

Sustainability Assessment – Retrospective House Extension

Site Address: 6 Chapel Lane, Ashurst Wood, RH19 3QT

Local Planning Authority: Mid Sussex District Council

Development: Retrospective residential extension

1. Introduction

This Sustainability Assessment has been prepared in support of a retrospective householder planning application. It demonstrates how the development accords with the principles of sustainable development set out within the Mid Sussex District Plan (2014–2031) and the Mid Sussex Design Guide SPD.

The proposal adopts a **fabric-first approach**, reduces energy demand, and incorporates renewable energy technologies, resulting in a significant improvement over the original dwelling.

2. Existing Baseline Condition

The original dwelling was of relatively low energy efficiency, typical of older housing stock:

- Limited insulation within cavity walls
- No insulation within the ground floor slab
- Minimal roof insulation
- Higher heat loss and energy demand

As such, the baseline performance of the property was poor in sustainability terms.

3. Sustainable Design Approach (Fabric First)

In accordance with Mid Sussex design guidance, the development prioritises **reducing energy demand before introducing energy generation**.

Measures include:

- High levels of insulation within walls, floors, and roof
- Insulated ground floor slab to modern standards
- Reduction in thermal bridging
- Improved airtightness
- Installation of high-performance double glazing

These improvements significantly reduce heat loss and overall energy consumption.

4. Energy Efficiency and Heating Strategy

The extension incorporates an efficient and modern heating approach:

- **Underfloor heating (UFH)** provides low-temperature, energy-efficient heat distribution
- The existing **gas boiler** is retained but operates more efficiently due to reduced heating demand

This approach aligns with sustainable development principles by minimising energy use through improved building performance.

5. Renewable Energy and Low Carbon Measures

The property includes on-site renewable and low-carbon technologies:

- **Solar photovoltaic (PV) panels** generating renewable electricity
- **Battery storage system** enabling efficient use of generated energy

These systems reduce reliance on grid electricity and contribute to lowering carbon emissions associated with the dwelling.

6. Water and Drainage Considerations

The development has been designed with regard to sustainable drainage principles. Surface water drainage has been considered in accordance with the drainage hierarchy, ensuring that runoff is managed appropriately and does not increase flood risk elsewhere.

7. Sustainable Design Benefits

The extension provides a clear sustainability improvement by:

- Significantly reducing heat loss through enhanced insulation
- Lowering operational energy demand
- Incorporating renewable energy generation and storage
- Improving internal comfort and living conditions

The development therefore represents a substantial environmental improvement compared to the original dwelling.

8. Compliance with Local Policy

The proposal supports the objectives of Mid Sussex planning policy by:

- Promoting **sustainable development principles**
- Improving energy efficiency of the existing housing stock
- Incorporating renewable energy technologies
- Following a **fabric-first design approach**

This aligns with the Mid Sussex Design Guide SPD and the Council's position on delivering sustainable development.

9. Conclusion

The retrospective extension delivers a significant upgrade in environmental performance over the original dwelling. Through enhanced insulation, efficient heating, and the integration of renewable energy systems, the proposal reduces energy consumption and carbon emissions.

The development is therefore considered to comply with local and national sustainability objectives and represents a positive contribution to sustainable development.