

Sustainability and Energy Strategy: Discharge of Condition 12 of the Outline Planning Permission 18/01154/OP

Highover Farm, Hitchin

September 2025



Contents

Contents 2

1. Introduction 4

2. Policy and Context..... 7

3. Sustainability at Barratt & Redrow 13

4. Sustainability at Highover Farm 16

5. Sustainability Strategy for Phase 1..... 32

6. Conclusion 36

Appendix A – NHDC Sustainability Checklist..... 38

Client
BDW (North Thames)

Turley Reference
02927_SUST

Document Status
Final

Date
September 2025



1. Introduction

This Sustainability and Energy Statement has been prepared to demonstrate the sustainability performance of the consented development at Highover Farm, Hitchin and discharge condition 12 of the Outline Planning Permission.

1.1 Introduction

This Sustainability and Energy Statement has been prepared by Turley Sustainability, on behalf of Barratt David Wilson and Redrow Homes ('the applicants') to support a series of Reserved Matters Applications to North Herts District Council (NHDC) for the development of up to 700 dwellings, neighbourhood facilities, and a primary school at Highover Farm, Hitchin.

An Outline Planning Application (OPP) was submitted to NHDC in April 2018 (reference number: 18/01154/OP). Planning permission was granted for the development in November 2024, subject to a number of conditions. This statement relates to **Condition 12** which requires the following:

Condition 12: *"Prior to or concurrently with each reserved matters submitted in each phase identified in Condition 5 Phasing and Delivery a sustainability strategy shall be submitted to the Local Planning Authority for approval addressing renewable energy, reducing carbon emissions and water conservation."*

Reason: To reduce carbon dioxide emissions and promoting principles of sustainable construction and the efficient use of buildings in accordance with North Hertfordshire Local Plan Policies SP9 and D1 and the Sustainability SPD 2024."

This statement provides a summary of the sustainable design measures incorporated into the proposals to ensure suitable levels of sustainability performance in accordance with local and national planning policy and the requirements of Condition 12.

The Planning Condition references the recently adopted (September 2024) Sustainable Design Supplementary Planning Document (SPD) which contains a Checklist for scoring each site. This SPD was adopted a number of years after the planning application was submitted (2018) and also post the resolution to grant which was received in October 2023. The project has been assessed against this SPD using the information approved as part of the outline permission and subsequent discussions with Barratt David Wilson and Redrow who purchased the site. The SPD is useful to demonstrate the sustainability positives of the consented project.

1.2 Site Context

The site is located to the north east of Hitchin, Hertfordshire.

The site was used historically for agriculture but has not been actively farmed since the tenant was given notice to quit circa four years ago. It is bounded by the existing urban area of Hitchin to the south, the Hitchin to Letchworth Garden City railway line to the west, and Stotfold Road to the east.

1.3 The Consented Development

The description of development on the outline planning permission is as follows:

“Outline application with all matters reserved other than access, comprising residential led development of up to 700 dwellings of use class C3 (dwellings), approximately 500 sqm of neighbourhood-level facilities, a new 2FE primary school, open space, play space, green infrastructure, and associated accesses (vehicular, pedestrian and cycle), including a new primary access off Stotfold Road with limited access off High Dane (as amended).”.

The Illustrative Masterplan is shown in **Figure 1** overleaf.

Reserved Matters (RM) applications are being prepared by the Applicants which will be submitted in due course. The first RM application for Phase 1 of the development is due to be submitted in September 2025.

Chapter 4 provides the details of the overarching sustainability and energy strategy that will be applied across all the entire site. Chapter 5 sets out the specific measures that will be implemented within phase 1 of the development. Further detailed strategies will be developed for each subsequent phase of the development in line with the principles set out in the overarching site-wide strategy, and will be submitted with future Reserved Matters (RM) applications.

It is anticipated that Phase 1 will consist of homes built by Barratt and David Wilson only. Phase 2 will be built by Redrow, with Phases 3 and 4 a mix of Barratt and David Wilson.

1.4 Document Structure

Chapter 2 of this report provides an overview of relevant national and local legislation, planning policy, and guidance.

Chapter 3 provides details on Barratt David Wilson’s and Redrow’s corporate Sustainability Strategy and ESG priorities.

Chapter 4 provides detail of the overarching sustainability and energy strategy to be applied across the whole site.

Chapter 5 provides detail of the specific sustainability measures to be implemented within Phase 1 of the consented development.

Chapter 6 provides an overall summary of the strategy.

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

Figure 1: Illustrative Masterplan (Source: Design Code)



2. Policy and Context

This chapter provides an overview of the relevant sustainability planning policy and guidance from a national and local perspective.

2.1 National Policy

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

2.1.1 National Planning Policy Framework

The National Planning Policy Framework¹ (NPPF December 2024) 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.

Chapter 2 of the NPPF sets out details on sustainable development, and how the planning system must perform three distinct objectives, aligned to the three pillars of sustainability (economic, social, and environmental) which should be pursued jointly.

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) which address social progress, economic wellbeing and environmental protection. Example UNSDGs are presented in **Figure 2**.

¹ [UK Government | NPPF](#)

Figure 2: Example UN Sustainable Development Goals



2.1.2 Planning Practice Guidance

Planning Practice Guidance (PPG) provides further advice on various planning issues associated with development, including those linked to sustainability and renewable energy and underpins the policies within the NPPF.

PPG is a material consideration in planning decisions and should generally be followed unless there are clear reasons not to. It sets out how local authorities should include policies that protect the local environment and strategies to mitigate and adapt to climate change and supports developments that are functional and adaptable for the future.

2.1.3 National Design Guide

The National Design Guide published in October 2019 and is based on the national planning policy practice guidance and objective for good design as set out in the NPPF. The Guide introduces ten characteristics of well-designed places which work together to create developments Character and Community, while positively addressing environmental issues affecting climate.

2.1.4 Building Regulations

Building Regulations set out the requirements for energy and carbon performance in new buildings. Periodic updates to these national regulations drive

energy efficiency and carbon reduction improvements.

June 2013 - Part L, Conservation of Fuel and Power

In March 2014, Part L (2013) was implemented which required all new homes to improve Fabric performance with a set of minimum standards. It did not require any renewable energy technologies, instead focusing on fabric improvements. Part L 2013 remained in legislation until the introduction of Part L 2021 (see below).

June 2021 - Part L, Conservation of Fuel and Power

- On 15th June 2022, the Building Regulations were introduced (with a one year transition period) as an interim step towards part of the roadmap to the 'full' Future Homes and Buildings Standard, which was proposed to be introduced in 2025. The 2021 regulations deliver buildings that are of a higher quality, with lower energy bills and reduce GHG emissions by around 30% for new homes and 27% for non-domestic buildings.

In December 2023 the Government published the 2025 Future Homes Standard (FHS) and Future Buildings Standard (FBS) consultation. The 2025 FHS will require homes to achieve a c.75% 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. Fabric standards will closely resemble the fabric standards in the 2021 Part L uplift to the Building Regulations.

The two options currently being consulted on are:

- **Option one** with 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), and
- **Option two** with 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

FHS², leading to installation of Solar PV on the vast majority of new build homes. The announcement confirmed the FHS consultation response will be launched in Autumn 2025 but this is not the implementation date which is still unknown

Part S, Infrastructure for Charging Electric Vehicles - Approved document Part S came into force in June 2022 and sets out requirements for the provision of electric vehicle (EV) charging infrastructure. EV charge points must be provided for each new residential building with associated parking, and any remaining spaces must have cable routes for charge points to be installed. For non-residential car parks with more than 10 spaces, at least one active EV charge point must be provided, with cabling to the remaining 20% of spaces.

Part O, Overheating - Part O came into force in June 2022, and sets out requirements for mitigating overheating. 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 to demonstrate the risk of overheating from rising summer temperatures has been mitigated by following a simplified prescribed glazing and free area ratio or use of Dynamic Simulation Modelling.

2.1.5 The Environment Act

The Environment Act aims to protect the environment through improving air and water quality, protecting wildlife, and ensuring the sustainable management of waste. As of February 2024, The Environment Act requires new development to deliver at least 10% Biodiversity Net Gain (BNG), as measured by the statutory biodiversity metric.

2.2 Local Planning Policy – North Herts District Council

2.2.1 NHDC Local Plan 2011-2031

NHDC's Local Plan, adopted in 2022, sets out the long-term vision for the district by identifying how and where new homes, jobs and infrastructure will

be delivered, while encouraging high-quality sustainable design and consideration for the natural environment.

Condition 12 of the outline planning permission requires the development to accord with Local Plan Policies SP9 and D1, as well as the Council's Sustainability SPD 2024.

Policy SP9 Design and Sustainability: The Council considers good design to be a key aspect of sustainable development. The council will:

- Support new development where it is well designed and located and responds positively to its local context.
- Require Strategic Masterplans to be produced for Strategic Housing Sites and other significant development.
- Require Strategic Masterplans to:
 - create buildings, spaces and streets which positively reflect and respond to the local landscape, townscape and historic character;
 - create integrated, accessible and sustainable transport systems with walking, cycling and public transport designed to be the most attractive forms of transport and effectively linking into the surrounding areas;
 - provide a clear structure and hierarchy of pedestrian friendly streets and well-connected footpaths and cycleways integrate with the wider built and natural environment and communities;
 - plan for integrated and mixed-use communities with walkable locally accessible community, employment and retail facilities;
 - positively integrate with adjacent rural and urban communities and positively contribute to their character and the way the area functions, including

² [Rooftop solar for new builds to save people money - GOV.UK](https://gov.uk)

addressing cumulative, cross boundary planning and infrastructure matters;

- create and accessible multi-functional green infrastructure network that provides:
 - a key structuring and functional place-making feature supporting healthy lifestyles, sport, play and recreation linking into the wider Green Infrastructure Network; and
 - a high-quality integrated network to support ecological connectivity, biodiversity net gain, climate adaptation and mitigation linking into the wider Ecological Network.
- ensure the effective use of sustainable urban drainage and sustainable water management;
- ensure a hierarchy of linked, high quality and attractive public spaces and public realm that is safe, attractive and supports social interaction for all age groups; and
- design to last with a clear stewardship, management and maintenance strategy.
- Ensure Strategic Masterplans are informed by a technical and design evidence base and include the following for Strategic Housing Sites:
 - Site specific vision and place-making principles
 - Masterplan setting out the quantum, scale, type, mix and distribution of land uses, housing and community facilities;
 - Green Infrastructure Framework identifying the scale, distribution, type and design of green spaces, biodiversity net gain, strategic drainage and on and off-site linkages:

- Movement Framework setting out the key access points, strategic highways, street hierarchy and footways and cycleways (on and off site)
- Urban Design Framework and design principles identifying how the site responds to local character and context and key structuring elements and layout principles (including heights and densities)
- Sustainability & Energy Framework identifying site-wide and building scale opportunities for low and zero carbon
- Illustrative Masterplan Layout
- Infrastructure Delivery, Phasing & Management Strategy.

- Encourage the submission of Strategic Masterplans for the Council's consideration and agreement before the submission of a planning application. Where applications have already been submitted to the Council a Strategic Masterplan should be agreed with the Council prior to or as part of the grant of planning permission. Adherence to the Strategic Masterplan will be secured through planning conditions and/or legal agreement.
- Assess proposals against detailed policy requirements set out in the Local Plan, and have regard to the Design SPD; and
- Adopt the Government's additional technical standards for the size of new homes, water efficiency and, in specified circumstances, accessibility.

Some of the requirements of Policy S9 are design and not sustainability related and so will be addressed in other parts of the RM application such as the Design Code (Condition 6).

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

- a) Respond positively to the site's local context;

- b) Take all reasonable opportunities, consistent with the nature and scale of the scheme, to:
 - i. create or enhance public realm;
 - ii. optimise the potential of the site by incorporating Sustainable Drainage Systems (SuDS);
 - iii. reduce energy consumption and waste;
 - iv. retain existing vegetation and propose appropriate new planting;
 - v. maximise accessibility, legibility and physical and social connectivity both internally and with neighbouring areas;
 - vi. future proof for changes in technology and lifestyle;
 - vii. design-out opportunities for crime and anti-social behaviour; and
 - viii. minimise the visual impact of street furniture and parking provision;
- c) Have regard to the Design SPD, and any other relevant guidance; and
- e) For residential schemes, meet or exceed the nationally described space standards and optional water efficiency standards.

Policy SP17: Site HT1 – Highover Farm, Hitchin – Land to the east of Hitchin is allocated as a Strategic Housing Site for a new neighbourhood of approximately 700 homes. Requirements for the allocation include:

- Neighbourhood-level retail facilities providing approximately 500m² of retail and food and beverage floorspace;
- Provision for sustainable modes of transport and comprehensive integration into the existing pedestrian and cycle, public transport and road networks
- Land reserved for provision of a new primary school;

- Lower density development and / or green infrastructure to the north of the site to maintain separation between Hitchin and Letchworth Garden City, address surface water flood risk, and respect the setting of the scheduled burrows to the north-east.
- Sensitive consideration of other designated and non-designated heritage assets.
- Risk assessment of Contaminated Land.
- Ecological appraisal of Stotfold Road Verges and Hitchin Railway Banks Wildlife Sites.

2.2.2 Climate Emergency & Sustainability SPD

NHDC declared a Climate Emergency in 2019 and set a target to achieve Carbon Neutrality for the Council's own operations by 2030, and to become a Net Zero Carbon District by 2040.

In support of these aims the Council have prepared a Sustainability Supplementary Planning Document (SPD)³ in 2024 which sets out best practice sustainability guidance for new development in the district.

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

Each theme includes a checklist of recommendations with benchmarks for that particular theme, grouped into 'Bronze', 'Silver', and 'Gold' levels. Applicants are expected to select

³ [Sustainability SPD 02SEPT24.pdf](#)

several sustainability themes on which to achieve higher sustainability levels (silver/ gold).

The SPD does not form part of the Development Plan and so cannot introduce new planning policies or add unnecessary financial burdens on development, however the SPD is a material consideration in the determination of planning decisions and sets out the 'direction of travel' to support current adopted policies.

The full completed checklist can be found in **Appendix A** of this report.

2.3 Planning Policy Summary

Both local and national policy aims to ensure the delivery of sustainable and well-designed homes and other buildings which mitigate and adapt to the impacts of climate change.

Latest national planning policy and guidance confirms the Government's approach to sustainable development is being driven through updates to the Building Regulations in the form of the FHS, to ensure that new buildings reduce emissions in line with the UK's national carbon targets.

At the time of submission of the OPA (2018), Part L 2013 was in place and was not fully replaced by Part L (2021) until June 2023. It is important to recognise that during determination of the planning

application there was a significant change in the Building regulations as a result of the introduction of Part L 2021 and this is highly relevant to the discharge of this condition because the standards being proposed in this report are significantly higher than those presented in the outline application and, in effect, meet the requirements of Condition 12 through the provision of renewable energy and greater carbon savings.

NHDC's Local Plan contains a number of requirements in relation to sustainability including sustainable drainage, energy, waste, water use, landscaping, accessibility, futureproofing, and crime. The Council's Sustainability SPD provides further best practice guidance on sustainability-related topics such as passive design, renewable energy, embodied carbon, waste and circular economy, biodiversity, sustainable transport, and SuDS. The Local Plan does not set any energy efficiency or renewable energy targets above the Building Regulations.

The following sections of this Sustainability Strategy set out the measures proposed to ensure the delivery of a sustainable development in line with the requirements of local and national policy with due regard to the zero-weight attributable to the SPD given its status as a guidance document as opposed to formal adopted policy.

3. Sustainability at Barratt & Redrow

The following section summarises Barratt David Wilson's and Redrow's corporate Sustainability Strategy and ESG priorities, which will shape the development at Highover Farm.

3.1 Barrat

3.1.1 Building Sustainably Framework

Barratt 'Building Sustainably Framework' aims to bring together sustainability ambitions, targets, activities, and metrics to ensure that sustainability is embedded in every business decision. The Framework is based around three key themes of Nature, Places and People.

Key targets which they aim to achieve across their developments are summarised in the table below. These targets demonstrate how Barratt David Wilson's ambitious sustainability strategy influences the delivery of their projects onsite.

Table 1: Key development-related targets and performance

Theme	Target	Progress (FY2024)
Biodiversity & nature	Demonstrate a minimum biodiversity net gain (BNG) of 10% across all development designs submitted for planning from January 2023.	100% of sites (16 sites excluding JVs) with 10% minimum biodiversity net gain submitted for planning : 22% for area habitats; 41% for hedgerow habitats 125% for river habitats.
Waste & Circular Economy	Reduce construction waste intensity by 20% by 2025 vs. 2015.	49% reduction.
	Maintain 95% diversion of construction waste from landfill.	97%.
Modern Methods of Construction	Apply offsite based products and systems in 30% of homes by 2025.	33%.
Deforestation	100% of timber certified for net zero deforestation (for all timber procured via Group agreements, BD Living, Oregon and sub- contractor fencing).	98.78%.

3.1.2 Net Zero Targets

Barratt David Wilson were also the first national housebuilder to set a near-term greenhouse gas (GHG) emissions reduction target, aligned with the Science Based Target Initiative (SBTi), in September 2020. As part of their net zero transition, Barratt

have identified six principal 'decarbonisation' levers that will have the most material impact on achieving their transition towards net zero. **Figure 3** shows the principal levers identified, which include reducing embodied carbon emission from materials and reducing operational emissions from homes.

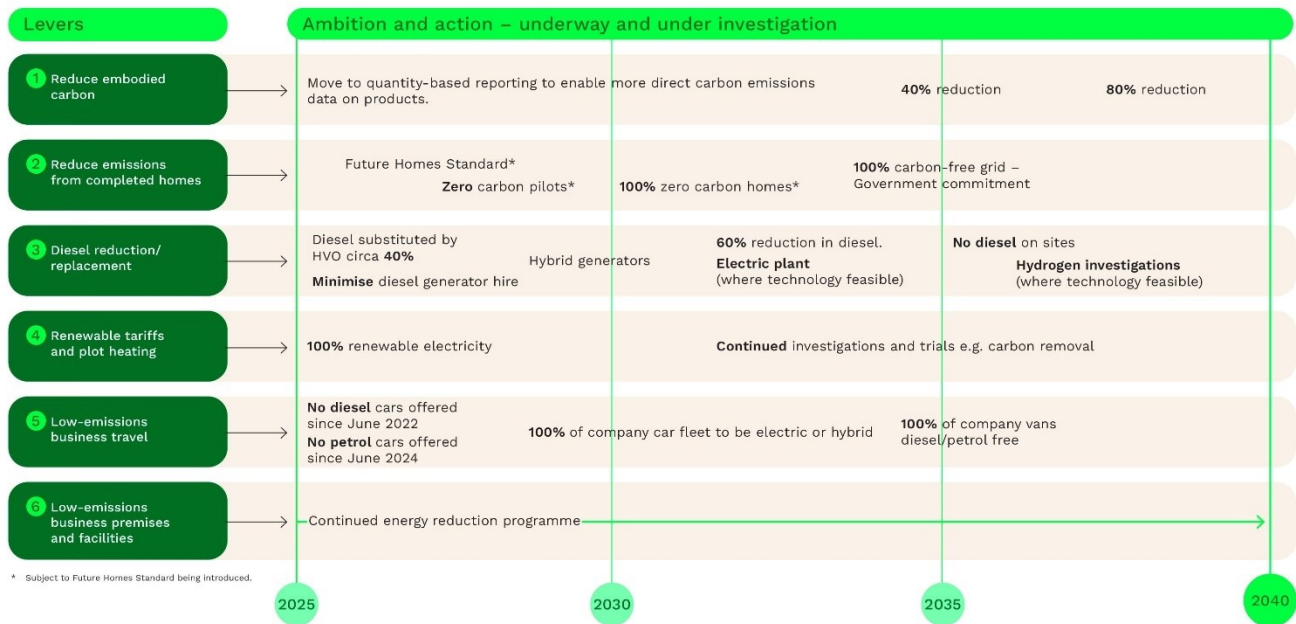


Figure 3: Barratt principal 'decarbonisation' levers

3.1.3 Timber Frame Construction

One of the key decarbonisation steps Barratt is taking is increasing the number of homes built using panelised timber frame construction.

Barratt are a leading developer in open-panel and closed-panel timber frame construction and in 2019 acquired Oregon, the UK's largest timber frame manufacturer, demonstrating their commitment to this building method.

A study by Verco (of houses developed by Barratt, SMG, and L&Q) shows that the whole life carbon impact of a typical timber-framed 4-bed semi-detached house is reduced by 5 tonnes CO₂e compared to typical masonry construction. This is due to:

- The lower embodied emissions of materials,
- Lower emissions from transport to site,
- Less energy and time spent on site, and
- The benefits of carbon sequestration during the life cycle of the building.

As operational emissions are predicted to reduce with the implementation of the Future Homes Standard, continued decarbonisation of the electricity grid, and increased electrification, the benefits of timber frame over masonry construction will become increasingly significant, as will focus on

reducing the embodied emissions from cementitious products.

3.2 Redrow

Redrow's corporate sustainability strategy is shaped around three sustainable business themes; Thriving Communities, Valuing People, and Building Responsibly.



Under the 'Resource efficiency and climate change' theme, Redrow's strategy is to achieve decarbonisation across the whole of their value

chain, while ensuring they remain resilient and adaptive to a changing climate.

Working with the Carbon Trust, Redrow have set near-term targets against a 2021 baseline, which has been validated by the SBTi. These targets aim to:

- Reduce absolute scope 1 and scope 2 emissions 42% by FY2030 from a baseline year FY2021.
- Reduce absolute scope 3 emissions 25% by FY2030 from a baseline year FY2021.

Redrow are implementing a number of carbon reduction initiatives for the company, key targets relevant to their new developments (scope 3) include:

- Implementation of the FHS. As of January 2023, homes on all upcoming Redrow developments will be heated using air source heat pumps. This commitment comes at least 2 years in advance of the FHS regulations and will reduce carbon emissions from our homes by c.70 – 80% compared with their previous house design.
- Establishing an EPD database to better understand products.
- Adding carbon-related clauses to suppliers and subcontractors.

- Engaging with industry product associations.
- Collaborating with Supply Chain Sustainability School & Future Homes Hub.

Redrow also aim to reduce waste, improve water efficiency, and source timber responsibly. Projects include an award winning Reduce the Rubble research project which aims to better understand the root-causes of waste and identify how it might either be eliminated, reduced or re-used, a Sustainable earthworks project at Daresbury Garden Village, and working in partnership with the Community Wood Recycling Schemes.

Redrow's Sustainable Timber Procurement Policy commits them and their supply chain to only source certified timber from sustainably managed forests, through Forest Stewardship Council (FSC) and The Programme for the Endorsement of Forest Certification (PEFC) schemes.

Redrow homes are industry-leading in terms of water efficiency, with a rating of just 105 litres per person per day, well below the Building Regulations requirement of 125 l/p/d.

4. Sustainability at Highover Farm

This section summarises the sustainability and energy strategy for the consented development at Highover Farm.

The next sections of this report outline the sustainability and energy strategy for the development at Highover Farm, demonstrating how it responds to both national and local planning policy, including the NPPF. This chapter contains the overarching strategy for the whole development, while the next chapter contains the specific measures to be implemented in Phase 1 of the development.

This report responds to condition 12 of the outline planning application as set out in Section 1.1.

In this context, the sustainable design measures incorporated into the development and design of homes at this stage are set out under the following headings which reflect the requirements of Condition 12 and the themes of the Council's Sustainability SPD.

4.1 Climate Change Mitigation

4.2 Waste and Circular Economy

4.3 Healthy Placemaking

4.4 Promoting Biodiversity

4.5 Sustainable Travel

4.6 Climate Change Adaptation

The council's Sustainability SPD has been referred to throughout the Sustainability Statement. A summary of performance can be found in **Section**

4.7 and the completed checklist can be found in **Appendix A**.

4.1 Climate Change Mitigation

Minimising carbon emissions is key to mitigating the effects of development on climate change. Policy SP9 requires development to provide a Sustainability & Energy Framework which identifies opportunities for low and zero carbon, Policy D1 requires new development to take all reasonable opportunities to reduce energy consumption, while the SPD sets out other best practice carbon reduction recommendations.

The strategy for Highover Farm is presented in terms of addressing the two largest sources of carbon emissions in new development; the carbon associated with the construction of the buildings (embodied), and that associated with the use of the buildings (operational).

4.1.1 Mitigating Climate Change – Embodied Carbon

As the operational efficiency of buildings continues to increase, the relative proportion of embodied carbon within a building's lifetime emissions increases. The embodied carbon associated with materials and construction can represent 40-70% of whole-life carbon impact of a new building. Reducing embodied carbon is not a requirement of adopted Sustainability Planning Policy nor the planning condition but is recognised by NHDC's Sustainability SPD, which encourages developers to consider whole life carbon and to set targets for embodied carbon performance. BDW are pleased therefore to provide information with respect to their embodied carbon calculations to demonstrate their proactive approach to this issue.

Embodied carbon is a key focus area for Barratt as part of their net zero transition. Barratt homes typically produce an average upfront carbon total of **325 kg/CO₂e/m²**, which exceeds 'gold' level performance within NHDC's Sustainability Checklist. This is achieved through the following measures which significantly reduce construction stage emissions:

- Use of Hydrogenated Vegetable Oil (HVO) made from waste materials like vegetable oils and animal fats as a sustainable diesel alternative.
- Obtaining early grid connections to reduce the number of generators being used.
- Use of highly efficient construction vehicles and equipment (92% of telehandlers are EU Stage V, which is the most efficient specification).
- Use of a dashboard to increase efficiency and reduce idling.

The design of Barratt homes also include features that further reduce the embodied carbon impact of the new homes, including:

- **Modern Methods of Construction and off-site manufacturing.** 33% of Barratt homes utilise modern methods of construction in the form of off-site open and closed panel timber framed systems. These systems reduce embodied carbon compared to traditional methods of construction through enhancing precision and minimizing waste.
- **Timber framed dwellings.** Barratt are increasing the number of timber-framed dwellings delivered on site. Studies by Barratt show that timber frame construction typically reduces whole life carbon by 5t CO₂e per dwelling (for a typical 4-bed detached home) compared to masonry construction. This is due to the use of lower embodied carbon impact materials, lower emissions from transport to site, less energy and time spent on site, and the benefits of carbon sequestration during the life cycle of the building.

Barratt aim for all timber used on site to be 100% certified net zero deforestation timber.

With respect to Redrow Homes, no formal Life Cycle Analysis (LCA) data is available for their dwellings however they are committed to reducing embodied and will consider a range of measures such as those set out in this report.

4.1.2 Mitigating Climate Change – Reducing operational carbon emissions.

Developing energy efficient, low carbon homes is a key objective of national policy, and recent changes to the Building Regulations support the reduction of energy demand through efficient building design to reduce carbon emissions.

From the outset Highover Farm will be designed in line with current Building Regulations (Part L 2021) which requires a significant reduction in carbon emissions compared to the 2013 Regulations which were in place at the time of the submission of the outline planning application and the determination period up to June 2023. Part L 2021 requires a 31% reduction in operational carbon emissions for residential development, and 27% reduction for non-residential development which includes the use of renewable energy technologies.

In addition to this, given the anticipated build-out timelines of the development, it is expected that a proportion of Highover Farm will also be delivered to the Government's Future Homes Standard, which is expected to require a 75% reduction in carbon emissions compared to 2013 requirements. Further details on the FHS, including timelines and transitional arrangements are expected to be released in autumn of this year (2025).

Homes at Highover Farm will be designed in accordance 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, as shown in **Figure 4**.

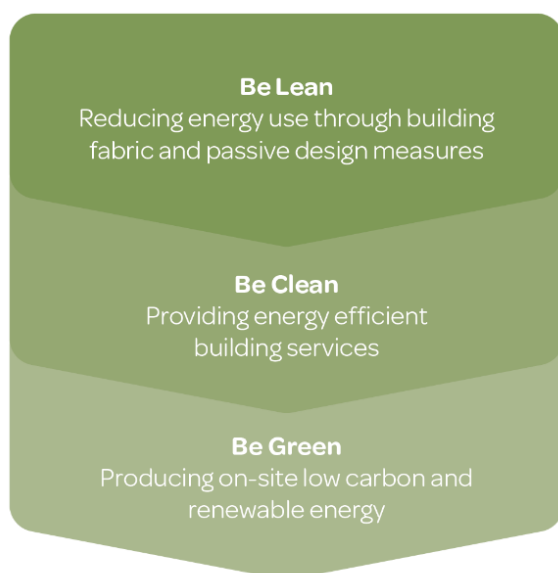


Figure 4: The Energy Hierarchy

The following sections set out the measures included to deliver an energy efficient, low carbon development.

Be Lean – Reducing Energy Use

Building orientation and form is an important consideration in reducing building energy demand through optimising solar gain and associated heat gains/ losses. Orientation and form were considered in the creation of the masterplan to promote passive solar gains, maximise natural daylight, sunlight and ventilation with the aim of optimising energy efficiency, whilst accounting for wider considerations such as transport, green infrastructure, and design.

Central to the delivery of low carbon and energy efficient buildings is the ‘Fabric First’ principle which recognises the most effective way of minimising carbon emissions is to reduce the demand for heat and power through a well-insulated, energy efficient building fabric and services.

Reducing the primary energy demand of a building through the use of an efficient fabric and services is widely regarded as best practice and is therefore the first and most important step to reducing carbon emissions.

This ‘fabric first’ approach has a number of distinct benefits including:

- Carbon savings delivered are ‘locked-in’ for the lifetime of the building (60 years or more);
- Virtually no maintenance and/or replacement costs to maintain carbon reductions through improved fabric;
- No reliance on an occupier’s behaviour to deliver carbon reductions. Achieving carbon savings from renewable energy technologies require education, awareness and often, behavioural changes from occupants.

Fabric Efficiency Measures – The design of new buildings will aim to reduce thermal energy demand by targeting improved air leakage and fabric u-values. A sample of Barratt u-values and their performance against the Regulations in place at the time of the outline planning application and during determination are shown in **Table 2** to demonstrate the significant improvements being achieved through compliance with the 2021 Building regulations and the significant enhancements from the Regulations in place at the time of submission of the application.

Table 2: Sample of Barratts fabric u-values (excluding dormers and garage walls)

Building element	Part L 2013	Sample Barratts spec.	% Reduction
Wall (W/m ² K)	0.30	0.2-0.24	20-33%
Roof (W/m ² K)	0.20	0.08-0.15	25-60%
Floor (W/m ² K)	0.25	0.2-0.24	4-20%
Windows (W/m ² K)	2.00	1.3	35%
Doors (W/m ² K)	2.20	1.1-1.6	27-50%
Airtightness (m ³ /h. m ² @50Pa)	10.00	8	20%

Any homes delivered after the introduction of the FHS are likely to be further improved, depending on the final values chosen by the Government.

Redrow Homes will target similar u-values for the dwellings they construct on site.

In addition to an enhanced fabric specification, a range of other measures to reduce energy use and carbon emissions is to be considered in the design of homes, including:

- High efficiency lighting targeting 100% of all light fittings as low energy lighting of 5-8 watts, significantly lower than traditional incandescent bulbs which are typically around 60 watts.
- Use of high efficiency heating systems appropriate to the building use to reduce energy consumption.
- Decentralised Mechanical Extract Systems, which are more energy-efficient than intermittent fans.
- Potential use of Waste Water Heat Recovery systems, dependent upon house types specified.

All Barratt homes will have Full Zone Controls, Boiler Interlock and Delayed Start Thermostat to enable efficient control and management of energy use.

Through these measures it is anticipated the development will significantly reduce energy demand and carbon emissions.

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 Networks (DHN) comprise a centralised heat generator, typically a gas fired Combined Heat and Power (CHP) engine. The continued decarbonisation of the national electricity network and changes to the Building Regulations mean that the carbon emission benefits of traditional CHP systems will diminish during their life cycle.

DHNs are suited to development with high thermal demand, typically provided by sufficient density or a large anchor load, i.e. high-density flats, leisure

centres and industrial process. Due to the high thermal efficiency and the relatively low heating and hot water demand at Highover Farm, individual heat pumps are considered to be a more efficient and lower carbon option for the development.

Be Green – Low Carbon Renewable Energy

The final stage of the Energy Hierarchy is the generation of low carbon and/or renewable energy. The following section provides a review of the potential low carbon renewable energy technologies considered suitable for the development.

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.

All of Barratt’s homes built to Part L 2021 are provided with solar PV panels for the generation of on-site renewable energy. All Redrow homes offer customers the opportunity to upgrade their homes by adding solar PV panels through MyRedrow, their online sales system.

For homes constructed to the forthcoming FHS 2025, the governments consultation on the 2025 FHS indicates two options, one which includes the use of high efficiency solar PV panels covering equivalent of 40% of ground floor area. On the 6th of June, the Government further announced that solar panels will be included in the FHS, leading to installation of Solar PV on the vast majority of new build homes. It is therefore anticipated that all homes on site built to the FHS will benefit from Solar PV systems. Each home will have a roof space suitable for the provision of Solar PV, where possible with roof spaces and systems orientated to the south to optimise solar output.

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) or air (Air Source Heat Pumps). 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. Heat pumps require ongoing and fairly frequent maintenance.

The FHS consultation includes the use of high-efficiency air source heat pumps (equivalent to ErP A++). Therefore, any homes built after the introduction of the FHS will benefit from an ASHP to provide low carbon heat. In addition to this, all Redrow homes will be heated using air source heat pumps as default, ahead of the FHS regulations.

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, so is not considered appropriate for the development.

Operational Energy Strategy Summary

Highover Farm will deliver a significant reduction (c 31%) in carbon emissions compared to the standards that were in place at the time of the original outline planning application submission and determination period.

From the outset all homes and buildings will achieve a minimum carbon reduction of 31% (homes) and

27% (non-residential development) over the 2013 Regulations. A portion of homes will also likely be delivered to the FHS, which is anticipated to come into force during the construction period of Highover Farm. Homes built to the FHS will deliver an estimated 75% reduction compared to the Part L 2013 standards. Meeting both the 2021 Building Regulations and the FHS (when introduced) will be achieved through a combined fabric, energy efficiency and low carbon renewable energy approach, which includes:

- Design to optimise passive solar gain through orientation and form where feasible.
- Enhanced fabric efficiency with improved u-values and airtightness.
- Use of a range of energy efficiency measures such as low energy lighting and potentially WWHR.
- Gas boilers and renewable energy in the form of Solar PV panels for Barratt homes built to the current Building regulations.
- High efficiency ASHP in all Redrow homes.
- Homes built after the introduction of the FHS will be all-electric and use ASHP to provide heat and hot water.

Table 3 shows the estimated operational carbon emission reduction that will be achieved by homes compared to the standards in place at the time of the submission of the outline planning application. Actual carbon reductions are likely to be even greater given that a proportion of homes are anticipated to be delivered under the proposed FHS.

Table 3: Estimated reduction in operational carbon emissions compared to outline application proposal.

	Total Emissions (kgCO ₂ /yr)	CO ₂ Emissions Reduction (kgCO ₂ /yr)
Part L 2013 (outline application proposed standard)	1,085,652	
Part L 2021 (current regulations)	749,100	336,552

4.2 Waste Minimisation and Management

Highover Farm will incorporate a number of measures to support a circular economy throughout construction and operation.

Waste 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.



Figure 5: The Waste Hierarchy

4.2.1 Construction Waste Management

Waste and Circular Economy is a key theme within Barratt 'Building Sustainability Framework'. As a company Barratt have achieved a 49% reduction in construction waste intensity (vs. 2015), and a

diversion from landfill rate of 97% across their projects in FY2024.

Prior to the start of construction on site, a Site Waste Management Plan (SWMP) will be produced in accordance with Condition 14 of the OPP, setting out measures that will be implemented to minimise waste and maximise reuse and recycling during the construction phases of the development.

The reduction, reuse and recycling of construction waste is to be prioritised through measures such as segregation of waste types, avoidance of over-ordering, assessing the potential use of secondary or recycled materials in the construction process, and returning unwanted packaging to suppliers for reuse/ recycling.

The SWMP will contain the following targets:

- A target of 80% of excavation waste materials diverted from landfill for reuse.
- A target of 80% of construction waste materials diverted from landfill for reuse, recycling, or recovery, with an aim to achieve 95% where possible.

4.2.2 Operational Waste Management

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

NHDC are committed to maximising recycling of household waste and currently provide separate collections of:

- Mixed dry-recyclables collection (plastic bottles, pots, tubs and trays, cartons, glass bottles and jars, tins, cans, and aerosols).
- Paper and card.
- Food waste.
- Garden waste (subscription service).
- Residual-waste collection (anything that cannot be recycled as above).

Provision will be made for the separate storage and collection of waste and recycling. Refuse storage areas will be designed to be easily accessible for

both occupants and refuse vehicles. In line with NHDC's Waste and Recycling Provision guidance⁴, residents will not be required to carry waste more than 30m from the main dwelling/door entrance to the storage point, and waste collection vehicles will be able to get to within 25m of the bin storage points for houses and 10m for flats.

Internally, storage areas will be provided for waste and recycling to support the recycling of different waste streams.

Upon occupation, residents will be provided with an information pack containing information on the Council's waste collection services and links to the Council's website which hosts signposts household waste recycling centres in Hertfordshire, as well as recycling guidance and advice such as Recycle Right⁵.

Please see the design code for further information on the design of operational waste facilities.

4.3 Healthy Placemaking

Creating a high-quality development that promotes health and wellbeing and community cohesion for residents and local people is a key aim of the scheme. The development includes a number of measures to support the wellbeing of residents and surrounding communities.

- Location within close proximity to a range of services and facilities, accessible on foot, by bike, or by bus, and design of a walkable neighbourhood with a permeable, well-connected street network, helping to promote healthy and active travel.

- Approx 13.6 Ha of green spaces, including parks, greenways, play spaces in the form of Neighbourhood Equipped Area of Play (NEAP) and a Local Equipped Area of Play (LEAP), providing opportunities for exercise, play, and social interaction. Homes will be within a 10-minute walk from a green space, in line with Fields in Trust distances, as recommended by NHDC's Sustainability checklist.
- A primary school site which is strategically located adjacent to retail outlet(s) and Highover Green, to form a community hub within the development.
- 0.57 ha of community allotments proposed to the south-west of the school site. Allotments are located in an accessible location with opportunities for shared initiatives and activities with the community hub.
- Public realm delivered with a focus on inclusive design, incorporating natural surveillance to create a safe and welcoming environment which designs-out opportunities for crime and anti-social behaviour in line with the requirements of Policy D1.

The Green Infrastructure framework plan is shown in **Figure 6**.

The proposed 13.6 Ha of proposed green spaces is significantly in excess of the 6.22 ha required by North Herts Local Plan policy requirement for provision of Green Infrastructure. Green space will be made publicly accessible for the benefits of both new residents and the surrounding community.

⁴ [Waste and recycling provision | North Herts Council](#)

⁵ [Bins and recycling | North Herts Council](#)

KEY

Site boundary

Green Spaces

- 1: Hitchin Meadows (North: semi-natural; South: parks & gardens)
- 2: Highover Park (North-East: parks & gardens; South-West: semi-natural)
- 3: Pocket Park / LEAP (parks & gardens)
- 4: Threshing Barn Green (semi-natural)

Greenways

- 5: Icknield Linear Greenway (amenity)
- 6: Stotfold Linear Greenway (amenity)
- 7: Dane Walk (amenity)

8: School pitches

9: Allotments

10. Stotfold Road Gateway

Green Street Links

Play Areas

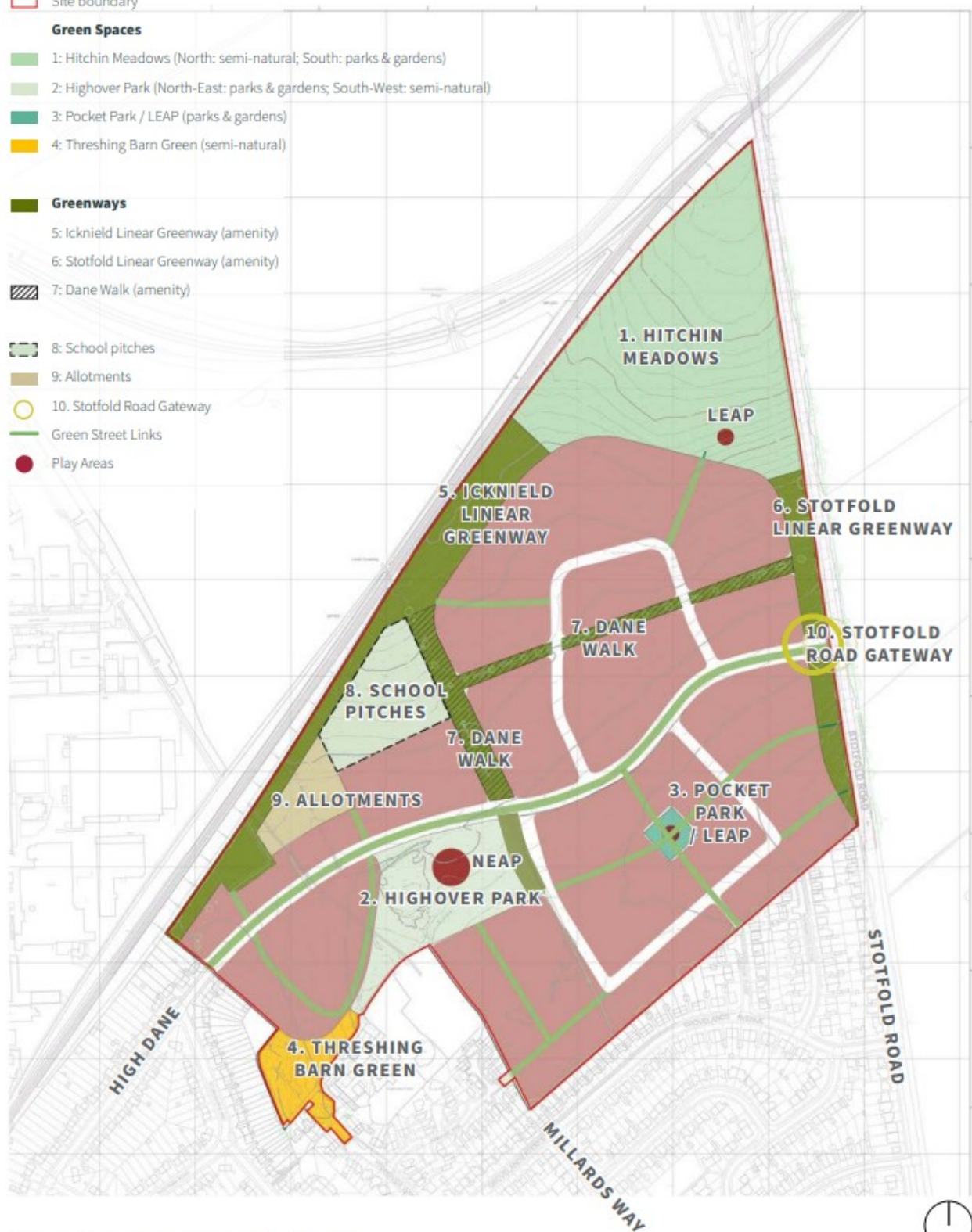


FIGURE 13 - GREEN INFRASTRUCTURE FRAMEWORK

Figure 6: Green Infrastructure Framework (Source: Strategic Masterplan Framework)



Figure 7: Green Infrastructure Precident Imagery (Source: Strategic Masterplan Framework)

Please see the design code for further information on open spaces, play areas, and design to promote health and wellbeing.

In addition to the proposed site-wide design measures, the design of new homes will promote health and wellbeing through:

- Ensuring good levels of ventilation through the use of decentralised Mechanical Ventilation Extract systems.
- Prioritising natural light and views of nature.
- Utilisation of materials and services that have low emission rates and pollutants to ensure indoor air quality.

4.4 Promoting Biodiversity

The development will incorporate a range of measures to conserve and enhance the natural environment through the consideration of existing site ecology and delivering net gains in biodiversity.

An Ecological Impact Assessment was prepared by WSP to accompany the outline application. The assessment considered the likely ecological implications of the development.

The assessment identified important ecological features to comprise of two non-statutory designated sites (Stotfold Road Verges LWS, Hitchin Railway Banks LWS), hedgerows (species rich and species poor), Breeding birds, Bats, and the Common lizard.

The development has been designed to avoid impacts on ecological features where possible. Habitat enhancement and mitigation measures include:

- Retention and enhancement of Species-rich Semi-Natural Grassland in the south-west of the site alongside new areas of grassland established throughout the site.
- Habitats designed to be appropriate for farmland birds, including provision of a Field

Margin habitat area in the north of the site to be established as farmland bird habitat.

- Enhancement of all retained species-poor hedgerows with species-rich planting.
- Retention of the existing pond and enhancement through the establishment of marginal vegetation.
- Planting of the attenuation swale areas, infiltration basin and attenuation ponds with native aquatic planting and subsequently managed as a series of wet meadows to improve biodiversity value.
- Mature trees along Stotfold Road will be retained and new tree planting at various locations throughout the site, including plantation woodland around the site boundaries and in discrete areas in the centre of the site, as well as tree planting throughout the development as green links alongside road infrastructure.
- Provision of bat and bird boxes integrated into buildings that front on to areas of public open space.

Measures will also be implemented throughout the construction phases of the development to protect species and the surrounding environment. These include:

- Following measures set out in the Construction Environmental Management Plan (CEMP) to reduce risk of pollution from the site.
- Good environmental site practices.
- Where possible, vegetation clearance is to be undertaken outside of the breeding bird season (March – July). If clearance is required within the breeding season an inspection of vegetation is to be undertaken.

A biodiversity offsetting calculation was undertaken by Tyler Grange in 2023. Based on the habitats present on site at that stage, the development would result in a net gain of +18.95 habitat units and

12.33 hedgerow units which is net gain of **20.96%** and 63% respectively.

Please see the design code for further information on green infrastructure, nature, and design for biodiversity.

4.5 Sustainable Travel

Carbon emissions from vehicular transport currently account for c.33% of all emissions within Hertfordshire⁶, therefore, one of the single biggest impacts new developments can make to reducing carbon emissions is to ensure it is in a sustainable location and provides the infrastructure for residents to use an alternative to a private car. As well as reducing emissions a sustainable transport strategy can deliver numerous co-benefits such as promoting physical activity, improving mental wellbeing, and reducing air pollution.

A Transport Assessment was prepared by WSP summarising the existing conditions in the vicinity of the site, the accessibility of the site relative to local facilities, and the public transport proposals for the development. This section of the report provides a summary of sustainable transport accessibility and measures proposed for the development.

4.5.1 Local Strategic Connectivity

Local Services and Amenities – It is widely accepted that walking has the greatest potential to replace car journeys for distances < 2km, while cycling can substitute for short car trips, particularly those under 5km cycling. A summary of key local amenities and their distance from the site is provided below:

- Highover Junior Mixed and Infant School Primary School (1.2 km)
- The Highfield School Secondary School (2.6km)
- Pinehill Hospital (2.1 km)
- Regal Chambers Surgery GP practice (2.0 km)
- Essential Dental Dentist (2.2 km)

⁶ [active-travel-strategy.pdf](#)

- Lloyds Pharmacy (2.2km)

In addition to these existing local facilities, the development includes the provision of 500 m² of neighbourhood-level facilities, a new primary school, open space, play space, and green infrastructure. The provision of facilities and services within walking distance of homes will help to promote more sustainable travel patterns and reduce reliance on the private car.

Walking/Cycling Infrastructure – The site benefits from a number of routes for pedestrians which run adjacent to existing highways, Public Rights of Way, cycle routes, and off-road unpaved trails in the vicinity of the Site.

A review of walking and cycling connectivity to key local destinations such as local shops, The Priory, Fearnhill and Highfield schools, the local GP/Pharmacy, and Hitchin Train Station has been undertaken as part of the Transport Assessment Addendum. The assessment shows a good level of walking and cycling accessibility to key locations in the vicinity of the site.

The development includes a number of improvements to the local walking and cycling network to enhance the accessibility of the site for both new and existing residents.

Bus Services – The site is considered to have very good public transport connectivity. A total of six

buses provide services from bus stops within a 10minute walking distance of the Site including the 81 and 81A between Westmill and Purwell, the 89 between Henlow Camp and Hitchin, the 97/98 between Stotfold/ Badlock and Hitchin Hermitage Road, and the 386 between Stevenage and Bishop's Stortford.

The development includes the provision of a bus stop to the south of the local centre which would be within 400m of nearly all the residential development on the site (aside from a very small number of units which would be only slightly further than 400m from the bus stop), as well as a contribution towards diverting bus services 81/81a (or other relevant service) into the development.

Rail Services – The nearest railway station is Hitchin Railway Station, located approximately 1.8km (c. 20-minute walk or 5-minute cycle) from the site boundary. The station is on the Great Northern line and provides connections to a range of key destinations such as Peterborough, Cambridge, Stevenage, and London. The station is accessible by cyclists, pedestrians and local bus services which stop next to the station entrance.

The strategic connection of the site in relation to the wider transport network is shown in **Figure 8** below.



Figure 8: Strategic Connectivity (Source: Design and Access Statement, PLANIT-IE).

4.5.2 Sustainable Transport Proposals

The development includes a number of measures to improve connectivity and support the uptake of sustainable transport modes in line with Local Policy SP9, Policy D1 and NHDC's Sustainability SPD, including:

- Design of a walkable site plan which provides a network of direct, legible and integrated pedestrian and cycle routes between key destinations and green spaces to encourage pedestrian and cycle movement within the site and to key destinations in Hitchin and Letchworth.
- Pedestrian and cycle movement will be prioritised over other modes of transport through the use of 20 mph speed limits, reduced parking at local facilities, and traffic management measures.
- Provision of a green corridor through the site from High Dane and Highover Way to Stotfold Road, providing a quality route for pedestrians and cyclists.
- Improvements to the western footway on Stotfold Road to provide a circa 3m wide cycleway/footway from the south-eastern corner of the site to the junction of Frensham Drive with Stotfold Road, allowing cyclists to connect with the existing cycle infrastructure on Cambridge Road.

- Contributions towards the extension of the existing bus service into the Development from High Dane and sustainable travel vouchers for each dwelling offering three months of free bus travel.
- Contributions towards the creation of a footpath/cycle link between The Greenway and Highfield School, Letchworth Greenway Extension, and the provision of a new toucan crossing over Stotfold Road to be provided by the County Council, and wider measures to enhance sustainable transport in the vicinity of the development.
- Provision of cycle parking spaces in line with the Minimum Parking Standards for Residential Uses as set out within the North Herts District Council (NHDC) supplementary planning guidance.
- Electric Vehicle (EV) charging in accordance with the requirements of the Building Regulations and NHDC requirements. All new residential buildings with associated parking will have access to electric vehicle charge points to encourage the uptake of low emission vehicles. Non-residential car parks with more than 10 spaces will provide at least one active EV charge point with cabling to the remaining 20% of spaces.
- A sustainable Travel Plan which identifies measures to maximise accessibility to/from the development and reduce reliance on the car and to encourage the use of alternative modes of travel including walking, cycling and public transport.

4.5.3 Sustainable Transport Summary

Highover Farm benefits from being in a highly sustainable location, with foot and cycle connections to a range of local services and amenities, and good access to public transport connections including bus and rail services. The development includes provision of enhanced walking and cycling infrastructure to improve general accessibility and permeability of the site for

future residents and visitors, promoting sustainable transport.

Further detailed information on transportation issues and targets can be found in the Transport Assessment, Travel Plan, the Environmental Statement, Transport Assessment Addendum, and the Supplementary Transport Note which accompanied the outline planning application. The design code also contains further details on the specification for vehicular and pedestrian access, the active travel network, and public transport provision.

4.6 Climate Change Adaptation

The UKCP18 projections demonstrate that over time the UK will experience increased summer and winter temperatures, significantly increased maximum temperatures, reduced summer rainfall, increased winter rainfall, and an increase in extreme weather events. Adapting to this changing climate will impact on the design, construction, location, cost and operation of all new buildings.

The UK Climate Change Risk Assessment, updated in 2021, identifies key risks associated with the effects of climate change. In relation to the built environment and the consented development, these include reduce summer water availability, increased winter rainfall and increased summer temperatures.

The need to adapt to a changing climate is recognised by NHDC's Sustainability SPD, which recommends new developments incorporate measures to mitigate overheating, conserve water, and incorporate sustainable drainage.

This section identifies key measures which will be incorporated into the design of new homes and the proposed development to adapt to climate change.

4.6.1 Water Efficiency

Potable water is an increasingly important natural resource. Highover Farm is served by Affinity Water, which is classed as being in an area of serious water

stress⁷. This is recognised by Policy SP9 and D1 which require residential developments to meet or exceed nationally described water efficiency standards.

Homes will be designed to reduce water consumption, targeting the government's higher water efficiency rate of 110 litres/person/day, which is significantly lower than the Building Regulations requirement of 125 l/p/d. Redrow homes will aim to achieve a water efficiency of 105 l/p/d in line with Redrow's sustainability strategy. This will be achieved through use of a range of water efficiency measures such as:

- Dual flush WCs;
- Water meters;
- Low flow fittings; and
- Where appropriate, water efficient equipment.

Homes with access to a garden will be provided with a water butt to enable rainwater collection for external use (such as for watering gardens).

Achieving lower levels of water consumption can be very challenging to achieve due to difficulties with influencing residents' behavior and the use of greywater recycling systems which are unreliable and still not deployed within the average home. The emerging FHS is not anticipated to set higher water efficiency standards.

4.6.2 Flood Risk and Drainage

A Flood Risk Assessment (FRA) & Drainage Strategy was prepared by WSP. The site is within Flood Zone 1, defined as land assessed as having a less than 1 in 1000 annual probability of river or sea flooding in any year (<0.1%), and the overall flood risk from rivers and the sea is assessed as being low.

The drainage strategy for the site is designed to limit discharge flows from the site to match predevelopment greenfield rates for all events up to the 1 in 100-year event, plus upper end allowances for climate change.

The surface water drainage strategy mimics the existing natural drainage utilising attenuation ponds prior to infiltration through an infiltration basin (to the north) and soakaway (to the south of the site). SuDS features in the form of ponds/basins, swales and a soakaway have been incorporated into the development drainage strategy

The SuDS features will provide multifunctional water quality benefits through the removal of pollutants, and biodiversity benefits through the provision of new floral and faunal habitats across the site.

Further information on the flood risk and the surface water management system can be viewed in the approved FRA and the Infrastructure Reserved Matters application currently being determined by NHDC (24/02780/RM).

4.6.3 Overheating

With increasing summer temperatures there is an increasing risk of overheating in buildings which could adversely affect building occupants and users.

All homes will be designed in accordance with the new Building Regulations Part O, which requires development to reduce overheating risk.

The new dwellings will be designed in accordance with the cooling hierarchy, as shown in **Figure 9**, which aims to reduce any potential overheating in buildings using passive design measures in the first instance. Incorporating the cooling hierarchy into the design process means buildings will be better equipped to manage their cooling needs and to adapt to and mitigate climate change.

⁷ [Water stressed areas – 2021 classification - GOV.UK \(www.gov.uk\)](https://www.gov.uk)

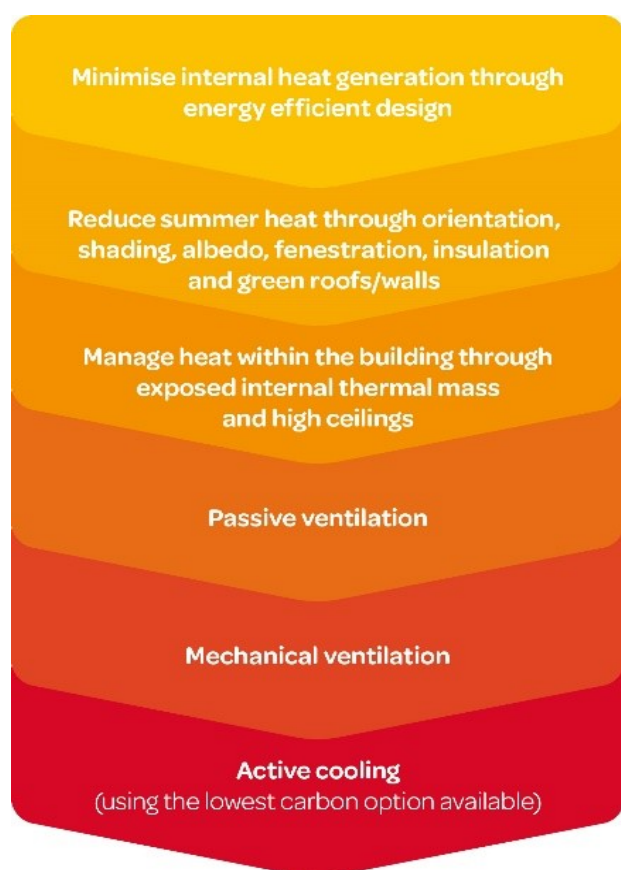


Figure 9: The Cooling Hierarchy

The provision of extensive green and blue infrastructure throughout the development will also help to reduce the risk of overheating through proving a cooling effect.

4.6.4 Climate change adaptation summary

The design of the development includes a number of measures to increase resilience to future climatic changes, such as - features to minimise water use and enhance water efficiency, a drainage strategy that accounts for increased extreme weather events due to climate change, modelling to minimise the risk of overheating in homes, and the planting of climate resilient species. These measures will ensure that homes and the wider development will be adaptable and resilient to future climatic changes.

4.7 Performance against the Council's Sustainability SPD

Condition 12 requires the submission of a Sustainability strategy to promote sustainable construction in accordance with North Hertfordshire Local Plan Policies SP9 and D1 and the Sustainability SPD 2024.

A full review of performance against the Council's Sustainability SPD has been carried out and is contained in Appendix A, with a summary of performance set out in the table below.

The below table shows that all of the 'Bronze' level recommendations have been achieved, with 'Silver' and 'Gold'-level performance achieved in a number of topics such as ecological surveying, ecological buffers, and sustainable transport and travel plans.

Table 4: Summary of performance against NHDC's Sustainability SPD.

NHDC SPD Checklist Category	Sub-category	Highover Farm Performance
Optimising Passive Design & Fabric Performance	Residential	Bronze
	Non-Residential	Bronze
Achieving low carbon energy	Residential	Bronze
	Non-Residential	Bronze
Minimising carbon footprint	Whole life carbon assessment - Residential	Bronze
	Whole life carbon assessment - Non-Residential	Bronze
	Circular Economy	Bronze
Healthy placemaking	Green & Blue Infrastructure - Residential development	Bronze

	Green & Blue Infrastructure - Non-residential development	Bronze
	Urban Greening Factor	N/A
Promoting Biodiversity	Ecological surveys	Gold
	Arboriculture	Silver
	Biodiversity Net Gain	Gold
	Ecological buffers	Gold
Sustainable Transport	Transport assessments and travel plans	Gold
	EV Charging	Bronze
Conserving Water	Residential	Bronze
	Non-Residential	N/A
Incorporating sustainable drainage	SuDS	Bronze

5. Sustainability Strategy for Phase 1

This section sets out the strategy for Phase 1 of the Outline Planning Permission.

This section has been drafted to focus on the specific measures for Phase 1. Further strategies will be provided for each subsequent phase of the application RM application, in line with the overarching strategy set out in Chapter 4.

The description of development for that Phase 1 reserved matters planning application is as follows:

“The construction of Phase 1 Residential comprising 257 dwellings, associated highway, drainage, servicing/utilities infrastructure, landscaping and open space provision of Hitchin Meadows and Stotfold Linear Park in accordance with condition 3 of 18/01154/OP (and the associated partial discharge of conditions 7, 9, 10, 11 and 12).”

The site layout for Phase 1 is shown in **Figure 10**.

5.1 The Consented Development



Figure 10: Site Layout Plan for Phase 1 of the development (source: McBains)

5.2 Sustainability Strategy for Phase 1 of the Consented Development

The key sustainability measures integrated in the Phase 1 RM application are set out within the table below under the following headings which reflect those presented in the site wide strategy:

- **Climate Change Mitigation**
- **Waste and Circular Economy**
- **Healthy Placemaking**

- **Promoting Biodiversity**
- **Sustainable Travel**
- **Climate Change Adaptation**
- **Climate Change Mitigation**

Please note, at this stage it is anticipated that Phase 1 of the development will be delivered in line with Part L 2021 of the Building Regulations. Should this change due to the introduction of the FHS, the strategy will be updated accordingly.

Theme	Sustainability measures included in Phase 1.
Climate Change Mitigation	• High Energy Efficiency: ○ All homes at Highover Farm Phase 1 will be built to Part L 2021 Building Regulations ○ New homes built to Part L 2021 typically achieve an EPC rating of A or B under the current methodology. ○ Orientation and form promote passive solar gains, maximise natural daylight, sunlight and ventilation with the aim of optimising energy efficiency. • Low/Zero Carbon Technologies: ○ High efficiency gas boilers will be installed for space heating and hot water. ○ Solar PV will be included on all homes in Phase 1 that will be achieving Part L 2021. ○ Roof shapes and orientation will be optimised to maximise solar output. • Embodied Carbon; ○ Barratt have introduced measures to minimise embodied carbon in their new developments which will be integrated into the design of the homes at Highover Farm. ○ Average upfront carbon (A1-A5) for Barratt Redrow house types recently assessed was 325kgCO₂e/m²GIA, which is significantly lower than the <500kgCO₂e/m² NHDC GIA target. Please see Section 4.1 of the Outline Sustainability and Energy Statement for more information on the above strategy.
Waste and Circular Economy	• Reducing Construction Waste: Barratt have committed to achieve a 20% reduction in construction waste vs. 2015 levels. Further targets for Highover Farm include; ○ A target of 80% of non-contaminated excavation waste materials diverted from landfill for reuse. ○ A target of 80% of construction waste materials diverted from landfill for reuse, recycling, or recovery, with an aim to higher waste recovery rate of 95% where possible.

Theme	Sustainability measures included in Phase 1.
	○ 100% of timber sustainably certified for net zero deforestation. Section 4.2 of the Outline Sustainability and Energy statement sets out the measures that will be implemented to support a Circular Economy at Highover Farm.
Healthy Placemaking	● A Sustainable Location: ○ The site is close to a range of services and facilities, accessible on foot, by bike, or by bus, and design of a walkable neighbourhood ○ Permeable, well-connected street network, helping to promote healthy and active travel. ● Green Space: ○ Creation of the Hitchin Meadows and the Stotfold linear park which are key aspects of the total Green Infrastructure provision on site ○ Homes will be within a 10-minute walk from a green space, in line with Fields in Trust distances, as recommended by NHDC's Sustainability checklist. ● Ventilation and Light: ○ Ensuring good levels of ventilation through the use of decentralised Mechanical Ventilation Extract systems. ○ Prioritising natural light and views of nature. ● Sustainable Materials: Utilisation of materials and services that have low emission rates and pollutants to ensure indoor air quality. Section 4.3 of the Outline Sustainability and Energy statement sets out the measures that will be implemented to support Healthy Placemaking at Highover Farm.
Promoting Biodiversity	● Ecological Mitigation and enhancement: ○ Two infiltration basins as part of the SUDs drainage are within the Hitchin Meadow, and although their principle function is drainage, there will inevitably be some ecological interest around them. ○ Introduction of species rich grassland and New tree planting. ○ Bird nesting boxes, and bat roosting opportunities Please see Section 4.4 of the Outline sustainability and energy statement report for further information on how the scheme will promote biodiversity.
Sustainable Travel	● Sustainable Transport Links: The scheme includes a number of measures to support the use of sustainable transport for the new residents. These include; ○ Walkable site plan which provides a network of direct, legible and integrated pedestrian and cycle routes provided as part of The Avenue (main spine road) linking to the Stotfold Road cycleway. Leisure paths are provided as part of the design for the Hitchin Meadows area ○ Pedestrian and cycle movement prioritised over other modes of transport through the use of 20 mph speed limits, reduced parking at local facilities, and traffic management measures. ○ Provision of a green corridor through the site ○ Improvements to the western footway on Stotfold Road to provide a circa 3m wide cycleway/footway.

Theme	Sustainability measures included in Phase 1.
	○ Contributions towards the extension of the existing bus service which is to be operational by the 185th occupation which is within the construction of this RM. ○ Provision of cycle parking spaces ○ Electric Vehicle (EV) charging for each home ○ The travel plan promotes the use of car sharing schemes such as Liftshare. ○ Provision of a temporary footpath on site to connect the site to the nearby primary school at High Dane. ○ Each resident to receive a travel pack and voucher within one month of occupation. Section 4.5.2 of the Outline Sustainability and Energy statement sets out the measures that will be implemented to support sustainable transport at Highover Farm.
Climate Change Adaptation	● Minimising Overheating: All homes will be designed in accordance with the new Building Regulations Part O, which requires development to reduce overheating risk. ● Water Efficiency: All residential development will aim to limit water consumption to 110 l/pp/pd. ● Sustainable Drainage: The development is located in an area of low flood risk and includes a number of measures that support adaptation to climate change. These include; ○ Attenuation is to be provided to ensure no increase in surface water run-off volumes for all rainfall events up to and including the 1 in 100 year + 40% for climate change event. ○ SuDS features in the form of ponds/basins, swales and a soakaway are incorporated into the drainage design Section 4.6 of the Outline Sustainability and Energy statement sets out the measures that will be implemented to support Climate Adaptation at Highover Farm.

6. Conclusion

This Sustainability Statement has been prepared to demonstrate how the development at Highover Farm responds to the requirements of Condition 12.

This statement has provided a summary of the key sustainable design measures incorporated into the development to respond to Condition 12 and the guidance set out in the SPD.

A summary of the overarching strategy for the development has been set out in Chapter 4. Details on the specific sustainability measures to be implemented within Phase 1 of the development are set out in Chapter 5. Further sustainability and energy strategies will be produced for subsequent phases of the development setting out the specific measures to be implemented within that phase, to be submitted with each future Reserved Matters application.

Climate Change Mitigation

- Homes designed to reduce embodied carbon through the use of sustainable building techniques and materials with a lower embodied carbon impact.
- From the outset of construction all homes built in line with Part L 2021 to deliver a reduction in carbon emissions over the regulations in place at the time of the submission of outline planning application of 31% for homes and 27% for non-residential development.
- Design in accordance with the energy hierarchy and a fabric first approach to reduce energy demand followed by the use of on-site

renewable energy generation in the form of Solar PV (Barratt) and Air Source Heat Pumps (Redrow)

- A proportion of the development to be delivered in line with the FHS/ FBS, delivering a 75% reduction in carbon emissions.

Waste Management

- A SMWP will be produced to ensure the sustainable management of waste throughout construction, including targets for a target of 80% of excavation waste and construction waste materials diverted from landfill for reuse, recycling, or recovery.
- Design of waste management infrastructure in line with NHDC Waste and Recycling guidance, and provision of information and guidance to new occupants to support the reduction and recycling of operational waste.

Healthy Placemaking

- Approx 13.6 Ha of green spaces, including parks, greenways, play spaces, a significant increase over the 6.22 ha required by Local Plan policy.
- High quality landscaping, tree planting, and open space, allowing residents and visitors to enjoy the health and wellbeing benefits associated with green space.
- Homes within a 10-minute walk from a green space, in line with Fields in Trust distances.
- Homes which will be designed to create healthy living environments which are flexible for the future with good levels of ventilation, indoor air quality, natural light, space and accessibility.
- Provision of a mix of homes, including policy compliant 40% delivered as affordable, helping to meet the need for market and affordable housing in the local area and the wider District.

Promoting Biodiversity

- Provision of measures to protect and enhance on-site ecology, including retention and enhancement of key habitats, and creation of new habitats such as species rich grassland, tree planting, bird nesting boxes, and bat roosting opportunities.
- Proposals estimated to deliver a net gain of c.20% of habitat and 63% hedgerows.

Sustainable Transport

- Development in a highly sustainable location with access to a range of services and amenities via foot or bike.
- Design of a walkable neighbourhood which provides a safe and high-quality environment for pedestrians and cyclists, this includes 20 mph speed limits, traffic management measures, and a green corridor.
- A sustainable transport strategy which aims to reduce emissions associated with private car travel, for example through delivering improvements to walking and cycling infrastructure, secure cycle parking, and EV charging infrastructure.

Climate Change Adaptation

- Specification of water efficient fittings to reduce water consumption, aiming to limit water consumption to 110 litres per person per day.
- A surface water drainage strategy designed to accommodate stormwater for all storm events up to the 1 in 100-year event plus a 40% allowance for climate change.

- A variety of SuDS features in the form of ponds/attenuation basins, swales, and a soakaway which aim to mimic the natural processes of surface water drainage and provide water treatment, biodiversity, and amenity benefits.
- Homes designed to take into account increasing annual temperatures set out in the UKCP18 climate projections to minimise the risk of overheating.

Sustainability SPD Performance

- Accomplishment of all 'Bronze' level recommendations within the Council's Sustainability SPD checklist.
- 'Silver' and 'Gold'-level performance achieved in a number of topics such as ecological surveying, ecological buffers, and sustainable transport and travel plans.

Barratt and Redrow are committed to the delivery of sustainable homes which protect and enhance the natural environment, support health and wellbeing, as well as mitigate and adapt to the long-term effects of climate change.

Appendix A – NHDC Sustainability Checklist

Key
Achieved
Potentially achieved
Not targeted

Development Type	Bronze	Silver	Gold	Highover Farm 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 ✓ 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)	✓ Achieve 80% EPC ratings of at least B and 20% rating of at least C ✓ 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	✓ Achieve an EPC rating of at least B on all dwellings ✓ 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	- All homes and buildings at Highover Farm will be built to Part L 2021 as a minimum. - New homes built to Part L 2021 typically achieve an EPC rating of A or B under the current methodology. - Orientation and form have been considered in the development of the masterplan to promote passive solar gains, maximise natural daylight, sunlight and ventilation with the aim of optimising energy efficiency, whilst accounting for wider considerations such as transport, green infrastructure, and design. - Given the timelines of the development it is anticipated that a proportion of the development may be delivered to the FHS/FBS which

	estimated unregulated energy) (RIBA 2025) • SHD $\leq$ 30 kWh/m²/yr (Passivhaus low energy building) or $\leq$ 40 kWh/m²/yr (AECB/ Energiesprong new build)	software and confirms compliance with LETI or RIBA 2030 standards: - o EUI $\leq$35 kWh/m²/yr - o SHD $\leq$15 kWh/m²/yr	will secure a c.50% improvement over Part L 2021 and utilise ASHP to provide heat and hot water. - Please see Section 4.1 of the Sustainability Statement for more information.
--	--	--	---

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 (AECB/ Energiesprong new build) Or • Evidence that the scheme achieves BREEAM 'Excellent'	In addition to silver level requirements ☒ Submit an Energy Statement from a certified assessor showing: • on-site reductions of 50% (minimum) in CO₂ emissions 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 - o SHD ≤ 15 kWh/m²/yr Or • Evidence that the scheme achieves BREEAM 'Outstanding'	The non-residential element of Highover Farm consists of the School and the Local Centre. The developers responsible for these elements will submit their own sustainability strategies in accordance with Condition 12.
-----------------------------------	--	---	---	--

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)	- All homes and buildings at Highover Farm will be built to Part L 2021 as a minimum. - Section 4.1 of the Sustainability Statement contains a review of the most appropriate low/zero carbon technologies for the site. - Solar PV is proposed to provide on-site low carbon renewable energy. 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. - Given the timelines of the development it is anticipated that a proportion of the development may be delivered to the FHS/FBS. For this development it is likely that 75% or more of dwellings energy demand will be supplied from onsite renewable technology such as ASHP or Solar PV.
-------------------------	--	--	---	---

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.	- All homes and buildings at Highover Farm will be built to Part L 2021 as a minimum. - Section 4.1 of the Sustainability Statement contains a review of the most appropriate low/zero carbon technologies for the site. - Solar PV is proposed to provide on-site low carbon renewable energy. 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. - Given the timelines of the development it is anticipated that a proportion of the development may be delivered to the FHS/FBS. For this development, it is likely that 20% or more of building's energy demand will be supplied from onsite renewable technology such as ASHP or Solar PV.
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	☒ 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 ☒ Incorporate the findings of pre-demolition audits (where applicable) into the WLC assessment for the development ☒ Applicants must commit to updating the assessments at pre-commencement (Stage4) and preoccupation (Stage5/6) ensuring alignment with the targets	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	- Whole life carbon is a key area of focus for Barratt who as a group have introduced measures to minimise embodied carbon in their new developments. - Average upfront carbon (A1-A5) for Barratt David Wilson house types recently assessed was 325kgCO₂e/m²GIA, which is significantly lower than the <500kgCO₂e/m²GIA target. - The Site is currently in agricultural use. No building demolition onsite is necessary. - WLCAs / Post-completion WLCAs will not be undertaken.
--	--	---	--	---

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 ☑ Applicants must commit to updating the assessments at precommencement (Stage4) and preoccupation (Stage5/6) ensuring alignment with the targets ☑ 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 A1 - A5 score = 625 B1 - 5, C1 - 4 incl. Sequestration score = 210	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 non-residential development will ensure compliance with policy and building regulations in relation to embodied carbon. - The construction of the development will implement measures to reduce the embodied carbon impact of the development, this could include use of sustainable diesel alternatives or electricity during construction, use of efficient construction vehicles and equipment, procurement of local materials where possible to reduce transport-related emissions, and prioritisation on materials which have a low embodied carbon impact and/or high recycled content. - The Site is currently in agricultural use. There are no buildings that require demolition.
--	---	---	--	--

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). ☒ 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)	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 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)	- Waste and Circular Economy is a key theme within Barratt's 'Building Sustainably' Framework. As a group Barratt have committed to achieve a 20% reduction in construction waste vs. 2015 levels, 95% diversion of construction waste from landfill, and use of 100% certified net zero deforestation timber - The development is on a greenfield site, therefore pre-demolition and pre-redevelopment audits are not relevant. - Section 4.2 of the Sustainability and Energy statement sets out the measures that will be implemented to support a Circular Economy at Highover Farm, including: • A target of 80% of non-contaminated excavation waste materials diverted from landfill for reuse. • A target of 80% of construction waste materials diverted from landfill for reuse, recycling, or recovery, with an aim to higher waste recovery rate of 95% where possible. • 100% of timber sustainably certified for net zero deforestation.
---	--	--	--	---

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) ☑ Ensure the development scheme includes community allotments.	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 approved Strategic Masterplan Framework contains a detailed open space and green infrastructure strategy. - The development includes approx. 13.6 Ha of green spaces, including Parks and Gardens, Amenity Space, Natural and Semi natural Green Space, two Locally Equipped Areas for Play (LEAPs), one Neighbourhood Equipped Area for Play (NEAP), and community allotments. - Key GI features include Hitchin Meadows, Highover Park, and Threshing Barn Green, connected by Icknield Linear Park, Stotfold Linear Park and Dane Walk. - Homes will be within a 10-minute walk from a green space, in line with Fields in Trust distances. - The GI Framework aims to retain, strengthen, connect and integrate existing habitats including key hedgerows, semi-improved grassland and trees into the landscape structure and green infrastructure network. - All homes 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. Passive measures will be prioritised in accordance with the cooling hierarchy which prioritises the use of passive cooling measures prior to the consideration of mechanical ventilation and/or active cooling systems. - A noise and vibration assessment was undertaken as part of the Environmental Statement and found that noise levels can be appropriately controlled with the use of appropriate layout / screening considerations and building fabric design. Adequate soundproofing will be provided for each dwelling with consideration of the adjacent railway line. - All domestic units will meet Part M4(1) to ensure suitable building access and use for those with disabilities. - 0.57 ha of community allotments are to be located to the south-west of the School site. Allotments are in an accessible location with opportunities for shared initiatives and activities with community hub. - Please see section 4.3 of the Sustainability Statement for further detail.
--	--	--	--	---

		☑ 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	- The proposals do not include green or blue roofs at this stage. Homes will be provided with solar panels. While green roofs can be combined with solar PV in the form of bio-solar roofs, the high upfront cost and maintenance requirements are seen to outweigh the benefits. - An Air Quality Assessment was undertaken as part of the outline application. The development complies with relevant national and local air quality policy, and the impact on local air quality is considered to be negligible. - Measures to mitigate and reduce air quality impacts include implementation of good practice dust management measures during construction, provision of EV charging points to support the uptake of low emission vehicles, and a sustainable transport strategy to reduce overall transport-related emissions.
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	Same as requirements for residential development	

		compliance ☑ Achieve Wst 05 BREEAM credit		
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'	- UGF tends to be more applicable to urban development. Highover Farm is a greenfield site therefore UGF is not applicable, however over 13.6 ha of green space is proposed within the Green Infrastructure Framework, a significant increase over the 6.22 ha required by North Herts Local Plan policy requirement for provision of Green Infrastructure.
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 follow-up surveys should be completed and submitted according to recommendations required to enable determination – i.e. no outstanding surveys	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 compensation for species affected is included in the species assessment	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	- The Ecological Appraisal (EA) for the outline application was supported by a range of Habitat surveys and species assessments including a Extended Phase 1 habitat survey, breeding bird survey, brown owl survey, bat survey, and Great crested newt surveys. - The EA included a review of existing data sources such as The Multi-Agency Geographic Information for the Countryside (MAGIC), The Herts Environmental Records Centre, and Bedfordshire and Luton Biodiversity Recording and Monitoring Centre. - The ecology strategy for the site includes features to protect ecology beyond species specific compensation, for example enhancement of the existing pond on site, introduction of species rich grassland, and new tree planting. - The EA includes a review of all statutory and non-statutory sites within 2 km of the proposed site, including LNRS such as Oughtonhead Common and Purwell Meadows. - Please see Section 4.4 of this report 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 trees onsite (Category A/B or other highest value trees)	In addition to silver level requirements ☒ Retain all existing trees on site	- The aim is to retain, strengthen, connect and integrate existing habitats including trees into the landscape. - The existing mature trees in the northern half of the Stotfold Road boundary retained and enhanced with a minimum 25m buffer. - New tree planting will be provided at various locations throughout the site, including plantation woodland around the site boundaries and in discrete areas in the centre of the site, as well as tree planting throughout the development as green links alongside road infrastructure. - However it is not possible to retain all trees as part of the development, some trees will be felled or reduced as part of the development. - Please see Section 4.4 of this report for further information.
--	--	--	---	---

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 BNG significant habitats are to be managed and monitored	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 biodiversity offsetting calculation was undertaken by Tyler Grange in 2023 and demonstrates that the site is capable of achieving a BNG of c.20% habitat units and c.63% hedgerow units. - A landscape and ecological management plan (LEMP) will be submitted setting out the delivery of the agreed number of habitat and hedgerow units, including arrangement for management and monitoring. - On plot ecological enhancements include enhancement of the pond, a new attenuation pond, three swales and an infiltration basin which will become an ephemeral wetland area, introduction of species rich grassland including an area of rougher, less managed grassland habitat that is appealing to farmland birds, new tree planting, bird nesting boxes, and bat roosting opportunities where appropriate. - Please see Section 4.4 of this report 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 sites of national, international, regional, county or district-level importance within the vicinity of the site, however there are three statutory designated sites of Local importance within the Study Area; Purwell Meadows Local Nature Reserve, Oughtonhead Common Local Nature Reserve and Norton Common Local Nature Reserve. - The existing pond will be enhanced by planting native aquatic and marginal plants to help improve the diversity of aquatic invertebrates. - A linear green park will provide a buffer between the site and adjacent LWS (Hitchin Railway Banks LWS and Stotfold Road Verges LWS). Retained hedgerows that meet the definition of Habitats of Principal Importance will be buffered with 10m of complimentary grassland buffer habitat. - The development includes enhancements to habitats in the form of retaining and enhancing hedgerows, part of the Species-rich Semi-Natural Grassland and the on-site pond. - Please see Section 4.4 of this report for further information.
--------------------	--	---	---	---

Sustainable Transport				
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 Travel Plan were submitted with the outline planning application. - The Transport Assessment identified off-site improvements to the transport network such as extension of bus service 81/81A, traffic calming measures along High Dane, and introduction of an advisory cycle lane and advanced cycle line. - The travel plan promotes the use of car sharing schemes such as Liftshare and sharing of a car share database link with new tenants.
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 (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)	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	- EV charging will be provided in accordance with the requirements of the Building Regulations.. All new residential buildings with associated parking will have access to electric vehicle charge points to encourage the uptake of low emission vehicles. Non-residential car parks with more than 10 spaces will provide at least one active EV charge point with cabling to the remaining 20% of spaces.
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/pp/pd.
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).	The only non-residential development on site is the school and 500 sqm of neighbourhood-level facilities. The school will be delivered by HCC, and the remaining non-residential elements of the development will be relatively small in size. BREEAM is considered to be disproportionately complex and resource-intensive for small buildings and therefore will not be pursued.

Incorporating sustainable drainage

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 ☑ Ensure the scheme achieves Wst 05 BREEAM credit	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 ☑ Ensure the scheme achieves Wst 05 Exemplary BREEAM credit.	- A Flood Risk assessment and drainage strategy were submitted as part out the outline planning application. Attenuation is to be provided to ensure no increase in surface water run-off volumes for all rainfall events up to and including the 1 in 100 year + 40% for climate change event. - Surface water runoff is to be managed and stored at/near source through the use of SuDS. The development is to sustainably manage surface water runoff through attenuation prior to infiltration to ground in the northern part of the site and infiltration to ground via a soakaway in the southern area of the site. SuDS features in the form of ponds/basins, swales and a soakaway are incorporated into the drainage design
--	---	---	--	---

Turley

Brownlow Yard,
12 Roger St,
London
WC1N 2JU

T 020 7851 4010



Turley
Sustainability