

Sustainability and Low Carbon

The energy assessment for Ashbourne Lane will take a three-stage approach to reducing the building's carbon dioxide emissions to support the Peak District Net Zero Carbon Roadmap:

“Be Lean”

Reduce the building's energy requirements by incorporating passive design measures and reduce the building's energy consumption through the use of energy efficient mechanical and electrical engineering systems.

“Be Clean”

Reduce the building's carbon dioxide emissions through the efficient supply of heat and electricity.

“Be Green”

Reduce the building's carbon dioxide emissions through the use of renewable technologies.

The energy assessment will comprise the following stages:

Estimating a target for total regulated and unregulated annual energy consumption and CO₂ emissions of the proposed development. The estimates are based primarily on Part L approved software modelling results.

1. Estimating savings in regulated annual energy consumption and CO₂ emissions of the proposed development through the incorporation of passive and active energy efficiency measures. The estimates are based primarily on Part L approved software modelling results.
2. Estimating the potential contribution to carbon dioxide reductions that could be achieved by the use of energy networks.
3. Estimating the potential contribution to carbon dioxide reductions that could be achieved by the use of renewable technologies.

Energy Efficient Design Measures “Be Lean”

Passive Measures

The energy approach will adopt has been to adopt a fabric first approach, whereby the thermal envelope of the building is enhanced to improve the overall energy efficiency of the building. The passive design measures adopted include:

- Day lighting
- Night cooling
- Natural ventilation
- Shading in summer: blinds, overhangs
- Thermal heating in winter

Active Measures

The mechanical and electrical services are critical to reducing energy consumption. The following active energy saving products and techniques should be integrated into the base design to achieve reductions in CO₂ emissions:

- Dimming controls linked to daylight sensors
- Local light switching
- Movement and absence sensors for lighting control
- Low energy lighting
- Heat recovery mechanical ventilation
- Low specific fan power
- Metering for energy management
- Rigorous commissioning
- Heating controls to optimize plant efficiency
- Controls set up to dynamically adjust heating, ventilation, cooling, hot water generation to reduce carbon emissions and maximise energy efficiency