

WOODLEYS,
WOODSTOCK,
OX20 1HJ

DESIGN & ACCESS STATEMENT
GROUND-SOURCE HEAT PUMP
MARCH 2024

ADAM ARCHITECTURE



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I.0 INTRODUCTION

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The Woodleys estate set within the heart of Oxfordshire just outside of Wooton, the principal grade II listed country house 'Woodleys House' is set within 230 acres with unique views across to Blenheim Palace. Within the site there are three residential cottages, The Garden Cottage, The Coach House directly behind the main house and Grimsdyke Cottage as well as several small outbuildings of various constructions. The historic walled garden is situated to the west of the main house and to the south there is a formal lawn complete with a gate. North of the main house, beyond the walled garden there is a stone barn with lean to structures that creates a gated courtyard as well as a number of sizable, more modern agricultural barns.

The application area is not within the curtilage of the listed buildings on the estate.

Woodleys House is currently privately owned, with a real focus on reinstating and renovating existing buildings rather than developing new ones, based on ethical design development and attention to detail.

The client wishes to retain and preserve the character and atmosphere that these original features of these historic spaces already possess.

ADAM Architecture is a UK leading practice specialising in traditional and progressive architecture and contextual urban design and have been commissioned to develop the proposals for this unique project. The practice has considerable experience in the restoration, conservation and sensitive adaptation of historic country houses much like Woodleys.

This design and access statement is in relation to the application for the installation of a ground-source heat pump (GSHP) on the Woodleys Estate to serve the main house and ancillary buildings, in conjunction with the wider proposals for restoration, alterations and change of use at Woodleys. This planning application should be read in conjunction with application 24/00083/FUL, as well as the planning statement prepared by Montagu Evans, and Energy Statement prepared by ISO Energy.



1.2 PROJECT BRIEF

The Woodleys Estate comprises the Grade II listed Woodleys House, Grade II listed Bell Barn and a series of outbuildings set within the adjacent landscape. While this application is for the GSHP only, it sits in the context of the wider works proposed at the Woodleys Estate (ref 24/00083/FUL). The wider project brief calls for a dual-purpose use of the main house for residential and event space, along with a change of use for the Bell Barn and the Cattle Barn, transforming them into event spaces. While these proposals are not included in this application, they are outlined here to provide the context in which the GSHP is being introduced at Woodleys.

As part of the sustainable ambitions of the owners of the estate, the GSHP installation is intended to meet the heating and hot water requirements of the estate in a sustainable manner, feeding into the energy centre proposed as part of application 24/00083/FUL, in conjunction with the other sustainable energy sources such as the PV array which will supplement the estate's energy requirements. These will help the Woodleys estate to reduce its carbon emissions and improve the long-term sustainability and viability of the house and estate.

2.0 SITE OVERVIEW

2.1 SURROUNDING CONTEXT

2.1.1 Wider Context

West Oxfordshire, where Woodleys is located, is a predominantly rural district which consists of large areas of relatively unspoilt countryside and a diverse pattern of landscapes. The local distinctiveness and intrinsic quality of the landscape helps to define the sense of place.

Woodleys is located adjacent to but not within the Cotswolds Area of Outstanding Natural Beauty. It is also most notably located on the edge of the Blenheim Estate, which is designated as a world heritage site, and enjoys views of Blenheim Palace and its surrounding landscaped parkland.

The land immediately surrounding the estate on the remaining sides remains largely agricultural fields interspersed with woodland copses.

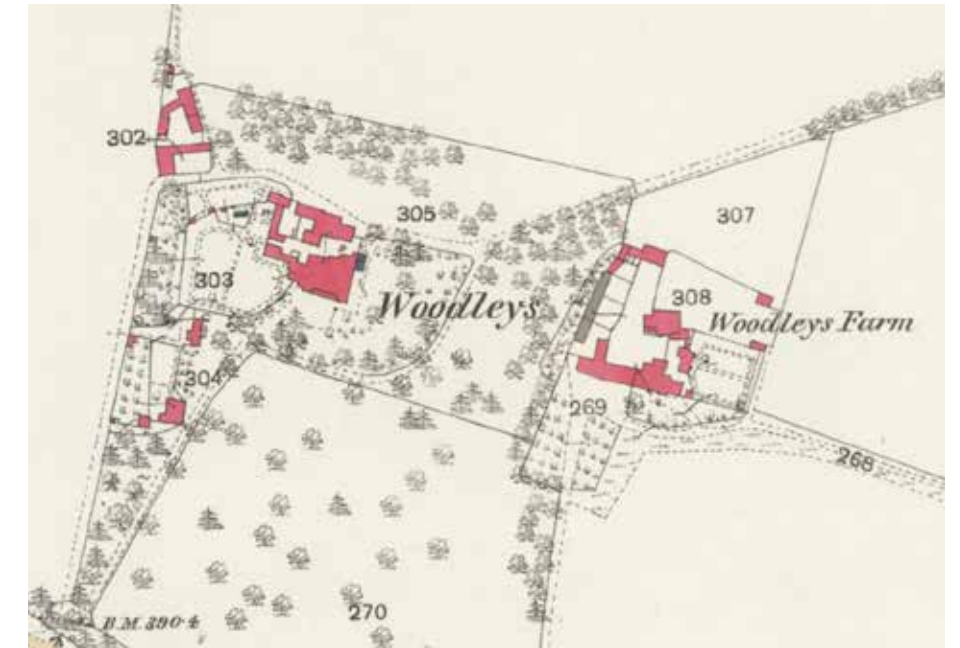
The nearest settlement is Wootton, and falls within the historic parish of Wootton, and the present day Wootton (Woodstock) Parish Council.

2.1.2 Closer Context

The wider landscape around the main house comprises agricultural fields in all cardinal directions. The area selected for the proposed new GSHP falls within an existing neutral grassland mostly used for sheep grazing, allowing the grass to grow long (with an average sward length of 40cm), and devoid of trees or any particular plants.



1793 map showing the site



1895 Ordnance Survey map



Present-day aerial view of the house



Aerial view of the proposed GSHP collector array location



View of the proposed GSHP collector array location

3.0 PROPOSED DESIGN

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The GSHP has been designed in conjunction with sustainability consultants Iso Energy. Special consideration has been taken with regards to the setting of the main house, and its visibility from the wider landscape.

An onsite heat loss survey has been conducted using the provided plans detailing the changes intended for each building. Figures for the peak thermal load and annual energy consumption of each building have been estimated to aid the design of the system.

It has been determined that two areas of vertical ground source collector arrays are required, one consisting of 6000m of active collector, and the other of 3900m. The first area will be covered by 20 x 150m deep boreholes spaced 10m apart from each other, and the second by 13 x 150m boreholes spaced 10m apart. The area required is shown indicatively to the right, in the context of the separate application for the works to the house and wider estate. (Ref. application 24/00083/FUL)

Given the heritage and architectural significance of the main Woodleys mansion, it is proposed that the ground array for the GSHP is located a distance away from the house or any other buildings. This removes the need to dig up the front lawn and gardens of the main house, and does not cause disturbance to existing trees, foundations or services.

The area selected for the location of the GSHP piping array is to the west of the house, and beyond the walled garden and tennis court, as shown to the right, superimposed on the proposed masterplan for the estate in application 24/00083/FUL. Note that the trees shown on the proposed site of the collector arrays are proposed and the area is currently neutral grassland with no existing trees, as shown in the accompanying site plans.

The new heat pump installation will remove the need for any bulk and not-environmentally-friendly oil storage onsite.

The buried nature of the GSHP piping array ensures zero visual impact. By locating the proposed area a distance away from the house, any potential negative impact to the listed building is mitigated, making it unlikely that the works will have any impact on the main house or its setting. All pipework is buried at a depth of 1m underground, ensuring is not visible. The land over the top of the borehole array can continue to be used for recreational or farming purposes.

Please refer to the accompanying plans and drawings for further details, as well as the report prepared by Iso Energy.



Proposed array locations, shown in red, superimposed on the proposed masterplan proposed in application 24/00083/FUL

4.0 JUSTIFICATION

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As part of the wider works to the estate, it is the ambition of our clients that the work should be environmentally-conscious and strive to be sustainable and environmentally responsible. The house currently uses an oil-source system, and the upgrading of the heating system to a GSHP will result in a significant reduction in carbon emissions of approximately 84%, when compared to the oil alternative for this property.

The GSHP array(s) proposed alongside the PV in application 24/00083/FUL will generate zero carbon electricity to support the electrical requirements on the property. Any excess electricity not consumed onsite will be fed back into the grid for the benefit of the local network.

The ambitions of this GSHP installation, when combined with the proposed refurbishment works to the main house at Woodleys, align with West Oxfordshire Council's commitment to becoming carbon-neutral by 2030. Section 14 of the National Planning Policy Framework advises that support should be given to the delivery of renewable and low carbon energy and associated infrastructure. It should be recognised that even small scale projects provide a valuable contribution to cutting greenhouse gas emissions.

West Oxfordshire District Councils Local Plan outlines that climate change mitigation and adaptation, and minimising carbon emissions will be key for the future success of the borough; their approach will therefore embrace cleaner and smarter growth that focuses on productivity gains which do not compromise the quality of the environment. Paragraph 148 of the NPPF also states that the planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change. It should help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience.

The proposed installation also aligns with West Oxfordshire's environmental objectives, namely policy EH2 - the buried nature of the GSHP array means that it will not interfere with the landscape character of the area, conserving and enhancing the quality of the landscape, which can still be used for the current purpose. No external and therefore visible fans and/or equipment are proposed. The system is quiet in operation, issues no emissions, is very safe and requires very little maintenance. The proposed areas (pictured, right) are currently grassed areas and the proposed installation will not affect any trees or root protection areas.

It is also in line with policy EH3, as the area selected will not result in harm to biodiversity and geodiversity. The selected type of vertical ground source collectors also reduces the required amount of excavation, as opposed to the coil type of collector, further reducing the already minimal impact.



View of the proposed collector array position as existing

The locations of the GSHP array has been positioned so as not to have any negative impact on the listed buildings on the Woodleys estate, and is not in the curtilage of any listed building.

According to Policy SD1 and paragraph 11 of the NPPF, there should be a presumption in favor of development in this case, as West Oxfordshire does not have any policies within its local plan that specifically address GSHPs. Due to the position of the collector array and pipes underground and the reinstatement of the land to its original state, there would not be any landscape or visual effects, nor any impacts on residential amenity.

5.0 CONCLUSION

A large, multi-story stone building with many windows, set in a green field under a cloudy sky. The building is the central focus, with a well-manicured lawn in the foreground and trees in the background. The sky is filled with soft, white clouds, and the overall atmosphere is serene and historic.

13.1 CONCLUSION

We strongly believe that the proposals presented within this report, along with the accompanying drawings and report demonstrate the client's willingness and the consultant team's commitment to transform and renew this heritage asset, while maintaining its historic significance and character. We believe that the proposals set out in this application have been thoughtfully and sensitively developed, responding to the needs of both the client and the site, in line with local and national planning policy.