PROPOSED RESIDENTIAL DEVELOPMENT

LAND AT RATBY LANE, MARKFIELD

ENERGY STATEMENT

June 2025

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Introduction

This statement has been prepared by Award Energy Consultants on behalf of Taylor Wimpey UK Limited in relation to the Outline planning application with all matters except access reserved, for the erection of up to 135 dwellings, amenity space, areas for outdoor play, landscaping and all associated infrastructure. This statement has been produced to address Hinckley and Bosworth Borough Council's Local Plan Policies relating to sustainability and reducing the effects of climate change and outlines the anticipated measures to be incorporated into the development at Ratby Lane, Markfield to reduce energy demand and carbon emissions in addition to enhancing the sustainability of the development.

Policy Context

The following documents were considered:

Building Regulations Approved Document Part L1 2021 – Conservation of Fuel and Power. As new build dwellings, Part L1 is of particular note for the development at Ratby Lane. Part L1 sets minimum standards for fabric and energy efficiency for new build dwellings. Whilst the proposed dwellings will possibly be built to Future Homes Standards, the consultation for its implementation has not yet been concluded and therefore this Report is grounded in Part L1 2021 which are the Building Regulations in force at the time of writing

National Planning Policy Framework 2025 – strengthens the emphasis on sustainable development, and requires new developments to secure the highest viable resource and energy efficiency and reduction in emissions by considering Governments and other national standards

Hinckley and Bosworth Borough Council's Core Strategy (adopted 2009) Policy 24: Sustainable Design and Technology – requires Code for Sustainable Homes Level 6. However, following the Housing Standards Review in 2015, the Code can no longer be required by Local Authorities. Energy efficiency and Carbon reduction is now legislated through Building Regulations Part L and at the time of writing are set at levels in excess of Code Level 4

Hinckley and Bosworth Borough Council's Site Allocations and Development Management Policies DPD (adopted July 2016) DM10: Development and Design – requires developments to maximise opportunities for the conservation of energy and resources through design, layout, orientation and construction in like with Core Strategy Policy 24

Hinckley and Bosworth Borough Council's Emerging Plan Policy SP05: Mitigating and Adapting to Climate Change – requires developments to minimise energy consumption, maximise the use of renewable energy, minimise water use and the production of waste and use passive design to use resources efficiently

Hinckley and Bosworth Borough Council's Emerging Plan Policy SP32: Water Supply and Wastewater Management – requires developments to minimise water use by meeting a water efficiency of 110 litres per person per day

Hinckley and Bosworth Borough Council's Emerging Plan Policy SP08: High Quality Design – requires developments to be designed with climate change in mind, maximising opportunities for active travel and sustainable transport methods to help reduce car dependency, renewable and low/net-zero carbon energy technologies, including electric vehicle charging points, use of sustainable and low–carbon materials where feasible, building in flexibility to respond to change, and mechanisms for reducing energy consumption within buildings

Passive Design

- The development layout will be designed to maximise a north-south orientation, where possible, to allow for passive design whereby dual aspect dwellings enable views, good daylighting and cross ventilation
- Internally, the accommodation will be laid out to maximise the internal space and light afforded, with primary habitable rooms benefitting from a southern orientation. Each of the principal living rooms will have sufficient glazing to allow natural light to penetrate the rooms, reducing the need for artificial lighting
- Hard landscaping will be minimized as much as possible to maximize soft landscaping thus providing natural and localized infiltration
- The site has been designed to promote sustainable travel connections to established local transport links, cycle and pedestrian routes
- All dwellings will meet the requirements of Approved Document Part O: Overheating, utilising an appropriate glazing specification and opening areas to minimise solar gain and allow purge ventilation
- All houses will benefit from a garden or private space for recreation, thus allowing external space for recreation and clothes drying
- Electric Vehicle Charging Points or Bollards will be installed as per the requirements of Part S
- Waste Water Heat Recovery Units will be considered for inclusion where practical

Material Selection and Waste

- Taylor Wimpey has national policies to promote the reduction and effective management of construction related waste. Robust procedures are in place to share materials such as soil and aggregate between sites and to sort waste on and off site to divert waste from landfill
- The re-use and recycling of wooden pallets is encouraged to reduce the amount of wood waste sent to landfill and Taylor Wimpey work closely with suppliers to minimise and recycle packaging
- Taylor Wimpey commit to obtaining responsible sourcing certification for at least 90% of the building elements of each dwelling
- All construction activities will be carried out to minimise dust, fumes, discharges and any other form of pollution on site, in line with best practice policies
- All dwellings will be provided with adequate external space for storing household waste that caters for the widest range of users. Hinckley and Bosworth Borough Council provides refuse and recycling collection services and external space at the dwellings will accommodate the Council's storage provision.

Construction

Award Energy have compared the specification that will achieve minimum compliance with Part L 2021 with the intended enhanced specification as shown in Table 2 below plus the installation of Air Source Heat Pumps. Table 3 shows the predicted Carbon Emissions for a representative selection of proposed dwelling types. As this an Outline application, the precise mix of specific house types is yet to be determined. However, Hinckley and Bosworth Borough County Council can be assured that similar levels of carbon reductions can be expected throughout the site and detailed calculations will be undertaken at the Reserved Matters stage when the agreed layout and specific house types are known.

Table 2

Element	Value required by AD Part L1 2021 (u-value)	Proposed Enhanced specification (u-value)
Walls (w/m²k)	0.26	0.25
Party Walls (w/m²k)	0.20	0.00
Roofs (w/m²k)	0.16	0.11
Floors (w/m²k)	0.18	0.15
Windows (w/m²k)	1.6	0.86
Doors (w/m²k)	1.6	1.2
Design air pressure test ($m^3/h/m^2$)	8	4.5

- High levels of air tightness to be achieved within the construction of the dwelling to reduce unnecessary heat loss; all dwellings will be tested for air leakage as standard
- Thermal bridging will be minimised through careful design and construction with a focus on continuity of insulation to avoid unnecessary heat loss
- Whilst the exact mechanical and electrical design has not yet been finalised, it is anticipated that Air Source Heat Pumps will be installed and this Report has included them for the purposes of the calculations. Any alternative space and water heating solution will be low or zero carbon and the heating designs of each dwelling will include controls to maximise the efficiency of any installed system
- The design team propose using natural ventilation via background/trickle ventilation, opening windows and wet room extraction.
- Energy efficient lamps will be installed in every light fitting. Each entrance will be illuminated with an energy efficient external light or provision will be made for a purchaser to install such a fixture

Carbon Reduction Calculations

As can be seen in Table 3, the proposed specification is expected to perform significantly in excess of the carbon requirements of Part L1 2021. The average carbon emissions are expected to be reduced by an average of **65.77%** above Part L1 2021 which represents an uplift of 96.77% on the carbon emissions target of Part L1a 2013 and above the 75% target anticipated for the Future Homes Standard.

Table 3

Dwelling Type	Carbon Emissions ($KgCO_2/Year/m^2$) Baseline specification	Carbon Emissions ($KgCO_2/Year/m^2$) Enhanced specification + ASHPs	% Reduction in Carbon Emissions over Part L1 2021
Mid-Terrace	10.33	3.19	69.12%
Semi-Detached	10.35	3.51	66.09%
Detached	10.29	3.90	62.10%

*calculated using SAP10 software. Award Energy can, upon request, provide reports from SAP10.

Water Efficiency

Approved Document G (2010) restricts new build dwellings to a maximum consumption of 125 litres per person per day, however Hinckley and Bosworth Borough Council's Emerging Plan Policy SP32 requires a maximum daily consumption of 110 litres per person. Whilst the exact sanitaryware specification has yet to be decided, It is proposed that eco-sanitary ware and restricted flow rates will be introduced into the design of each dwelling to obtain the appropriate level of water efficiency.

Table 4

Installation Type	Unit of Measurement	Capacity/Flow Rate	Use Factor	Fixed Use	Litres Per Person per day
WC (Dual Flush)	Full Flush (litres)	4	1.46	0.00	5.84
	Part Flush (litres)	2.6	2.96	0.00	7.70
Taps (excluding kitchen tap)	Flow rate (litres/minute)	5	1.58	1.58	9.48
Baths (where shower present)	Capacity to overflow (litres)	160	0.11	0.00	17.60
Showers (where bath present)	Flow rate (litres/minute)	9	4.37	0.00	39.33
Kitchen sink tap	Flow rate (litres/minute)	6	0.44	10.36	13
Washing Machine	Litres/kg dry load	8.17	2.1	0.00	17.16
Dishwasher	Litres/place setting	1.25	3.60	0.00	4.50
		TOTAL			114.61

Total Internal Water Consumption	114.61
Normalisation Factor (x 0.91)	104.29
External Use	5.00
Part G Water Consumption	**109.30**

Conclusion

This report demonstrates that the proposed enhanced fabric specification and the installation of Air Source Heat Pumps are expected to reduce Carbon emissions on site by an average of **65.77%** above Part L1 2021. In addition, the sanitaryware specification will achieve a daily water usage of less than 110 litres per person per day in line with Emerging Plan Policy SP32. Thermal elements will be significantly improved beyond than the requirements of Building Regulations and sustainable measures are proposed that are in line with the National Planning Policy Framework 2025 and Hinckley and Bosworth Borough Council's Core Strategy Policies which emphasise sustainable development, energy efficiency, reduction in carbon emissions and the use of renewable technologies.