



Land East of Pirton, North Hertfordshire

Energy Statement

June 2026

The dwellings on the proposed development on Land East of Pirton will be 'zero-carbon ready' in line with the Future Homes Standard.

They will feature a high fabric efficiency specification, low carbon air source heat pumps and roof integrated solar photovoltaic panels.

The approach described will ensure that the development achieves the requirements of *North Hertfordshire Local Plan 2011-2031 (Adopted November 2022)* Policy D1 and Policy SP11, while aligning to the guidance set out in the *Sustainability Supplementary Planning Document (Adopted September 2024)*.

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1 Introduction

1.1 This Statement

- 1.1.1 This *Energy Statement* supports the planning application for the proposed development on Land East of Pirton in North Hertfordshire. It has been commissioned by Gladman Developments Limited (the Applicant).
- 1.1.2 The Statement sets out how the dwellings on the proposed development will be 'zero-carbon ready' in line with the Future Homes Standard which will come into force in March 2027, and which will therefore apply.
- 1.1.3 The hierarchy of solutions proposed, including a high fabric efficiency specification, low carbon air source heat pumps and roof integrated solar photovoltaic panels, will set the new development on a pathway to zero emissions over time.
- 1.1.4 The approach described will also ensure that the development comfortably achieves the requirements of existing planning policy and guidance, including the *North Hertfordshire Local Plan 2011-2031 (Adopted November 2022)* and the *Sustainability Supplementary Planning Document (Adopted September 2024)*.
- 1.1.5 Broader sustainability issues are addressed in the Sustainability Statement which accompanies this application. The Statement's Appendix A includes the Sustainability Checklist from the Sustainability Supplementary Planning Document which has been completed in as much detail as is possible at this outline planning stage.
- 1.1.6 This Statement has been prepared by Daedalus Environmental Ltd, a sustainability consultancy which, since 2009, has delivered energy and sustainability statements and services for c.800 new build developments throughout the UK.
- 1.1.7 All formal energy calculation/building assessments – including SAP, SBEM and Dynamic Simulation Assessments undertaken by Daedalus Environmental Ltd (for demonstrating compliance under Part L and Part O of the Building Regulations for example) are completed by a fully qualified and certified assessor: Thomas Owen (OCDEA ref: EES/021896).
- 1.1.8 As this is an outline application, no formal compliance calculations have been completed for the project at this stage. Further details will accompany those calculations at the next stage of the application, which we assume will be secured by condition.

1.2 The Site

- 1.2.1 The proposed c.6.65ha site is located to the east of Pirton, a large village to the northwest of Hitchin. It currently comprises a single grassed field with scattered boundary trees and hedgerows.
- 1.2.2 The site is bound by the recent residential development on Drovers Way and Strawplaiters Green to the west, and the associated area of public open space with a children's play area and drainage basin to the southwest.
- 1.2.3 A residential property bounds the site to the north, arable/grassland fields bound the site to the east and a bridleway beyond which are arable fields bound the site to the south.

1.3 Description of Development

- 1.3.1 The outline planning application has the following Description of Development:

Outline application for the erection of up to 130 dwellings with public open space, landscaping and sustainable drainage system (SuDS), with all matters reserved save for access.

2 Sustainability Policy Review

2.1 National Planning Policy

The National Planning Policy Framework December 2024 (NPPF)

- 2.1.1 The NPPF Section 2 states that the purpose of the planning system is to contribute to the achievement of sustainable development, and it includes three overarching objectives 'to be pursued in mutually supportive ways':
- An economic objective, contributing to a strong, responsive and competitive economy;
 - A social objective, supporting vibrant and healthy communities and;
 - An environmental objective, protecting and enhancing our natural, built and historic environment.
- 2.1.2 As such, the NPPF at its heart contains a 'presumption in favour of sustainable development'. Emphasising the need to achieve well designed places, the NPPF states that "*Good design is a key aspect of sustainable development, creates better places in which to live and work and helps make development acceptable to communities*".
- 2.1.3 The NPPF sets out a number of principles which should underpin both plan-making and decision-taking, and of which many are particularly relevant to this document. In this context, planning should:
- Support the transition to a low-carbon future, avoid increased vulnerability to climate change impacts, take account of flood risk and coastal change and seek to reduce greenhouse gas emissions. Plans should include a positive strategy to help increase the use and supply of renewable and low carbon energy.

The Climate Change Act

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

Building Regulations

- 2.1.5 *Approved Document L, Conservation of Fuel and Power, Volume 1: Dwellings (2021)* came into force in June 2022. It sets out the Building Regulation standards for energy performance in new developments, placing a greater emphasis on reducing primary energy use, in addition to achieving carbon and fabric efficiency targets, compared to the previous standards. The tightening of fabric energy efficiency standards, air tightness and carbon performance targets are accompanied by updated calculation and modelling requirements within the compliance mechanism (SAP10.2 for dwellings).

- 2.1.6 *Approved Document F, Ventilation, Volume 1: Dwellings* details requirements for ventilation in domestic properties to ensure that increased air tightness (as required by the updates to Approved Document L) does not impact on internal air quality.
- 2.1.7 *Approved Document O: Overheating* has been put into place to limit overheating risk in new residential buildings. It expands on the provision in the previous Part L and requires the use of passive methods where feasible. Compliance can be demonstrated through a prescriptive or thermal simulation compliance path.

The Future Homes and Buildings Standards

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

2.2 Local Planning Policy

North Hertfordshire Local Plan 2011-2031 (Adopted November 2022)

2.2.1 The *North Hertfordshire Local Plan 2011-2031 (Adopted November 2022)* sets out the strategic vision and spatial strategy for the District. It forms part of the statutory Development Plan and is used in the assessment of planning applications.

2.2.2 The following policy extracts are of particular relevance to this Statement:

Policy	Extract
SP1	Sustainable Development in North Hertfordshire This Plan supports the principles of sustainable development within North Hertfordshire. We will: (...) c) Grant planning permission for proposals that, individually or cumulatively: (...) v. secure any necessary mitigation measures that reduce the impact of development, including on climate change; (...)
SP9	Design and Sustainability The Council considers good design to be a key aspect of sustainable development. We will: a) Support new development where it is well designed and located and responds positively to its local context; b) Require Strategic Masterplans to be produced for Strategic Housing Sites and other significant development. Significant development generally comprises residential development of 100 dwellings or more. (...) c) Require Strategic Masterplans and planning applications for Strategic Housing Sites and significant development to (as applicable): (...) vi. create an accessible multi-functional green infrastructure network that provides: - a high-quality integrated network to support ecological connectivity, biodiversity net gain, climate adaptation and mitigation linking into the wider Ecological Network (...) d) Ensure Strategic Masterplans are informed by a technical and design evidence base and include the following for Strategic Housing Sites and where applicable for other significant development: (...) vi. Sustainability & Energy Framework identifying site-wide and building scale opportunities for low and zero carbon (...) f) Assess proposals against detailed policy requirements set out in this Plan and have regard to the Design SPD; and g) Adopt the Government's additional technical standards for the size of new homes, water efficiency and, in specified circumstances, accessibility.
SP11	Natural Resources and Sustainability This Plan seeks to meet the challenges of climate change and flooding. We will: a) Support proposals for renewable and low carbon energy development in appropriate locations; (...)

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; (...) e) For residential schemes, meet or exceed the nationally described space standards and optional water efficiency standards.
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Sustainability Supplementary Planning Document (Adopted September 2024)

- 2.2.3 The Sustainability Supplementary Planning Document (SPD) provides further guidance on the application of the Local Plan policies and the Council's sustainability expectations for different forms of development.
- 2.2.4 It identifies sustainable construction requirements for new developments, and includes a Checklist which has been completed and is included within Appendix A of the Sustainability Statement which accompanies the application.

Design Code Supplementary Planning Document (Adopted June 2026)

- 2.2.5 The North Herts Design Code SPD sets out requirements for the design of neighbourhoods, open spaces, streets and buildings to help ensure that future development is high quality, locally distinctive and shaped around the needs of the people who live and work in the area.

Design Supplementary Planning Document (July 2011)

- 2.2.6 The Design SPD provides guidance for future development in North Hertfordshire. It includes advice on sustainability, specifically reducing carbon and increasing resource efficiency, and has been reviewed for the purposes of this Statement.

Vehicle Parking at New Developments (Adopted November 2011)

- 2.2.7 The Vehicle Parking at New Developments SPD provides guidance on parking provision, including the provision of electric vehicle infrastructure, in line with national policy.

Pirton Neighbourhood Development Plan 2011-2031 (Made April 2018)

- 2.2.8 The Pirton Neighbourhood Development Plan was made in April 2018 and it forms part of the Development Plan for North Hertfordshire.
- 2.2.9 The Plan has been reviewed and it does not include any policies of specific relevance to this Statement.

Additional Planning Policy Documents

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

3 Low Carbon Energy Strategy

3.1 The Energy Hierarchy

- 3.1.1 The Energy Hierarchy underpins the entire approach to building performance for this development, thus prioritising a reduction in the demand for energy as far as possible through thermally efficient, easily controlled, well designed and oriented buildings:

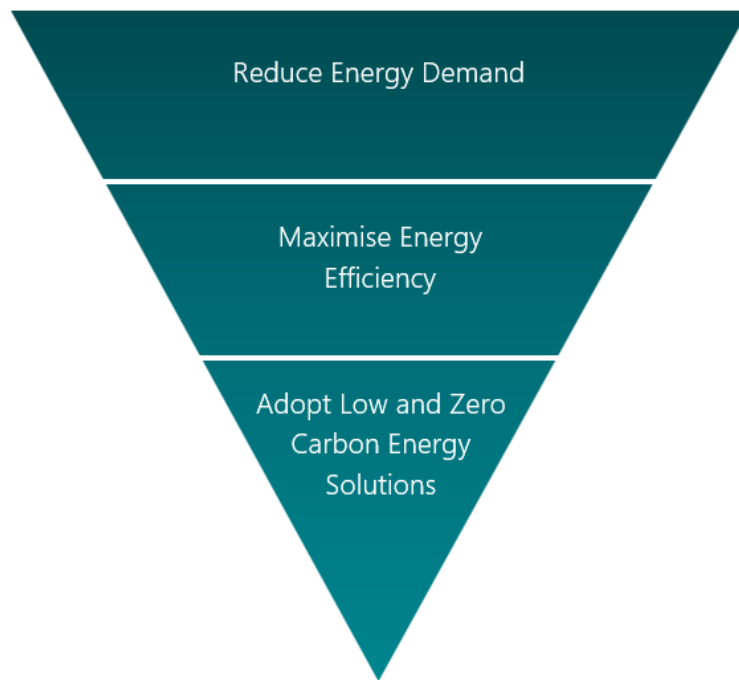


Figure 1: The Energy Hierarchy

3.2 Optimising Passive Design and Fabric Performance

Site Layout and Property Orientation

- 3.2.1 The orientation of buildings, along with the size and location of glazing and the extent of overshadowing, plays an important role in energy performance. Improving a building's orientation so that the main living spaces benefit from the heat and light of the Sun can reduce the requirement to use fuels to perform the same function thus reducing costs, energy use and associated carbon emissions.
- 3.2.2 When buildings have a southerly orientation, they can benefit from the Sun during the middle portion of the day without suffering from potential overheating later in the afternoon. This orientation can also help to ensure that they still benefit as much as possible from sunlight during the winter when the Sun's path is shortened.

- 3.2.3 However, there is a balance to be struck between maximising solar gain and the risk of overheating. Section 4 of the Sustainable Statement which accompanies this application discusses approaches to addressing and managing this risk which align with the requirements of Building Regulations Approved Document O.
- 3.2.4 The proposed layout of the site will be developed with respect to identified spatial, topological and visual constraints, all of which need to be carefully considered. Within these parameters, a proportion of the properties will have a southerly orientation. Furthermore, the relatively low density of the development will ensure appropriate spaces around dwellings, reducing overshadowing.
- 3.2.5 The impact of orientation on the viability of photovoltaic panels is discussed in Paragraph 3.4.8-3.4.10.

Highly Efficient Building Envelope

Thermal Elements

- 3.2.6 In line with the guidance provided in the Sustainability SPD, a 'fabric first' building specification will be developed to ensure that the envelope of each dwelling, including the wall, roof, floor, glazing and doors, will be highly energy efficient. This will reduce energy demand and increase comfort.
- 3.2.7 Thermal bridges will be minimised through the application of design details and products that provide continuous insulation, such as insulated lintels.
- 3.2.8 The specification will be confirmed at a later stage in the planning process once housetypes have been finalised. In the meantime, Table 1 in Section 3.5 provides an indication of the levels of performance required, including illustrative u-values for different thermal elements.

Air Tightness and Controlled Ventilation

- 3.2.9 It is vital that buildings have sufficient levels of air tightness to reduce heat loss and minimise draughts. Air tightness is also an important factor in managing interstitial condensation and reducing sound transmission through structures.
- 3.2.10 The current target for the development will be to ensure the dwellings are constructed with a design air permeability level of $5\text{m}^3/\text{m}^2@50\text{Pa}$ or less.
- 3.2.11 Where the as-designed air permeability is less than $5\text{m}^3/\text{m}^2@50\text{Pa}$ (and as-built is less than $3\text{m}^3/\text{m}^2@50\text{Pa}$), it will be necessary to install mechanical extract ventilation units (ideally with heat recovery) in each dwelling to ensure adequate and controlled ventilation, in line with the requirements of Approved Document F.

- 3.2.12 All of the dwellings at the development will also benefit from natural cross ventilation via openable windows which will enable rapid purges of air and will contribute to maintaining internal air quality.

3.3 Lighting, Fixtures and Fittings

- 3.3.1 Further energy savings will be made by maximising the efficiency of appliances, lighting, fixtures and fittings.
- 3.3.2 All internal and external fixed electric lighting will be categorised as 'energy efficient' in line with regulations to minimise lifetime energy use and associated emissions.
- 3.3.3 All installed appliances will be high efficiency, further minimising the use of both electricity and hot water. There will be space in all gardens for clothes drying to discourage the use of tumble dryers.
- 3.3.4 Taps and shower fixtures and fittings that reduce hot water consumption with low and/or aerated flows will be specified; more detail in relation to potable water management is provided in the Sustainability Statement which accompanies the application.

3.4 Achieving Low Carbon Energy

- 3.4.1 The UK is rapidly moving towards the electrification of the heating system. Indeed, it has been confirmed that the installation of gas and oil boilers will not be permitted under the Future Homes Standard.
- 3.4.2 To align with these emerging standards, this development will not connect to the gas grid, and will instead rely on sustainable heating solutions.

Air Source Heat Pumps

- 3.4.3 Air source heat pumps will be installed to provide space and water heating to all properties at this development (with the option of an alternative low carbon solution for any apartments), subject to detailed design and compliance with the required standards.
- 3.4.4 High quality, well installed units can deliver a seasonal heating efficiency in excess of 300%, significantly reducing both operational costs for occupiers and carbon emissions when compared to gas or direct electric baselines.
- 3.4.5 Furthermore, the heat pump solution will ensure the homes are 'zero-carbon ready', setting the development on a trajectory to net zero emissions over time: the rapid expansion in renewable and low carbon energy supply within the Grid in recent years means that Grid electricity is considerably cleaner per unit than natural gas, and will continue to decarbonise over time:

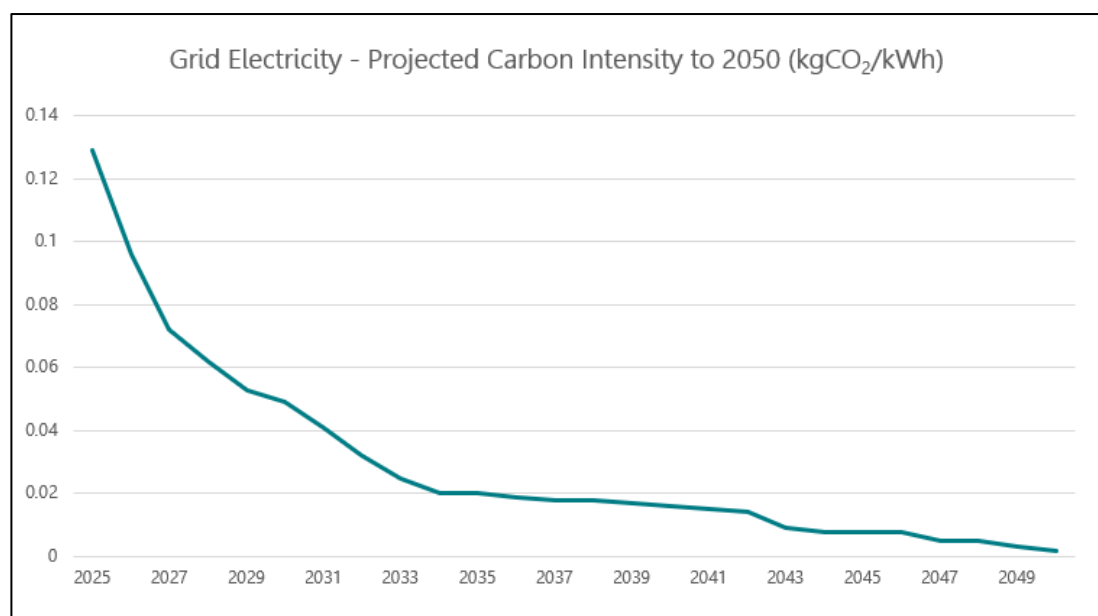


Figure 2: Projected Grid Decarbonisation
(Source: UK Government Green Book, Supplementary Guidance, November 2023)

- 3.4.6 A further option that could be explored later in the design process is the installation of Waste Water Heat Recovery units (WWHR). WWHR units enable heat to be recovered from the waste water produced in bathrooms via baths or showers. This heat is then used to pre-warm water in the system, therefore reducing the amount of energy needed to provide hot water for use within the property.

Solar Photovoltaics

- 3.4.7 Solar photovoltaic (PV) panels will be installed on all properties to complement the heat pump solution. This will result in further carbon reductions and energy cost savings by generating electricity on-site.
- 3.4.8 The quantity of PV installed at each property will be determined later at the Reserved Matters stage once houstypes have been designed. As the Future Homes Standard will apply to this development, it is expected that the sizing of the PV system will need to be equivalent to around 40% of the ground floor area of each property, unless specified exemptions apply.
- 3.4.9 The installed PV panels will be roof integrated to minimise visual impact as far as possible, so the orientation and design of the buildings and roofscapes will be carefully considered. For example, the designs will seek to avoid roof features on southerly orientations that significantly limit the installation of PV, such as hipped roofs and dormers.
- 3.4.10 Certain elevations will also be avoided where possible, including those facing WNW or ENE (although it is recognised that orientation to maximise solar PV potential is just one of many considerations when determining residential development layouts). Increasingly, east-west facing split systems are being adopted, providing a more even amount of generation through the day, without any significant loss in annual output. It should not therefore be assumed that all roofs need to face between south east and south west when finalising the layout.

- 3.4.11 The introduction of domestic energy storage (battery) systems will also be considered, potentially as an optional extra for incoming residents. The use of battery technology provides far greater flexibility and control for residents, enabling them to benefit from the value of the energy generated and to capitalise on flexible tariffs designed for heat pump users.

Control Systems

- 3.4.12 The dwellings will feature smart control systems to help future residents maximise the efficiency of their heating and energy generation systems. This is likely to include highly granular time and temperature zone control and weather compensation. Clear and straightforward system user guides will be provided to incoming residents as part of their welcome packs.

3.5 Illustrative Specification: A Summary

- 3.5.1 By adopting the approach to energy outlined in this Section, including the use of low carbon air source heat pumps complemented with solar PV panels, the proposed development will be 'zero-carbon ready' in line with the emerging Future Homes Standard and will comfortably achieve local policy requirements.
- 3.5.2 The outline nature of this application means it is not possible to provide an exact specification for the dwellings. It is also not possible to complete energy compliance calculations to establish energy performance, including carbon emissions and Energy Use Intensity (EUI) figures as referenced in the Sustainability SPD.
- 3.5.3 Table 1 instead provides a summary of the *illustrative* levels of performance which will be applied at the proposed development:

Element Type	Illustrative Specification for the Proposed Development
Roof / Sloped Roof	0.11 W/(m ² .K)
External walls	0.18 W/(m ² .K)
Ground floor	0.13 W/(m ² .K)
Glazing	1.2 W/(m ² .K)
Doors	1.0 W/(m ² .K)
Air permeability	<5.0m ³ /m ² /hour@50Pa
Ventilation system	dMEV
Heating system	Air source heat pump
Photovoltaic system	High efficiency panels as required by regulations

Table 1: Illustrative Specification Summary

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

4 Summary

- 4.1.1 This *Energy Statement* has been commissioned by Gladman Developments Limited to set out the low carbon energy strategy for the proposed development on Land East of Pirton in North Hertfordshire.
- 4.1.2 In particular, the Statement provides as much detail as is possible at this outline planning stage to demonstrate compliance with relevant policies from the *North Hertfordshire Local Plan 2011-2031 (November 2022)* and current Building Regulations, whilst also looking ahead to the emerging Future Homes Standard:
- The development will be 'zero carbon ready', and will be futureproofed to become operationally zero carbon over time as the Grid decarbonises;
 - Space heating demand will be reduced by:
 - Balancing solar gain against overheating risk;
 - Applying 'fabric first' principles and adopting a highly efficient thermal specification.
 - Operational energy use will be reduced by:
 - Installing high efficiency lighting and appliances;
 - Installing low carbon air source heat pumps.
 - Energy will be generated on site via roof integrated solar photovoltaic panels on all properties.
- 4.1.3 As the planning and development process progresses, and as the wider regulatory environment develops, the approach proposed will be kept under review. The final design solution and associated detail will be provided at the Reserved Matters stage.

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