Growing Baldock

Sustainability and Energy Strategy

October 2025

Urban&Civic Hertfordshire

Growing Baldock

Sustainability and Energy Strategy

September 2025

Turley
Sustainability
and ESG

Contents

Client – Urban & Civic

Turley Reference – URBZ3000

Document Status - Final

Date – September 2025

1. Introduction

This Sustainability and Energy Strategy has been prepared to support the Outline Planning Application for Growing Baldock. It demonstrates how the proposals will deliver a highly sustainable new community that supports the transition to net zero and responds positively to national and local sustainability-related requirements.

This Sustainability and Energy Strategy has been prepared by Turley Sustainability & ESG, on behalf of Urban & Civic (U&C, "the Applicant"), to support the Outline Planning Application for the Growing Baldock development, within North Hertfordshire District Council.

This strategy provides detail of the various measures incorporated or capable of being incorporated into the development proposals to support local and national sustainability ambitions. It provides the framework for detailed sustainability and energy strategies to be prepared and approved for each future reserved matters (RM) application.

1.1 The Proposed Development

The site is c.220 hectares in size and located to the north and east of the historic market town of Baldock, within the jurisdiction of North Hertfordshire District Council (NHC). It comprises a series of parcels of predominantly agricultural land immediately adjoining the urban area. The site is within walking distance of Baldock town centre and Baldock railway station.

The adopted North Hertfordshire Local Plan (2011-2031) allocates land to the north and east of Baldock as an urban extension to accommodate c.3,300 homes, employment, local centres, schools and community facilities, sustainable transport connections and green infrastructure. The development incorporates various sites allocated within the North Hertfordshire Local Plan (2011-2031) (BA1, BA2, BA3 and BA10), as well as Urban Open Land to the north of Clothall Road and the Walls Field Scheduled Monument, designated under Policy G2 Strategic Green Space in the Baldock, Bygrave & Clothall Neighbourhood Plan 2021.

The Growing Baldock scheme is being brought forward by Hertfordshire County Council (HCC) as landowner, in partnership with U&C as delivery partner and master developer.

The planning description of the development is as follows:

Outline planning application with all matters reserved except for means of highway access into the development from the A505/Royston Road, North Road and Clothall Road :, for up to 3,200 homes, up to 16ha of employment, waste and leisure infrastructure, a mixed use local centre, up to 1 secondary school, up to 2 x primary schools, up to 1 SEND school, health hub, green infrastructure (including parks, formal sports provision, play, habitat areas, informal open space and structural planting), internal street network, access junctions and railway crossing, public transport infrastructure, pedestrian/cycle network (including PRoW diversions, active travel routes,

mobility hubs and crossing of the railway), utilities and drainage infrastructure (including diversions of existing and provision of new infrastructure, pumping stations, sustainable drainage, primary substations, rising main/strategic sewer and renewable energy infrastructure), ground remodelling/earthworks and any necessary demolitions.

The Parameter Plan for the site is shown in **Figure 1** overleaf.

1.2 Sustainability and Energy Strategy for Growing Baldock

A key part of the vision for Growing Baldock is to deliver a sustainable development that mitigates climate change through reducing carbon emissions, achieving net zero in operational carbon (associated with regulated energy uses), and is resilient to future changes in climatic conditions.

This Sustainability and Energy Strategy follows on from the Sustainability and Energy Opportunities Baseline Report and the Sustainability and Energy strategy submitted as part of the approved Growing Baldock Strategic Masterplan that was prepared in accordance with Local Plan Policy SP9.

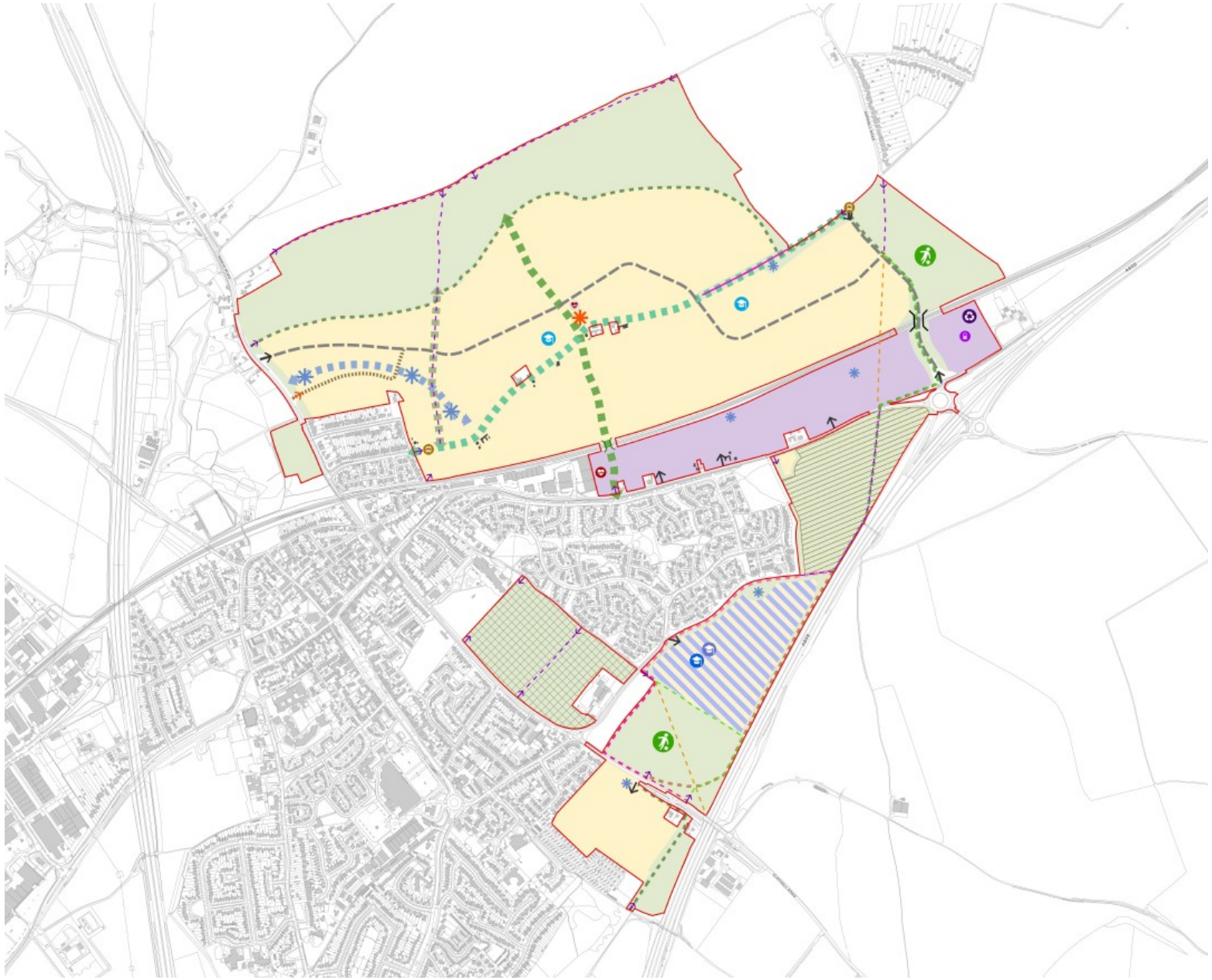
1.3 Structure of the report

- **Chapter 1 -** Introduces the report.
- **Chapter 2 -** Provides an overview of sustainability-related drivers and context which have driven the development of the Sustainability and Energy Strategy.
- **Chapter 3 -** Sets out the sustainability strategy for the outline planning application, and a framework for detailed sustainability and energy strategies to be prepared and approved for future detailed phases.
- **Chapter 4 –** Summarises the Sustainability and Energy Strategy.

Please note, the terms “carbon”, carbon dioxide (CO2)” and “greenhouse gas (GHG)” are used interchangeably in this strategy depending on the terminology of referenced documents.

This document should be read in conjunction with other documents submitted as part of the outline application, in particular the Design and Access Statement, Transport Assessment, Framework Travel Plan, Flood Risk Assessment, Drainage Strategy, Ecological Assessment, Green Infrastructure Strategy, and BNG Assessment.

Figure 1 – Growing Baldock Parameter Plan (Source: DLA)



2. Policy Drivers & Context

This chapter provides an overview of the key drivers and standards that have been considered in the development of the Sustainability and Energy Strategy.

Key drivers and standards that have been considered in the development of the Sustainability and Energy Strategy include a variety of national standards and guidance, local policy requirements and aspirations from HCC and NHC, U&C's corporate sustainability targets and framework, as well as feedback from HCC and NHC.

A detailed review of local and national sustainability-related drivers can be found within **Appendix 1.**

2.1 National Drivers

- The National Planning Policy Framework (NPPF).
- Future Homes & Building Standard (FHS & FBS).
- Sustainability standards and certifications such as the RIBA Climate Challenge, LETI Climate Emergency Design Guide, and Passivhaus standards.
- The UKGBC Net Zero Carbon Building Framework and emerging UK Net Zero Carbon Building Standard.
- Sustainable Accreditations such as BREEAM and Home Quality Mark.

2.2 Hertfordshire County Council Drivers

- Climate Emergency and Sustainable Hertfordshire Strategy.
- Hertfordshire Energy Strategy.
- Hertfordshire Waste Development Framework.
- Hertfordshire Tree & Woodland Strategy.
- Hertfordshire Pollinator Strategy.
- Hertfordshire Air Quality Strategy.
- Hertfordshire Local Transport Plan 2018 – 2031 and Transport Vision 2050.
- Hertfordshire's Health and Wellbeing Planning Guidance (May 2017).
- Hertfordshire Development Quality Charter (Hertfordshire Growth Board, September 2023).

2.3 North Herts Council Drivers

- NHC Sustainability Strategy 2025-2030.
- NHC Local Plan 2011-2031, particularly Policy D1: Sustainable design.
- NHC Sustainability Supplementary Planning Document (SPD) which provides good practice guidance and sets 'bronze', 'silver', and 'gold' level of performance across the following eight themes:
    - Optimising Passive Design & Fabric Performance
    - Achieving Low Carbon Energy
    - Minimising Carbon Footprint
    - Healthy Placemaking
    - Promoting Biodiversity
    - Sustainable Travel

    - Conserving Water
    - Incorporating Sustainable Drainage
- Bygrave and Clothall Neighbourhood Plan.
- NHC North Hertfordshire Strategic Sites and Masterplanning Project Board Sustainability Principles – June 2022.

2.4 Urban & Civic Drivers

The sustainability and energy strategy for Growing Baldock is also shaped around the aims of U&C's corporate Sustainability Framework and Map to Net Zero.

U&C's Sustainability Framework identifies three universal challenges - Climate Change, Biodiversity, and Health & Wellbeing. These are key global issues that U&C consider development must respond effectively to in order to be successful and sustainable. As a company, U&C have ambitions to achieve Net Zero for Scope 1&2 emissions by 2030, and for Scope 3 emissions by 2040.

2.5 Engagement with HCC

A Sustainability Workshop was held with key stakeholders from HCC, U&C and Turley Sustainability on the 12th of July 2023 to discuss the emerging sustainability strategy and aspirations for Growing Baldock. Key points from the workshop are summarised as follows:

- The sustainability framework should be flexible to accommodate evolving technologies and standards.
- Sustainable forms of travel should be promoted such as walking, cycling, public transport. Transport consultants are looking into the viability of targeting a 60% 'sustainable travel' modal share.
- The development should promote the health and wellbeing of residents and visitors.
- The development should create a strong sense of community. Masterplanning should generate benefits for the whole of Baldock.
- The strategy should aim to address fuel poverty and the cost of living.
- The development should be adaptable and able to accommodate change.
- Multi-functional green spaces should promote biodiversity, carbon capture, climate adaptation, health and wellbeing.
- Schools should be designed to a high standard to inspire the next generation into climate action.
- Commercial buildings should be just as sustainable as housing.
- Delivery of an ambitious sustainability strategy will need to be balanced carefully with overall development viability and affordability of housing.
- Sustainable Design and Construction standards should aim to exceed Building Regulations.

A series of further meetings were held with the Director of Environmental Sustainability Growth and Environment at HCC, to discuss the emerging strategy for Growing Baldock. These workshops and meetings have been integral to shaping the sustainability strategy for the development.

2.6 Engagement with NHC

A sustainability pre-application meeting was held with NHC on the 26th of June 2025 to discuss the proposed strategy. Key points of discussion were:

- Design for climate resilience.
- Accommodating evolving sustainability standards over time.
- Enforcing the standards with housebuilders.

Further feedback was sought from NHC on the structure and contents of the sustainability strategy. This feedback has been addressed within the statement and within a separate response issued to the Council, which can be found in Appendix 2.

2.7 Growing Baldock Strategic Masterplan – Section 10 Sustainability & Energy Framework

The Strategic Masterplan for Growing Baldock provides a framework for the development of land to the north and east of Baldock, in accordance with Policy SP9 of the North Hertfordshire Local Plan (2022). Section 10 sets out the

proposed Sustainability & Energy Framework and articulates the ambitious approach that will be taken at Baldock in respect of the development's sustainability and energy performance. This strategy has been developed in line with the principles set out in in the Strategic Masterplan.

2.8 Drivers & Context Summary

Both the land partner (HCC) and the planning authority (NHC) declared a climate emergency in 2019. HCC have set targets to be a net zero county by 2050, while NHC have set targets to become a net zero Council by 2030 and to achieve a Net Zero North Herts district by 2040. HCC aim to be a net zero council by 2050. HCC and NHC have also developed wider guidance in relation to sustainable travel, air quality, health and wellbeing, trees and woodlands and biodiversity. The Hertfordshire Development Quality Charter sets out a clear aim for developers to identify a sustainability standard that exceeds minimum current building regulations, and the draft NHC vision statement describes a potential net-zero vision for the site.

U&C have a clear ambition to create a development at Baldock that not only satisfies the sustainability aspirations and policies of HCC and NHC but also delivers a high-quality sustainable development that meets the ambitions of all parties, and which has the infrastructure and strategy to fully support the transition to a net zero economy.

The following sections of this report set out the measures that have been incorporated into the design of the masterplan for the outline application and will be delivered during the subsequent detailed design phases to ensure a high standard of sustainability.

3. Sustainability and Energy Strategy

This chapter provides an overview of the proposed sustainability and energy strategy for Growing Baldock, demonstrating how it will deliver a highly sustainable operationally net zero development that responds positively to both national and local sustainability requirements.

The sustainable design measures incorporated into the design of the development at this stage, and measures to be considered further during the detailed design stages, are set out under the following headings which reflect the main themes of NHC's Sustainability SPD.

Implementation of the Strategy

Because the development at Baldock is expected to take place over a number of years, the sustainability strategy aims to retain flexibility in the standards set to accommodate emerging standards and technologies over time. The sustainability strategy for the outline planning application provides the principles and framework for subsequent key phases and development parcels to adhere to. The targets will be developed and embedded into design codes and subsequent RM applications.

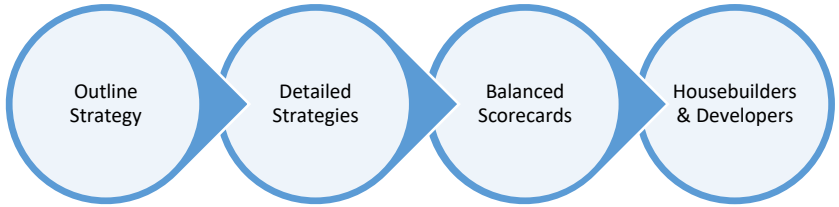
U&C will use a 'balanced scorecard' approach as a way of enforcing the principles of the sustainability strategy on housebuilders and other developers over time. The balanced scorecard will set minimum 'baseline' targets which are mandatory requirements together with 'improved' and 'innovation' targets reflecting higher levels of performance. The targets will cover specific areas of sustainability including energy, materials, water, waste, biodiversity and health and safety. The improved and innovation targets will also reference the 'silver' and 'gold' target levels in the North Herts Sustainability Supplementary Planning Document where practical to do so.

The balanced scorecard will be used in two ways:

1. The mechanism by which sustainability standards can be adapted over the course of the development. This will reflect changes to industry standards, local planning policies and the desire by U&C or HCC to

achieve specific outcomes. For example, specific carbon innovations or biodiversity outcomes.

2. Form part of the assessment criteria for appointing and monitoring housebuilders and other developers. At the bid stage, housebuilders and developers who are willing to commit to improved or innovation targets will score better than those complying with only the baseline targets. The scorecard can also be used as part of the negotiation process to achieve better sustainability outcomes. The 'agreed' scorecard would then form part of the contractual obligations for the housebuilder or developer to deliver against and are enforced accordingly.



3.1 Climate Change Mitigation Through Reducing Carbon Emissions

The vision for Growing Baldock is to create a highly sustainable development that accelerates the transition towards operational net zero.

Minimising carbon emissions is key to mitigating the effects of development on climate change. The UK Government is committed to tackling climate change and in 2019 set out an ambition to reduce carbon emissions and achieve net zero by 2050. HCC have set the target to be a Net Zero County by 2050, while NHC aim to be a net zero council by 2030, and for North Herts to be net zero district by 2040. U&C aim to reach net zero for Scope 3 emissions by 2040. Delivering a development that supports the transition to net zero is therefore an important aim of the scheme.

In relation to construction and the built environment, there are two key sources of carbon emissions:

- **Operational Energy** – energy consumption in the day to day running of a building.
- **Embodied Carbon** – carbon related to the materials and components that make up a structure.

The following sections consider the measures that will be implemented to reduce and manage both operational and embodied carbon respectively.

3.1.1 Operational Energy Strategy

Operational energy use can be divided into 'regulated' and 'unregulated' energy. 'Regulated energy' refers to building energy consumption resulting from controlled, fixed building services and fittings (such as space heating and cooling, hot water, ventilation, fans, pumps and lighting). This energy use is controlled by the Building Regulations and the FHS. 'Unregulated energy' is building energy consumption resulting from a system or process that is not 'controlled' (such as refrigeration systems, external lighting, ducted-fume cupboards, servers, printers, photocopiers, laptops, cooking, audio-visual equipment and other appliances). While regulated energy is predictable and controllable by designers, unregulated energy is heavily influenced by occupants and is harder to predict and account for in building energy modelling.

Based on the specification set out in the FHS consultation, it is anticipated that regulated energy use will contribute to around 50% of energy consumption in a home built to the FHS. The operational energy strategy for Baldock therefore primarily focuses on achieving net zero for regulated energy uses, as these uses are more easily influenced by the designer/ developer, and they account for a large proportion of energy consumption within a typical home.

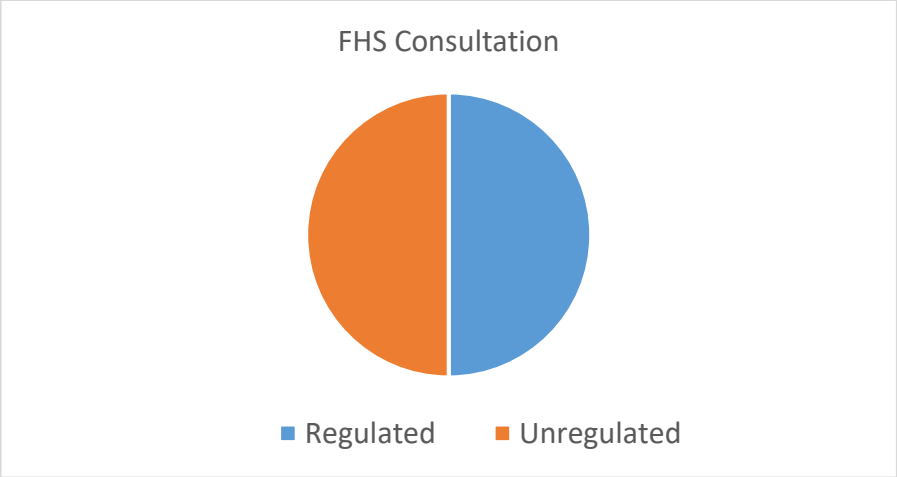


Figure 2: FHS anticipated household energy consumption

Developing energy efficient low carbon homes and buildings is key to reducing operational carbon emissions. The proposed operational energy strategy for Growing Baldock comprises:

- All homes will target being net zero for regulated carbon emissions.

- All homes and buildings will be constructed to a high standard of fabric efficiency and airtightness that aims to go beyond the minimum requirements of the Government's Future Homes and Buildings Standard.
- Energy Use Intensity (EUI) Targets and Space Heating Demand Targets for homes will be set for housebuilders by U&C (see **Section 3.1.1.1**).
- All community buildings built by U&C (including schools) will aim to be net zero for regulated carbon emissions.
- All non-residential buildings over 1,000 m^2 will pursue BREEAM certification with an aim to achieve a BREEAM 'Excellent' rating, which requires a strong focus on minimizing energy demand and reducing carbon emissions.
- Homes and buildings will utilise a range of renewable energy technologies such as roof mounted Solar PV and Air Source Heat Pumps (ASHP). The eastern end of the employment area (BA10) has also been identified as potentially suitable for the provision of stand-alone renewable energy infrastructure (subject to separate feasibility study).
- The whole development will be powered solely by electricity without the use of fossil fuels to provide heating and hot water.
- Parcels BA1 and potentially BA10 will include an 'innovation zone' or invite wider innovation which will explore the use of new technologies and higher construction standards on a select number of dwellings when compared to the rest of that specific zone. Innovation zones could include measures such as building to the UK Net Zero Carbon Building Standard, the use of Modern Methods of Construction (MMC), smart grid technology, 'zero bills' homes, or collaboration with a university or research institution.

The development will be designed in line with the energy hierarchy, which aims to reduce energy demand through passive design measures and a fabric first approach before utilising low carbon energy and the production of on-site renewable energy.

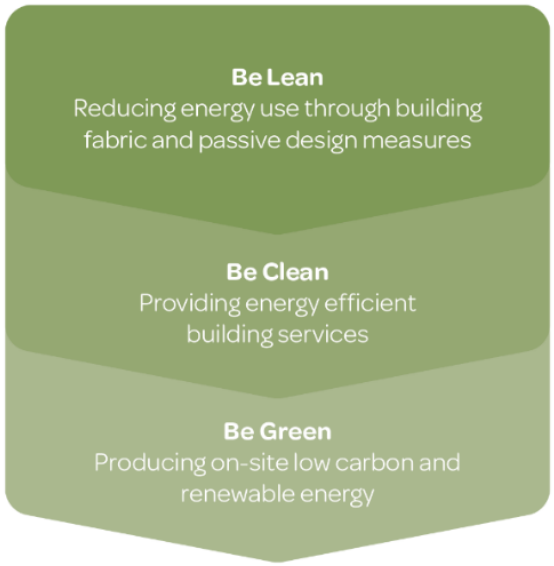


Figure 3: The Energy Hierarchy

The following sections set out the measures included at this stage, and which will be considered during the detailed design stages, to deliver an energy efficient, low carbon development.

3.1.1.1 Be Lean – Reducing Energy Use

Building orientation and form – Building orientation and form is an important consideration in reducing building energy demand through optimising solar gain and associated heat gains/ losses. In line with NHC's Sustainability SPD, the orientation, form, elevation, and overshadowing of homes should be considered at the detailed design stages, with the aim of optimising energy efficiency, whilst accounting for wider considerations such as transport, green infrastructure, and design. Design principles to achieve this are set out in the Sustainability section of the Design and Access Statement.

Fabric Efficiency – Traditionally, there has been support for the 'Fabric First' principle which recognises the most effective way of minimising carbon

emissions is to reduce the demand for heat and power through a well-insulated, energy efficient building fabric and services. Reducing the primary energy demand of a building through the use of an efficient fabric and services is traditionally regarded as best practice and is the first step to reducing carbon emissions.

The design of new buildings will aim to reduce thermal energy demand by targeting improved air leakage and fabric u-values that go beyond the minimum values set by the FHS & FBS. Developers will be asked to deliver improved air leakage and fabric u-values that go beyond the minimum values set by the FHS & FBS. Fabric Performance standards will be included in the 'Balanced Scorecards', which will form part of the assessment criteria for appointing and monitoring housebuilders and other developers. As the final version of the FHS/FBS is yet to be released, further detail on the proposed fabric standards to be specified will be provided at the detailed design stages and submitted as part of future RM planning applications. This approach enables the strategy to remain flexible in relation to evolving standards and practices over time.

Other energy efficiency measures – A range of other measures to reduce energy use and carbon emissions will be considered in the detailed design of individual buildings:

- Incorporating high efficiency lighting targeting 100% of all light fittings as low energy lighting.
- Use of high efficiency heating systems appropriate to the building use to reduce energy consumption.
- Potential installation of Mechanical Ventilation and Heat Recovery.
- Potential use of Waste Water Heat Recovery systems; and
- Where appropriate, specification of high energy efficient equipment that use less energy and water.

Energy Use Intensity (EUI) & Space Heating Demand (SHD) Targets – EUI and SHD targets will be set for housebuilders by U&C at the tender stage within the 'Balanced Scorecards' which will form part of the assessment criteria for appointing and monitoring housebuilders and other developers. EUI targets will be set at ≤ 60 kWh/m^2/yr and SHD targets set at ≤ 30 kWh/m^2/yr in line with 'silver' level performance with compliance being subject to viability. Higher standards of performance may be included as improved/ innovation targets.

For community buildings delivered by U&C directly, U&C have set a range of EUI targets as part of their Map to Net Zero update, as shown in the following table. Where possible, all new development built by U&C will aim to meet these EUI targets.

Table 1: U&C's Map to Net Zero EUI Targets* (non-domestic development delivered by U&C).

Operational EUI Target	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050
Office	75	65	50	35	13
School	55	55	40	30	13
Retail	180	150	105	60	21
Food retail	350	295	210	125	44
Community	75	65	50	35	14
Sports facilities	140	130	95	60	22
Health	150	100	75	50	31
Industrial	140	110	80	50	25
Storage	70	60	45	30	10

*EUI Targets follow the UKNZBS targets until 2035 and are extrapolated to achieve 90% reduction in 2050. EUIs in the table could change in line with new standards and regulations.

Further details on the proposed EUI targets for each phase of the development will be confirmed during the detailed design stages, with information provided in the sustainability statements for each RM application.

3.1.1.2 Be Clean – Efficient Energy

The next stage of the Energy Hierarchy is the efficient supply of heat and energy. This means connecting into an existing District Heating Network

(referred to as "DHN" hereafter) where possible or providing an on-site communal heat network or individual systems.

District Heating systems operate by generating heat in an energy centre and distributing it to buildings as hot water through insulated pipes. It has been supported by national and local government with a great deal of funding given to schemes and a lot of local plans requiring consideration of district heating as a minimum.

The purported benefits of district heating are that these systems can use technologies that are not an option at a building level, they can be more efficient and use waste heat sources. In most cases, district heating has not delivered these benefits; >90% of heat networks are gas fired, thermal losses on the networks are typically 40% to 50% and it has proved more difficult to use waste heat sources than expected.

Based on a desktop review there are no obvious local heat sources in the area that would offer a suitable source of waste heat, and according to the UK Heat Network Map, there are no existing or planned heat networks in the vicinity of the site[1].

Typically, the first stage of a district heating system feasibility assessment involves considering the thermal demand density of a scheme. Thermal demand density (TDD) measures the amount of heat required in a given area. The greater the TDD, the more cost effective a heat network can be. A TDD of 30kWh/m2/yr is typically considered a minimum to justify further consideration. The proposed development at Baldock, which will be constructed to a high standard of thermal efficiency, is estimated to have a TDD of c.21-25kWh/m^2. Therefore, due to the high thermal efficiency and the low heating and hot water demand of the development at Baldock, it is expected the cost of the network and thermal losses on it would be disproportionately higher than the benefit provided.

Higher density areas such as local centres, flats, or employment areas with higher heat demand may be more suitable for a DHN, however although there is a significant quantum of commercial development proposed at Baldock, the building types and density are not expected to create a sufficiently high heat demand.

As such, the provision of a DHN is not likely to be suitable for the site. Instead, the development has assumed the provision of electric heat pumps and renewable energy infrastructure (such as photovoltaics) to individual homes and buildings as the lower carbon and more cost-effective option.

3.1.1.3 Be Green – Low Carbon Renewable Energy

The final stage of the Energy Hierarchy is the generation of low carbon and/or renewable energy. Each of the renewable and low carbon energy technologies listed within NHC's Sustainability SPD have been reviewed, and the following section provides an assessment of the technologies which are considered likely to be suitable for inclusion during the detailed design stages of the development.

Details of the specific renewable technologies to be incorporated on site will be provided in the sustainability and energy statements for each future RM application. This will enable the development to maintain flexibility in the face of evolving technologies and standards.

Solar Photovoltaics (PV) - Solar photovoltaic (PV) systems generate zero carbon electricity from sunlight and are well suited to dwellings with unobstructed southeast to southwest facing roof space. Excess power is exported to the grid or can be harnessed using battery storage. Maintenance requirements are typically minimal.

In order to achieve net zero in regulated energy, it is envisaged that all homes will benefit from PV panels for the production of on-site renewable energy. Where possible, roof spaces and systems will be orientated to the south to maximise potential energy generation.

As a result of the proposed energy strategy, it is estimated that there will be circa **9,300 MW of PV** installed on the roofs of domestic and non-domestic

[1] UK Heat Network Map (1)

buildings across the site as a minimum. This is a significant deployment of PV and will generate large quantities of renewable energy every year.

Solar Thermal - Solar thermal systems generate zero carbon hot water from sunlight in a similar manner to Solar PV. They require insulated tanks to store the hot water and have greater maintenance demands than solar PV given the need to ensure anti-freeze in the pipework is topped up every few years. They can be a highly cost-effective technology particularly where mains gas supplies are not available, however in energy efficient new homes, their benefit can be limited, and they are not anticipated to be considered further in the design.

Heat Pumps - Heat pumps provide low carbon heat sourced either from the ground (Ground Source Heat Pumps/ GSHP) or air (Air Source Heat Pumps/ ASHP). This type of system is suited to thermally efficient buildings. They require main electricity to operate but typically generate at around three units of heat for every unit of electricity that is consumed. Because the heat generated is at a lower temperature than that produced by a gas boiler, heat pumps typically require underfloor heating or large radiators to ensure the heat is distributed efficiently. GSHP typically have higher upfront installation cost and require more space for ground loops. ASHP may be less efficient in very cold weather, however the only outside space required is an external wall.

The 2025 FHS consultation is based on the use of a notional high-efficiency air source heat pump (equivalent to ErP A++) to provide low carbon heat, and it is anticipated that all homes and buildings at Baldock are likely to utilise Heat Pumps to provide space heating and hot water.

Biomass - Biomass provides useable heat from a range of solid fuels including wood and straw. The installation of a biomass boiler, flue and associated fuel store require significant space. Biomass burning can also have significant impacts on local air quality and is therefore not considered appropriate for the development.

Wind energy - Wind turbines can offer a renewable energy source for new developments, however due to their size and prominent appearance careful consideration must be given to their potential visual impact. Noise pollution can also be a potential issue, particularly when located in close proximity to homes and noise sensitive receptors. Wind energy is therefore not considered appropriate for the development.

Stand-alone renewable energy infrastructure – An area of land to the east of the employment area has been identified as potentially suitable for the provision of stand-alone renewable energy infrastructure. Given the size of the parcel (c.50m^2) and close proximity to the potential primary substation, the site could be suitable for the provision of battery technology to facilitate a low carbon microgrid for example. The feasibility of this and other potential options will be evaluated as the detailed designs evolve.

3.1.2 Embodied Carbon Strategy

In addition to addressing operational carbon emissions, reducing embodied carbon is a crucial step in delivering low carbon development and mitigating climate change.

Embodied carbon emissions are the carbon emissions associated with materials and construction processes over the whole lifecycle of a building. They can represent 40-70% of whole-life carbon in a new building. As the electricity grid continues to decarbonise, embodied carbon emissions contribute to an increasingly significant proportion of the whole life emissions of a building.

The proposed embodied carbon strategy for Growing Baldock comprises:

- All infrastructure (such as access, storm drainage, foul drainage and utilities) will aim to meet U&C's capital carbon intensity reduction targets in line with their Map to Net Zero.
- A landscape strategy which promotes carbon sequestration in vegetation and soils.
- Whole Life Cycle Assessments (WLCAs) will be carried out on an appropriate representative sample of homes (e.g., c.<5-10% of dwellings) to calculate the embodied carbon emissions of the development, and to consider measures to reduce embodied carbon emissions.

- Homes to achieve an upfront carbon performance (A1-A5) of <800 kgCO2e/m^2, with an aim to achieve <675 kgCO_2e/m^2 (A1-A5) where viable, in line with 'silver' level performance.
- All community buildings at Baldock built by U&C (including schools) will aim to meet U&C's Map to Net Zero Embodied and Upfront carbon targets, further detail on which is provided below.
- All non-residential buildings over 1,000 m^2 will pursue BREEAM certification with an aim to achieve a BREEAM 'Excellent' rating, which requires developers to demonstrate a commitment to reducing embodied carbon emissions.
- Sustainable use of resources and materials will be encouraged through alignment with circular economy principles.

3.1.2.1 Infrastructure Embodied Carbon Design Efficiencies

Embodied carbon is a key area of focus for Urban and Civic. All infrastructure (such as access, storm drainage, foul drainage and utilities) will aim to meet the site-specific carbon budget prepared in line with the U&C Map to Net Zero. The Map to Net Zero sets out the emissions reductions required across all developments to achieve the U&C ambition of being Net Zero for Scope 3 emissions by 2040. Site-specific carbon budgets are reviewed annually and updated with actual emissions data from U&C's live development sites. The carbon budgets in turn inform 'capital carbon intensity reduction targets' which are for project design teams and contractors.

3.1.2.2 Landscape Strategy and Carbon Sequestration

The Landscape Strategy aims to promote opportunities for on-site nature-based carbon removal through carbon sequestration in vegetation and soils. The masterplan integrates trees, green spaces, growing spaces, and orchards in order to create a healthy biodiverse landscape that is able to sequester and store more carbon. During design and construction, best practice soil management techniques will be implemented in order to minimise the loss of carbon from soils and the retention of valuable habitats, with consideration of the Soils in Planning and Construction Task's "Principles for soils in planning and construction". Upon occupation, a long-term landscape management plan will be developed to ensure that carbon sequestration benefits are supported in the long term by good practice land management.

3.1.2.3 Building-level Embodied Carbon Design Efficiencies

In order to manage and reduce the embodied carbon impact of individual homes and buildings, development at Baldock will aim to achieve the following targets as a minimum:

- Homes will aim to achieve an upfront carbon performance of <800 kgCO2e/m^2 upfront carbon (A1-A5), with an aspiration to achieve <675 kgCO2e/m^2 upfront carbon (A1-A5) where viable in line with 'silver' level performance. These performance levels will be included as targets within the 'Balanced Scorecards' which will form part of the assessment criteria for appointing and monitoring housebuilders and other developers.
- All non-residential buildings over 1,000 m^2 will pursue BREEAM certification with an aim to achieve a BREEAM 'Excellent' rating, which requires developers to calculate and report embodied carbon emissions across all stages of a building's lifecycle, and to demonstrate a commitment to reducing the carbon footprint associated with materials and construction.
- All community buildings at Baldock (including schools) built by U&C or other developers will aim to achieve U&C's Map to Net Zero Embodied and Upfront carbon targets, as shown in **Table 2**. The upfront targets are based on the average between the SBTi targets and the lowest targets at each end of the timeframe from the UKNZBS to establish the best practice standard for each building type. The U&C target typically aligns with the average of the UKNZBS target for each timeframe. WLCAs will be required for any non-residential development and will aim to meet these targets where feasible. Further details will be

provided within the sustainability statements submitted as part of future RM application stages.

Table 2: U&C's Map to Net Zero Embodied and Upfront Carbon Targets* (non-domestic development delivered by U&C).

	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050
Embodied Carbon (A-C)					
Office	1,200	850	650	450	180
School	900	650	500	350	165
Retail	1,100	800	600	400	160
Food retail	1,100	800	600	400	160
Community	1,100	750	550	350	165
Sports facilities	1,100	750	550	350	165
Health	1,300	900	650	400	190
Industrial	800	600	450	300	120
Storage	800	600	450	300	120
Upfront Carbon (A1-A5)					
Office	635	450	330	210	95
School	605	435	325	215	110
Retail	590	415	305	195	85
Food retail	590	415	305	195	85
Community	720	510	375	240	110
Sports facilities	720	510	375	240	110
Health	685	485	355	225	100
Industrial	550	390	285	180	80
Storage	550	390	285	180	80

*targets in the table could change in line with new standards and regulations.

Whole Life Cycle Assessments (WLCAs) will be carried out at the detailed design stages and will be submitted as part of RM applications on a representative sample of homes (e.g., c.<5-10% of dwellings) to estimate the embodied carbon emissions of the development, and to consider measures to reduce embodied carbon emissions. Carbon reduction measures may include:

- Lean design to minimise materials use.
- Specification of locally sourced or lightweight materials wherever possible to reduce emissions from transport to site.
- Specification of low carbon materials, for example lower carbon steels, materials with high recycled content, and/or concrete with cement replacement.
- Use of natural materials which sequester carbon, such as timber.
- Specification of sustainably sourced timber from the Forest Stewardship Council (FSC) or equivalent certified sources.
- Use of durable and resilient materials.
- Delivery of a proportion of homes using modern methods of construction.
- Use of materials such as bricks that can be reused and recycled at the end of their life.
- Material from construction/excavation to be re-used on site in the first instance where feasible.

3.1.2.4 Supporting a Circular Economy

A circular economy is one where materials are retained in use at their highest value for as long as possible and are then re-used or recycled, leaving a minimum of residual waste. A Circular Economy moves away from the current 'linear economy', where materials are mined, manufactured, used and thrown away, to a circular economy where resources are kept in use and their value is retained. A circular economy offers various benefits including environmental protection, economic growth, social well-being, and carbon emission reduction through reducing waste, minimizing resource use, and promoting reuse and recycling.

Circular economy in design

The Growing Baldock scheme supports a Circular Economy approach through following principles of 'lean design' in order to design out waste and reduce the volume of raw materials required for site infrastructure, as set out in Section 3.1.2.1.

Circular Economy principles will be considered at the detailed design stages to support a Circular Economy in the design of homes and buildings. This could include measures such as designing for adaptability, flexibility, longevity, and designing out waste. The use of sustainable materials such as those that are locally sourced, reused, recycled, natural and biobased, or have a low embodied carbon will be prioritised. The specification of local, responsible, and lower carbon materials will be considered as a priority. Further information will be provided in the sustainability statements submitted as part of future RM applications.

Waste and materials will be managed in accordance with the Waste Hierarchy which prioritises waste prevention, followed by re-use, recycling, then energy recovery and disposal as a last resort.

Measures to prevent waste and maximise reuse and recycling will be incorporated throughout construction and operation of the proposed development.

The waste chapter of the Environmental Impact Statement considers the potential waste effects of the proposed development on waste receptors during the construction and operation of the project, and finds the effect to be not significant, once appropriate mitigation measures have been implemented. Mitigation measures will include the preparation of a Site Waste Management Plan (SWMP) and implementation of measures to minimise waste and maximise recycling.

Figure 4: The Waste Hierarchy

Circular economy in the construction phase

Prior to construction, a SWMP will be produced, setting out measures that will be implemented to minimise waste and maximise reuse and recycling during the construction phases of the development in line with Policy 12 of Hertfordshire's Waste Core Strategy. Measures will include:

All development at Baldock will aim to achieve the following targets, with opportunities to exceed these targets to be encouraged as part of 'improved' or 'innovation' strategies:

- Limit construction waste to <11.1 tonnes/100m^2 GIA, in line with BREEAM criteria.
- Aim to achieve a cut and fill balance on-site where practicable. Where spoil has to be removed from the site steps would be taken to keep the amounts to a minimum and opportunities to recycle the material in the local area would be investigated. Soils will be managed in line with the Soils in Planning and Construction Task's "Principles for soils in planning and construction" guidance.
- Wastes generated during the construction process will be segregated into waste types to facilitate off-site recycling. A minimum 80% of Construction, Demolition and Excavation waste will be diverted from

landfill in line with 'Silver' level performance within NHC's Sustainability SPD, with an aim to achieve 90% (by weight) in line with HCC's Waste Core Strategy and Development Policies (2012) target.

An Outline Construction Environmental Management Plan (OCEMP) has been developed to set out measures that will be implemented to minimise the environmental impact of construction activities, including measures to manage any potential waste impacts during the construction phases of the development (within Section 22.2 and Table E11 in Appendix E).

Circular economy in the operational phase

During the operational phase of the development, the detailed design will allow for effective waste and recycling segregation and storage, including composting facilities in line with the East and North Herts Shared Waste Service requirements and guidance.

Opportunities to promote Circular Economy initiatives such as The Library of Things will be considered. The Library of Things is a community-powered social enterprise that rents out useful items like drills, DIY items, sound systems and/or sewing machines for a small fee. Sharing items helps residents to reduce waste and unnecessary production elsewhere. The approach can also save money, reduce cost, and support a sense of community. The enterprise also supports skill-sharing sessions between neighbours and employs people in the local community.

3.1.3 Encouraging low carbon innovation

Parcels BA1 and potentially BA10 will include an 'innovation zone' or invite wider innovation which will explore the use of new technologies and higher construction standards on a select number of dwellings when compared to the rest of that specific phase. The idea of innovation zones is to trial innovative design/ construction techniques or standards, to help develop and support new approaches to carbon reduction and sustainability. Innovation zones could include measures such as:

- Building to Passivhaus or UK Net Zero Carbon Building (UKNZCBS) standards. Passivhaus and UKNZCB are voluntary industry-leading low carbon building standards. Further detail is set out in Appendix 1.
- The use of Modern Methods of Construction (MMC). MMC involves innovative construction methods such as off-site manufacturing, prefabrication, or modular building, which aim to increase efficiency, speed and quality compared to traditional building methods. MMC can offer multiple benefits including improved quality and efficiency, and reduced waste.
- 'Zero Bills' Homes. 'Zero bills' homes is a concept focused on achieving net-zero energy consumption and eliminating energy bills for residents. This is accomplished through a combination of high energy efficiency, renewable energy (such as solar panels and heat pumps), and smart technology.
- Microgrid technology. A microgrid puts all homes on a single electrical network served by a single energy supplier. A microgrid is somewhat analogous to a heat network but using an electrical network rather than a hot water network. By sharing rooftop solar generation across homes and using batteries, the microgrid operator can reduce bills for connected homes and reduce the size of the grid connection required. A further benefit is that it enables residents to charge cars on communal chargers at their standard rate, rather than commercial rates. There are legal issues that require consideration, and it would require engagement with a microgrid developer/operator, of which there are currently only a few.

Parcels BA1 and potentially BA10 will contain a form of 'innovation zone', the precise details of which will be confirmed at the detailed design stages.

3.2 Healthy Placemaking

The proposed development at Baldock will deliver a vibrant and inclusive community that supports and promotes the health and wellbeing of individuals and communities.

A key piece of feedback from the sustainability workshop with HCC was the desire to ensure good placemaking through provision of connections to open space, allotments, play, and communal meeting spaces. The following section contains a summary of the key measures that are proposed to support the development of a healthy and inclusive community.

3.2.1 Green and Blue Infrastructure

Growing Baldock will deliver a range of high-quality, publicly accessible green and blue infrastructure, providing residents and surrounding communities the opportunity to enjoy the health benefits of green spaces and outdoor activity. Proposed green and blue infrastructure features include:

- A number of parks and key green spaces including circa 40ha of new parkland at Bygrave Common, Heritage Park, land east of Clothall Common, the Urban Open Land, and Walls Field.
- The proposed 'Baldock Greenway', a multi-user leisure route around and through the settlement of Baldock, connecting to and supporting the Etonbury Green Wheel and Letchworth Greenway.
- Play opportunities in the form of Local Equipped Areas for Play (LEAP), Neighbourhood Equipped Areas for Play (NEAP), informal 'play on the way' opportunities, and pocket parks. The play strategy will deliver a range of opportunities that suit all ages and abilities and will be connected by a network of active travel routes. The delivery of play spaces will be based on Fields in Trust benchmark guidelines, policy standards and design requirements for minimum activity zones, buffer zones, and walking distances. Example of play features are shown in **Figure 5.**
- Sports provision will be provided in the form of two sports hubs (one publicly accessible in the Heritage Park and one on the Urban Open Land which may form part of the secondary school and be available for community use), and areas of informal sport including outdoor gym facilities, 2km and 5km trail loops, and recreational areas for informal kickabouts. Indoor sports provision will also be provided at the school site (either within the new school on BA3 or at the expanded Knights Templar site).
- Food growing opportunities will be provided in the form of formal allotments, community growing spaces, and informal foraging/edible trails. The illustrative strategy proposes that existing formal allotments at North Road and Clothall Road will be extended, three community growing spaces will be co-located next to play areas, MUGAs and sports facilities, and opportunities for foraging and edible trails will be provided along key pedestrian movement routes.
- A Heritage Trail is proposed, which celebrates the site's local heritage and cultural context using public art installations and/or information at key vantage points to notable landscape and/or heritage features.

Connectivity is fundamental to the approach and green infrastructure features will be designed to be accessible via pedestrian and cycle routes, providing safe, inclusive and sustainable access for both new and existing communities.

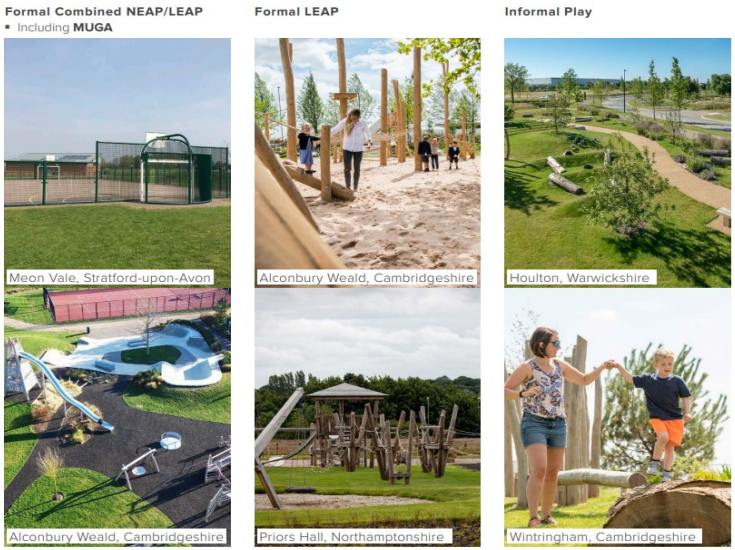


Figure 5: Examples play spaces (Source: Green Infrastructure Strategy, BMD)

Figure 6: Illustrative Green Infrastructure Framework (Source: BMD)

Please see the Green Infrastructure Strategy submitted with the outline planning application for further information on the Green Infrastructure Strategy, including the play, sports, and productive landscape/ food growing strategies.

3.2.2 Community Facilities

A range of new community facilities will be provided to ensure a healthy, inclusive community in line with local plan **Policy SP10.** These include

- Health provision – The proposals include provision of an on-site health hub, with the potential to include GP services alongside a wider health offering, to serve the Baldock community. The land for the health centre is proposed adjacent to the active travel crossing and may incorporate the relocation of the existing medical centre in Baldock.
- Local centre – A new local centre will be provided, offering a mix of local retail and community facilities. The proposals also include measures to improve access to Baldock town centre for all Baldock residents.
- Education – Additional education provision will be provided. Up to two new primary schools with nursery facilities and a site for a new special educational needs school will be provided on site. Secondary education will be provided either in the form of an expansion to the existing Knights Templar school, or relocation and expansion of the school to the Baldock site.

A range of other community, cultural leisure and recreational facilities are proposed including the Baldock greenway, play spaces, sports facilities, the heritage trail, food growing opportunities, and public open space.

The development of community infrastructure will be carefully phased in line with housing delivery in order to establish and support a strong sense of community from the outset.

Please see the Design and Access Statement (DAS) submitted with the application for further information on community facilities.

3.2.3 Delivering a Wide Choice of High-Quality Homes

Up to 3,200 homes will be provided on site, comprising a mix of house types and tenure, helping to meet the need for market and affordable housing in the area. The development will include serviced plots for self-build development, a site for a care home for older people, sheltered, supported living and extra care housing.

A percentage of homes will be provided as affordable housing, helping to meet the need for affordable housing in the area. The proportion of affordable housing will be decided dependent upon a viability assessment and s106 requests, with consideration of local **Policy HS2**. Affordable housing will be indistinguishable from market housing, and provided in mixed-tenure streets, helping to create a cohesive and well-integrated community.

Delivery of homes with high fabric efficiency and renewable energy infrastructure will also help to reduce energy bills and vulnerability to fuel price fluctuations. This will help to address fuel poverty and the cost-of-living crisis, which was raised as a key priority in the sustainability workshop with HCC.

3.2.4 Ensuring a Healthy Environment

The development will include a number of measures to ensure the delivery of an environment that supports the health and wellbeing of residents and surrounding communities, with consideration of air quality, overheating, noise and inclusive design.

- Air Quality – Air Pollution has harmful effects on the health of humans, wildlife and our environment. An Air Quality Assessment (AQA) has been undertaken by RPS. Local monitoring has confirmed that concentrations of NO_2, PM10 and PM2.5 are well below limits and there are no obvious air quality constraints to development on the site. The overall design of the development includes a number of measures which will reduce emissions and contribute to better air quality management across the site and surrounding areas. These include a sustainable movement strategy which reduces the need to travel and promotes the use of low/zero emission travel options, and an all-electric energy strategy, resulting in a reduction in NOx emissions associated with gas boilers. At the detailed design stage, homes and buildings will be designed to ensure that they provide a comfortable indoor environment in terms of ventilation and air quality.
- Overheating – With increasing summer temperatures, overheating is quickly becoming one of the most critical climate adaptation considerations. The proposals will include measures to mitigate the risk of overheating, with consideration of rising summer temperatures as a result of climate change. Further detail is provided in **Section 3.5.3** and within the noise chapter of the Environmental Statement**.**
- Noise – A Noise Impact Assessment has been undertaken as part of the Environmental Impact Assessment. The main noise constraints on the development are noise from road traffic along the A1(M) and the A505 as well as the railway line running through the centre of the site. The Environmental Statement confirms that appropriate internal and external noise guideline levels will be achieved in all dwellings, provided the recommended mitigation measures are implemented. The site layout, landscaping, building orientation, and location of external amenity areas will be designed with consideration of the potential impact of road/rail noise, to mitigate any potential impacts on health and wellbeing.

3.2.5 Community Involvement

Community engagement during the planning and design process. U&C want to make sure that the community plays a role in shaping the town's future growth. Understanding people's views and the knowledge of existing residents is a key part of this. The design of the development has been based on extensive community engagement to date. Feedback has been sought through a variety of events and forums such as the public consultations, online public consultation, events and meetings with the community and community groups and two Design Review Panels Further information on the community

engagement strategy can be found in the 'Baldock Conversation' website[2] and is set out in the Statement of Community Involvement.

Figure 7: Image of Public Event

Long-term community ownership and stewardship. A stewardship approach is being developed which will ensure the long-term management of public assets such as green spaces, play areas, footpaths and cycle paths, community centres, allotments, sports pitches etc. One of the key aims and objectives of the stewardship approach is to engage and empower local and neighbouring residents and businesses through inclusive and ongoing community participation so they can continue to shape and care for the public areas and green spaces around them.

The stewardship approach is being refined and agreed with NHC and HCC and could involve a range of approaches such as Local Authority adoption, management by a U&C Management Company (ManCo), management by a charitable trust, or community ownership and local long-term stewardship.

[2] The Baldock Conversation - Growing Baldock

3.3 Biodiversity

Development at Baldock will enhance and expand on existing assets to form a comprehensive green network that protects and promotes biodiversity. Key ecological features will be retained, and new and enhanced habitats will be provided in the form of a landscape-scale ecological network.

Key biodiversity principles for the site are:

- Enhancing Bygrave Road Local Wildlife Site Integrating habitats and corridors, trees and hedgerows, into GI network.
- Creating a network of connected wildlife corridors and green spaces.
- Providing connections to and buffering of Local Nature Reserves.
- Mitigating impacts on ecology through provision of new habitats.
- Native and climate resilient planting.
- Provision of additional green spaces to reduce recreational pressure elsewhere.

Various habitats surveys and species-assessments have been undertaken as part of the baseline ecological survey work to determine the likely ecological implications of the development and to develop a comprehensive strategy that aims to protect habitats and species and deliver a net gain in biodiversity. The Herts Local Nature Recovery Strategy has been considered throughout the development of the GI strategy, landscape illustrative plan, and the shaping of the parameter plan.

3.3.1 Existing Conditions

The majority of the site is arable farmland of low ecological value. Notable features are limited to fragmented hedgerows, trees and woodland around field boundaries. Habitats include amenity grassland, dense scrub, hedgerows and trees, improved and semi-improved grassland, and woodland. Protected and notable species on site include bird species such as corn bunting, common lizard, slow worm, bats, small blue butterfly, and sandrunner shieldbug.

The site does not lie within the Impact Risk Zone for any statutory designated sites of nature conservation. The site lies within 2km of two statutory sites of nature conservation importance (Weston Hills and Ivel Springs Local Nature Reserves and Local Wildlife Sites) (LNRs). There are ten non-statutory designated sites, six priority habitats, and two notable habitats located within 1km of the site. Bygrave Road Local Wildlife Site (LWS) is located within the centre of the site.

3.3.2 Biodiversity Mitigation and Enhancement Measures

A number of mitigation and enhancement measures are proposed to protect and enhance biodiversity. The aim is to create a strategic nature recovery network that reconnects nature and provides greater permeability for species. Proposed measures include:

- A wildlife-focused area of green space is to be retained to the east of Clothall Common to protect the existing grassland habitat and species.
- Wildlife corridors and green links will be provided to enhance connectivity. Wildlife corridors will be incorporated along Bygrave Common and Winterbourne Way to provide east-west connection between key open spaces and the LNRs. Smaller green links will run throughout the site to enhance the ecological network.
- Bygrave Road LWS will be retained and enhanced, alongside the historic route of the winterbourne channel. This will form a key east-west wildlife corridor through the site.
- The northern part of Bygrave Common will include grassland habitat for ground nesting birds such as corn bunting.
- Ivel Springs and Weston Hills LNRs will be safeguarded and buffered. Connectivity to the LNRs will be improved through the provision of wildlife corridors incorporating newly created habitat such as SuDS features, woodland and wildflower grassland planting.

- Substantial new parkland area will be provided in the north of the Baldock site, which will also help to relieve the recreational pressures on Ivel Springs LNR.
- Walls Field will be taken out of agricultural use and planted as a wildflower meadow, forming a new habitat area.
- The site plan will aim to retain and enhance existing hedgerow boundaries, trees and small woodlands where possible.
- The proposed sustainable drainage strategy also has the potential to recharge the local chalk aquifer and improve water flows in the upper River Ivel.

A summary of the proposed biodiversity measures can be seen in the Framework Biodiversity Strategy Plan, shown in **Figure 8.**

3.3.3 Biodiversity Net Gain

Through implementation of these habitat protection and enhancement measures, the development will deliver a policy compliant biodiversity net gain (BNG) of 10% as a minimum. However, given the extensive retained habitat and landscape proposals, the development will aspire to achieve beyond this. BNG metrics will be reviewed and updated after each key design and delivery milestone to ensure the BNG is maintained.

For further information on ecology and biodiversity, please see the ecology reports and Green Infrastructure Strategy which accompany the outline planning application.

Figure 8: Framework Biodiversity Strategy Plan (Source: Green Infrastructure Strategy, BMD)

3.4 Sustainable Movement and Transportation

The promotion of sustainable movement that supports active and low-carbon forms of travel is vital to the delivery of a healthy and sustainable development at Baldock. This section provides a summary of the sustainable movement and transport measures proposed for the development.

Transport emissions account for 26% of greenhouse gas emissions within the county of Hertfordshire[3]. Lower carbon modes of transport such as walking and cycling have many co-benefits in relation to improved health and wellbeing, reduced noise and air pollution, and an increase in social interaction. The development of a sustainable transport strategy that supports healthy and sustainable forms of travel is therefore a key aim of the scheme.

The transport strategy for the site, set out in the Transport Assessment has been developed using a vision-led approach. The transport vision for the site has been agreed through extensive discussion with NHC and HCC and seeks to ensure that the development delivers sustainable transport, healthy lifestyles and lower environmental impacts.

"Growing Baldock will create a place that prioritises quality of life over traffic movement. Walking, cycling and public transport will be the quickest and most enjoyable way to travel on-site, with off-site connections enhanced to key destinations, benefitting existing communities and businesses in the town. Through masterplan design, mix of uses and delivery of new infrastructure, the need to travel off-site will be reduced, with non-car options being the first choice when travel is required, encouraging active, healthy lifestyles."

The vision is supported by the following Transport Principles:

- Reducing car dominance in Baldock;
- Safe, direct and coherent networks for active travel (i.e. walking and cycling);
- Delivering a green infrastructure network;
- Prioritising buses over private vehicles;
- Excellent rail access;
- Managing freight and logistics; and
- Reducing reliance on the private car so that around 50% of all trips are made by other modes.

These objectives are being implemented through a variety of on and off-site measures, examples of which are provided in the following sections.

3.4.1 Liveable Neighbourhoods

Centre to the transport strategy is the creation of 'Liveable Neighbourhoods' that reduce car dependency and promote active and sustainable forms of travel. 'Liveable Neighbourhoods' build upon the concept of a '20-minute neighbourhood' or '15-minute city' and are places where daily needs can be met within a short journey by foot, cycle or public transport.

The site is within walking distance of Baldock town centre which provides a range of facilities for existing residents. In addition to these existing services and facilities, a range of new amenities will be provided within the site plan, including community facilities, employment development, education provision, and a health centre. The development will aim to ensure a range of facilities are available within a short walk, cycle or public transport journey from

[3] HCCSP Strategic Action Plan for Transport 2023

people's homes. The everyday and occasional services and facilities envisaged to be required to create a liveable neighbourhood at Baldock are as follows:

- On site: Open space, primary and secondary education, a community hall, mixed use local centre, convenience store, bus stops, parks, local employment, GP surgery, and a care home.
- 20-minute walk/ cycle: Rail connections, sports field, pharmacy, nursery, supermarket, library, retail, leisure centre, post office, and town centre employment.
- 20–60-minute public transport trip: Wider leisure attractions, hospital, further education, and wider employment.

3.4.2 Active Travel (walking and cycling)

The sustainability workshop with HCC highlighted that connectivity across the development by cycling and walking is critical to a low carbon lifestyle. The active travel strategy aims to ensure that walking and cycling are a realistic mode of transport for a large proportion of day-to-day journeys. This will involve:

- Provision of high-quality walking and cycling routes to key local destinations such as the local centre and schools, the employment area, informal play and meeting spaces.
- Design of active travel routes to key destinations to be more attractive than car routes.
- Provision of traffic-free routes which prioritise walking and cycling. On the busiest roads (such as Station Road / North Road and Royston Road) segregated routes for cycling will be introduced. Where there is no space for dedicated traffic-free routes, traffic volumes will be reduced to levels that most people will find comfortable for cycling or walking.
- Provision of convenient cycle parking at building/dwelling entrances.

The proposed measures will transform the foot and bicycle connections for both new residents and existing communities within Baldock. A map of the proposed active travel improvements can be seen in **Figure 9**.

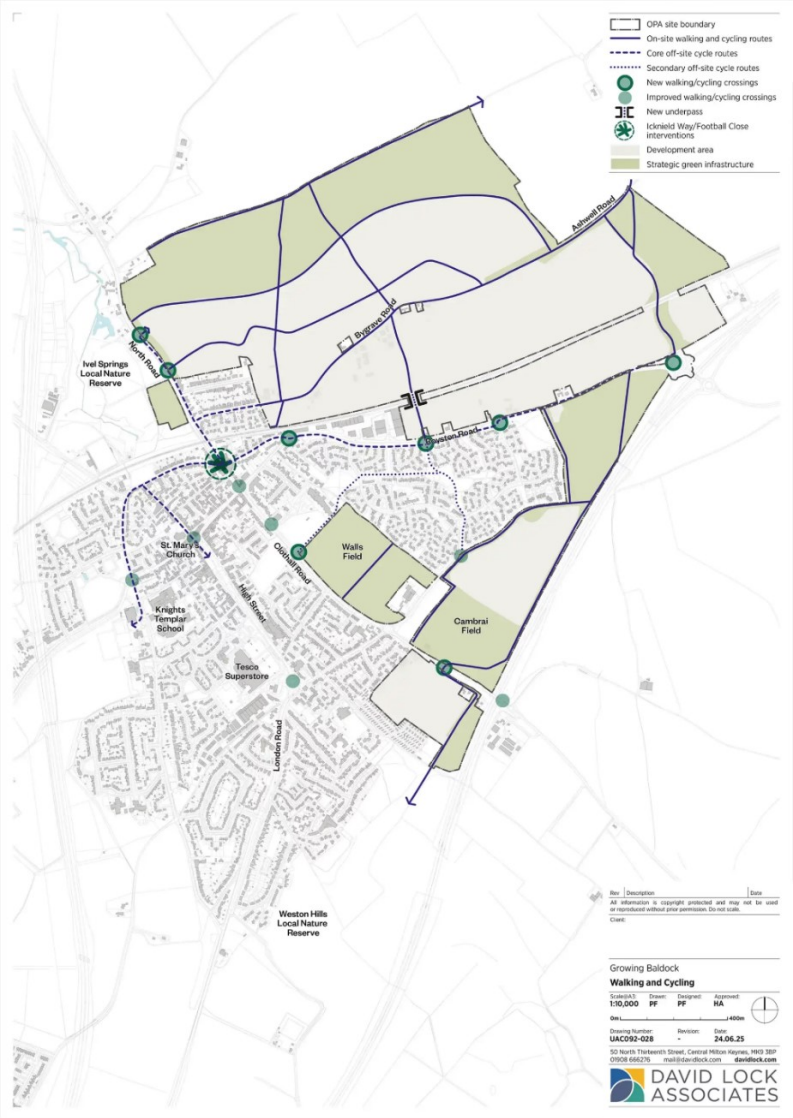


Figure 9: Summary map network (Source: ITP / DLA)

3.4.3 Public Transport

The site is well-located to provide strong public transport links including Baldock railway station. The sustainability workshop with HCC emphasised the need for a regular bus service around Baldock, and that due to the high levels of anticipated commuting, ensuring good access to the train station will be important in terms of employment and reducing reliance on the car. Proposed measures to support public transport connectivity include:

- Enhanced access to Baldock Railway station and a range of improvements implemented to improve the accessibility of the station building. This will include enhanced public realm at Station Road, reopening of pedestrian access from North Road, creation of a new pedestrian link to the north platform from BA1, and installation of lifts to both platforms to ensure step-free access throughout the station.
- Creation of an attractive and frequent bus service that will have advantage over the private car.
- A new shuttle bus – the 'Baldock Flyer' – which will provide quick and frequent connections between Baldock Railway Station, development sites, new employment and the town centre.
- Bus routes to key destinations will be designed to be attractive to potential users. Bus priority is proposed at the Whitehorse Street junction, Station Road and North Road. A new bus gate will be provided at Royston Road to allow bus access to Yeomanry Drive. This will help give journey time advantage to buses, making bus travel a reliable and direct alternative to the car.
- Bus stops will be located within 400m of most new homes, providing services to Baldock town centre and Letchworth.
- A network of mobility hubs will be provided both on- and off-site, where people can easily switch from one mode of transport to another. These hubs will incorporate a range of facilities such as bus stops, cycle and scooter hire, cycle parking, car club spaces, cafés, co-working spaces, cycle repair, shopping pick up/ drop off lockers, EV charging points. A hierarchy of hubs will be delivered, with the busiest locations containing the widest range of facilities, and local street-level hubs containing more basic facilities. Further detail on mobility hubs will be secured in subsequent RM applications.

3.4.4 Managing Vehicles

Highway design has been developed with consideration of the transport vision for the site, and with the aim of supporting more sustainable modes of transport such as walking and cycling. It will always be possible to access all areas of Baldock via car, however vehicular routes may be amended to favour sustainable modes and to discourage through-traffic. For example:

- A package of measures will be delivered with the aim of ensuring through-traffic stays out of the town centre and to encourage drivers to stay on the strategic and main road network.
- Road space will be reallocated to walking, cycling and public transport in a balanced way, while accommodating additional vehicle trips from development.
- Consolidation points and parcel pick up lockers will be provided to help to minimise the number of delivery vehicles moving around the site.

3.4.5 Car Parking and Electric Vehicle Charging

Smart and flexible parking design will be delivered to support the transport vision. Car parking will be designed so that it will not block pavements and will be designed with flexibility in mind so that it can be repurposed for different used in the future, should car ownership decrease.

In line with Building Regulations Approved Document S, all proposed dwellings will have access to one allocated EV parking space, either on-plot, or in a shared parking area in the case of apartments. All non-residential parking will also benefit from an appropriate proportion of EV charging spaces, to be determined by a confirmed use at RM stage.

3.4.6 Car Clubs

Car clubs can support lower car ownership by providing access to a vehicle when needed, without the need for each household to own their own private car. Access to car clubs will be provided across the development, where vehicles can be booked, reducing the need to own a private car. New residents will be provided with an introductory paid car club membership to encourage residents to use the scheme.

3.4.7 Framework Travel Plan

A Framework Travel Plan (FTP) has been developed with the overarching aim of ensuring that 50% of all trips associated with the development are made by sustainable modes. The FTP sets out aims and objectives, targets, reporting and monitoring requirements that will be required to ensure the successful implementation of the sustainable transport strategy. All future site occupiers who come forward as part of the development (for residential, educational or workplace developments) will be required to produce full detailed Travel Plans which comply with the wider targets and requirements set out in the FTP.

Further detail can be found in the Transport Assessment and Framework Travel Plan which accompany the outline planning application.

3.5 Climate Change Adaptation and Resilience

This section of the report identifies key measures which will be incorporated into the design to ensure a resilient development that is able to adapt to the effects of climate change.

Climate change will cause the UK to become warmer, winters will become wetter, and summers will become drier. The UK Climate Change Risk Assessment identifies key risks associated with the effects of climate change. In relation to the built environment and the proposed development, these include reduce summer water availability, increased winter rainfall and increased summer temperatures.

As part of U&C's Sustainability Framework, all key phase design codes are required to include climate resilient design recommendations to mitigate and adapt to the future impacts of climate change. Climate resilient design measures will therefore be set out in the design codes for Growing Baldock.

The development at Baldock will include a range of measures to adapt to the key climate change risks of flooding, drought, and overheating.

3.5.1 Flood Risk

A Flood Risk Assessment and Drainage Strategy have been prepared by AKT to accompany the planning application. The site is located entirely within Flood Zone 1 and is identified at being at very low risk of flooding from groundwater or artificial sources (such as reservoirs). The majority of the site is at also at very low risk of surface water flooding, aside from two areas in the southern part of the site and an area in the northern part of the site.

The masterplanning of the site locates development away from surface water flood risk areas and also provide an opportunity to improve overland flows and reduce localised flooding. The surface water drainage strategy for the site will be designed to accommodate a 1 in 100-year event plus 40% allowance for climate change.

The drainage strategy for the site has been designed in line with In line with national and local design standards including the LLFA Summary Guidance for developers and HCC Local Flood Risk Management Strategy. Surface water will be disposed of through infiltration wherever possible. The proposed strategy features individual soakaways for residential plots. Roads, footpaths and the employment land buildings will be drained to infiltration basins through a combination of swales, bio-retention areas and piped networks. Employment land car parks will benefit from permeable paving and will discharge via infiltration.

The proposed Sustainable Drainage System aims to mimic natural drainage processes to reduce the impact of the development on the quality and quantity of runoff, as well as provide amenity and biodiversity benefits. The proposed strategy will minimise the volume of surface water entering sewers and contributing towards the recharge of groundwater aquifers in the area.

Further information can be found in the Flood Risk Assessment and Drainage Strategy which accompany the application.

Figure 10: Illustrative Sustainable Drainage Strategy (Source: BMD)

3.5.2 Water Efficiency

Potable water is an increasingly important natural resource, and with North Hertfordshire classed as being in an area of severe water stress, the conservation of water is a significant sustainability metric. The need to reduce water consumption is highlighted in **Policy D1** of the NHC Local Plan, which requires residential schemes to meet or exceed a water efficiency standard of 110 litres per person per day (l/p/d), and NHC's Sustainability SPD, which sets a 'silver' target of <95 l/p/d and a 'gold' target of <75 l/p/d. At the detailed design stage, homes and buildings will aim to include a number of measures to enhance water efficiency and reduce water consumption. This will include measures such as:

- Dual flush WCs;
- Low flow fittings;
- Water meters and leak detection devices; and
- Water efficient equipment.

Limiting water consumption to <95 l/p/d can be very challenging due to difficulties influencing residents' behaviour and expectations and accessing reliable data. Furthermore, according to the Future Homes Hub 'Water Ready' report, meeting this standard is likely to require the use of rainwater/ greywater recycling systems, or enhanced effectiveness WC and spray showers (with air assist/ air boost systems) which are not currently available at scale[4]. Therefore, all residential development will aim to limit water consumption to 110 litres per person per day (l/p/d) as a maximum, with an aim to reduce this to 95 l/p/d where feasible. Water efficiency targets will be included in the 'Balanced Scorecards', which will form part of the assessment criteria for appointing and monitoring housebuilders and other developers

Community buildings built by U&C will aim to achieve RIBA Climate Challenge targets for potable water use of < 0.5 m^3/pupil/year for schools, or < 10 l/p/d for other community buildings. All non-residential buildings over 1,000 m^2 will

[4] Future Homes Hub Water Efficiency Report

aim to achieve BREEAM Excellent, which requires buildings to ensure water efficiency and include water-efficient fixtures and fittings.

At an organizational level, U&C are also aiming to achieve a 20% reduction in potable water consumption in delivery and maintenance of landscaping projects (against a 2025 baseline), either through switching to non-potable water supplies, or through greater efficiency.

In addition to these measures to enhance water efficiency and reduce water consumption, the surface water drainage strategy for the site will be designed to optimise rainwater infiltration to ground at or close to source, which has the potential to contribute towards the recharge the local chalk groundwater aquifers in the area and improve water flows in the upper River Ivel.

3.5.3 Overheating

With increasing summer temperatures, overheating is quickly becoming one of the most critical climate adaptation considerations. The risk of overheating is compounded by the Urban Heat Island (UHI) effect, which occurs when dense concentrations of pavement, buildings, and other surfaces absorb and retain heat, and can lead to significantly higher temperatures in urban areas compared to rural equivalents. Green and blue infrastructure can provide a cooling effect through the provision of shade, evapotranspiration, and altered airflow patterns. The extensive provision of green and blue infrastructure throughout the site plan (over 40% of the site) will therefore help to mitigate UHI and reduce temperatures during heatwaves.

In addition to the wider landscape measures, the detailed design of all homes and buildings at Growing Baldock will be designed in accordance with the cooling hierarchy, as shown in **Figure 11**, which prioritises the use of passive cooling measures prior to the consideration of mechanical ventilation and/or active cooling systems. Design in accordance with the cooling hierarchy means that buildings will be better equipped to manage their cooling needs while also reducing reliance on active cooling systems, minimising associated energy use and carbon emissions.

All new homes will be designed in accordance with Part O of the Building Regulations, which specifies that new developments must take steps to mitigate the risk of overheating, with consideration of rising summer temperatures as a result of climate change, and introduces requirements on limiting solar gain, ventilation, and removing excess heat. Further information will be provided in the sustainability statements for the detailed design stages.

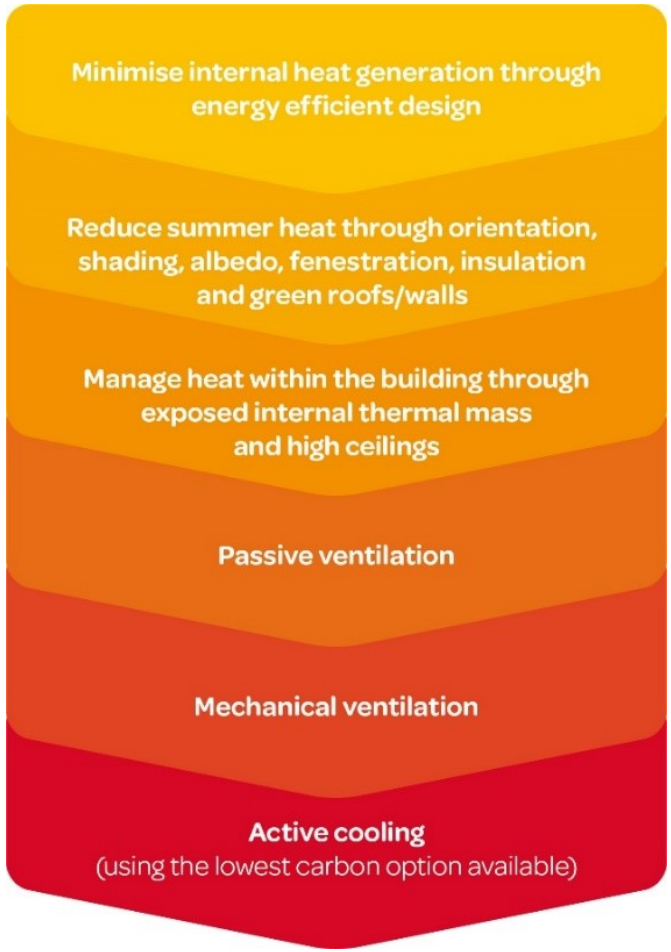


Figure 11: The Cooling Hierarchy

4. Conclusion and Summary

This Sustainability strategy has set out how the proposed development at Baldock will deliver a high-quality sustainable development that supports local and national sustainability related ambitions and facilitates a transition to net zero.

A range of sustainable design measures have been incorporated at this stage of the development and will be considered during the detailed design to mitigate and adapt to the effects of climate change, deliver social and economic benefits, and to protect and enhance the natural environment. A summary of the key measures is provided below.

Engaging with Stakeholders

- Workshops and meetings have been held with representatives from NHC and HCC to understand key priorities for the scheme, and to ensure that the sustainability strategy aligns with the NHC and HCC aspirations. Feedback has been incorporated into the sustainability strategy and will continue to be considered at every stage.

Climate Change Mitigation

- All **homes** will aim to be **net zero** for regulated operational carbon emissions.
- All **community buildings** at Baldock built by U&C (including schools) will aim meet the **EUI targets** in the Map to Net Zero and aim to be **net zero** for regulated operational emissions.
- All non-residential buildings over 1,000 m^2 will aim to achieve **BREEAM Excellent**, which requires a strong focus on minimizing energy demand and reducing carbon emissions.
- All homes and buildings will be constructed to a **high standard of fabric efficiency and airtightness** that aim to go beyond the minimum requirements of the Government's Future Homes and Buildings Standard where viable.
- **Energy Use Intensity (EUI) Targets and Space Heating Demand Targets** will be set for housebuilders by U&C at the tender stage. Buildings delivered by U&C directly will aim to meet EUI and SHD targets in line with their Map to Net Zero
- Homes and buildings will utilise a range of **renewable energy technologies** such as roof mounted **Solar PV and Air Source Heat Pumps** (ASHP). An area of land has also been identified for potential provision of stand-alone renewable energy infrastructure (subject to feasibility) should the recycling centre not progress.
- All development will be powered **solely by electricity** without the use of fossil fuels to provide heating and hot water. This means that the carbon intensity of each building will reduce over time with the decarbonisation of the national electricity grid.

- BA1 and potentially BA10 will include an **'innovation zone'** or invite wider innovation which will explore the use of new technologies and higher construction standards on a select number of dwellings.
- A **low carbon masterplanning approach** that aims to reduce embodied carbon and facilitate low carbon lifestyles;
- A landscaping strategy that maximises the potential for on-site **nature-based carbon removal.**
- Implementation of **best practice soil management techniques** throughout planning. construction, and management, to reduce the loss of carbon from soils.
- All community buildings (including schools) will aim to U&C's Map to Net Zero **Embodied and Upfront carbon targets**.
- **Whole Life Cycle Assessments (WLCAs)** will be carried out on a representative sample of homes at detailed design to estimate the embodied carbon emissions of the development, and to consider measures to reduce embodied carbon emissions.
- Homes will aim to achieve an upfront carbon performance of **<800 kgCO2e/m^2 upfront carbon (A1-A5)** with an aspiration to achieve <675 kgCO2e/m^2 upfront carbon (A1-A5) where viable in line with 'silver' level performance.
- Inclusion of **Circular Economy principles** to promote the reuse of materials, optimise design, and minimise waste and the environmental impacts of construction.
- Following the principles of **'lean design'** to design out waste and reduce the volume of raw materials required for site infrastructure.
- Promoting the use of **sustainable materials** such as those that are locally sourced, reused, recycled, natural and biobased, or have a low embodied carbon.
- **Reducing waste** including the target for at least 80% of Construction, Demolition and Excavation waste to be diverted from landfill, with an aim to achieve 90%.

Healthy Placemaking

- Supporting **active lifestyles**.
- Promoting **access to nature** and open green open spaces.
- Provision of **community facilities** to support new and existing communities.
- Delivering a wide choice of high-quality and **affordable homes**.
- Consideration of air quality, overheating and noise to ensure the delivery of a **healthy environment** that supports health and wellbeing.
- Promoting **community ownership** and stewardship.

Biodiversity

- A **landscape-led approach**, where the natural features have guided blue-green infrastructure.
- **Retention and protection** of key area of areas of ecological interest, such as Bygrave Local Wildlife Site and the Spital Hill area.
- The planting of trees, the creation of new habitats, and the design of a strategic network of green infrastructure to **enhance biodiversity** within and around the site.
- BNG of **10% as a minimum**, with an aspiration to achieve beyond this.

Sustainable Movement and Transportation

- A **vision-led** approach to transport planning which aims to reduce the need to travel, and to ensure more sustainable modes of travel such as walking, cycling and public transport are the first choice.

- **Liveable neighbourhoods** where day-to-day needs can be met within a short walk, cycle, or public transport journey.
- An **active travel** strategy which ensures walking and cycling are a realistic alternative to the private car.
- Improved access to the **train station** and provision of an attractive, legible and frequent **bus service**.
- A network of **mobility hubs** where people can easily switch from one mode of transport to another.
- **Highway design and parking strategy** which aims to support more sustainable modes of transport such as walking and cycling.
- **EV charging facilities** to support the uptake of low emission vehicles.

Climate Change Adaptation and Resilience

- **Managing flood risk in accordance with** Sustainable Drainage System (SuDS) principles.
- All key phase design codes will be required to include **climate resilient design recommendations** to mitigate and adapt to the future impacts of climate change.
- A **drainage strategy** designed to treat pollutants in runoff, provide amenity and health benefits for people, and habitats for wildlife.
- Enhancing **water efficiency** with an aim for all residential development to limit water consumption to 110 l/p/d as a maximum, with an aspiration to reduce this to 95 l/p/d where feasible. Community buildings built by U&C will aim to achieve < 0.5 m^3/pupil/year for schools, and < 10 l/p/d for other community buildings. Non-residential development over 1,000m^2 will aim to achieve BREEAM Excellent, which requires buildings to ensure the efficient use of water.
- Supporting water efficiency in the **maintenance and delivery of landscaping**.
- Mitigating **Urban Heat Island** effect through the extensive provision of green and blue infrastructure and managing the risk of **overheating** in accordance with the cooling hierarchy.

Appendix 1 – Policy and Context

5.1 National Policy and Guidance

This section sets out a summary of current national guidance and policy in relation to sustainable development.

5.1.1 National Planning Policy Framework

The National Planning Policy Framework[5] (NPPF) provides a framework for the development of locally prepared plans and the government's planning policies for England and how these are expected to be applied.

Paragraph 8 outlines the environmental objective of the Framework which includes mitigating and adapting to climate change and moving to a low carbon economy.

Paragraph 161 similarly confirms that the planning system should support the transition to a low carbon future in a changing climate, including providing support to proposals which contribute to radical reductions in greenhouse gas emissions and encourage the reuse of existing resources, as well as the development of low carbon energy.

Paragraph 164 expects new development to be planned for in ways that avoid increased vulnerability to the range of impacts arising from climate change, ensuring that suitable adaptation measures are provided where development is located in a vulnerable area.

Paragraph 166 of the Framework states that new development should:

- Comply with adopted Local Plan policies on local requirements for decentralised energy supply unless it can be demonstrated by the applicant, having regard to the type of development involved and its design, that this is not feasible or viable; and
- Take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption.

Paragraph 167 states that LPAs should prioritise supporting energy efficiency and low-carbon heating improvements, such as installing heat pumps and solar panels, for both domestic and non-domestic buildings.

The NPPF recognises the role planning has to play in support of the UK's pursuit of the United Nations Sustainable Development Goals (UNSDGs) **(Figure 1.1)** which address social progress, economic wellbeing and environmental protection[6].

[5] UK Government | NPPF
[6] UNSDGs

Figure 1.1: Example UN Sustainable Development Goals

5.1.2 Building Regulations

Whilst not planning policy, the Building Regulations (and specifically Approved Document Part L: Conservation of Fuel and Power) set out the requirements for energy and carbon performance in new buildings. Periodic updates to these national regulations will drive energy efficiency and carbon reduction improvements.

Part L, Conservation of Fuel and Power - On 15th June 2022, the Building Regulations were updated as an interim step towards part of the roadmap to the 'full' Future Homes Standard.

In December 2023 the Government published the Future Homes Standard (FHS) consultation. The standard, which is expected to be published in full autumn 2025, will require homes and buildings to achieve a c.75-80% reduction in carbon emissions beyond Part L 2013. Homes will be 'zero-carbon ready', meaning that they will need no retrofitting to produce zero carbon emissions as the electricity grid decarbonises.

For dwellings, two options are currently being consulted on:

- **Option 1:** High efficiency solar PV panels covering 40% of ground floor area (equiv.), airtightness of 4 m3/m2.h @ 50Pa, wastewater heat recovery, and decentralised mechanical extract ventilation (dMEV).
- **Option 2:** No renewable energy, airtightness of 4 m3/m2.h @ 50Pa, no wastewater heat recovery, and natural ventilation with intermittent extract fans.

On the 6th of June 2025, the Government further announced that solar panels will be included in the FHS[7], leading to installation of Solar PV on the vast majority of new build homes. The announcement confirmed the FHS will be launched in Autumn 2025, and it is anticipated this will then come into force in 2026, subject to transitional arrangements.

Part S, Infrastructure for Charging Electric Vehicles - Part S sets out guidance for electric vehicle (EV) charging infrastructure. For residential development, EV charge points must be provided for each dwelling (or where the total number of parking spaces is less than each dwelling, all spaces should be provided with an active EV charging point). Any remaining spaces must have cable routes for charge points to be installed.

Part O, Overheating - Part O sets out new requirements for mitigating overheating in residential buildings, specifying that residential developments must limit unwanted solar gains in the summer and provide means to remove heat. Compliance with Part O can be demonstrated using two methods, either following a simplified prescribed glazing and free area ratio or using Dynamic Simulation Modelling to demonstrate the risk of overheating from rising summer temperatures has been mitigated.

5.1.3 Sustainability Standards and Certifications

The sustainability strategy for Growing Baldock has been influenced by a range of national voluntary sustainability standards and certifications such as the RIBA

[7] Rooftop solar for new builds to save people money - GOV.UK

Climate Challenge, Passivhaus standards, BREEAM, and the emerging UK Net Zero Carbon Building Standard (UKNZCBS).

BREEAM – BREEAM is established by The Building Research Establishment (BRE) and provides a comprehensive assessment of a new home or building's sustainability performance. Both HQM and BREEAM assess buildings on a wide range of sustainability criteria, including energy efficiency, water efficiency, materials, waste, pollution, health and wellbeing, and ecology. BREEAM covers a wide range of non-residential building types, with ratings ranging from Pass to Good, Very Good, Excellent and finally Outstanding. Around 550,000 buildings have been certified under BREEAM, and the standard is touted as the world's longest-established method of certifying the sustainability of buildings.

RIBA Climate Challenge – RIBA (Royal Institution of British Architects) - 2030 Climate Challenge Targets are a series of voluntary operational energy, embodied carbon, and potable water performance targets for homes, schools, and office developments. RIBA Climate Challenge targets for embodied carbon and operational energy performance are set out in the following table. The operational energy targets include unregulated energy.

RIBA Metrics	2025 Targets	2030 Targets
Operational; Energy (kWh/m^2/yr)	<60 kWh/m^2/yr	<35 kWh/m^2/yr
Embodied Carbon (kgCO_2e/m^2)	<800 kgCO_2e/m^2	<625 kgCO_2e/m^2

Passivhaus – Passivhaus is an international energy performance standard for buildings which aims to reduce the requirement for space heating and cooling. The standard sets rigorous targets around overall energy demand and space heating, including a Space Heating target of 15 kWh/m2/yr, Primary Energy Demand of target 120 kWh/m2/yr, and Air tightness target of <0.6ac/hr.

UKNZCBS – The UK Net Zero Carbon Buildings Standard is a cross-industry initiative has been launched by leading industry organisations such as BBP, BRE, the Carbon Trust, CIBSE, IStructE, LETI, RIBA, RICS, and UKGBC to develop the UK's first Net Zero Carbon Buildings Standard.

The standard is an innovative initiative that sets a single, agreed technical methodology to help the sector develop and deliver net-zero buildings which are aligned with the UK's legal requirements to meet net zero by 2050. The Pilot version of the standard was released on the 24th of September 2024 and includes a range of carbon and energy limits for net zero carbon aligned buildings. The standard includes targets for embodied carbon, operational energy, on-site renewable electricity generation, heating/cooling limits, and refrigerants, as well as reporting metrics for water use and electricity demand management. Future versions of the standard will also include requirements around verification, conformity, and communication of performance.

5.2 Hertfordshire County Council Drivers

Climate Emergency and Sustainable Hertfordshire Strategy. HCC declared a climate emergency in July 2019. Their Sustainable Hertfordshire strategy sets out the aim of achieving net-zero carbon emissions for the county by 2045 and for its own operations by 2030. Other targets include enhancing nature on their land by 20% by 2030 and by 20% across the county by 2050, reducing waste and increasing resource efficiency, and getting communities ready for future climates.

Hertfordshire Development Quality Charter. The aim of the Hertfordshire Development Quality Charter[8] is to achieve a new benchmark for high quality and sustainable development in Hertfordshire. The charter sets out a number of pledges including:

- Developers must identify a sustainability standard that exceeds minimum current building regulations as part of their planning application and then use an industry-recognised process to demonstrate compliance with that standard upon completion of their development.
- Major sites will be informed by community engagement and a design review

[8] Draft-Hertfordshire-Development-Quality-Charter.pdf (hertfordshiregrowthboard.com)

panel as part of the pre-application and planning application process.

- Major sites must explain the long-term stewardship strategy for their development.
- Developers must incorporate environmental management systems, considerate construction, social value and construction skills development into their business models.
- All developments should achieve at least 10% biodiversity net gain for at least 30 years, in accordance with the DEFRA toolkit.

Hertfordshire Couty Council's Local Nature Recovery Strategy (LNRS). HCC and Hertfordshire Nature Recovery Partnership (HNRP) have developed a LNRS, which sets out the vision for a resilient network for nature across Hertfordshire, by connecting, enhancing and creating places for wildlife. The LNRS sets strategic priorities for nature, which can be supported through a number of actions. There are a number of Areas of Particular Importance for Biodiversity (APIBs) and Areas that could become of Particular Importance for Biodiversity (ACIB). The LNRS has been considered in the development of the green infrastructure strategy for Growing Baldock.

5.3 North Herts Council Drivers

5.3.1 North Herts Council Sustainability Strategy

NHC declared a climate emergency in May 2019 and set targets to achieve Net Zero in council operations by 2030, and for North Herts to be net zero by 2040. Sustainability is one of four key priorities laid out in NHC's Council Plan 2024-2028.

In August 2025 the council have released a new Sustainability Strategy 2025-2030[9], which replaces the previous Climate Change Strategy 2022-2027, and broadens the scope to include wider areas of sustainability such as emissions reductions, climate change adaptation, and biodiversity.

The aims of the strategy are to:

- Achieve Net Zero by 2030 for the council's own operations.
- Achieve a Net Zero North Herts district by 2040.
- Ensure all operations and services are resilient to the impacts of climate change.
- Become a district that is resilient to unavoidable impacts of climate change.
- Increase biodiversity in North Herts.

5.3.2 North Herts Local Plan 2011-2031

The North Herts Local Plan[1], adopted in November 2022, contains a number of sustainability-related requirements for new development.

Strategic Policy SP1: Sustainable development in North Hertfordshire – States that the Council support the principles of sustainable development within North Hertfordshire.

Policy D1: Sustainable design – Planning permission will be granted provided that development proposals:

- Respond positively to the site's local context;
- Take all reasonable opportunities, consistent with the nature and scale of the scheme, to:
    - create or enhance public realm;
    - optimise the potential of the site by incorporating Sustainable Drainage Systems (SuDS);
    - reduce energy consumption and waste;
    - retain existing vegetation and propose appropriate new planting;

[9] Sustainability Strategy launched | North Herts Council

- maximise accessibility, legibility and physical and social connectivity both internally and with neighbouring areas
- future proof for changes in technology and lifestyle;
- design-out opportunities for crime and anti-social behaviour; and
- minimise the visual impact of street furniture and parking provision;

- Have regard to the Design SPD, and any other relevant guidance.
- Meet or exceed the nationally described space standards and optional water efficiency standards.

Policy SP10: Healthy Communities – States that the council will maintain healthy, inclusive communities through supporting retention of existing community facilities, requiring appropriate provision of levels of new community, cultural, leisure and built sport & recreation facilities, ensure appropriate coverage of healthcare facilities, support local retail centres and shops, ensure sufficient education provision and protect, enhance and create new physical and green infrastructure to foster healthy lifestyles.

Policy T1: Assessment of transport matters – Major developments must demonstrate that the proposed scheme would be served by public transport, provide safe, direct and convenient routes for pedestrians and cyclists, and secure comprehensive integration into the existing pedestrian and cycle, public transport and road networks.

Policy T2: Parking – Parking for residential development must be provided in accordance with the Council's minimum standards. This includes provision of at least 1 secure covered cycle parking space per dwelling (or a garage or secure area provided within curtilage of dwelling). Where no garage or secure area is provided then 1 covered and secure space per dwelling should be provided for visitors in a communal area.

Policy HS2: Affordable housing – Sites of 25 or more dwellings should provide 40% affordable dwellings. The Council expects 65% of the affordable housing to be rented, and 35% other forms of affordable housing.

Policy HS3: Housing mix – Requires an appropriate range of house types and sizes to be provided.

Policy HS5: Accessible and adaptable housing – Major development should demonstrate that at least 50% of homes can be built to the M4(2) Accessible and Adaptable standard, and on schemes where 10 or more affordable units will be delivered, 10% can additionally be built to the M4(3) wheelchair user standard.

Policy D4: Air quality – Requires development to consider impact on local air quality, both during the demolition/ construction and operational phases of development.

Policy NE1: Strategic green infrastructure – Requires new development to protect, conserve and enhance strategic green infrastructure.

Policy NE4: Biodiversity and geological sites –Requires new development to protect, enhance and manage biodiversity. This includes delivering measurable net gains for biodiversity and geodiversity.

Policy NE6: New and improved open space – Permission will be granted for development proposals that make provision for new and/or improved open space which have regard to the Council's open space standards and other guidance. On-site provision must include a long-term maintenance and management plan.

Policy NE7: Reducing flood risk – Sets out requirements for new development to mitigate flood risk, including directing development to areas at lowest flood risk and considering climate change within flood risk assessments.

Policy NE8: Sustainable drainage systems – Requires the most appropriate sustainable drainage solution to be used to reduce the risk of surface water flooding, enhance biodiversity, water quality and provide amenity benefits. Drainage solutions should follow the SuDS hierarchy and mimic natural drainage patterns and processes as far as possible.

5.3.3 NHC Sustainability Supplementary Planning Document (SPD)

The Council's Sustainability Supplementary Planning Document (SPD) was adopted on the 23rd of September 2024. The SPD offers good practice guidance and provides information regarding the Council's sustainability expectations. The SPD does not form part of the Development Plan and so cannot introduce new planning policies or add unnecessary financial burdens on development.

The SPD sets three standards of sustainability: bronze, silver, and gold. Applicants are not expected to achieve the highest standards (gold) across all themes but are expected to select individual themes in which to excel depending on site context, type, and scale of development.

The SPD covers numerous sustainability topics broadly split into the following eight themes:

- Optimising Passive Design & Fabric Performance
- Achieving Low Carbon Energy
- Minimising Carbon Footprint
- Healthy Placemaking
- Promoting Biodiversity
- Sustainable Travel
- Conserving Water
- Incorporating Sustainable Drainage

Further detail on the requirements of the SPD and how the proposed development performs against them is set out in **Appendix 3** of this report.

5.3.4 Bygrave and Clothall Neighbourhood Plan

The Baldock, Bygrave and Clothall Neighbourhood Plan was made on 29 June 2021 and forms part of the Development Plan for North Hertfordshire. Several policies within the neighbourhood plan apply to the proposed development at Baldock including Policy G2 'Strategic Green Space, E1 Transport and air quality, E2 Green Infrastructure and outdoor recreation, E4 Building Strong communities, E5 Development north of the railway, E6 Royston road, and Policy E7 Cambrai Farm and south of Clothall Common.

5.3.5 NHC Baldock Vision and Objectives

The Baldock Vision and Objectives sets out NHC's proposed vision and commitments for the development in relation to green infrastructure, movement, community, town centre & health, employment, housing, and energy & climate change, including for the development to be potentially net zero in carbon emissions.

2.4 Urban & Civic Drivers

The sustainability and energy strategy for Baldock is also shaped around the aims of Urban & Civic's corporate Sustainability Framework and Map to Net Zero. U&C's Sustainability Framework identifies three universal challenges - Climate Change, Biodiversity, and Health & Wellbeing. These are key global issues that development must respond effectively to in order to be successful and sustainable. The Sustainability Framework is structured around five 'Capitals', which aims to promote a holistic and interdisciplinary response to the universal challenges identified. Physical, Social, Economic, Natural, and Human.

Key targets set out within U&C's Sustainability Framework include:

- All key phase design codes to include climate resilient design recommendations to mitigate and adapt to the future impacts of climate change.
- Construct 80% of all homes and other buildings within 650m linear distance of a constructed public transport node or other publicly available alternatives.
- Build 80% of all homes and other buildings within 800m linear distance from and existing or planned or shop, café/pub, community facility.

- 95% of construction contracts (by spend) to contribute a minimum number of volunteering days or equivalent benefit-in-kind contributions to local community projects and initiatives facilitated by U&C.
- All sites to create an annual action plan in line with the post planning Consultation and Engagement Strategy and report on the engagement activities and outcomes undertaken in line with the plan.
- 95% of construction contracts to have a minimum of 10% weighting attributed to an assessment of the contractor's project specific sustainability proposals.
- All sites to develop and implement a Community Economic Development Strategy containing site specific obligations with regards to the local authority's economic development strategy and report annually the impact from the actions taken.
- 20% average tree canopy cover per key phase in design or delivery.
- 25% average Biodiversity Net Gain delivered for all strategic land sites (excluding pre-acquisition development) aligned to the Local Nature Recovery Strategy.
- 15% average Biodiversity Net Gain assessed at the planning stage.
- 95% of building and infrastructure construction contracts to procure 25% of construction materials (by contract spend) that are either reused, recycled or have a low environmental impact.
- 20% reduction by 2030 in potable water consumption in the delivery and maintenance of landscaping projects, either through switching to non-potable water supplies or implementation of efficiency initiatives measured (against a 2025 baseline water footprint).
- All sites (>200 occupied homes) to survey resident quality of life every three years and subsequently use feedback to prepare specific U&C actions.
- All U&C directly employed contractors and housebuilders who are; on-site for at least four months within a financial year; active; and are reporting H&S statistics, to achieve a minimum average monthly score of 3.5 out of 5 under the U&C Health & Safety Engagement and Performance Monitoring Tool (5 Star System)

U&C are committed to becoming net zero in both their direct and indirect carbon emissions. In 2021, U&C set the following Net Zero objectives, and developed the initial '**Map to Net Zero'** plan to achieve them, to act as a catalyst for the business to reduce its carbon emissions:

- Net Zero by 2030 for Scope 1 and 2 emissions, by keeping cumulative absolute emissions well within the carbon budget for the 1.5 degree scenario of Science Based Targets (SBTs).
- Net Zero by 2040 for Scope 3 emissions resulting directly and indirectly from infrastructure and buildings commissioned by U&C. Cumulative absolute Scope 3 emissions to remain within the carbon budget for the 1.5-degree scenario of Science Based Targets (SBTs).

U&C have since gathered a breadth of carbon data and undertaken a review of how these objectives could be realised. Achievement of these targets is strongly impacted by the decarbonisation of electricity supplied by the UK national grid and the changing landscape of industry standards and frameworks governing how Net Zero should be measured and assessed. In light of their analysis U&C have adapted their objectives to remain flexible in response to the external factors as follows:

- introduce intensity based 2030 "interim" SBTi aligned targets for all scopes to ensure U&C remain on the right pathway towards achieving Net Zero (subject to grid decarbonisation);
- continue to work towards original Net Zero timescales, but recognise that these are challenging due to influencing factors beyond U&C's control;

- align with the requirements of the Science Based Targets initiative (SBTi) to 2030 but without making a formal commitment or pursuing formal target validation;
- undertake further analysis on Scope 3 opportunities and impacts beyond 2030 before committing to a date for achieving Net Zero; and
- undertake further work to understand the feasibility of meeting the carbon reductions required before making a commitment under the SBTi.

U&C have developed a 'Climate Action Toolkit' and 'Carbon Management Framework' which sets out a comprehensive range of solutions and the approach required by designers and contractors to manage and reduce carbon emissions, including carbon targets for buildings and infrastructure delivered by U&C.

In addition to the Climate Action Toolkit, U&C have two additional toolkits on the themes of Biodiversity and Health & Wellbeing, which provide detailed design and delivery guidance and aid the implementation of the Sustainability Framework.

Appendix 2 – Note to NHC

NHC provided the following advice on the content of the sustainability statement for the OPA:

"It will need to clarify the points raised in the meeting specifically; how fabric parameters proposed improve on reference BR requirements (on reference/ notional dwelling values rather than the backstop values) and what % of the CO2 savings targeted will be due to fabric only measures (excluding savings due to heat pumps). Also, we need to know the target space heating demand (SHD) and energy use intensity values (EUI), whether they intend to provide a whole life carbon assessment & circular economy statement? What's the water consumption target?"

The following note addresses each point and provides further information on the level of detail provided at the outline planning application stage:

Fabric parameters – The design of new buildings will aim to reduce thermal energy demand by targeting improved air leakage and fabric u-values that go beyond the minimum values set by the FHS & FBS. The full FHS/ FBS standard is expected to be published by the government in autumn this year. Further detail on the proposed fabric parameters will therefore be confirmed at the detailed design stages, once further information on the FHS/ FBS is available.

Percent carbon savings from fabric-only measures – As the final details of the FHS/ FBS are yet to be published, it is not possible to provide the exact percentage of carbon savings that will be achieved via fabric only measures. Further detail on the carbon savings anticipated from fabric-only measures can be provided at the detailed design stages, once further information on the full FHS/ FBS is available.

Target space heating demand (SHD) and energy use intensity values (EUI) – EUI and SHD targets will be set for housebuilders by U&C at the tender stage within the 'Balanced Scorecards' which will form part of the assessment criteria for appointing and monitoring housebuilders and other developers. As a minimum, EUI targets will be set at ≤ 60 kWh/m^2/yr and SHD targets set at ≤ 30 kWh/m^2/yr in line with 'silver' level performance with compliance being subject to viability. Higher standards of performance may be included as improved/ innovation targets. All development built by Urban & Civic will aim to meet U&C's Map to Net Zero EUI Targets.

Whole Life Carbon assessment & Circular Economy – Whole Life Cycle Assessments (WLCAs) will be carried out on a sample of development (e.g., c.<5-10% of dwellings) at the detailed design stages, to calculate embodied carbon emissions, and to consider measures to reduce embodied carbon emissions and to support circular economy principles. WLCAs will be required for any development built by U&C. All non-residential buildings over 1,000 m^2 will aim to achieve a BREEAM 'Excellent' rating, which requires developers to demonstrate a commitment to reducing embodied carbon emission, with Life Cycle Assessment and embodied carbon reporting a minimum standard.

Water consumption target – All residential development will aim to limit water consumption to 110 litres per person per day (l/p/d) as a maximum, with an aim to reduce this to 95 l/p/d where feasible. Community buildings built by U&C will aim to achieve RIBA Climate Challenge targets for potable water use of < 0.5 m*3*/pupil/year for schools, or < 10 l/p/d for other community buildings. All non-residential buildings over 1,000 m*2* will aim to achieve BREEAM Excellent, which include water efficiency requirements.

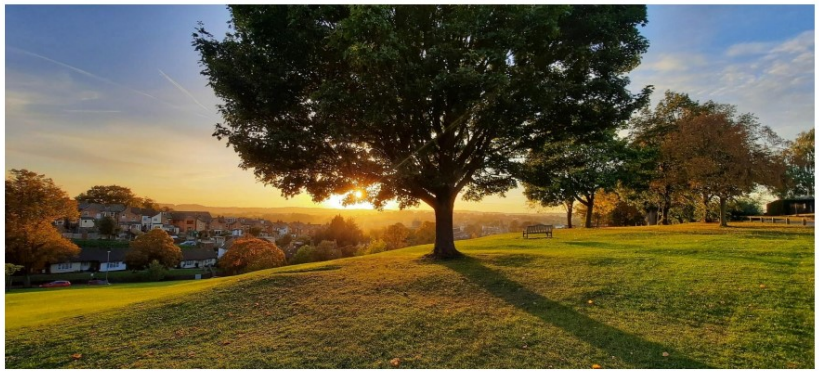
Appendix 3 – NHC Sustainability SPD Checklist

The below table contains a review of anticipated performance against NHC's Sustainability SPD checklist.

North Herts Council

Sustainability

Supplementary Planning Document



KEY:

Achieved
Potentially achieved/ targeted
Not targeted

Development Type	Bronze	Silver	Gold	Growing Baldock Proposed Performance
Optimising Passive Design & Fabric Performance				
Major residential applications of 100 or more dwellings	☑ Achieve an EPC rating of at least C on all dwellings	☑ Achieve 80% EPC ratings of at least B and 20% rating of at least C	☑ Achieve an EPC rating of at least B on all dwellings	- The aim is for development at Baldock to achieve a sustainability standard that exceeds the Building Regulations in place at the time of development. - New homes are currently likely to achieve an EPC of A or B under the current methodology, however the methodology for calculating EPC ratings is due to change with the introduction of the FHS/FBS and the Home Energy Model (HEM). Therefore, EPC ratings will need to be confirmed once further detail on the HEM is available. - **Section 3.1** of the Sustainability and Energy Statement sets out the overarching strategy for the development, including measures to maximise energy efficiency through site layout and orientation, and measures that will be considered during technical design stages. Design principles to achieve this are set out in the Sustainability section of the Design and Access Statement. - Further Sustainability & Energy statements will be provided at the detailed design stages as part of RM applications, setting out how the detailed design of the development will be delivered in line with the principles set out in the Outline sustainability strategy. - All development at Growing Baldock will be fossil-fuel free without the use of gas boilers to provide heat and hot water. - EUI and SHD targets will be set for housebuilders by U&C at the tender stage. EUI targets will be set at ≤ 60 kWh/m^2/yr and SHD targets set at ≤ 30 kWh/m^2/yr in line with 'silver' level performance with compliance being subject to viability. Higher standards of performance may be included as improved/ innovation targets. EUI
	☑ Submit a Sustainability & Energy Statement showing compliance with Policy and Building Regulations (this should include the Energy Use Intensity (EUI) & the total Space Heating Demand (SHD) calculations with recommendations on methods that could be investigated during technical design to improve performance)	☑ Submit a Sustainability Statement from a certified assessor showing: • maximisation of solar gain through site layout, orientation, and design (for the purpose of energy efficiency) • measures to prevent overheating ☑ Submit an Energy Statement from a certified assessor showing: • lower carbon alternatives to gas boilers • on-site reductions of 50% (minimum) in CO2 emissions over and above Building Regulations Part L (including at least 10% reductions through fabric first measures) (inclusive of MHVR) • EUI ≤ 60 kWh/m2/yr (inclusive of estimated unregulated energy) (RIBA 2025) • SHD ≤ 30 kWh/m2/yr (Passivhaus low energy building) or ≤ 40 kWh/m2/yr	☑ Submit an Energy Statement from a qualified body showing: • on-site reductions of 75% (minimum) in CO2 emissions over and above Building Regs Part L (including at least 10% reductions through fabric first measures) • commitment to achieve Passivhaus certification and site assessment at planning stage using Passive House Planning Package (PHPP) to confirm compliance against Passivhaus Classic, Plus or Premium. Or • assessment of the development using CIBSE TM54 or alternative operational energy modelling software and confirms compliance with LETI or RIBA 2030 standards: o EUI ≤35 kWh/m2/yr o SHD ≤15 kWh/m2/yr	

Development Type	Bronze	Silver	Gold	Growing Baldock Proposed Performance
		(AECB/ Energiesprong new build)		and SHD targets will be set for housebuilders by U&C at the tender stage within the 'Balanced Scorecards' which will form part of the assessment criteria for appointing and monitoring housebuilders and other developers.
Major non-residential development	☑ Submit an Energy Statement and a Sustainability Statement showing compliance with national and local Policy and Building Regulations	☑ Submit a Sustainability Statement from a certified assessor showing: • maximisation of solar gain through site layout, orientation, and design (for the purpose of energy efficiency) • measures to prevent overheating ☑ Submit an Energy Statement from a certified assessor showing: • lower carbon alternatives to gas boilers • on-site reductions of 35% (including 10% through fabric first measures) in CO2 emissions over and above Building Regulations Part L unless it is justifiably difficult to achieve • EUI ≤ 75 kWh/m2/yr (inclusive of estimated unregulated energy) (RIBA 2025) • SHD ≤ 30 kWh/m2/yr (Passivhaus low energy building) or ≤ 40 kWh/m2/yr	In addition to silver level requirements ☑ Submit an Energy Statement from a certified assessor showing: • on-site reductions of 50% (minimum) in CO2emissions over and above Building Regs Part L unless it is justifiably difficult to achieve, in which case a saving of >35% will be required • commitment to achieve Passivhaus certification and site assessment at planning stage using Passive House Planning Package (PHPP) to confirm compliance against Passivhaus Classic, Plus or Premium. Or • assessment of the development using CIBSE TM54 or alternative operational energy modelling software and confirms compliance with LETI or RIBA 2030 standards: o EUI ≤35 kWh/m2/yr	- The aim is for development at Baldock to achieve a sustainability standard that exceeds the Building Regulations in place at the time of development. - Section 3.1 of the Sustainability and Energy Statement sets out sets out the overarching strategy for the development, including measures to maximise energy efficiency through site layout and orientation, and prevent overheating. Further Sustainability & Energy statements will be provided at the detailed design stages. - All community buildings at Baldock (including schools) will aim to be net zero in operation (regulated energy) and will aim to achieve EUI targets in line with U&C's Map To Net Zero. - Non-residential development over 1,000m2 GIA will aim to achieve BREEAM Excellent which requires a strong focus on minimizing energy demand and reducing carbon emissions.

Development Type	Bronze	Silver	Gold	Growing Baldock Proposed Performance
		(AECB/ Energiesprong new build) Or • Evidence that the scheme achieves BREEAM 'Excellent'	o SHD ≤15 kWh/m2/yr Or • Evidence that the scheme achieves BREEAM 'Outstanding'	
Achieving low carbon energy				
Residential development	☑ Ensure development is Policy & Building Regulations compliant ☑ Larger schemes (>10 dwellings) are encouraged to submit a Feasibility Study from an Energy Specialist showing how the most appropriate Low/Zero Carbon technology will be implemented on site.	☑ Show that 75% or more of dwellings energy demand is supplied from onsite renewable technology such as PV (assuming low carbon heating/hot water technology is used such as ASHPs) ☑ Show that roof shape and orientation is optimised to maximise solar PV outputs ☑ Show that the development commits to investigating better uses of PV (if present) and detail what these are (connecting any array directly to the landlord supply should NOT be allowed. Options could include: SolShare (or similar), connecting to thermal stores of communal heat pumps)	In addition to silver level requirements ☑ 100% dwelling's energy demand is supplied from onsite renewable technology such as PV (assuming low carbon heating/ hot water technology is used such as ASHPs)	- **Section 3.1** of the Sustainability and Energy Statement contains a review of the most appropriate low/zero carbon technologies for the site. At this stage, the most appropriate technologies to be implemented on site are likely to be ASHP and Solar PV. Further information on the proposed technologies will be provided at detailed design stages. - All homes will target being net zero for regulated carbon emissions. - Roof shapes and orientation will be optimised to maximise solar output, whilst maintaining a balance with good urban design and considering wider factors that influence site layout. - The proposals are exploring options to deliver battery storage technology on an area of land close to the substation and employment land. This is dependent on if the proposed recycling centre goes ahead.

Development Type	Bronze	Silver	Gold	Growing Baldock Proposed Performance
Non-residential development	☑ Ensure development is Policy & Building Regulations compliant ☑ Submit a Feasibility Study from an Energy Specialist showing the most appropriate Low/Zero Carbon technology to be implemented on site.	☑ Show that at least 20% renewable energy is provided from onsite renewable technology such as PV. If this cannot be achieved, it should be shown that PV provision has been maximised.	☑ Show that at least 40% renewable energy is provided from onsite renewable technology such as PV. If this cannot be achieved, it should be shown that PV provision is above 20% and has been maximised.	- **Section 3.1** of the Sustainability and Energy Statement contains a review of the most appropriate low/zero carbon technologies for the site. At this stage the most appropriate technologies to be implemented on site are likely to be ASHP and Solar PV. - All community buildings (including schools) built by U&C will aim to be net zero in operation (regulated energy) through use of high fabric standards and on-site renewables in the first instance.
Minimising carbon footprint				
Whole life carbon assessment: All residential development	☑ Ensure compliance with Policy and Building Regulations including Part Z, if and when it is introduced. Discussions around reducing emissions will be required ☑ Applicants are encouraged to consider Whole Life Carbon (WLC) for Major Development, and methods for reducing emissions during the technical design stages	☑ Incorporate the findings of pre-demolition audits (where applicable) into the WLC assessment for the development ☑ Ensure the scheme achieves the following (kgCO2e/m2GIA) scores: • Embodied Carbon – Product & construction (A1 - A5) score = 675 • Embodied Carbon – maintenance, replacement repair and end of life (B1 - 5, C1 - 4, sequestration) score = 325 Or • LETI Band D	In addition to silver level requirements ☑ Ensure the scheme achieves the following (kgCO2e/m2GIA) scores: • A1 - A5 score <500 • B1 - 5, C1 - 4 (incl. sequestration) <300 Or • LETI Band C	- Embodied carbon is a key area of focus for Urban and Civic. All infrastructure (such as access, storm drainage, foul drainage and utilities) will aim to meet the site-specific carbon budget prepared in line with the U&C Map to Net Zero. The Map to Net Zero sets out the emissions reductions required across all developments to achieve the U&C ambition of being Net Zero for Scope 3 emissions by 2040. Site-specific carbon budgets are reviewed annually and updated with actual emissions data from U&C's live development sites. The carbon budgets in turn inform 'capital carbon intensity reduction targets' which are for design teams and contractors. - Whole Life Cycle Assessments (WLCAs) will be undertaken on a representative sample of homes at each RM application (e.g., c.<5-10% of dwellings) to estimate the embodied carbon emissions of the

Development Type	Bronze	Silver	Gold	Growing Baldock Proposed Performance
		☑ Applicants must commit to updating the assessments at pre-commencement (Stage4) and preoccupation (Stage5/6) ensuring alignment with the targets		development, and to consider measures to reduce embodied carbon emissions. - Upfront carbon targets will be set for housebuilders by U&C at the tender stage. This will include a target to achieve an upfront (A1-A5) performance of <800 $kgCO_2e/m^2$ as a minimum, with an aim to achieve an upfront (A1-A5) performance of <675 $kgCO_2e/m^2$ where viable, in line with 'silver' level performance. Targets will be included in the 'Balanced Scorecards', which will form part of the assessment criteria for appointing and monitoring housebuilders and other developers. - WLCAs will not be repeated at pre-commencement and pre-occupation stage.
Whole life carbon assessment: Non-residential development	☑ Ensure compliance with Policy and Building Regulations including Part Z, if and when it is introduced. Discussions around reducing emissions will be required ☑ Applicants are encouraged to consider Whole Life Carbon (WLC) and evidence discussions and include methods for reducing emissions during the technical design stages and within planning assessments	☑ Incorporate the findings of pre-demolition audits (where applicable) into the WLC assessment for the development ☑ Submit WLC assessment in accordance with British Standard BN EN15978 and RICS Guidance ☑ Ensure the scheme achieves the following (kgCO2e/m2GIA) scores: • Offices A1 - A5 score = 775 B1 - 5, C1 - 4 incl. Sequestration score = 405 • Retail A1 - A5 score = 700 B1 - 5, C1 - 4 incl. Sequestration score = 170 • Education	In addition to silver level requirements ☑ Ensure the WLC assessment demonstrates that the scheme achieves the following Embodied Carbon (kgCO2e/m2GIA) scores: • Offices A1 - A5 score <600 B1 - 5, C1 - 4 incl. Sequestration score <370 • Retail A1 - A5 score < 550 B1 - 5, C1 - 4 incl. Sequestration score < 140 • Education A1 - A5 score <500 B1 - 5, C1 - 4 incl. Sequestration score < 175	- All community buildings at Baldock (including schools) built by U&C or other developers will aim to achieve U&C's Map to Net Zero Embodied and Upfront carbon targets which align with silver/gold level performance. - All non-residential buildings over 1,000 m^2 will pursue BREEAM certification with an aim to achieve a BREEAM 'Excellent' rating, which requires developers to demonstrate a commitment to reducing embodied carbon emissions, with Life Cycle Assessment and embodied carbon reporting a minimum standard.

Development Type	Bronze	Silver	Gold	Growing Baldock Proposed Performance
		A1 - A5 score = 625 B1 - 5, C1 - 4 incl. Sequestration score = 210 ☑ Applicants must commit to updating the assessments at pre-commencement (Stage4) and preoccupation (Stage5/6) ensuring alignment with the targets		
Circular Economy Principles (Major residential and non-residential developments)	☑ Ensure compliance with Policy and Building Regulations	☑ Ensure a pre-demolition audit is undertaken (where applicable). ☑ Ensure a pre-redevelopment audit is undertaken for brownfield sites. ☑ Ensure the proposal demonstrates how excavated materials will be put to beneficial use (e.g. re-used/recycled).	In addition to silver level requirements the Circular Economy Statement should also show: • 50% of construction materials being of re-used materials • 80% of materials used are designed for re-use • 100% of demolition waste materials (non-hazardous) are diverted from landfill for	- The sustainable use of resources and materials will be promoted at Baldock through alignment with circular economy principles. - The development is on a largely greenfield site, therefore pre-demolition and pre-redevelopment audits are not relevant. - The development will aim to achieve a cut and fill balance across the site, so that excavated materials will be re-used and recycled onsite as far as possible. Where not possible any excavated materials will be put to beneficial use off site. Development will take place in accordance with the Soils in Planning and Construction

Development Type	Bronze	Silver	Gold	Growing Baldock Proposed Performance
		☑ Submit a Circular Economy Statement showing a waste hierarchy approach with: • A minimum of 30% of construction materials being of re-used materials • 50% of materials used are designed for re-use • 80% of demolition (where applicable) waste materials (non-hazardous) are diverted from landfill for reuse/ recycling or recovery • 80% of excavation waste materials are diverted from landfill for reuse • 80% of construction waste materials are diverted from landfill for reuse, recycling, or recovery • 80% of materials are sourced from ethical and responsible supply chains: 80% (LETI)	reuse/ recycling or recovery • 100% of excavation waste materials are diverted from landfill for reuse • 100% of construction waste materials are diverted from landfill for reuse, recycling, or recovery • 100% of materials are sourced from ethical and responsible supply chains • 80% of materials used are reusable i.e. they can be disassembled and reused in future buildings (LETI)	Task's "Principles for soils in planning and construction" which includes measures such as designing for soil retention and reuse, aiming to minimise cut and fill, and ensuring there is no loss of soil to landfill. - The outline masterplan supports a Circular Economy approach through following principles of 'lean design' in order to design out waste and reduce the volume of raw materials required for site infrastructure. - Circular Economy principles will be considered during the detailed design stages. This could include measures such as designing for adaptability, flexibility, longevity, and designing out waste. The use of sustainable materials such as those that are locally sourced, reused, recycled, natural and biobased, or have a low embodied carbon will be prioritised. The specification of local, responsible, and lower carbon materials will be considered as a priority. Further information will be provided in the sustainability statements submitted as part of future RM applications. - All development at Baldock will aim to achieve the following targets, with opportunities to exceed these targets to be encouraged as part of 'improved' or 'innovation' strategies: • A minimum 80% of Construction, Demolition and Excavation waste will be diverted from landfill in line with 'Silver' level performance, with an aim to achieve 90% (by weight) in line with HCC's Waste Core Strategy and Development Policies (2012) target. • Limit construction waste to <11.1 tonnes/100m2 GIA, • Aim to achieve a cut and fill balance on-site, where not possible non-contaminated excavated materials will be put to beneficial use off site. • All timber to be legally and sustainably sourced.

Development Type	Bronze	Silver	Gold	Growing Baldock Proposed Performance
Healthy placemaking				
Green & Blue Infrastructure & NHS Health into Place Principles Residential development	☑ Ensure compliance with Policy requirements and open space standards	☑ All schemes must submit a landscaping strategy ☑ Ensure all schemes propose play, community amenity and food production opportunities. Fields in Trust distances should be followed for play spaces and locations mapped with walking isochrones. ☑ Green Infrastructure design should follow Natural England's Green Infrastructure Principles ☑ Ensure all schemes embed key aspects of healthy placemaking as outlined in the NHS Putting Health into Place guidance. ☑ Undertake an overheating risk assessment to assess residential dwellings against CIBSE TM59 and Part O ensuring compliance at planning stage - prioritising passive measures ☑ Undertake an acoustic assessment to confirm performance against the Part O acoustic criteria for the overheating assessment. ☑ All domestic units to meet Part M4(1)	In addition to silver level requirements ☑ Locations of play areas, amenity and food growing areas should be mapped, and character areas defined. Strategies should be included for play / food / active frontages. ☑ Ensure any Green Infrastructure provision links to strategic Green Infrastructure to compliment the Nature Recovery Network (where appropriate). ☑ Ensure schemes embed key aspects of healthy placemaking as outlined in the NHS Putting Health into Place guidance.	-The Green Infrastructure (GI) Strategy submitted with the outline application sets out the landscaping strategy for the development, including strategies for play, community amenity, food production opportunities, and active frontages. - Natural England's Green Infrastructure Principles have been embedded in the green infrastructure design. - The quantum of play aligns with the 'The North Herts Council (NHC) Developer Contributions (SPD) January 2023,' and the 'Fields in Trust Standards (FiT) 2024'. The play strategy will not only ensure that play meets the minimum size and walking distances required, but will cater for all ages, offer opportunities for social interaction and provide a range of experiences. The exact location, shape and size of play areas are Indicative only and will be resolved through future Design Codes and RM Applications. - The proposed GI provision links in to the local GI assets to compliment the Nature Recovery Network- For example proposed nature corridors will provide a connection between Weston Hills and Ivel Springs Local Nature Reserves to form integrated network that connected with the wider landscape. The overall GI Strategy aims to strike a balance between recreational and public uses, as well as management for wildlife. - All homes at Baldock will be designed in accordance with Part O of the Building Regulations, which requires new developments to demonstrate that the risk of overheating has been mitigated through measures such as limiting solar gain, ventilation, and removing excess heat. Passive cooling measures will be prioritised in

Development Type	Bronze	Silver	Gold	Growing Baldock Proposed Performance
		☑ Ensure the development scheme includes community allotments.		accordance with the cooling hierarchy which means that buildings will be better equipped to manage their cooling needs while also minimising energy use and carbon emissions. - A Noise Impact Assessment has been undertaken as part of the Environmental Statement. The assessment confirms that appropriate internal and external noise guideline levels will be achieved in all dwellings, provided the recommended mitigation measures are implemented. - All domestic units will meet Part M4(1) to ensure suitable building access and use for those with disabilities. - The proposed productive landscape provision includes formal allotments, community growing spaces, and informal foraging/ edible trail opportunities. - Please see the GI Strategy submitted with the outline application for further details.
		☑ Ensure 50% of all flat roofs are green or blue roofs ☑ Ensure that an air quality assessment is undertaken to achieve air quality neutral (AQN) or provide justification of why AQN not possible.	☑ Ensure 100% of flat roofs are green or blue roofs ☑ Ensure that the air quality assessment demonstrates air quality positive	- Green and blue roofs are not proposed at Baldock due to their significant cost and maintenance requirements. - An Air Quality Assessment has been undertaken by RPS and is submitted as part of the Outline Planning Application. The development at Baldock will include a number of measures to minimise air pollution, including the management of dust during construction, an all-electric energy strategy, and sustainable transport strategy to minimise traffic-related emissions during operation.

Development Type	Bronze	Silver	Gold	Growing Baldock Proposed Performance
Green & Blue Infrastructure & NHS Health into Place Principles Non-residential development	Same as requirements for residential development	Same as requirements for residential development and: ☑ Achieve BREEAM Hea 02 Indoor Air Quality credits ☑ Achieve BREEAM Hea 05 Acoustic performance credits ☑ Assess for overheating risk against CIBSE TM52 and ensure compliance ☑ Achieve Wst 05 BREEAM credit	Same as requirements for residential development	- All non-residential development over 1,000m^2 will aim to achieve BREEAM Excellent. The BREEAM strategy and specific credits targeted will be confirmed at detailed design stages.
Urban Greening Factor (UGF) Major residential and non-residential schemes		☑ Ensure schemes include a multifunctional UGF calculation achieving a minimum of 0.4 (residential) or 0.3 (commercial) UGF along with a maintenance and management plan ☑ Ensure the green space attains a Green Flag score of 'Very Good'	☑ Ensure schemes include a multifunctional UGF calculation achieving a minimum of 0.6 (residential) or 0.5 (commercial) UGF along with a maintenance and management plan ☑ Ensure the green space attains a Green Flag score of 'Outstanding'	- Natural England guidance usually refers to achieving a UGF of 0.4 OR 40% green infrastructure. UGF tends to be more applicable to urban development, as Baldock is a greenfield site the UGF of 0.4 is not considered to be applicable, however GI provision will be over 40%, so this criterion is considered to be met. - The development at Baldock will align with the Green Flag criteria and standards, however, will not apply for formal certification.
Promoting Biodiversity				
Ecological surveys & assessments	☑ Carry out and submit a habitat survey to enable metric baselines to be completed, including quadrat survey (where necessary) to demonstrate UK Habitats. The survey should be undertaken in line with best practice (e.g. timing and age) and identify Priority/ irreplaceable habitats (BS42020) ☑ A species assessment and	In addition to bronze level requirements ☑ Ensure surveys include a review of existing sources of information such as the Hertfordshire Environmental Records Centre, MAGIC or any other appropriate resource ☑ Ensure that an assessment of additional features within the site but beyond	In addition to silver level requirements ☑ Ensure habitats are evidenced in photographs, and the local context of the site is shown in relation to features beyond the site / wider ecological networks / LNRS	- Habitats surveys and species-assessments have been undertaken as part of the baseline ecological survey work. - Surveys include a review of existing sources of information such as the Hertfordshire Environmental Records Centre, MAGIC and includes assessment of a range of features beyond compensation for species affected. - Habitats are evidenced with photographs and the context of the site is considered in relation to wider ecological networks such as Weston Hill, Ivel Springs, Bygrave Road Local Wildlife Site,.

Development Type	Bronze	Silver	Gold	Growing Baldock Proposed Performance
	follow-up surveys should be completed and submitted according to recommendations required to enable determination – i.e. no outstanding surveys	compensation for species affected is included in the species assessment		- Please see the Ecological Assessments submitted with the application for further information.
Arboriculture Assessment (where trees are impacted by the proposal)	☑ Submit a survey of all trees on site, identifying trees of value and potential impacts on offsite trees	In addition to bronze level requirements ☑ Retain any high value tress onsite (Category A/B or other highest value trees)	In addition to silver level requirements ☑ Retain all existing trees on site	A tree survey has been undertaken. There are no Ancient, veteran or notable trees within or in the immediate vicinity of the site. Only one category A tree (high quality) was identified (ref:T67). The site is designed to retain existing trees as far as possible. All high value category A/B trees will be retained and incorporated into the development with appropriate buffers and protective measures.
Biodiversity Net Gain (BNG) (all development except BNG exempt developments)	☑ Ensure the Statutory Metric or Small Sites Metric (SSM) is completed and submitted showing baseline value and demonstrate how the mitigation hierarchy has been applied ☑ Submit a plan showing that habitat proposals achieve at least 10% BNG. (see North Herts Developer Contributions SPD) ☑ Submit a Habitat Management and Monitoring Plan (HMMP) showing how	In addition to bronze standard requirements ☑ Ensure 10% BNG is achieved onsite ☑ Provide on plot ecological enhancements to support wildlife (housing for bats, birds, bees, hedgehog holes in fences etc.)	In addition to silver standard requirements ☑ Submit a plan showing that 20% BNG is achieved, either all onsite or 10% onsite plus 10% offsite (e.g. contributing to the Hertfordshire LNRS)	A BNG Assessment has been undertaken using the Biodiversity Metric 4.0. At this stage, the proposals are anticipated to achieve a policy compliant biodiversity net gain (BNG) of 10% as a minimum. However, given the extensive retained habitat and landscape proposals, the development will aspire to achieve beyond this. BNG metrics will be reviewed and updated after each key milestone to ensure the BNG is maintained as further detail comes forward at each stage. On plot ecological enhancement principles have been established within the Ecological Appraisal which feeds into the GI Strategy at the outline stage. Specific details in relation to on-plot ecological enhancements will be confirmed at detailed design/ RM Application stages. A Habitat Management and Monitoring Plan (HMMP) will

Development Type	Bronze	Silver	Gold	Growing Baldock Proposed Performance
	BNG significant habitats are to be managed and monitored			be submitted showing how BNG significant habitats are to be managed and monitored. Please see the BNG report submitted with the application for further information.
Ecological buffers	☑ Ensure the scheme takes account of Natural England's Standing Advice for ancient woodland and veteran trees to provide a 15m buffer in these areas ☑ Ensure the scheme includes a 12m buffers for SSSIs ☑ Ensure the scheme includes a 10m riparian zone buffer alongside watercourses, where applicable	In addition to bronze standard requirements ☑ Ensure the scheme includes a 12m buffer adjacent to LWS and species rich hedgerows	In addition to silver standard requirements ☑ Ensure the scheme includes enhancements to national and/or local sites and other habitats seeking to limit impacts of development and positively contribute to existing habitats	- There are no ancient woodland or veteran trees, SSSIs or watercourses in the vicinity of the site, therefore bronze level recommendations are not applicable. - Bygrave Road LWS will be retained, enhanced and incorporated into the landscape masterplan with an appropriate green corridor buffer. - S41/Priority Habitats surrounding the site and small blocks within the site will be managed with appropriate retention, buffering, mitigation and precautions. - Please see the Ecological Assessments submitted with the application for further information.
Sustainable Transport				

Development Type	Bronze	Silver	Gold	Growing Baldock Proposed Performance
Transport statements, assessments and travel plans	☑ Submit a Transport statement and travel plan clearly demonstrating how the scheme will facilitate sustainable transport and encourage active travel ☑ Ensure the scheme includes segregated cycle ways, pedestrian paths away from traffic and integrated with green infrastructure	In addition to bronze level requirements ☑ Ensure the transport statement/ travel plan seeks to achieve 50% of local trips (under 5 miles) by active travel by for example: • Including proposals/ financial contributions for off-site upgrades to walking and cycling infrastructure creating safe, continuous routes to schools and key destinations • Including proposals/ financial contributions to enhance/ provide additional local bus services serving the development and its environs	In addition to silver level requirements ☑ Ensure the transport statement/ travel plan seeks to achieve 50% of all trips by sustainable modes, by including, for example: • Car clubs • Ride sharing schemes • Community transport schemes • Cycle hire schemes	- A Transport Assessment and Framework Travel Plan have been submitted with the outline planning application, demonstrating how the scheme will facilitate sustainable transport and encourage active travel. - The proposals include a significant network of fully segregated cycle tracks linking the site to Baldock town centre and railway station, as well as a new bus-only link between Royston Road and Clothall Common to facilitate a new bus loop service. This will improve access to public transport for future and existing residents. - A number of measures are proposed as part of the Sustainable Travel Plan, including: • High-frequency shuttle bus to Baldock town centre • Engagement with a car club operator and location of vehicles across the masterplan • Engagement with a cycle/scooter hire operator and location of docking stations across the masterplan • Integration of parcel lockers at hubs • Facilitation of community active travel groups (e.g. bike user group)
EV Charging	☑ Ensure compliance with Policy and the Building Regs Part S	In addition to bronze level requirements ☑ Provide one active EV charging point (EVCP) per dwelling, rated 7kW (minimum) ☑ Provide at least one EV charging point at each mobility hub and destination location (e.g. community hall, parade of shops, sports facilities etc.), rated 7kW	In addition to silver level requirements ☑ Ensure EV charging points at mobility hubs and destination locations are rated 22kW or higher. ☑ Ensure passive provision for an additional EV charging point per 200 dwellings for car clubs and visitor use	- All proposed dwellings will have access to one allocated EV parking space, either on-plot, or in a shared parking area in the case of apartments. All non-residential parking will also benefit from an appropriate proportion of EV charging spaces, to be determined by a confirmed use at RM stage. - The potential to provide additional EV charging facilities will be explored at the detailed design stages. This could include the option for public chargers to be outsourced to a commercial operator.

Development Type	Bronze	Silver	Gold	Growing Baldock Proposed Performance
		(minimum) ☑ Provide one EV charging point per 200 dwellings for a car club, disabled visitor, and other visitor use, evenly distributed throughout the site, rated 7kW (minimum)		
Conserving water				
Residential development	☑ Ensure compliance with Policy requirements of 110 lpppd	☑ Ensure that water consumption can meet the target of < 95 lpppd (RIBA 2025 Climate Challenge)	☑ Ensure that water consumption can meet the target of < 75 lpppd (RIBA 2030 Climate Challenge)	- All residential development will aim to limit water consumption to 110 l/p/d as a maximum, with an aim to reduce this to 95 l/p/d where feasible.
Non-residential development	☑ Applicants are encouraged to achieve a minimum of 1 credit for category Wat 01 of BREEAM	☑ Ensure development achieves 25% improvement over baseline water consumption in line with BREEAM New Construction V6 (or latest version)	☑ Ensure development achieves 40% improvement over baseline water consumption in line with BREEAM New Construction V6 (or latest version).	- All non-residential development over 1,000m^2 will aim to achieve BREEAM Excellent. The BREEAM strategy and credits targeted will be confirmed at detailed design stages. It is anticipated that development will achieve at least a 25% reduction over the BREEAM baseline.
Incorporating sustainable drainage				

Development Type	Bronze	Silver	Gold	Growing Baldock Proposed Performance
SuDS scheme All development	☑ Submit a SuDS strategy and maintenance plan approved by SAB ensuring that surface water run-off is managed as close to its source as possible and the scheme will not increase downstream flood risk. Strategy to include a climate change allowance ☑ Ensure that discharge to a combined sewer is avoided unless all other discharge options (infiltration, watercourse, surface water sewer) have been exhausted first, as per the discharge hierarchy ☑ Ensure that the scheme achieves greenfield run-off rates unless this is demonstrably not feasible in which case a minimum of 50% reduction will be required. Brownfield sites will need to achieve run-off rates as close to greenfield as possible	In addition to bronze level requirements ☑ Ensure the SuDS strategy is in accordance with DEFRA's non-statutory SuDS technical standards ☑ Ensure the SuDS strategy also addresses the 4 pillars of SuDS. The scheme must also include SuDS planters, tree pits and rain gardens	In addition to silver level requirements ☑ Ensure the scheme achieves better than greenfield (pre-development) runoff rates ☑ Ensure that the scheme does not discharge to combined sewers	- A SuDS Strategy has been submitted showing that surface water run-off is managed as close to its source as possible in line with the discharge hierarchy and DEFRA's non-statutory SuDS technical standards. - The proposed SuDS strategy addresses the 4 pillars of SuDS and includes planters, tree pits and rain gardens. - The strategy will achieve better than greenfield (pre-development) runoff rates and not discharge to combined sewers. - Please see the Drainage Strategy submitted with the application for further information. - All non-residential development over 1,000m^2 will aim to achieve BREEAM Excellent. The BREEAM strategy and credits targeted will be confirmed at detailed design stages. This may include targeting Wst 05 BREEAM credit.
		☑ Ensure the scheme achieves Wst 05 BREEAM credit	☑ Ensure the scheme achieves Wst 05 Exemplary BREEAM credit.	

12 Brownlow Mews,
Roger St,
London
WC1N 2JU

Turley
Sustainability
and ESG