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DESIGN, ACCESS & HERITAGE STATEMENT

LISTED BUILDING CONSENT FOR THE ERECTION OF A ROOF MOUNTED SOLAR ARRAY ON THE SOUTH AND WEST FACING ROOF PLANES OF STABLE OUTBUILDINGS AT WALL GRANGE FARM, LEEK, STAFFS, ST13 7AA

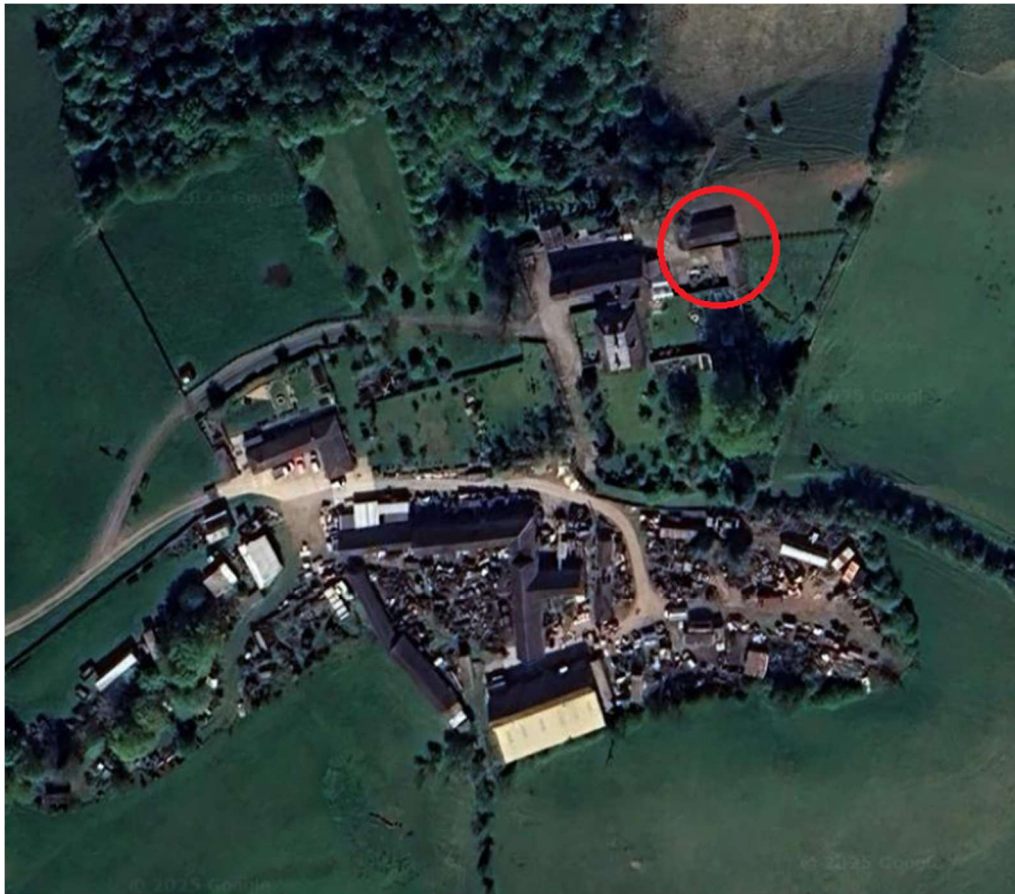


Image courtesy of Google Maps

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DESIGN & ACCESS STATEMENT

INTRODUCTION / CONTEXT

This statement is produced to support a planning application and subsequent Listed Building Consent for the erection of a roof mounted solar array on the roof planes of two stable outbuildings within the curtilage of the Listed Building – Wall Grange Farm, Leek, Staffordshire.

The main element of a PV system is the photovoltaic (PV) cell, which converts sunlight into electrical energy. A PV cell consists of layers of a semi-conducting material that absorb energy from sunshine to create an electric field, causing electricity to flow. The greater the intensity and duration of sunlight, the greater the flow and quantity of electricity. These individual cells combine to form panels.

Although PV panels can still generate some electricity on a cloudy day, they will only generate electricity whilst there is daylight, so the energy must either be consumed as it is being generated, stored in batteries, or exported to the National Grid (the grid).

The government is committed to achieving net-zero carbon emissions by 2050, which requires near-complete decarbonisation of homes, which includes the homes that have already been built. The carbon budget and growth delivery plan was published on 29th October setting out how the UK will continue to reduce emissions to lower bills in line with the 2008 Climate Change Act. Key policies include phasing out new gas boiler installations by 2035, achieving high energy efficiency standards in homes, and expanding support for low-carbon heating systems like heat pumps. The government aims for as many homes as possible to have an Energy Performance Certificate (EPC) band C by 2035, with a focus on fuel-poor homes by 2030.

With the government drive towards phasing out the use of fossil fuels, and replacing them with electric vehicles, electricity powered air or ground source heating, and in increased reliance on electrical gadgets within a household, there is a greater need for electricity in the home. As the cost of energy rises more households are seeking solar generated electricity to be self-sustainable, or simply reduce the reliance on the grid and reduce their bills.

Government support for solar panels on listed buildings primarily focuses on making it easier to get permission, not on specific grants. While direct financial incentives are not the main focus, the UK government, through bodies like Historic England, is encouraging local authorities to approve applications for solar panels on heritage sites, as long as they don't cause "unacceptable harm" to the building's special interest. This doesn't offset the need to apply for and receive Listed Building Consent (LBC). Adapting Historic Buildings for Energy and Carbon Efficiency Historic England Advice Note 18

PROPOSAL

The ideal position for a solar panel would be a south facing aspect in order to benefit from the maximum daylight as the sun rises in the east and sets in the west. The positions identified as the most suitable within the site are the roofs of two stable blocks in the north east corner of the site. The two buildings are traditional, linear stable blocks, arranged in a L-shaped configuration with an enclosed courtyard area. The two front elevations of the outbuilding face South and West, which are the ideal orientations for solar panels, maximising the available daylight exposure. The buildings themselves although within the curtilage of the Listed Building, are simple open sided brick shelters with no significant importance on their own merit.

Each of the two roof slopes will have 7no. portrait panels fitted in a single row, each panel being approx. 1.75m tall and 1.35m wide, fitted on an MCS approved system manufactured by Schletter. A single Powerwall 3 13.4kWh battery with Off Grid capable Gateway and Intelligent Charging shall be installed on the internal wall of one stable block which will allow the storage of electrical energy for peak time usage and off-peak charging. The system shall be connected to the dwelling using a single armoured cable, externally fixed to the garden wall running from the buildings to the house, replacing an existing cable currently providing power from the house to the buildings.

USE & AMOUNT

The energy generated by the panels shall be used to power the dwelling, improving the carbon footprint and efficiency rating of the building by using a renewable energy source.

The peak panel output will be 6.65kWp with an estimated annual output of 5,985kWh. The battery storage has 13.4kWh capacity with intelligent charging capabilities. The supplied datasheets for all products provide additional figures for the capacity and efficiency of the system, as well as the expected lifespan of the panels.

The panels themselves will not significantly change the size, height or massing of the original roof

LAYOUT

The panels are laid out on the roof's planes in the most efficient way. The two rows are South and West facing, and each roof plane is only tall enough for a single row of portrait panels.

The Powerwall 3 is a hybrid inverter and battery storage unit that will be fitted to the internal wall of the south end of the stable block, as indicated on the plan. It is not externally mounted, so will not detract from the appearance of the building, and it is within the closest proximity to the cable which will link the system to the dwelling.

APPEARANCE

The two rows of solar panels will not greatly detract from the appearance of the two stable buildings. The panels protrude by a minimal amount and are of a similar colour to the clay tiles. The buildings have been identified as the most suitable position for solar panels, considering both the visual impacts on the listed building, the wider landscape and the feasibility of installation. Below is a photo of the buildings with images of solar panels super-imposed, to reflect the appearance of the panels on the roof.



SCALE

The number of panels has been calculated by a competent energy assessor, taking into account both the available area of roof and the usage/storage capacity of the dwelling. The panels are raised off the roof tiles by a minimal amount, with suitable bird protection etc.

LANDSCAPING

There are no proposed landscaping works.

ACCESS

There are no access restrictions for the building, it is approached via the yard area to the North of the dwelling. The cable connecting the system to the dwelling shall be a black armoured cable which will be fixed to the side of the garden wall, replacing the existing cable which provides power to the stable block. There are no proposals to alter the current access

HERITAGE STATEMENT

A description of the heritage asset, its history and setting.

Wall Grange farm is a Grade-II listed farmhouse with associated outbuildings, located South of the historic market town of Leek. It was built after circa 1715 as a farmhouse. The farm was one of the granges of Trentham Abbey, dating from the 13th century when it was called simply 'Wall', changing from a manor to a grange, or estate, by 1510. Wall Grange later became part of the Dukes of Sutherland estate until 1911.

The original house was more than likely timber-framed - there is evidence of re-used construction timbers in the roof space and tenanted by a succession of gentry families. In 1668 the Jolliffe family of Leek were tenants before transferring the lease to Simon Debank after the death of their son, Thomas in 1693. The present stone house was presumably built for John Debank, who followed his father Simon Debank as tenant in 1701.

After the breakup of the Sutherland estate in 1911, Wall Grange together with 200 acres (81 ha) was transferred to the tenant Robert Bennison and the remaining 200 acres were sold to the then Potteries Water Board. Wall Grange was later sold at auction (held at the Red Lion, Leek) to Walter Needham (farmer) in March 1926. Needham continued to farm at Wall Grange, and indeed one of the recent stockmen running animals at Wall Grange remembers working for Mr Needham and sleeping at the farmhouse.

In Feb 1944, Needham sold to Colonel Arthur Faulkner Nicholson (Gentleman) who in turn sold to Henry Burgess (farmer) in May 1951 until transferring ownership to Samuel George Clowes (the applicant's father) in March 1959 who initially used the land for grazing, but soon established a diesel engine business in the outbuildings.

The present 18th century house has a double-pile plan - that is one room behind the other - and consists of two storeys and an attic under a hipped roof. Its architectural style is evidently of its time and classically proportioned with windows and doors placed symmetrically on each facade which was the fashion for new detached houses during this period. Its solid dressed, coursed, squared Sandstone rubble construction and Staffordshire Blue plain clay tiled roof are typical for this area.

Focusing more on the two brick stable buildings to the North-west of the dwelling, these two buildings are configured in an L-shaped arrangement, with the larger building, running east-west having a double storey height portion of the building, complete with chimney stack and apex roof running perpendicular to the remainder of the stable block. Both are of a red brick construction with arched soldier courses to the door and window openings, and timber lines to the stable openings. The smaller building running north-west has three simple stable openings to the front and a single door to the side. It abuts a mono-pitched stone structure which is separated from the walled garden of the house by a stone wall. The two buildings form a courtyard between them and the rear elevation of the dwelling.

These buildings are not present on the 1777 Plan of Earl Gowers buildings at Wall Grange, so the assumed later construction is believed to be at a similar time to when the earlier, main barn, to the north of the dwelling was linked to the dwelling. The original farm buildings to the South-west of the house were used for the agricultural operations at Wall Grange, so it is assumed the two stable buildings were more for the recreational use of keeping horses and ponies.

An assessment of significance

Whilst the heritage of the main dwelling house is significant, the associated outbuildings, although evident of the rich farming history of the site, do not bear the same level of architectural merit as the main dwelling house and other, more prominent outbuildings on the site. The typical and traditional vernacular of the stables display a strong example of their architectural era with attractive features and details with dentil courses, brick arches and buttresses. They contribute to the amenity of the area, but are not individually listed for their own individual merit.

An explanation of the proposed development

The proposal is simply to install a single row of 7no. portrait panels to each roof with each panel being 1.75 x 1.35m and fitted on an MCS approved system manufactured by Schletter. The south and west facing roof planes have been selected because of the suitability of the orientation for optimum panel performance.

The impact on the Heritage Asset

The works will not directly affect the heritage asset; the panels will only be visible from the rear of the main dwelling and its surroundings, and not from any public vantage point. The buildings are positioned within a concealed location behind the dwelling, and although they back onto open fields within an elevated position above the River Churnet and South Leek, the panels are on the roof slopes facing towards the dwelling, not the surrounding area.

Other locations for the panels were considered, however, the options of the two stable roofs selected were the most suitable. The main house would not be suitable because the panels would have a direct impact on the appearance of the listed building. With it being a listed building it would result in the panels positioned on the front or side of the listed building or in the garden area on a ground mounted array, contrary to Historic England advice to preserve the character and nature of the listed building and setting. Other options within the site would be obscured from sunlight by the buildings or mature trees found around the site. Similarly, the south facing roof of the main barn, which is attached to the dwelling was considered, however its proximity to the dwelling would have had a greater impact on the heritage asset, and they would have been visible from the principal elevation of the farmhouse. Ground mounted arrays were considered in the two orchards to the south of the dwelling, however the introduction of panels within the green space would have been more visually intrusive on the landscape, when compared to the existing roof planes of the stable buildings selected. New infrastructure would also be more complicated to install for ground mounted panels in this location, included excavations and selecting a suitable position for the battery storage unit. Additionally, both orchards are overshadowed by mature trees. The below image shows the stable block view from the rear of the dwelling.





Above & below – stone wall with existing cabling and battery unit location.

