E N E R G Y S T A T E M E N T

Planning application to erect
a detached triple garage with first floor storage
(23/1167/HOUS)

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This statement has been commissioned in response to the Sustainable and Low Carbon Planning Policy requirements of North Kesteven District Council in respect to the proposed detached triple garage with first floor storage development at 38 Station Road, Waddington, LN58QN.

The Statement outlines an overall commitment to reducing energy consumption under occupancy through the adoption of enhanced insulation standards and improved HVAC & lighting efficiencies, together with the installation of low carbon and renewable technologies.

The methodology used herein is consistent with the widely regarded energy hierarchy approach to improving the energy performance of buildings and Approved Document L1 2021 of the Building Regulations.

NKDC have reviewed the application against the new CLLP and advised that the following plan policies apply to the application:

S6 – Design Principles for Efficient Buildings – which looks at design expectations for proposals;

S7 – Reducing Energy Consumption in Residential Development – which looks at renewable energies to reduce energy consumption;

Summary of Policies:

Policy S6: Design Principles for Efficient Buildings

1. *Orientation of buildings – such as positioning buildings to maximise opportunities for solar gain, and minimise ``winter cold wind heat loss;*

2. *Form of buildings – creating buildings that are more efficient to heat and stay warm in colder conditions and stay cool in warmer conditions because of their shape and design;*

3. *Fabric of buildings – using materials and building techniques that reduce heat and energy needs. Ideally, this could also consider using materials with a lower embodied carbon content and/or high practical recyclable content;*

4. *Heat supply – net zero carbon content of heat supply (for example, this means no connection to the gas network or use of oil or bottled gas);*

5. *Renewable energy generated – generating enough energy from renewable sources on-site (and preferably on plot) to meet reasonable estimates of all regulated and unregulated total annual energy demand across the year.*

Policy S7: Reducing Energy Consumption – Residential Development

Unless covered by an exceptional basis clause below, all new residential development proposals must include an Energy Statement which confirms in addition to the requirements of Policy S6 that all such residential development proposals:

1. *Can generate at least the same amount of renewable electricity on-site (and preferably on-plot) as the electricity they demand over the course of a year, such demand including all energy use (regulated and unregulated), calculated using a methodology proven to accurately predict a building's actual energy performance; and*

2. *to help achieve point 1 above, target achieving a site average space heating demand of around 15-20kWh/m2/yr and a site average total energy demand of 35 kWh/m2/yr, achieved through a 'fabric first' approach to construction. No single dwelling unit to have a total energy demand in excess of 60 kWh/m2/yr, irrespective of amount of on-site renewable energy production. (For the avoidance of doubt, 'total energy demand' means*

the amount of energy used as measured by the metering of that home, with no deduction for renewable energy generated on site).

The orientation of the building is dictated by the existing dwelling and driveway access direct off Station Road.

The Ground floor Garage will be unheated however benefit from cavity wall insulation.

Natural light would be provided by large gable windows to the front and rear elevations. These windows along with the open plan layout will facilitate natural cross-ventilation which should act to reduce overheating risks during the summer months and reduce the likelihood of any mechanical cooling being installed in the future. It should also benefit from solar gains during the winter months.

The First Floor will be heated and it is the client's intention to utilise building techniques and materials that achieve U-values that meet the requirements of the current Building Regulations (that are already very thermally efficient). This approach will reduce the need / reliance on heat and energy needs.

TARGET U-VALUES – DOMESTIC 2022	
Requirement of current Building Regulations	
Roof (all Types)	0.11 W/m^{2}K
Walls	0.18 W/m^{2}K
Floor	0.13 W/m^{2}K
Windows	0.12 W/m^{2}K
Doors	0.12 W/m^{2}K

This approach, when combined with good thermal bridging techniques and excellent air tightness performance, will create a dwelling that has reduced energy costs, demand, and lower carbon footprint.

The use of PV panels is recognised as being the most viable and cost effective technology for use within the proposed development. This will provide a local source of renewable electricity for occupant use as well as an affordable reduction in the calculated carbon dioxide emissions.

The PV will have minimal on-going costs and maintenance issues following installation aswell as being easy to integrate into the build specification.

The proposed garage benefits from a large pitch roof space with favourable Southern orientations that would maximise the efficiency and generation capacity of the PV panels.

PV panels are not always aesthetically pleasing and may detract rom the visual appearance of the development although this would be mitigated somewhat by the panels being installed to face onto the existing dwelling.

It is our belief that these measures demonstrate our client's commitment to go beyond the requirements of the Building Regulation Requirements, to ensure that the proposed building, although a Garage with storage at first floor achieves excellent thermal performance and reduces the reliance on heat and energy.

- Traditional Construction
- Excellent elemental U-values

- Air tightness to high standard
- Good thermal bridging techniques
- Use of PV
- LED lighting throughout

Along with all the information above, our client would be happy to explore other alternative renewable energy options, that may be feasible on site following the appointment of Contractor.

Whilst writing this statement the client is also keen to advise NKDC that they intend to incorporate a Swallow Nest box similar to the image below under the gable soffit on the rear (north-east) elevation. This will provide a new habitat and biodiversity net gain in line with *Policy S61: Biodiversity Opportunity and delivering measurable net gains*.