



SUSTAINABILITY STATEMENT

LONDON ROAD, ST. IPPOLYTS

JSP SUSTAINABILITY LTD
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Report Completed By	JSP Sustainability Limited The Catalyst, Baird Lane, York YO10 5GA 
Reviewed By	Gerard McGuigan BSc PGDipSurvey
Signature	



EXECUTIVE SUMMARY

- The proposed development off London Road, St. Ippolyts includes construction of 52 no. residential properties by Persimmon Homes.
- Local policy requires new residential development to achieve high standards of energy efficiency and reduced CO₂ emissions.
- Persimmon Homes proposes the construction of energy efficient homes capable of delivering the reductions in energy consumption and CO₂ emissions over the minimum standards of the Building Regulations.
- Persimmon Homes proposes the construction of energy efficient homes capable of complying with revised benchmarks in the Building Regulations Part L.
- Photovoltaic arrays will be installed on the roof slopes of every home and building.



1 INTRODUCTION

JSP Sustainability Ltd has been commissioned by Persimmon Homes to prepare a Sustainability Statement in response to condition 29 of the planning approval for the residential development off London Road, St. Ippolyts. The development includes the construction of 52 no. homes, landscaping, public open space and associated highways works. For completeness the relevant condition is included below;

“29. Prior to the commencement of above ground construction of the development, a sustainability and energy assessment shall be submitted to and approved in writing by the Local Planning Authority. The development shall be carried out in accordance with the approved details.

This statement will detail the measures proposed by the developer to deliver a sustainable development, compliant with national and local policy, including the most recent amendments to the Building Regulations Part L. A number of documents have been used to complete this report. These include;

[National Planning Policy Framework \(NPPF\)](#) includes a presumption in favour of sustainable development. The Framework expands upon the guiding principles and objectives of a successful planning system. These include the building of a strong and competitive economy, delivering high quality housing, requiring good design and meeting the challenges of climate change.

[Approved Document L – Conservation of Fuel & Power](#) sets fabric efficiency standards and together with SAP, establishes a maximum CO₂ emission rate and primary energy rate for new build residential properties. The Approved Document is the Government's sustainable design benchmark in England.

[The Future Homes Standard: 2019 Consultation on changes to Part L and Part F of the Building Regulations for new dwellings. \(January 2021\)](#) provides a summary of the received responses to the 2019 consultation and the Government's intentions to revise Part L of the Building Regulations in 2022 and introduce a FHS in 2025.

[The Future Homes and Buildings Standards: 2023 Consultation](#) was published in December 2023. Within the consultation the Government presented two options for the technical specification of the Future Homes Standard. Both options confirm a shift to low carbon electric heating.

[North Hertfordshire Local Plan](#) includes policy SP9, *Design and Sustainability*, which requires a 'Sustainability & Energy Framework identifying site-wide and building scale opportunities for low



and zero carbon' to demonstrate carbon emission reductions and sustainable energy solutions. In addition, Policy SP11: *Natural resources and sustainability*, supports proposals for renewables and low carbon energy development in appropriate locations.



2 MATERIAL SELECTION

Persimmon Homes operates a nationwide timber procurement policy. At its core is a requirement that timber products are sourced from suppliers who can adequately demonstrate and provide appropriate evidence that the supplied material is responsibly and legally procured from a sustainable source. In all instances, suppliers must present Chain of Custody or FSC certificates demonstrating compliance prior to the purchase of materials.

Included within Persimmon Homes Environmental Policy is a commitment to minimise environmental impacts from all operations and activities, to be efficient with materials, avoid the creation of waste, and a requirement to use sustainable, re-usable or recyclable materials where possible. This policy is applicable to all Persimmon Homes suppliers. As part of the procurement process, Persimmon Homes reviews the environmental credential of suppliers, and requires compliance with its Supplier Principles, which includes requirements on environmental compliance, use of materials, use of toxic and hazardous materials, health and safety, working hours, age and benefits, discrimination and ethical behaviour.



3 WASTE MANAGEMENT

Persimmon Homes will operate a Site Waste Management Plan at the London Road development. As an engaged partner in the WRAP initiative Persimmon Homes conducts regular reviews of the Group's performance. At the present time the Group is engaged in a drive to reduce the volumes of waste generated on site and increase the percentage of waste diverted from landfill through reuse and recycling. In recent years the Persimmon Homes Group has achieved a recycling rate of 97% and continues to implement measures to reduce total waste volumes per home constructed.

This level of performance is enforced through the adoption of a robust Site Waste Management Plan but also through effective and coordinated design and procurement. The following briefly summarises the policies contained within the Groups waste management policies.

- Design to minimise wastage during the construction phase.
- Landform design and mass balance exercises are undertaken to retain as much material on site and reduce disposable volumes. There should be careful sub and topsoil storage and accommodation within the predetermined landform.
- Maximise the value of recycled aggregates through the separation of physical and chemical contaminants and through the careful matching of the materials generated with appropriate site use.
- Regular inductions and toolkit talks to all contractors and sub-contractors are standard. Careful site management of stockpiling and storage, segregation of waste groups and the prevention of cross contamination are implemented as standard.
- Agreements are in place with suppliers to reduce the amount of packaging on goods delivered to site. Take back agreements and *"just in time delivery"* are in place with key suppliers.
- Work with suppliers to specify the correct size of materials, thereby reducing cuttings and waste material.
- Each regional office has a waste champion and on site there is a clear delegation of roles.
- All waste contractors are required to segregate demolition waste off site and provide records of such.
- The regular monitoring and reporting of waste volumes with cross reference to previous performance and annual targets.



- Landfill will be the last option when no economic solution can be found.



4 HEALTH AND WELLBEING

In achieving ever stricter levels of sustainability, it is important that one does not lose sight of the fact that the industry is building homes that people can live in and not just occupy. This is an integral part of sustainability. While it is quite difficult to measure health and wellbeing, the following are a sample of the measures that will be included in the detailed design to address this issue.

- Each property will have a large living/dining space or family space;
- Each of the principal living rooms will have sufficient glazing to allow natural light to penetrate into the rooms, reducing the need for artificial lighting. Numerous studies have also shown this to be beneficial to the general health and happiness of occupants. This also allows for each home to take advantage of solar gain. This is taken into account by the SAP methodology and reduces the forecasted energy consumption of each home;
- All houses will benefit from a garden or private space for recreation. Each property will also have a designated space for recycling facilities;
- Many of the properties will have private detached or integral garages. Each will be large enough to store bicycles.
- The development will include open landscaped spaces;
- The site layout will be designed to ease travel for cyclists and pedestrians;
- The party wall specification will reduce sound transmission between properties providing comfort to future residents;
- The scheme will comply with the security standards included in Approved Document Q; and
- A home user guide will be placed in the home of each property.



5 WATER EFFICIENCY

Approved Document G of the Building Regulations requires each new home to achieve a water consumption rate of no more than 125 litres per person per day. Persimmon Homes proposes to incorporate low flow sanitary ware and eco-sanitary products into the design of each property to achieve a low water consumption rate. This strategy will permanently reduce water consumption. The tables below summarise the proposed flow rates and capacities and the water efficiency calculation.

Table 1 – Flow Rates & Capacities

Fitting	
Toilets	6 & 4 litre dual flush
WHB Taps	5 litres/min
Kitchen Taps	12 litres/min
Bath	181 litres
Shower	6 litres/min



Table 2 - Water Efficiency Calculation

Installation Type	Unit of Measurement	Capacity/Flow Rate (1)	Use Factor (2)	Fixed Use (litres/person/day) (3)	Litres per Person day. = [(1) x (2)] + (3) (4)
WC (Dual Flush)	Full Flush (litres)	6.00	1.46	0.00	8.76
	Part Flush (litres)	4.00	2.96	0.00	11.84
Taps (excluding kitchen tap)	Flow rate (litres/min)	5.00	1.58	1.58	9.48
Bath (where shower present)	Capacity to overflow (litres)	181	0.11	0.00	19.91
Shower (where bath present)	Flow rate (litres/min)	6.00	4.37	0.00	26.22
Kitchen/utility room sink taps	Flow rate (litres/min)	12.00	0.44	10.36	15.64
Washing machine	Litres/kg dry load	8.17	2.10	0.00	17.16
Dishwasher	Litres/place setting	1.25	3.60	0.00	4.50
TOTAL	(5)				113.51

(5)	Total Internal Water Consumption	113.51
(6)	Normalisation Factor	0.91
(7)	Internal Water Consumption [(5) x (6)]	103.29
(8)	External Water Use	5.00
(9)	Part G Water Consumption [(8) + (7)]	108.29

The calculations above confirm a water consumption of 108.29 litres per person per day, with an internal consumption of 103.29 litres per person per day.



6 ENERGY STRATEGY

6.1 Local Policy

The adopted North Hertfordshire Local Plan does not establish energy efficiency benchmarks above and beyond the Building Regulations Part L.

6.2 Future Homes Standard

In January 2021 the Government responded to the public consultation on the Future Homes Standard (FHS) and proposed revisions to Part L. The Government confirmed;

“The introduction of the Future Homes Standard will ensure that an average home will produce at least 75% lower CO₂ emissions than one built to current energy efficiency requirements...Homes built under the Future Homes Standard will be “zero carbon ready”, which means that in the longer term, no further retro-fit work for energy efficiency will be necessary to enable them to become zero carbon homes as the electricity grid continues to decarbonise.”

“The Building Regulations will continue to set a performance based standard rather than mandating or banning the use of any technologies. However, to ensure that new homes are zero carbon ready, we intend to set the performance standard of the Future Homes Standard at a level which means that new homes will not be built with fossil fuel heating, such as natural gas.”

“Currently electrification is one of the few proven scalable options for decarbonising heat. As set out in the consultation, we expect heat pumps will become the primary heating technology for new homes under the Future Homes Standard.”

A consultation on the full technical specification for the FHS was launched in December 2023. Within the consultation the Government presented two options for the notional dwelling within the new Home Energy Model. However, both recipes include the specification of electric heat pumps with a co-efficient of performance greater than one.

Importantly the Government concluded that further improvements to fabric energy efficiency were not desirable or necessary;

The performance requirements in this consultation closely resemble the fabric standards in the 2021 Part L uplift to the Building Regulations. We investigated including better walls, floors, roofs, triple glazing and improved thermal bridging. However, the only cost effective and practical improvement we found could be made to the standard was an improvement in airtightness. This



improvement in airtightness is matched with the change to a decentralised mechanical extract ventilation system, in line with Approved Document F, Volume 1: Dwellings.

The decision to keep fabric standards largely the same is driven by several factors. Firstly, the level set in 2021 will ensure that (with adequate ventilation) new homes do not generally experience damp and mould or excessive temperatures; an increase in fabric beyond this level does not give significant additional benefit. Secondly, it allows efficient low carbon heating, including modern heat pumps, to function well. The move to low carbon heating is central to the government's commitments to decarbonise housing, and so fabric must be set at a level that allows these systems to work efficiently. Again, increasing fabric beyond the proposed level does not deliver significant gains to the efficiency of heating systems. Thirdly, because the electricity grid is decarbonising rapidly, and the efficiency of heat pumps significantly reduces energy demand, further reducing total energy use is relatively less important than switching to electric sources of heat in efforts to decarbonise. Grid decarbonisation also means that fabric improvements are increasingly not a cost-effective intervention to reduce carbon. This means that as we increase fabric beyond the proposed level, the monetary value of carbon saved by increasing fabric efficiency is less than the cost of installing that additional fabric. As such, there are other interventions that decrease carbon and consumer bills in a more cost-effective way, such as (above) switching heat source and including solar PV panels."

Paragraph 4.2.3, Future Homes & Building Standard Consultation 2023

6.3 Part L of the Building Regulations

In anticipation of the FHS, the Government amended Part L of the Building Regulations on June 15th 2022 to deliver a saving of 31% in CO₂ emissions. The revisions are expected to provide the industry and supply chains with the incentive, skills and time to prepare for the FHS. The Part L 2021 Regulations include improved u-value backstops, the inclusion of a new Primary Energy target, updated CO₂ emission factors to take account of the progressive decarbonisation of the national grid and the retention of the Fabric Energy Efficiency Standard. The formulation of the target recipe also makes it necessary to include renewable generation or low carbon heating to deliver compliance with the target metrics.

6.4 Proposed Strategy

In response to local policy and the new Building Regulations Part L, Persimmon Homes will construct every home at the application site to a robust energy efficient specification capable of delivering compliance with the revised Fabric Energy Efficiency standard. Furthermore, a photovoltaic array will be provided to every home capable of delivering compliance with the Target Primary Energy and Target Emission Rates associated with Part L.



6.5 Energy Efficiency Measures

Persimmon Homes' exposure to the marketplace has confirmed that purchasers demand energy efficient homes with low operating costs and familiar user-friendly technologies. As such the proposed construction specification has been tailored to these demands and incorporates many of the lean and clean measures of the Energy Hierarchy. Listed below are some of the measures that will be incorporated into the detailed design of the scheme;

- The construction specification of every home will include high levels of insulation in the ground floor, external walls and roof spaces. This will lessen heat loss from the building envelope and lower the energy requirement of every home;
- The detailed house type designs will incorporate intelligent junction design, including the specification of thermally broken lintels, to limit heat loss at non-repeating junctions;
- The heating designs of each house type will include dual zone controls with delayed start thermostats. The heating systems will be designed to a 55 degree flow rate;
- Energy efficient lamps will be installed in every light fitting;
- Each property will be naturally ventilated using efficient decentralised extract fans to ensure the internal living environment will be healthy and comfortable. Occupants will have the ability to ventilate their home via openable windows during summer months to prevent overheating. As part of the Building Regulations assessment all of the proposed homes will show a low risk of summer overheating;
- The principal living rooms of every home will have sufficient glazing to allow each to benefit from the positive effects of passive solar gain;
- The glazing specification will achieve a g-value, or solar transmission value, of 0.71 or more. This will aid the benefit of solar gain; and
- The proposed traditional masonry construction will deliver sufficient thermal mass to the structure of each home such that it will retain heat in winter and assist in cooling in the summer;

The table below provides a summary of the energy efficiency standards to be achieved in the design and construction of each home;



Table 3 – Specification Summary

Element	Part L 2021	Specification
Wall	0.26W/m ² K	0.24W/m ² K
Cold Roof	0.16W/m ² K	0.09W/m ² K
Sloped Roof	0.16W/m ² K	0.16W/m ² K
Floor	0.18W/m ² K	0.12W/m ² K
Glazing	1.60W/m ² K	1.30W/m ² K
Door	1.60W/m ² K	0.90-1.20W/m ² K
Air Permeability	8.0 m ³ /(h.m ²) @ 50 Pa	3.9-5.01 m ³ /(h.m ²) @ 50 Pa

The Government has concluded a consultation on the technical specification and the operation of transitional measures for the Future Homes Standard. A response is expected by the close of 2025. At the time of writing, it is not possible to forecast how many plots at the development site, if any, will be constructed post the implementation of the Standard. However, Persimmon Homes will comply with any revised Regulations, and where necessary adhere to revised energy efficiency standards on plots that may start following the introduction of the Standard.

6.6 Photovoltaic Panels

Photovoltaic panels will be installed on the roof slopes of every home. The arrays will be sized to deliver compliance with the Building Regulations and will range in size, dependent on house type and orientation. However, arrays in the range of 0.81kWp to 5.67kWp are forecasted, based on initial SAP 10 modelling. The installations will provide each home with a free and zero carbon source of electricity.



6.7 Forecasted Emission Rate & Energy Requirement

The specification summarised overleaf was modelled in SAP 10 to determine the anticipated CO₂ emission rate and energy requirement of the development. The table below summarises the results calculated. Note that the calculations assume the minimum size of PV array necessary to comply with Part L 2021.

Table 4 – St Ippolyts Emission Rate

House Type	Target Emission Rate (kg/year)	Calculated Emission Rate (kg/year)	Total Requirement (kWh/year)	PV Generation (kWh/year)
24BP	4,455.36	4,029.37	19,274.30	2,941.45
3B5P 1036	6,813.29	6,099.58	30,867.59	7,345.10
3B5P 1383	1,143.73	1,070.19	5,672.10	1,764.87
4B7P	2,261.76	2,157.18	11,082.45	2,941.44
Benslow	1,203.09	1,125.80	5,668.58	1,384.22
Gosmore	2,565.29	2,282.15	10,929.33	1,764.87
Graveley	11,447.80	11,212.30	52,486.40	9,747.76
Ickleford	7,727.46	7,476.39	35,507.40	7,712.35
Preston	5,937.09	5,732.76	27,373.40	4,197.18
Purwell	5,552.65	5,322.52	27,841.92	8,394.40
Weston	5,824.94	5,817.92	29,197.27	7,005.04
Winchester Flats	5,459.40	5,707.78	27,763.44	5,285.34
Total	60,391.90	58,033.97	283,664.24	60,484.02

The calculations confirm that compliance with Part L 2021 will necessitate the installation of PV arrays capable of generating approximately 60,484.02kWh/year. This is equivalent to 19.04% of the site's regulated energy requirement. The site's emission rate represents a modest 3.90% saving over Part L.



7 EVALUATION

This Sustainability Statement accompanies the planning application for the residential development at London Road, St. Ippolyts. The Statement has detailed the measures that will guide the construction of the development and considers a number of categories including; materials, water consumption, energy efficiency and low carbon energy. These measures can be summarised as follows;

- Persimmon Homes will operate a robust Sustainable Procurement Policy which emphasises the legal and sustainable sourcing of building materials;
- A comprehensive, efficient and robust SWMP will be implemented. This plan will adhere to the waste hierarchy of reduce, re-use and diversion from landfill;
- Best practice policies with respect to site pollution will be implemented as standard;
- Measures will be incorporated into the design of each property to achieve a water consumption lower than 110 litres per person per day;
- Energy efficiency measures, including the specification of thermally broken lintels, high levels of insulation and low air leakage will be included in the design and construction of every home;
- PV panels will be installed on the roof slopes of every house and building. The arrays will provide homeowners with a free and zero carbon source of electricity. The arrays will be sized to deliver compliance with Part L of the Building Regulations; and
- The site's forecasted emission rate betters the Building Regulations Part L by 3.90%;

In conclusion, the measures above take account of current best practice guidance and comply with policy within the North Hertfordshire Local Plan. As such a sustainable development is proposed and we recommend the approval of these measures.