Fig 0.1: Hall Farmhouse - 86 High Street from the private garden at west

PHOTOVOLTAIC PANELS TO HALL FARMHOUSE 86 HIGH STREET GREAT ABINGTON CAMBRIDGESHIRE CB21 6AE

21.433.01 - 499 E

MAY 2023

AC ARCHITECTS CAMBRIDGE LTD

33-35 VICTORIA ROAD, CAMBRIDGE, CB4 3BW Tel: 01223 576315 e-mail: info@acarchitects.com

Fig 0.2: Aerial view of Hall farmhouse and wider context from SE
google earth

To high street

Contents

Rev A: 22/03/22 Draft Issue
Rev B: 25/03/22 Planning Issue
Rev C: 20/03/23 Draft PV Issue
Rev D: 22/05/23 Updated to comments
Rev E: 23/05/23 Final updates

Fig 1.1: Aerial view of the 5 elements to the site.
1. The farmhouse
2. Converted barn
3. Link
4. Garage
5. Pool house

Introduction

1.1 Scope of the Application

This Design and Access Statement supports the Planning and Listed Building Application for the installation of an enlarged array of photovoltaic panels, to that already permitted, on the barn roof at Hall Farmhouse, Great Abington.

1.2 Aspiration

- To provide renewable energy such that the household can run as sustainably as modern technology allows in line with the Councils zero Carbon strategy.
- To facilitate the conversion to an all-electric dwelling.
- To create a reversible solution should future developments in energy production allow for the removal of the photovoltaic panels.

1.3 Supporting material

This Design and Access Statement is to be read in conjunction with the survey drawings and the drawings of the proposed works.

2.1 CLIMATE CATASTROPHY

South Cambridgeshire District Council acknowledged the climate catastrophe in their 2020 publication *"Zero Carbon Strategy"* which sets out a target of achieving net zero carbon by 2050 at the latest. This document notes that *"Reducing carbon emissions from housing is a huge task" but one which needs to be addressed in order to achieve this target."*

Council's own resolution of September 2021 notes that:

Planning law establishes the principle that 'harm' to a heritage asset should be weighed against 'public benefit'

And

that though the weighting of the balance is subject to statutory guidance, the assessment of 'public benefit' cannot be blind to climate change nor to the context of the Council's declaration of a Climate Emergency and its adoption of a Zero Carbon Strategy.

It is for this reason that this Council resolves that:

i. In the officer reports accompanying applications for Planning and Listed Building Consent the reports will contain information making clear the way in which the balance has been made between public benefit, including where that benefit includes climate considerations, and the preservation of historic fabric.

ii. Where appropriate officers will seek the advice of the Council's sustainability officer in addition to experts in conservation to contribute to the assessment exercise.

2.2 REQUIRED ELECTRICAL OUTPUT

In undertaking the refurbishment of Hall Farmhouse the client has embraced South Cambridgeshire District Council's zero carbon target. On commencing the project they commissioned a report on the energy requirements for converting Hall Farmhouse to an all-electric installation, a necessary change in a zero carbon strategy. This report was based on the assumption that the fabric of the building could be improved in order to reduce energy requirements. Planning and Listed Building Consents reference, 22/01602/HFUL and 22/01603/LBC, curtailed the level of fabric improvements originally proposed consequently increasing the energy demand of the building to compensate for the lack of fabric improvement.

Fig 2.1 View showing separation of the farmhouse and the barn with the flat roof link from the private garden.

Fig 2.2 View of the barn from the south west from the private garden.

Fig 2.3 View of the farmhouse from the east - the Walnut tree hides the view of the barn from this direction - also viewed from the private garden.

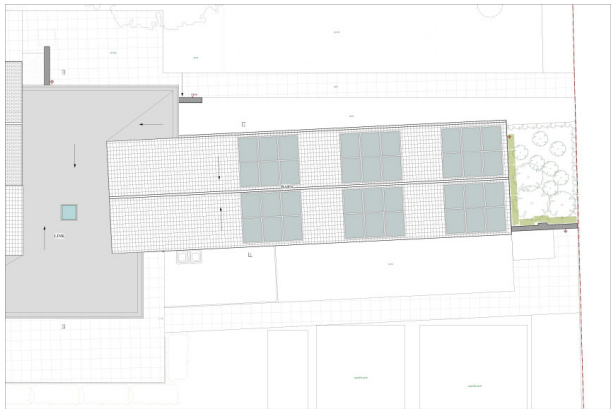

Fig 2.4 Plan showing the location of the PV Panels as permitted on the barn roof

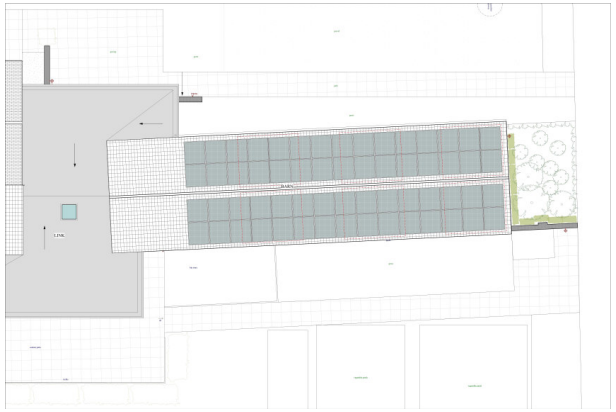

Fig 2.5 Plan showing the requested amendment to the PV panels for the barn roof.

The energy report has been updated to account for the fabric improvements permitted as follows:

Assuming a Coefficient of Performance of the heat pump of 3 to 1, and making assumptions about internal energy use, the building will require **23,500kWh per year**. Permission is already given for arrays on the garage roof (3,936kWh) and the pool house roof (7,829kWh). This proposal concerns the barn roof where we wish to increase the output from the permitted 8,880 kWh (placing arrays as shown on fig. 2.4) to 14,270 kWh (placing a greater number of arrays on the roof as shown on fig. 2.5). Allowing the new configuration will provide a 61% increase in output from the arrays on the barn. The arrays in fig. 2.4 cover 41% of the roof area and in fig. 2.5 they cover 64% of the roof area.

The energy generation anticipated from the permitted arrays, based on a local installers quotation is: **20,645kWh**, a shortfall of nearly 3000kWh per year.

If the barn roof is utilised as proposed in the current application, the energy generation anticipated, based on a local installers quotation would be **26,035kWh** and thus providing the energy as required by the property.

2.3 FARMHOUSE ROOF

Using the barn roof efficiently in this way provides sufficient electricity without the need to utilise the farmhouse roof for photovoltaic panels.

2.4 SETTING & APPEARANCE

The barn is part of a complex of farm buildings surrounding Hall Farmhouse. These farm buildings were converted into a small group of detached residential properties accessed off a private drive off the lane leading from the High Street to Great Abington Church. The single storey barn is attached to the two storey Farmhouse by a 4m wide flat roof single storey link (see fig. 2.3). The barn roof is therefore isolated from the Farmhouse. The building has been listed for its age and timber frame, and not for its setting or external appearance.

2.5 PLANNING CONTEXT

The barn, believed to date from the 19C, ceased to be a farm building when it was joined via a flat roofed link to the farmhouse in 1979 to form part of the extended residential accommodation. Vestiges of the original farmyard setting of the building disappeared in 1979 when the gravelled courtyard and private garden, which form its modern setting, were created. The farmhouse was listed grade II in 1985 and the barn, by reason of being attached to the farmhouse became an adjunct to that listing. Hall Farmhouse is situated in the Great and Little Abington Conservation Area.

2.6 SIGNIFICANCE OF THE BARN

The barn was converted and extensively altered in the 1979 works when it was incorporated into the family dwelling. It

was re-roofed with modern clay pantiles at this time. Both the east and west roof slopes are uninterrupted by rooflights, vents, or other roof penetrations. The Conservation Officer's report, Consultation Response Form ref 22/01603/LB date 20/05/22, assesses the significance of the barn as follows:

The painted brick and pan-tiled barn, now part of the extended home, retains little of its former character. Its age and former use is discernible by the external brick coursing pattern (Monk bond), its general form, and its farmyard position, as per the OS map of the 1880s. The only visible truss in the barn appears early 20th century. No original openings were discernible, other than perhaps that of the round window in the south gable. The other existing windows and openings date from c.1980. This is of moderate significance.

Fig 3.1 View of the farmhouse and barn from the south west viewed from the private garden.

3.1 Existing Permissions

Permission has been granted for photovoltaic panels to be fitted on the south slope of the Garage; on the flat roof of the Pool house roof; and for a limited number of panels to be fitted on the east and west slopes of the barn, the array on the barn being determined by aesthetic considerations as raised by the Conservation Officer (see below) rather than their contribution to the net zero target or indeed the practicalities and economics of installation.

3.2 Conservation Officer Comments

Planning and Listed Building consent (references 22/01602/HFUL and 22/01603/LBC) for the energy refurbishment of Hall Farm house was received on the 2nd December 2022. These consents permitted a reduced area of photovoltaic panels on the barn roof to the area originally proposed.

The Conservation Officer's report, Consultation Response Form ref 22/01603/LB date 20/05/22, made the following comments:

The solar panels are acceptable in principle, but it is felt that the extent of their proposed deployment on the barn is overbearing for both the farmhouse and the barn and obscures the positive character of the pantile roof. As the barn is single storey the roof makes up half of its form and is closer to eye level, so increasing the impact. Reducing the number of panels and locating them further from the historic farmhouse should relieve their impact. The panels proposed for the pool house and garage are acceptable. Panel and mounting choices will also be important. A low reflection finish is also advised. Manufacturer's/installer's details will be required.

The Conservation Officer concluded her report: *Whilst the principle of improving thermal efficiency and the use of solar PVs are supported, based on the information provided there are some key areas of concern within this application that cannot be supported or satisfied by applying conditions. The main points being:*

- *The proposed wall insulation for the historic farmhouse requires revision*
- *Insufficient information regarding the insulation and ventilation of the cellar*
- *Insufficient information of the secondary glazing for the historic windows*
- *The extent of the PV array on the roof of the barn is too dominant*

Taking the above into account, I consider that the proposal will adversely affect the character of the Listed Building.

Taking the above into account, I consider that the proposal will not preserve the character and appearance of the conservation area.

The proposals will not comply with Local Plan policy H14.

With reference to the NPPF (2021) and the effect on the significance of the heritage asset, paragraphs 199, 200, and 202 apply.

Fig 4.1 View of the farmhouse from the road to the church showing limited views of the buildings due to vegetation even in winter time.

Fig 4.2 View of the farmhouse from further down the road to the church showing limited views of the buildings due to vegetation even in winter time.

3.3 Recent Correspondence with the Local Planning Authority:

The following email was received from the Area Development Manager, Jane Rodens, on the 17th of March 2023 in response to an informal enquiry regarding increasing the area of photovoltaic panels on the barn roof from that permitted:

"There were concerns about the previous amount of Solar Panels and if they where going to completely cover the barn roof in PV panels, on the grounds that it would overwhelm the roof form of the curtilage listed barn, and be harmful to the setting of the farmhouse. That view has not changed. The cumulative impact of all the PV panels on the site would also increase significantly."

4.1 Climate Catastrophe

Councillors in Greater Cambridge have demonstrated that they will support carbon reduction schemes rather than adhere to the existing planning and conservation policies cited by the Conservation Officer as reasons for refusal in the case of Hall Farmhouse. On the 7th February 2023 Councillors unanimously approved the installation of photovoltaic panels on the roof of grade I listed Kings College Chapel. The following points were recorded in the minutes of the Planning Committee meeting of that date:

Councillor Nethsingha (Newnham Ward Councillor) noted:

"There was no doubt that King's College Chapel was a building of worldwide architectural importance. For solar photovoltaic to be installed on such a building would demonstrate that it was possible for even buildings of this level of importance to make their contribution to moving towards a zero-carbon future."

Councillor Smith (Castle Ward Councillor) noted:

"In conclusion, people needed to have at the forefront of their minds that climate change was resulting in catastrophic, irreversible harm to life on Earth, our prime responsibility must be to take every opportunity to reduce Carbon emissions however modest and not be distracted in that mission by minimal harm to a single historic building."

The recognition by communities that there is a climate catastrophe and that radical measures need to be taken to achieve net zero by 2050 is nationwide. Permission has been granted recently for photovoltaic panels to be fitted on the roof of grade I listed York Minster.

The acceptance of photovoltaic panels being fitted on iconic, highly visible public buildings suggests that the installation of photovoltaic panels on far more modest, curtilage listed, less publicly visible buildings should be accepted as contributing to the drive to achieve net zero by 2050.

4.2 TAKING THE OPPORTUNITY

Comprehensive refurbishments of buildings happen infrequently. Hall Farmhouse was refurbished in 1979, 44 years ago. If a similar time lapse occurs, the next time Hall Farmhouse can expect to be significantly refurbished is in 2067. 17 years after the 2050 zero carbon target. This suggests that the energy demands of Hall Farmhouse will not be significantly altered ahead of 2050 and therefore increasing the number of photovoltaic panels on the barn roof is the best way of allowing the property to become theoretically energy self-sufficient, thus significantly contributing to the Councils zero carbon target. The current proposals will increase the output from the array on the barn roof by approximately 60%, a significant contribution to the energy requirements of the building whilst upping the coverage of the roof from 41% to 64%, a moderate increase for a large gain which protects the farmhouse roof and adds to the targets for net Zero set by the Council.

4.3 REVERSIBILITY

The barn roof has a modern pantile roof covering which remains in place beneath the photovoltaic panels. The impact of the photovoltaic panel installation is therefore reversible should future developments make the panels redundant.

4.4 SETTING

The current secluded garden setting of Hall Farmhouse was created in 1979 when all vestiges of a working farmyard were removed. This setting is not historic or original to the building type.

4.5 VIEWS OF THE BARN ROOF IN RELATION TO THE FARMHOUSE

Public views of the barn in relation to the Farmhouse are not possible as another property known as the Red Barn along with a belt of mixed evergreen and deciduous trees obscure any view of the barn and Farmhouse together from the lane leading to the Church. The private drive, which is not a public right of way, provides access to one house beyond the entrance to Hall Farmhouse. The barn is visible from the private drive but views of the Farmhouse are obscured by the garage which fronts the private drive and the mature walnut tree which dominates the entrance courtyard. This precludes views of the barn roof in conjunction with the farmhouse from the east.

The barn roof can be seen in conjunction with the Farmhouse from within the private garden to the west.

Fig 4.3 View of the barn from the south east showing limited views of the farmhouse due to the walnut tree.

Fig 5.1 View of the farmhouse and the barn not really visible beyond further from the north east - also viewed from the private garden.

5.1 Proposed Photovoltaic Array

The application proposal is to cover the barn roof up to the intersection with the link roof, ie 7.5m away from the Farmhouse, maintaining a consistent coverage with all the panels in the same orientation, either landscape or portrait and maintaining a consistent rectangular array mirrored on either slope. Panels to be black framed, low reflectivity and fixed on panel supports holding the panels above the roof covering. The installation is entirely reversible should an alternative form of generation become available in the future.

6.1 Access

This application does not alter any of the access arrangements to the site or buildings.

7.1 Conclusion

This application is for a change to the already permitted photovoltaic array on both slopes of the barn to improve the energy output of the property in response to the climate catastrophe. It is considered that the national response to the climate catastrophe provides ample precedent for making these proposals, and that the proposals do not constitute lasting harm to the heritage asset of Hall Farmhouse as the installation is reversible. Furthermore the impact on the secluded location of the buildings along with their modern setting does not outweigh the public good provided by the increased energy output made possible by full coverage of the barn roof.

Appendix A
Other Considerations

Biodiversity Survey and Report
Due to the nature of the proposals a biodiversity survey and report is not thought to be warranted.

Daylight/Sunlight Assessment
Will not be affected by proposals.

Flood Risk Assessment
The property is not in a flood plain.

Heritage Statement
The historic context of the property, its significance and historic fabric planned to be affected by the proposals is referred to in the Heritage Statement (21.433.1 - 498).

Photographs
Relevant photographs have been included within the Design and Access Statement and the Heritage Statement.

Site Waste Management Plan
Waste management on the site is unaffected by the proposals.

Structural Survey
A Structural Engineer has confirmed no structural works are required to the barn roof to take the photovoltaic panels.

Tree Survey
No trees will be affected by the proposals.