy HC1: Promoting Healthy Communities:

This policy focuses on fostering vibrant and safe communities through quality environments and local services that enhance health and wellbeing. Development proposals must assess their impact on residents' health and include strategies to promote healthier communities. A Health Impact Assessment (HIA) is necessary for residential developments with 10 or more units and non-residential projects exceeding 1,000 m^2.

Building Regulations Approved document Part G (2015)

Part G of the Building Regulations provides guidance on the supply of water to a property, including water safety, hot water safety, supply, sanitation and water efficiency.

The current version is Part G 2015 (with 2016 amendments) and contains the following key criteria in relation to water efficiency:

- Reasonable provision made by the installation of fittings and fixed appliances that use water efficiently for the prevention of undue consumption of water.

04. Energy

Energy strategy, passive & active design measures

A preliminary energy strategy has been established for the proposed development of Loddon Garden Village, aligning with Wokingham Borough Council's priorities to minimise carbon dioxide emissions and target a net zero carbon development.

The strategy will focus on adapting to climate change by reducing greenhouse gas emissions through efficient energy use and renewable alternatives. The proposed scheme aims to reduce carbon dioxide emissions as much as feasible, aspiring to achieve the net zero target of the council, with further details to be provided in future reserved matters applications.

The energy strategy will adopt the energy hierarchy approach: first, reducing energy demand through passive and efficient design measures, then, supplying energy in the most efficient and low-carbon way possible and finally, meeting remaining energy needs with renewable sources.

Passive Design Features

The design will aim to include the following passive measures:

- Optimised orientation and massing of the buildings
- Low air permeability and high thermal performance.
- Incorporation of natural ventilation
- Optimised glazing and solar control windows

Energy Efficiency Measures

The goal is to create energy-efficient buildings without relying on complex systems for low carbon output. The selected energy systems equipment will aim to reduce energy consumption.

Active systems will be incorporated to decrease energy demand, which could include:

- All-electric systems such as air and/or ground source heat pumps for heating and hot water;
- Mechanical ventilation with heat recovery;
- LED lighting to lower energy consumption.

The energy hierarchy

Building Regulations baseline

Use less energy and manage demand

Exploit local energy resources and supply energy efficiently and cleanly

Maximise opportunities for renewable energy

Optimisation and Renewables

To support its ambition for a low-carbon, energy-efficient community, Loddon Garden Village is exploring a range of innovative technologies and strategies that optimise energy use and maximise the benefits of renewable generation. These measures are designed to reduce reliance on the national grid, enhance energy resilience, and support the transition to net zero carbon living. Key proposals include:

- District Heating Network (DHN) Integration: A DHN may be implemented to distribute low-carbon heat from a central energy centre to multiple buildings around the local and district centre. This approach enables efficient heat generation and delivery, particularly when integrated with renewable sources, and supports long-term decarbonisation of heating.
- Smart Microgrid: In parallel, a SmartGrid is being considered to enable the sharing of locally generated electricity, such as from solar PV and battery storage, across the site. Operating behind a central boundary meter, this system would allow for real-time energy balancing, reduce grid dependency, and improve the overall efficiency of renewable energy use.
- Photovoltaic (PV) panels: Solar panels are proposed for installation on suitable roof spaces throughout the site. These will generate clean, zero-carbon electricity to offset grid demand and support the site's energy needs.
- Battery Energy Storage Systems (BESS): Community-scale battery storage will be considered to store excess solar energy and release it when needed. This will help balance supply and demand, reduce peak-time grid reliance, and enhance the effectiveness of the SmartGrid.
- Energy Monitoring: All homes will be equipped with smart meters to allow residents to track and manage their energy use in real time. Non-residential buildings will also incorporate advanced control systems to ensure efficient energy performance.
- Future-Proofing: The viability and installed capacity of PV and BESS systems will be confirmed at the reserved matters stage, ensuring flexibility to adapt to evolving technologies and energy demands.

Further details, recommendations and performance limits for the proposed residential and non-residential energy strategy are detailed in the Climate Change Statement in the energy strategy section, accompanying this application. Furthermore, it includes projections of potential carbon dioxide emissions savings.

05. Whole life carbon

Understanding the whole life carbon of the scheme, circular economy principles

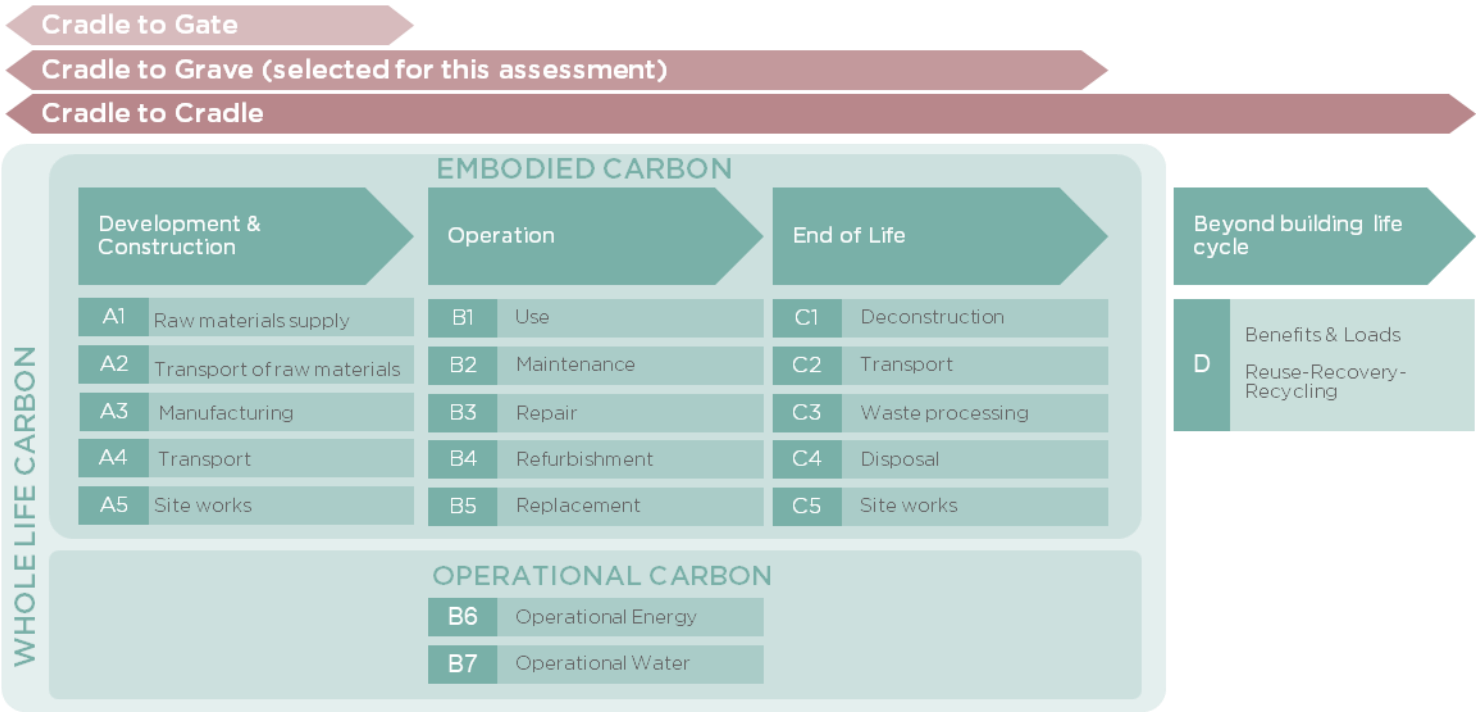
In line with best practice, a whole life carbon design approach will be considered to minimise the carbon footprint associated with the construction and materials of the buildings throughout the building's lifetime.

Whole life carbon comprises operational carbon and embodied carbon. While the previous section presents the measures to reduce operational carbon, this section provides a description of the holistic thinking, and the sustainable and circular economy practices and design options that can be implemented to reduce the whole life carbon of the development.

There are four life cycle models which account for each stage in the life of a typical project outlined in the diagram below. These include:

- Module A1-A5: Product sourcing and construction phase
- Module B1-B7: Use stage
- Module C1- C4: End of life stage
- Module D: Benefit and loads beyond the system boundary

The different stages of the building assessment (LETI Embodied Carbon Primer)



Loddon Garden Village is proposed to follow the below whole life carbon reduction principles:

- Building in layers – ensuring that different parts of the buildings are accessible and can be maintained and replaced where necessary;
- Designing out waste – ensuring that waste reduction is planned in from project inception to completion, including consideration of standardised components, modular build, and reuse of secondary products and materials;
- Designing for longevity;
- Designing for adaptability or flexibility;
- Designing for disassembly;
- Using systems, elements or materials that can be reused and recycled.

Building design, form, layout, orientation and construction should help to reduce resource requirements and create long-lasting high-quality buildings that are efficient and resilient.

In addition to that, the layout should be designed with adaptation and changing local and national policy and Building Regulations requirements in mind to ensure longevity.

Buildings and homes should be constructed from high quality durable materials, while allowing for adaptation and flexibility, with the ability for interior layouts to be adapted and changed over time.

The scheme will aim to limit their total embodied carbon to <625 kg of $kgCO_2$ /m^2 for the residential areas and to <645 kg of $kgCO_2$ /m^2 for the non-residential areas (average target between offices and schools), in line with the RIBA 2030 Climate Challenge, 2030 design target. To ensure this target is met, a monitoring framework will be implemented throughout the design and construction phases. This will include the use of Whole Life Carbon assessments at key project stages (RIBA Stages 2, 4, and post-completion), supported by recognised tools such as One Click LCA or equivalent. The design team will maintain a materials database aligned with material passports and Environmental Product Declarations (EPDs), enabling transparent reporting and verification. Regular reviews will be conducted to track progress against the RIBA 2025 target, and findings will be documented in the Sustainability Statement and post-construction evaluation.

06. Resources

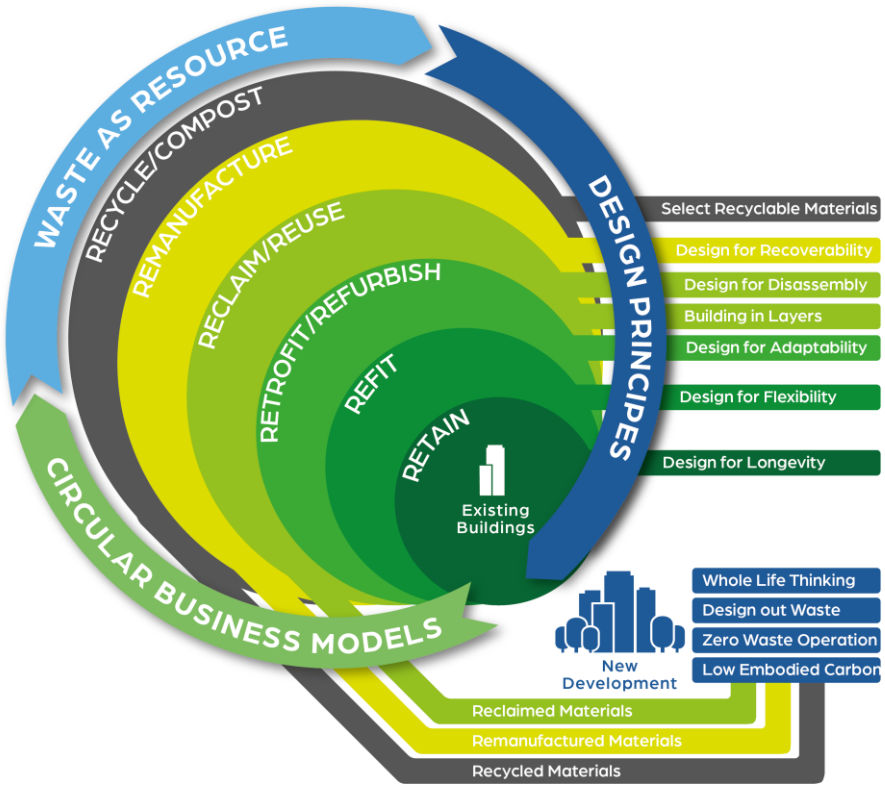
Understanding construction material choices, waste reduction and reduce water stress

The proposed development at Loddon Garden Village embraces circular economy principles to minimise waste, reduce embodied carbon, and promote long-term resource efficiency. Circular thinking involves retaining materials in use at their highest value for as long as possible, and this approach will inform both the design and construction phases of the scheme.

Key strategies include reducing the quantity of materials required through techniques such as Design for Manufacture and Assembly (DfMA), and prioritising materials that are responsibly sourced, locally available, and have Environmental Product Declarations (EPDs). Cement replacement products, such as fly ash and ground granulated blast furnace slag (GGBS), will be specified where possible to reduce the embodied carbon of concrete, with admixtures used to optimise performance. All timber will be FSC (or equivalent) certified, and materials will be selected to support reuse, recycling, and recovery at the end of the building's life.

In line with Wokingham Borough Council's emerging Local Plan policies, sustainable procurement and waste management will be prioritised. Municipal waste facilities will be provided for future residents, and construction waste will be minimised through best practice measures. The design will also consider longevity and low maintenance, with materials chosen for durability and compatibility with reclaimed or salvaged elements where appropriate.

Together, these measures support a circular economy approach that reduces environmental impact, enhances material efficiency, and contributes to the overall sustainability of the development.



Circular economy hierarchy

Waste strategy

A site waste management plan, will be prepared at future detailed stages of the development and will demonstrate the need to lessen the overall impact of waste generation through prevention, minimisation, reuse and recycling of materials from the construction phase of the development.

Waste from the construction phase

The Developer or Principal Contractor(s) are advised to enrol the construction site with the Considerate Constructors Scheme (CCS), a nationally recognised initiative that promotes best practice beyond statutory requirements. Participation in the CCS demonstrates a commitment to minimising the impact of construction on the local community, environment, and workforce. It encourages responsible site management, improved communication with neighbours, and enhanced safety and welfare standards. For Loddon Garden Village, CCS registration would support the project's sustainability and social value goals, helping to foster positive relationships with stakeholders and uphold a high standard of professionalism throughout the construction phase.

Waste generated during the construction phase of the proposed development will be sorted into various waste categories, with designated areas provided on-site for recycling materials such as timber, metals, packaging, and hardcore. Recognising space constraints on construction sites, full segregation may be impractical onsite and may be carried out off-site by a suitable waste contractor if necessary.

Contractors will be required to agree on waste recovery rate targets as a condition of the contract, which will be discussed during the initial contract meeting. Regular monitoring reports will track progress towards diverting waste materials from landfill in accordance with the agreed targets.

Waste from the operational phase

Each building will include adequate internal waste storage containers to encourage the separation of recyclable and compostable materials at the point of disposal.

Externally, adequate space will be allocated to accommodate waste containers in accordance with the local policy requirements and refuse and recycling collection procedures.

Water Consumption

In the UK, water use has increased by over 50% in the last 25 years, straining natural resources like reservoirs and rivers, impacting wetland habitats.

The proposed development aims to achieve a target of under 105 litres per person per day, in line with Wokingham Borough Council's policies. Strategies include low-flow fixtures, such as dual flush toilets that save over 33% compared to standard cisterns and flow restrictors that reduce water flow while maintaining pressure.

Wokingham Borough Council encourages a goal of 85 litres per person per day, achievable with efficient fittings. Additionally, rainwater collection systems could be installed in each house, allowing the use of collected rainwater for gardening and internal use for the WC.

Indicative fittings' flow rates to achieve the 105 l/p/d water consumption target can be found within the Climate Change Statement, submitted with this outline planning application.

07. A human-centric design

Environmental quality and comfort, health and wellbeing, sustainable lifestyles and sustainable mobility

Environmental quality and comfort

Healthy living environments impact residents' physical, mental, and social well-being while also fostering economic growth and reducing healthcare costs. The development will seek to provide a comfortable and sustainable environment that enhances occupant satisfaction.

Thermal comfort

Adequate thermal comfort will be achieved through operable windows and appropriate thermal zoning and use of thermostats.

Further detail on overheating mitigation strategy for the proposed homes can be found within the Climate Change Statement, submitted as part of this outline application.

In future reserved matters applications, an overheating assessment will be carried out for a representative sample of units using the CIBSE TM59 design methodology for the assessment of overheating risk in homes.

Noise and vibration

The potential noise and vibration impacts from the proposed Loddon Garden Village development have been carefully examined to ensure the wellbeing of both current neighbours and future residents. This assessment, carried out by qualified acoustic consultants, considered the effects during both the construction and operational phases of the development. It followed national standards and local planning policies, and was informed by detailed baseline surveys and predictive modelling.

During construction, noise and vibration will be managed through a robust Construction Environmental Management Plan. This plan includes a wide range of best practice measures such as using quieter equipment, limiting noisy work to daytime hours, installing barriers where needed, and monitoring noise and vibration levels throughout the works. These steps are designed to keep impacts well below thresholds that could cause disturbance or harm. The assessment found that, with these controls in place, construction-related noise and vibration will be minor or negligible and not significant.

Once the development is complete, the operational phase will include homes, schools, employment spaces, and outdoor sports facilities. While these uses can generate some noise, particularly from mechanical plant and sports activities, the design of the development ensures that noise levels will remain within strict limits. Plant and equipment will be selected and installed to ensure noise emissions stay below background levels, and sports pitches will be set back far enough from homes to avoid disturbance. Where necessary, further mitigation will be applied to maintain a high standard of residential amenity. The assessment concluded that operational noise impacts will be negligible and no significant effects are expected.

Traffic noise was also assessed in detail, both during construction and once the development is in use. The findings show that construction traffic will not noticeably increase noise levels on local roads, and operational traffic will cause only minor changes, with no significant impact on nearby homes. Even when considering

other nearby developments such as Hall Farm and Loddon Valley, the cumulative noise and vibration effects are expected to remain within acceptable limits, thanks to coordinated planning and mitigation.

The assessment also considered future climate change, recognising that rising temperatures may lead to increased window opening and exposure to external noise. However, the development will be designed to prevent overheating, reducing the likelihood of this occurring and helping to maintain a comfortable and quiet living environment.

In summary, the proposed development has been designed and assessed with great care to ensure that noise and vibration impacts are kept to a minimum. With the implementation of recommended measures, the development can proceed without causing significant disturbance, supporting a safe, healthy and pleasant environment for all.

Air quality

The air quality assessment for LGV has been carried out by TetraTech to understand how the proposed development might affect air quality, both while it is being built and once it is in use. The assessment follows national and local planning policies and uses the latest guidance and modelling techniques to ensure a robust and precautionary approach.

During the construction phase, activities such as demolition, earthworks, construction, and the movement of vehicles have the potential to generate dust and fine particles. Because of the scale of the works and the proximity of homes and other sensitive locations, the risk of dust impacts without any controls in place is considered high. However, the assessment sets out a comprehensive package of best practice measures that will be implemented through a Dust Management Plan and a Construction Environmental Management Plan. These measures include careful planning of site activities, dust suppression techniques, regular monitoring, and clear communication with the local community. With these controls in place, the assessment concludes that any effects from dust and particulate matter will be negligible and not significant, even when considering the possibility of other nearby developments being built at the same time.

For the operational phase, the focus shifts to the impact of emissions from traffic associated with the new development.

Using detailed traffic forecasts and advanced air dispersion modelling, the assessment predicts the levels of key pollutants such as nitrogen dioxide (NO_2), PM_{10}, and $PM_{2.5}$ at both existing and future homes and schools. The results show that pollutant levels are expected to remain well below national air quality objectives at all locations, including those closest to major roads like the M4. The design of the development has also taken air quality into account, with sensitive uses such as homes and schools positioned away from the most significant sources of pollution.

The assessment also considers the suitability of the site for new residents and schoolchildren, concluding that air quality will be appropriate for these uses now and in the future. Importantly, the modelling takes a conservative approach by not assuming any improvement in background air quality, even though it is likely that cleaner vehicle technologies and stricter emissions standards will lead to further reductions in pollution over time.

Cumulative effects have been considered, both for the construction and operational phases. For construction, the risk of dust impacts from overlapping works on nearby sites is judged to be minimal if all sites follow best practice mitigation. For the operational phase, the combined effect of traffic from LGV and other planned developments has been included in the modelling, and the results still show no significant adverse impacts.

In summary, the assessment demonstrates that, with the recommended mitigation measures in place, the proposed development will not cause significant harm to air quality at any stage. The site is suitable for new homes and schools, and the development will comply with all relevant air quality standards, helping to ensure a healthy and pleasant environment for both existing neighbours and future residents.

Visual comfort and natural light

While detailed daylight and sunlight performance values have not yet been calculated at this stage, the design intent prioritises high levels of visual comfort through thoughtful building orientation, massing, and window placement. Generously sized windows will be incorporated into the façades of homes, schools, and employment spaces to maximise the availability of natural daylight throughout the day, reduce reliance on artificial lighting, and enhance occupant well-being.

For homes, particular attention will be paid to ensuring living areas and primary bedrooms receive adequate daylight, with consideration given to glare control and privacy. In non-domestic buildings such as schools and workplaces, internal layouts will aim to optimise daylight distribution to key occupied spaces, supporting focus, comfort, and productivity.

The overarching approach will also consider factors such as solar gain, shading devices, and the use of light-coloured finishes internally to further enhance daylight penetration and visual comfort in a balanced and sustainable way.

Accessible, inclusive and adaptable design

Homes will be designed to provide a high standard of internal and external space that supports a range of household needs over time. This includes layouts that enable ease of movement, adaptability for changing mobility needs, and consideration for step-free access where possible. The design approach will promote inclusivity and support long-term independent living for all residents, including those with limited mobility or additional access needs.

Affordable housing

Around 3,930 dwellings, of which at least 2,700 dwellings will be delivered by 31st March 2040, including:

- 40% affordable homes, in accordance with Policy H3 of the Wokingham emerging local plan;
- 100 custom and self build serviced plots;
- 20 Gypsy and Traveller pitches; and
- Specialist accommodation, including accommodation for older persons.

Community consultation

At least two structured rounds of consultation will be undertaken with residents, local groups, and stakeholders during key stages of the project's evolution. These sessions will take place in accessible locations and formats to ensure inclusive participation. A minimum of three organisations—such as schools, local charities, community centres, or business forums—located within 1.5 miles of at least two project sites will be specifically engaged to provide targeted insights into local issues and opportunities.

The consultation will include a variety of engagement methods, such as:

- Public exhibitions and drop-in events
- Online surveys and digital engagement tools
- Stakeholder workshops or focus groups
- Targeted outreach to under-represented communities

The goal is to ensure a broad cross-section of the community is heard, including young people, older residents, and those with limited access to traditional consultation methods.

Feedback mechanisms

To support a two-way dialogue, feedback mechanisms will be embedded throughout the consultation process. These may include comment forms, interactive mapping tools, facilitated discussion sessions, and online platforms that allow community members to respond to emerging proposals. All feedback will be collated, reviewed, and—where feasible—influenced design decisions.

A clear and transparent audit trail will be maintained, summarising how community input has informed the development process. Where appropriate, longer-term mechanisms such as Community Liaison Groups or Design Review Panels may be established to provide continuity of input throughout planning, construction, and early occupation phases.

Secured by Design

The development incorporates the principles of Secured by Design (SBD) from the earliest stages of the design process to help create safe, resilient, and inclusive environments. While formal certification may not be sought in all cases, the design approach reflects SBD guidance to ensure that physical security and crime prevention are considered holistically and proportionately.

Key considerations include:

- Natural surveillance: Building layouts, streets, and public spaces are designed to encourage passive surveillance from homes and active frontages, improving visibility and reducing opportunities for anti-social behaviour.
- Clear definition of public and private space: Boundaries and access points are clearly defined through landscaping, lighting, and built form to promote a sense of ownership and territoriality.
- Secure access: Entrances to buildings, communal areas, and parking are designed to be visible, well-lit, and, where appropriate, controlled or overlooked.
- Material and specification choices: Doors, windows, lighting, and boundary treatments are selected to meet a reasonable standard of robustness and durability, contributing to the physical security of individual homes and shared facilities.
- Landscape and lighting strategy: External spaces are designed to feel safe and well-maintained, with consistent lighting and unobstructed sightlines to reduce concealment and promote confidence in the public realm.

The overall objective is to create a built environment that not only deters crime and anti-social behaviour but also supports community cohesion, legibility, and long-term stewardship.

20-minute neighbourhood

The project benefits from a well-connected location with convenient access to a range of everyday services and facilities. Within walking distance, typically considered a 10- to 20-minute walk, residents will be able to reach multiple local amenities, supporting sustainable, more active lifestyles and improving overall quality of life.

Key amenities accessible via safe and direct pedestrian routes include a selection of the following:

- A Post Office
- ATMs or retail-based services, available 24 hours a day.
- A general medical practice or NHS GP surgery, providing accessible primary healthcare services.
- A pharmacy, offering both prescriptions and everyday health needs.
- A supermarket or grocery store, ensuring access to fresh food and essential household goods.

The site's proximity to these services helps to promote walkability, social inclusion, and health and well-being, particularly for families, older adults, and those without access to private transport. The layout and movement strategy for LGV will support this by integrating safe, legible, and attractive pedestrian and cycle routes that link seamlessly with the existing infrastructure.

Foster a Sense of Community

Social interactions are promoted by the landscape design and masterplan.

Specifically, the below green spaces will be created in accordance with Policy HC4:

- c.86.1 Ha Natural Green Space
- c.1.1 Ha Community Orchards, Gardens and Allotments
- c.20.6 Ha Amenity Green Space
- c.8.7 Ha Parks and Gardens

In addition to the above Informal play provision will be integrated into the landscape as part of the wider play 'trails' and routes as well as incorporating sculptural elements. Also, a mix of formal and informal play provision will be included, using natural materials and planted features to integrate play areas into the wider landscape and ensure they relate sensitively to the surrounding environment.

Public Space Quality

Public and communal spaces will be designed to be well-connected, clearly visible, and easily accessible to all users. These spaces will also prioritise safety, be easy to maintain, and incorporate appropriate measures to ensure a secure and welcoming environment for the community.

08. Landscape & ecology

Understanding the impact of flooding, SuDs, the ecological value of the site and landscape strategy

In line with Wokingham Borough Council's existing and emerging local plan and the NPPF, the proposed development at Loddon Garden Village has been designed with a holistic approach to managing flood risk, surface water drainage, ecology, and landscape. This integrated strategy ensures that environmental resilience, biodiversity enhancement, and placemaking are embedded from the outset.

Flood Risk Assessment

A flood risk technical report has been prepared by Abley Letchford Partnership Limited to provide an overview of the modelled flooding impacts at the Loddon Garden Village.

Parts of the site, are known to be affected by flooding from the river Loddon and the site is potentially affected by other sources of flooding. Modelling of fluvial and surface water flooding has been completed across the site either by the EA and the council or as part of studies to inform the development and is generally well understood.

Thus, a sequential approach can be taken to masterplanning for the Loddon Garden Village with development focussed in areas of Flood Zone 1 and with less vulnerable and water compatible uses in areas of potential flooding. Within the floodplain areas the development strategy will embrace the opportunities for enhancing biodiversity, amenity value and access routes along the river corridor.

Further detailed modelling will inform the detailed design for specific elements of the proposed development which may impact the watercourses and/or floodplain.

The proposed development will incorporate a detailed flood risk assessment to ensure resident safety, with appropriate access and mitigation strategies where required. It will avoid adverse off-site impacts and explore opportunities for flood alleviation in line with emerging Policy SS13, as outlined in the submitted flood risk assessment.

Surface Water Drainage Strategy

Sustainable Drainage Systems (SuDS) are an essential tool for managing surface water in a sustainable and resilient manner. The following SuDS features have been integrated into the illustrative masterplan:

- Attenuation Basins;
- Permeable Paving;
- Swales;
- Filter Drains;
- Bioretention Systems;
- Sub-surface Storage;
- Use of Existing Natural Ditches and Watercourses.

Future development will maintain pre-development surface water greenfield runoff rates, ensuring no increased flood risk either on or off-site.

Future proposals will limit flows to greenfield runoff rates of 4.4 l/s/ha. The Drainage Strategy aims to manage flood risk from uncontrolled surface water runoff. Increased runoff will be controlled

using SuDS techniques and storage for extreme storms. Flows exceeding design storm levels will be contained within the internal road network until redirected to landscaping.

All systems will accommodate a 1 in 30-year storm event, with attenuation features designed for a 1 in 100 year storm plus a 40% climate change allowance. The development site is in low flood risk areas, ensuring safe access for future occupants and the public.

Further information can be found in the Climate Change Statement submitted as part of this application.

Ecology

The Site supports a wide range of important ecological features, including habitats and species that present constraints to the delivery of the proposed development.

Irreplaceable habitats are present in the form of provisional ancient woodlands and veteran trees, such as St John's Copse and Loader's Copse. These habitats are highly valuable for biodiversity due to their age, structure, and ecological continuity, and are protected under the NPPF. To safeguard these features, buffer zones and root protection areas will be implemented.

Several Local Wildlife Sites (LWS) are located within or adjacent to the Site, including Rushy Mead, Hall Farm Woodland Triangle, and the River Loddon. These sites encompass a variety of habitat types, including lowland mixed deciduous woodland, wet woodland, and floodplain grazing marsh. The River Loddon, designated as an LWS, supports a diverse range of habitats and species and is considered of County-level ecological importance.

The Site also contains multiple Habitats of Principal Importance under Section 41 of the Natural Environment and Rural Communities Act 2006 (as amended), including reedbeds, wet woodlands, hedgerows, and floodplain grazing marsh. These habitats are integral to the local ecological network and must be considered in the planning process.

In addition to important habitats, the site supports a broad range of protected and notable species. These include:

- Bats: At least nine species have been recorded, including Common and Soprano Pipistrelle, Brown Long-eared, and Barbastelle. Several buildings and trees support confirmed roosts, including a maternity roost. Bats and their roosts are protected under the Wildlife and Countryside Act 1981 and the Conservation of Habitats and Species Regulations 2017. A mitigation license will be required for any works affecting these roosts.
- Great Crested Newt: Although not confirmed on-site, they are assumed present in nearby ponds. Precautionary measures and licensing will be required.
- Birds: The site supports diverse breeding and wintering bird assemblages, including red- and amber-listed Birds of Conservation Concern such as Skylark, Yellowhammer, and Lapwing. Skylark mitigation strategies are proposed to offset habitat loss.
- Otter and White-clawed Crayfish: Evidence of Otter use and potential habitat for White-clawed Crayfish has been recorded, particularly along the River Loddon and Barkham Brook.
- Freshwater Fish: The River Loddon supports a rich fish assemblage, including European Eel and Brown Trout.
- Invertebrates: Surveys recorded over 850 species, including several of conservation concern, particularly in floodplain fen habitats.

To mitigate impacts, the development includes a comprehensive suite of measures such as a Construction Environmental Management Plan (CEMP), habitat buffers, lighting and drainage strategies, and the creation of over 40 hectares of Suitable Alternative Natural Greenspace (SANG). Long-term habitat management and enhancement will be secured through planning conditions and legal agreements.

Despite some temporary negative effects during construction (notably on wintering birds), the proposed development is expected to deliver significant long-term ecological benefits through habitat creation, restoration, and management.

Landscape Strategy

The Landscape Strategy for Loddon Garden Village builds upon the site's existing natural features and responds to the findings of the Landscape and Visual Impact Assessment. It adopts a character-based approach, enhancing the distinct identity of the River Loddon floodplains and pastoral valley terraces.

Key elements include:

- A network of green corridors ("fingers") that connect and frame development parcels, supporting pedestrian, cycle, and wildlife movement, as well as sustainable drainage.
- A variety of multi-functional green spaces, including formal focal points, play areas, nature conservation zones, and SuDS features.
- Retention and enhancement of mature trees and hedgerows, with new planting to reinforce the landscape structure.
- Integration of street trees along the Spine Road to establish a strong visual character.
- A high-quality public realm around District and Local Centres, combining hard and soft landscaping.
- A comprehensive biodiversity strategy, informed by site assessments, aiming to protect existing habitats and create new ones.
- Implementation of SuDS features such as ponds, dry basins, and swales, designed to support both drainage and ecological functions.

Overall, the strategy aims to create a resilient, connected, and biodiverse landscape that supports sustainable transport, ecological health, and community wellbeing.

Illustrative landscape masterplan

09. Sustainable transport

Sustainable transport, Electrical Vehicles and active transport infrastructure

The proposed development has been designed to promote sustainable transport in line with Wokingham's Borough Council's emerging local plan. The NPPF also encourages local authorities to support "a pattern of development which, where reasonable to do so, facilitates the use of sustainable modes of transport" and "gives priority to pedestrian and cycle movements with access to high quality public transport facilities".

Active Travel

A detailed Active Travel Strategy has been developed, underpinned by a baseline assessment of the area's existing pedestrian and cycle infrastructure. The site benefits from an extensive Public Rights of Way (PRoW) network (approx. 12.6 km), including footpaths, bridleways, and byways, connecting Shinfield, Arborfield, Barkham, and Wokingham. Recent investments have delivered high-quality shared-use footway/cycleways along key corridors such as Lower Earley Way, Hatch Farm Way, Shinfield Eastern Relief Road, and Observer Way. However, provision is inconsistent in quality, with some rural links lacking surfacing, lighting, or continuity.

The proposed development will deliver a comprehensive network of high-quality, segregated cycleways and shared-use footways, fully compliant with Department for Transport guidance (LTN 1/20). These will be integrated along all primary streets and through green corridors, ensuring safe, direct, and attractive routes for walking and cycling within the site and to key destinations beyond. The layout respects and enhances existing PRoWs, with new connections to support east–west and north–south movement. Key features include:

- Segregated cycleways along primary streets and at key desire lines.
- Shared-use footway/cycleways through green spaces and along main corridors.
- New and upgraded crossings, including signal-controlled Toucan crossings at major access points (e.g., Arborfield Road, Lower Earley Way, Shinfield Eastern Relief Road).
- Enhancements to off-site networks, including new or improved links along Arborfield Road, Hollow Lane, Lower Earley Way, and King Street Lane, supporting integration with Wokingham's Greenway and Long-Distance River Walk schemes.
- Travel Hubs in district and local centres, providing cycle parking, car club spaces, cycle hire/repair, and real-time travel information.

A Framework Travel Plan will underpin these measures, promoting active travel through incentives (e.g., discounted public transport, cycle purchase vouchers) and personalised travel planning.

Public Transport

A phased Public Transport Strategy has been developed to ensure high-quality, accessible bus services from the outset. The site

is already served by frequent bus routes (Leopard 3, Lion 4/4a, Route 600, Claret 21) connecting to Reading, Wokingham, and Winnersh, with rail access at Winnersh, Earley, and Reading stations. The strategy proposes:

- Phase 1: New 30-minute frequency bus service linking Loddon Garden Village to Winnersh rail station and Wokingham town centre.
- Phase 2: Comprehensive 30-minute frequency service between Reading, Loddon Garden Village, Winnersh, and Wokingham.
- Phase 3: Potential enhancements to 20-minute frequency and additional routing as the development matures.

Viability analysis indicates that initial pump-priming will be required, but services are expected to become commercially viable as the community grows. The phased approach ensures flexibility and responsiveness to demand, supporting a long-term shift away from private car use.

Mitigation and Residual Effects

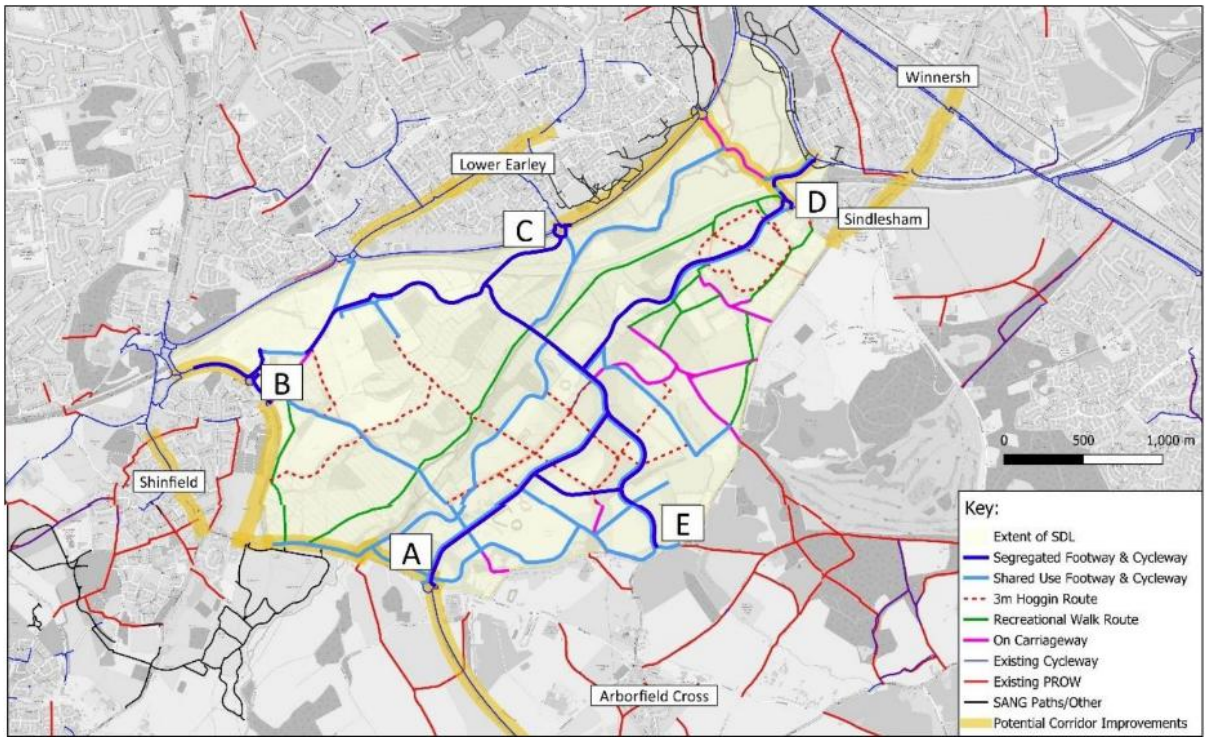
The sustainable transport strategy is supported by a significant package of off-site improvements, including new crossings, upgraded footways/cycleways, and junction enhancements. These measures are secured through planning conditions and S106 obligations, ensuring delivery and long-term maintenance.

The Environmental Statement concludes that, with these measures in place, the development will deliver:

- Minor beneficial effects in terms of community severance, non-motorised user amenity, and fear/intimidation for pedestrians and cyclists along key corridors.
- Negligible or minor adverse residual effects in a small number of locations, primarily where off-site improvements are not feasible.
- Significant positive impacts on active travel and public transport accessibility, supporting a modal shift and reducing reliance on private vehicles.

In summary, Loddon Garden Village will provide a highly sustainable transport environment, embedding active travel and public transport at the heart of the masterplan, and delivering long-term benefits for residents, employees, and visitors.

Active Travel Strategy



10. Conclusion

A summary of the holistic sustainable approach

The Loddon Garden Village Outline Sustainability Statement demonstrates a clear and ambitious commitment to delivering a sustainable, resilient, and future-ready community. The proposals align with the National Planning Policy Framework and both the existing and emerging Wokingham Borough Local Plan policies, embedding sustainability principles throughout the design, construction, and operational phases of the development.

This Statement has addressed six key areas of sustainability: energy, whole life carbon, resources, human-centric design, landscape and ecology, and sustainable transport. Together, these themes form a comprehensive framework that supports the creation of a low-carbon, inclusive and environmentally responsible neighbourhood.

The development aspires to achieve net zero carbon through a fabric-first approach, efficient energy systems, and the integration of renewable technologies. Whole life carbon and circular economy principles have been embedded to reduce environmental impact across the building lifecycle. Resource efficiency, sustainable material choices, and water conservation strategies further reinforce the development's environmental credentials.

A strong emphasis has been placed on human wellbeing, with design strategies that promote comfort, accessibility, and community cohesion. The masterplan integrates green infrastructure, biodiversity enhancements, and flood resilience measures, while also supporting active travel and public transport to reduce car dependency.

As the project progresses, these strategies will be refined and expanded through future reserved matters applications. The approach outlined in this Statement provides a robust foundation for delivering a high-quality, sustainable development that responds to local needs and contributes positively to broader environmental and social goals.

Savills Earth

Savills Earth provides a full suite of energy and sustainability services across both the built and natural environments. Savills Earth consolidates our established lines of business and expertise to provide the very best in environmental, social and economic sustainability advice to our clients. With over 100 specialists in the team we provide implementable solutions that respond to the climate emergency.

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