

Design and Access Statement for Solar Panels

At

The Old Rectory

Oswaldkirk

York

YO62 5XT

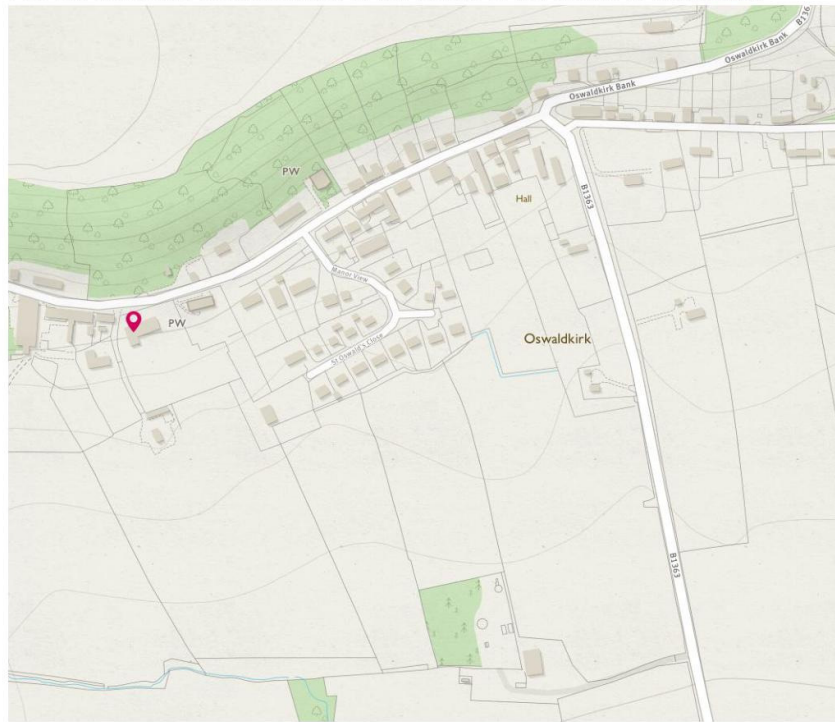


1.0 Introduction

- 1.1 This report has been prepared by Ben Reeves of The Old Rectory, Oswaldkirk, YO62 5XT
- 1.2 Section 42 of the Planning and Compulsory Purchase Act 2004 requires a Design and Access Statement to be submitted with the majority of planning applications. The purpose of this report is to satisfy the requirements of Section 42 of the Act.
- 1.3 The report has been prepared to demonstrate the process which has led to the development proposals. The report will explain and justify the need for the development.

2.0 Property Location

- 2.1 The Old Rectory is situated towards the center of the village of Oswaldkirk



- 2.2 The adjoining paddocks extend approx. 25 acres and are currently used for sheep grazing.
- 2.3 The property is a Grade II listed period house with several outbuildings totaling 10,709 sq ft of floor space.
- 2.4 Oswaldkirk is a green village with a significant proportion of residences in the village having already installed solar panels on their roof or on the ground.
- 2.5 Being the former accommodation for the Rector of the Church of St Oswald, the property itself is of important historical significance. It also neighbours the Grade II* church of St Oswald and is located some 200m East from Grade II* Oswaldkirk Hall.

3.0 Energy Generation & Demand in UK

It is widely known that non-renewable energy sources are in decline worldwide and that the burning of fossil fuels is resulting in harmful greenhouse gases being released into the earth's atmosphere. In order to secure our energy supply and reduce these damaging emissions, we need to increase the proportion of renewables used for energy generation.

To this end, the UK Government has shown its commitment to promoting low carbon technologies and renewable energy generation by creating relevant policies and strategies. Solar Photovoltaic panels absorb sunlight throughout daylight hours and convert it into electrical energy. There is limited environmental impact both from the construction of the panels and their operation.

Panels are low maintenance once installed, have a service life of 25-30 years and the site is fully restorable after decommissioning with no adverse effects on the environment. The local community is affected only by the construction of the panels and any visual impact post installation.

The Campaign to Protect Rural England warns climate change is the greatest threat facing the countryside and hopes that policymakers, both nationally and locally, take note of the 'unprecedented nature of the changes' and act swiftly to ensure that England's countryside is prepared for the enormous challenges it faces.



Humanity faces many threats but none is greater than climate change.

Prince Charles



4.0 Policy Context

- 4.1 There are a number of National and Local Policies relevant to this application, these are listed below and described in more detail where required.
- 4.2 The National Planning Policy Framework (2018) sets out the governments planning policies for England. Section 14 is particularly relevant to this application and addresses the needs to meet the challenges of climate change. Paragraph 151 outlines the actions need to “*To help increase the use and supply of renewable and low carbon energy and heat*”.
- 4.2.1 Provide a positive strategy for energy from these sources, that maximizes the potential for suitable development.
- 4.2.2 Identify opportunities for development to draw its energy supply from decentralised, renewable or low carbon energy supply systems

Paragraph 154 further states:

When determining planning applications for renewable and low carbon development, local planning authorities should:

- a) not require applicants to demonstrate the overall need for renewable or low carbon energy, and recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and*
- b) approve the application if its impacts are (or can be made) acceptable*

- 4.3 The Ryedale Local Plan Strategy was adopted in September 2013. Section 7 SP18 considers “Renewable and Low Carbon Energy” and states:

Developments that generate renewable and/or low carbon sources of energy will be supported providing that individually and cumulatively proposals:

- Can be satisfactorily assimilated into the landscape or built environment, especially in respect of the setting of the North York Moors National Park, the Howardian Hills Area of Outstanding Natural Beauty (and its setting), the Wolds and the Vale of Pickering;*
- Would not impact adversely on the local community, economy, or historical interests, unless their impact can be acceptably mitigated;*
- Would not have an adverse impact on nature conservation, in particular in relation to any sites of international biodiversity importance, unless their impact can be acceptably mitigated;*
- Would not have an adverse impact on air quality, soil and water resources in Policy SP17, unless their impact can be acceptably mitigated.*

5.0 Property Background & Planned Improvements

- 5.1 The Property is currently heated by two oil boilers installed in 2005.



- 5.2 Oil is stored in a 5000L tank located near the church



Climate change is no longer some far-off problem; it is happening here, it is happening now.

Barack Obama on Climate Change



- 5.3 When we moved into the property a year ago the attic had no insulation. With potentially up to 25% of home heat escaping through the roof the first thing we did was have rockwool insulation fitted across the entire roof space.



- 5.4 We also had “Smart heating” fitted so the temperature can be adjusted individually per room. Rather than having one thermostat for the whole of the ground floor energy is saved by turning off the heat in rooms which are not actively being used. The property now has 12 Nest thermostats.



- 5.5 In addition, the boiler electrics were completely re-wired in order to allow finer control of when the boilers fire up and to divide the heating system into separate zones.



Right now, we are facing a man-made disaster of global scale. Our greatest threat in thousands of years. Climate change. If we don't take action, the collapse of our civilisations and the extinction of much of the natural world is on the horizon.

Sir David Attenborough





- 5.6 Unfortunately, being an old property, there is only so much that can be done. The improvements previously listed have only had a small impact on the substantial heating demand of the property.
- 5.7 Without altering original features like the single glazed windows throughout the property, which is my opinion would be a great shame, the property is always going to be very thermally inefficient.



- 5.8 We would very much like to preserve these features and hence have been exploring other options on how the property can be made more environmentally friendly.
- 5.9 The oil boilers are over 10 years old now and are between 10-25% less efficient than the modern condensing boilers on the market today. The boilers need upgrading regardless. However modern technology also means that alternate systems that do not burn oil or

fossil fuels are now viable and are now the preferred solution for new heating installations and as well for boiler replacements.

- 5.10 An air source or ground source heat pump can be used as an alternative to burning fossil fuels. Air source heat pumps (ASHPs) absorb heat from the outside air. This heat can then be used to heat radiators, underfloor heating systems, or warm air convectors and hot water in your home.
- 5.11 We would like to swap the old oil boilers for an air source heat pump (Such as a Mitsubishi Ecodan picture below). The heat pump will convert electricity to heat at an efficiency of 300% (For every one kwh of electrical energy 3 kwh of heat energy is produced). The unit produces a low level of noise and does not produce any harmful emissions or consume fossil fuels directly.



- 5.12 The “catch” of course is not only are heat pumps expensive to install (costing between £5,000 to £10,000) but if electricity is taken from the UK grid it is often generated by burning fossil fuels. So, in-effect, whilst not burning fossil fuels directly, you are just burning them instead at the power station. In 2017 only 28% of electricity in Britain was generated from renewable sources.
- 5.13 The pro-active solution to this problem is generate the electricity yourself from a renewable source, the most viable for our location being solar panels. Many other people in Oswaldkirk village are already actively doing this (I count 17 residences with panels in the village).

6.0 Energy Demand of The Old Rectory

- 6.1 In 2018 The Old Rectory will use 12,000L of oil producing approximately 100,000 kwh of useful heat energy. Little can be done to significantly reduce this heat demand whilst still maintaining a livable home.
- 6.2 In addition the home used 18,000 kwh of domestic electric.
- 6.3 When considering that average UK home uses a combined 15,600 kwh of gas and electrical energy. The Old Rectory uses 10x the average UK energy demand.
- 6.4 If every home in the UK consumed the same amount of Oil as the Old Rectory, the UK would consume an additional 390 million tonnes of crude oil per year. This is twice the oil consumption of Japan, the worlds 4th biggest oil consumer. The increased emissions would increase NOx emissions of the UK by roughly 50% and have significant impact on local air quality. NOx mainly impacts on respiratory conditions causing inflammation of the airways at high levels. Long term exposure can decrease lung function, increase the risk of respiratory conditions and increases the response to allergens.
- 6.5 After the planned upgrade to an air source heat pump, assuming a COP of 3 (i.e. for every 1 unit of electrical energy 3 units of heat energy are produced) the home will require an electrical demand of 51,000 kwh per annum.
- 6.6 Increased demand from electric cars is not included in projected electricity consumption but will also be a factor in future.
- 6.7 Unfortunately, whilst solar panels are silent and relatively unobtrusive, they do require a significant amount of space, especially for the electrical demand that The Old Rectory will require.
- 6.8 25 Large Panels will produce an annual output of 7,700 kwh only 15% of the projected electricity demand. The proposed 76 panels will produce an estimated 23,000 kwh roughly 45% of the projected electricity demand.
- 6.9 In order to significantly reduce the Carbon footprint of The Old Rectory a large area of panels is required something which available roof space cannot accommodate.



“If every home in the UK consumed the same amount of oil as The Old Rectory the UK would consume an additional 390 million tonnes of crude oil per year.”



7.0 Proposed Development

- 7.1 The applicant is proposing to install ground based solar (PV) panels in the adjoining paddock nearest the property.
- 7.2 Several sites were considered and the chosen site has least overall impact amongst the available alternatives (See Options appraisal document).
- 7.3 PV panels silently convert sunlight to electrical energy. They generate direct current (DC) that is converted to alternating current (AC) to be used by the electricity grid.
- 7.4 The electricity produced by the panels will be used to provide an eco friendly and sustainable power source which will provide roughly 45% of the electrical demand of the property.
- 7.5 It is expected the panels will produce up to 23,000 kwh of electricity per year saving potentially 100 tons of co2 over a 15 year period (compared to the UK grid).
- 7.6 The panels are coated in a non-reflective coating to ensure minimal glare and so as not to deflect the sun's energy. There is no operational noise, smell, pollution or waste from the completed development.
- 7.7 Empty space will be left in-between the two rows of panels due to the shade cast by the first row of panels.
- 7.8 The site is naturally screened by mature hedges and trees on 2 sides. An existing building screens the site from the East side.
- 7.9 The installation will be very low lying. New trees have been planted to the north of the site to provide screening from the main property and houses to the north. The site will be hidden from the east by the existing outbuildings (which will not be altered).
- 7.10 On day one of installation the views from the surrounding important historical buildings will be minimal being only barely visible from Grade II The Old Rectory, Grade II* Oswaldkirk Hall and Grade II* Church of St Oswald.
- 7.11 It is expected a few years once the trees have established the panels will not be visible from any properties. Gaps will be filled with additional vegetation if they not completely hidden.
- 7.12 The supporting structure is temporary and requires no permanent foundations.
- 7.13 The site is not visible from the highway or visible to the remaining village.
- 7.14 The proposal would have a minimal impact on the appearance of the surrounding area and has been chosen because of the limited visibility from the surrounding village and neighbouring properties.



“Although the magnitude of climate change may make individuals feel helpless, individual action is critical for meaningful change.”

Mia Armstrong, The State Press



Conceptual View Of the Proposed Panels



8.0 Summary

- 8.1 This statement is submitted in support of a full planning application for the installation of low-lying ground based solar panels.
- 8.2 This document is revised from the original Design and Access statement in order to provide more background information and justification for the proposed number of panels.
- 8.3 Some residences have expressed concern that the number of panels is excessive or the number of panels is financially motivated. I hope the additions to this statement justify the need for the number of panels proposed. Also, I would like to make it clear that the government subsidy for solar generation (otherwise known as the Feed-In-Tariff) is ending in April and hence this project will not qualify for. Therefore, there can be no financial motivation to install an excess number of panels as surplus electricity will be fed back into the grid free of charge.
- 8.4 Whilst I appreciate the concern that views will be affected from neighboring properties, particularly St Oswald's Orchard it is the intention that newly planted trees will entirely obscure the panels in a few years.
- 8.5 Being only 2m in height and positioned ~200m from Grade II* Oswaldkirk Hall, ~100m from Grade II The Old Rectory and ~150m from the Church Of St Oswald the impact on the historic properties of the area will be minimal.
- 8.6 Out of all available options the chosen site is the highest median distance from neighbouring properties not visible from the majority of the village or from The Church of St Oswald.
- 8.7 The panels will reduce the carbon emissions of The Old Rectory by helping the conversion from oil-based heating to an electrically powered heat pump.
- 8.8 It will also ensure that original features of the property, such as single glazing, can remain which will not only help preserve important historical aspects of the building but also help ensure the continued use of the property as future home.
- 8.9 Reducing reliance on fossil fuels ensures that our surrounding English countryside will remain unaltered for future generations.
- 8.10 The onus falls on everyone to take a proactive approach to combat climate change and simply expecting someone else to bare the financial costs or suffer the other potential negatives (such as change of views) is not a justifiable position. This is true whether you live in a country hall or 1 bedroom flat.
- 8.11 The proposal has been considered against national and local planning policy. The concept of the scheme and the provision of renewable sources of energy is supported in particular by the National Planning Policy Framework (2018) and the Ryedale Local Plan Strategy.
- 8.12 It is submitted that the proposal is appropriate development, taking into account the positive policy position, the minimal impact of the proposed panels and the benefits in terms of renewable energy sources, the Council are requested to grant planning permission for the scheme.



Climate change is altering our cherished landscapes

Farming and rural communities are already suffering the effects of wetter winters, more storms, high winds and shifting seasons. As sea levels rise, we're likely to see dramatic further changes. In the East of England we will lose fens, beaches and probably entire villages too.

We need to use the energy we consume more efficiently and reduce our overall demand for energy to help meet the UK's target of reducing greenhouse gases, including carbon dioxide emissions, by at least 80% by 2050.

Campaign To Protect Rural England

