

SUSTAINABILITY STATEMENT

Erection of 3-bedroom dwelling house, attached to existing dwelling following demolition of detached outbuilding (Retrospective).

15 The Crescent, St Ippolyts, Hitchin, Hertfordshire, SG4 7RE

1. Introduction

- 1.1. This document was drafted to support the retrospective full planning application for the erection of a two-storey 3-bedroom semi-detached dwelling followed by demolition of detached outbuilding at 15 The Crescent, St Ippolyts, Hitchin, Hertfordshire, SG4 7RE.
- 1.2. The site is located within St Ippolyts village next to an open amenity space off The Crescent. The site is occupied by a 3-bedroom semi-detached dwelling with a dilapidated outbuilding to the side which is proposed to be demolished.

2. Design principles

- 2.1. The following design principles shall be adhered to in:

- **Energy and Carbon Management**
- **Water Efficiency**
- **Sustainable Building Materials**
- **Health and Wellbeing**

3. Policy Framework

- 3.1. **North Hertfordshire Plan 2011-2031:** The project aligns with critical objectives to ensure sustainability, such as:
 - **Policy SP9** – The policy in terms of design and sustainability outlines that the council shall support new developments that are well designed and shall ensure that strategic Masterplans include Sustainability and Energy Framework identifying site-wide and building scale opportunities for low and zero carbon.
 - **Policy SP11** – The policy relating to Natural Resources and Sustainability seeks to meet the challenges of climates change and flooding and the council shall support proposals for renewable and low carbon energy development in appropriate locations.
 - **Policy D1** – This policy relates to Sustainable Design, that states that planning permission shall be granted for proposals that optimise the potential of the site by incorporating Sustainable Drainage Systems (SuDS), reduce energy consumption and waste and future proof for changes in technology and lifestyle among.

3.2. National Planning Policy Framework (NPPF): The development adheres to the sustainability principles of the NPPF, emphasizing:

- Climate change mitigation through the adoption of renewable and low-carbon energy solutions.
- Resource efficiency, circular economy practices, and construction waste minimization.
- Promotion of healthy and inclusive places that encourage social interaction, enhance healthy lifestyles, and which are safe and accessible;
- High-quality of design and a good standard of amenity for occupants;
- 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;
- Help conserve and enhance the natural environment, achieve net gains in biodiversity and reduce the impact of all forms of pollution;
- Integration of health, well-being, and community engagement in urban development.

3.3. Building Regulations Part L *Conservation of Fuel and Power, Volume 1: Dwellings (2021)*:

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).

3.4. 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.

3.5. 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.

- 3.6. **Approved Document S:** Infrastructure for Charging Electric Vehicles (December 2021) details regulations for the installation of electric vehicle charging points and cable routes. Requirement S1 from Part S of Schedule 1 and regulation 44D of the Building Regulations states that every new home with an associated parking space must have access to an EV charging point.
- 3.7. **Approved Document G: Sanitation, Hot Water Safety and Water Efficiency (2015).** Within a domestic setting, the requirement is to limit water use to either 125 litres per person per day or, if required by the planning permission, an enhanced standard of 110 litres per person per day.
- 3.8. **Sustainability SPD:** In alignment with North Herts Local Plan (adopted in 2022) vision, the project strives to optimize building performance through passive design and optimal building fabric performance and ventilation.
- 3.9. **The Climate Change Act:** 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.

4. Key Sustainability Commitments

4.1. Energy and Carbon Management

- **Site Layout and Property Orientation:**

- The building design incorporates passive principles to optimize natural lighting, ventilation, and thermal comfort, thereby minimizing energy demand.
- Orientation and fenestrations have been designed to optimise solar gain and natural daylighting, reducing the need for artificial heating and lighting.

- **Building Envelope Efficiency:**

- The proposed dwelling has been designed with high performance insulation and airtight building envelopes to exceed current Building Regulations Part L standards.
- The building envelope follows the Sustainability SPD guideline, to ensure that a 'fabric first' building specification is followed. This shall ensure that the wall, roof, floor, glazing and doors shall be highly energy efficient.
- The current target for the development will be to ensure the dwellings are constructed with a design air permeability level of 5m³/m²@50Pa or less.
- 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.

- **Low Carbon Energy:**

- A suite of renewable energy technologies, including solar photovoltaic panels, air-source heat pumps, and battery storage systems, will ensure low-carbon operations.
- Smart energy management systems, coupled with energy-efficient fixtures like LED lighting, will reduce operational energy consumption and costs.

4.2. Water Efficiency

- Water Efficiency targets are driven by Approved Document G, which requires new residential developments to achieve a water efficiency equivalent of no more than 110lpd.
- Water conservation measures include low-flow fixtures, dual-flush systems, and advanced rainwater harvesting systems to reduce reliance on potable water supplies.
- The dwellings at the proposed development will include water efficient fixtures, fittings and appliances plus rainwater recycling via water butts to ensure that daily water use will be calculated to not exceed the 110 l/p/d target.

- Sustainable drainage systems (SuDS), such as permeable paving and retention basins, will manage surface water runoff effectively while enhancing local water quality and mitigating flood risks, details of which can be provided at a later stage.

4.3. Sustainable Building Materials

- To reduce embodied carbon footprint, the materials used for construction shall be derived from recyclable, repurposed or reused product wherever possible.
- The dwelling has been designed with an array of materials that are appropriate and in keeping with the local architectural vernacular. As such the form of construction will not require the use of materials with significant environmental impact or those that require significant off-site processing before use on site.
- Local suppliers of the materials shall be used where viable to reduce transportation.

4.4. Health and Well-being

- Indoor environments will be designed to maximize air quality, natural light, and acoustic comfort using non-toxic, low-VOC materials.
- The building will adhere to inclusive design principles, ensuring accessibility and usability for all community members.

5. Monitoring and reporting

A comprehensive post-occupancy evaluation will be conducted to ensure the project meets its sustainability targets. Key performance indicators (KPIs) will measure:

- Energy performance metrics, such as energy use intensity (EUI) and renewable energy generation.
- Water consumption and efficiency improvements.

Regular sustainability reporting will provide transparency and accountability, ensuring continuous improvement and alignment with evolving environmental standards.

6. Conclusion

This Energy Statement was commissioned by the applicant for a retrospective full planning application at 15 The Crescent, St Ippolyts, Hitchin, Hertfordshire, SG4 7RE for the erection of a 3-bed semi detached dwelling. The dwelling has been built with the following design strategies in compliance with national and local planning policy objectives and standards:

- The dwellings will be highly energy efficient, adopting a fabric first approach. They will be orientated to maximise solar gain where possible;
- There will be no natural gas connection to the dwelling.
- Heating and hot water will be supplied via low carbon air source heat pumps;
- The development will employ a combination of highly efficient fixtures, fittings and appliances to reduce domestic water use to achieve the 110 l/p/d target;
- Buildings will be designed and specified to adapt to a changed climate;
- Overheating will be managed through considered design;
- Surface water will be managed via the integration of SuDS into the development.
- The embodied carbon of the development will be considered and addressed through sustainable material choices and flexible and durable design;
- Construction and operational waste will be managed in accordance with the principles of the waste hierarchy.

Considering all the information provided in this Energy statement, and all the supporting reports and drawings, it is requested that the planning permission shall be granted for the development.