

**OLD WOOD ENERGY PARK  
APP REF: 24/00161/FUL  
ARCHAEOLOGY TECHNICAL NOTE**

**Background**

This Archaeology Impact Note has been written in response to comments received by the Nottinghamshire County Council (NCC) Archaeology Officer dated the 15th March 2024 as part of consultation on the planning application for Old Wood Energy Park (application reference: 24/00161/FUL), which is for the construction, operation and subsequent decommissioning of a renewable energy park comprising ground mounted Solar PV with co-located battery energy storage system (BESS) at the point of connection, together with associated infrastructure, access, landscaping and cabling (the proposed development). The proposed development is located on land north of Wysall Road (the southern parcel, which includes part of the solar farm, the substation and the BESS) and land west of Bradmore Road (northern parcel, which includes the rest of the solar farm).

There are two main points raised by the NCC Archaeology Officer:

- The heritage statement suggests that the layout will avoid some of the areas where the geophysical survey revealed obvious areas of archaeological activity, but I don't see that reflected in the submitted plans. If preservation in-situ of some of the areas is proposed then that will need to be accompanied by an appropriate archaeological management plan to ensure protection during the life, operation and decommissioning of the site.
- As for the rest of the site I recommend, as per the advice of English Heritage, NPPF para 200, and the emerging policy from East Midlands Association of Local Government Archaeological Officers, that further evaluation be carried out in the form of trial trenching prior to the application being determined. The forthcoming policy is expected to recommend that a range of between 3% and 5% trenching of the overall site will offer a more balanced approach to risk, while acknowledging that some archaeological sites will still be missed.

This note responds to the above points.

**Areas of Avoided Archaeology**

As noted in the Heritage Statement there were two areas within the Site where, on the back of the findings of the desk-based assessment and geophysical survey, were excluded from development (for both infrastructure and landscaping), in order to preserve in situ potential archaeological remains. For clarity these are summarised below and extracts of these two areas are shown on Plates 1 and 2 on the following page next to the relevant extracts from the geophysical survey findings.

As part of the Development, no panels are proposed across the anomalies indicative of Roman settlement activity in the northern parcel of the site, and this land will be retained as undeveloped with the exception of the cable route and access track extending across the northern extent of Area 7 and into Area 8. These areas are shown in Plate 1.

In the central area of the southern site parcel, several weakly positive curvilinear anomalies were identified which form a small rectilinear enclosure with rounded corners (11a in Area 11, Plate 11). Although of uncertain date, the nature of these anomalies is indicative of features of possible prehistoric to Roman date. These areas are shown in Plate 2.

It is noted that the request is for these areas to be set out in an archaeological management plan, however it is considered that the requirement for this can be adequately secured via an appropriately worded planning condition.

**Plate 1 – Area of Archaeological Avoidance – Northern Parcel (Area 7, south of Lodge Farm)**



**Plate 2 – Area of Archaeological Avoidance – Southern Parcel (Area 11)**



## The Policy Framework around Archaeological Assessment

The IEMA Principles of Cultural Heritage Impact Assessment (July 2021) states that *“Our valued cultural heritage is a resource worthy of protection. This is recognised in government policy and legislation that seeks to safeguard and maintain the most important cultural heritage assets. Safeguarding the cultural significance of places and objects need not prevent change.”* Exagen stands by this principle and commit to ensuring that the projects we design and deliver achieve this aim.

Primarily, this note has been drafted to ensure proportionate and sustainable decisions are being made regarding the need, scope and timing of field evaluations (specifically programmes of archaeological trial trenching).

Exagen recognise and endorse the practices that conform with government policy and those activities that adhere to industry guidelines on the matter of assessing the impact of photovoltaic generating stations (“solar farms”) on buried archaeological remains.

The National Policy Statement for Renewable Energy Infrastructure (EN-3) has recently been designated. This is the most up-to-date policy position from the government regarding the assessment of buried archaeological remains for solar farm applications. Whilst its application is intended for the largest of solar farms (via the Nationally Significant Infrastructure Projects – NSIPs, solar farms over

50MW AC capacity), its directions are equally relevant to any scale of development especially those just below this threshold as is the case with the Old Wood Energy Park. As such, the policy position presented within EN-3 (and EN-14) is being given weight in decision-making.

EN-1 and EN-3 derive their key policy directions and tests from the National Planning Policy Framework (NPPF) whilst relating them to the specific conditions of solar farms.

The key messages within EN-3, pertaining to understanding the impact of solar farms on buried archaeological remains can be summarised as follows:

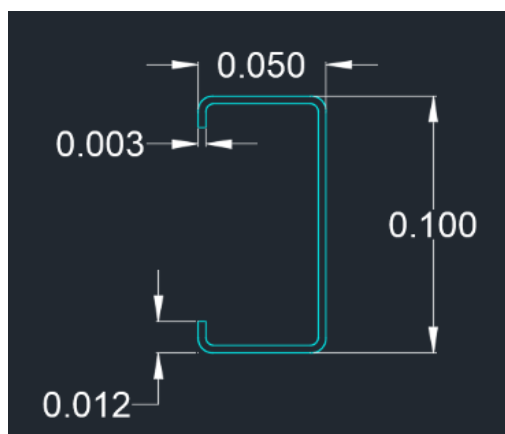
- The impacts on the historic environment will require expert assessment (paragraph 3.10.98);
- Impacts are generally limited (paragraph 3.10.100);
- Development may have a positive effect, by removing the site from regular ploughing (paragraph 3.10.101);
- The applicant should submit an appropriate desk-based assessment and, where necessary, a field evaluation (paragraph 3.10.104);
- In some instances, field studies may include investigative work [such as trial trenching] (paragraph 3.10.105);
- The extent of investigative work should be proportionate to the sensitivity of, and extent of proposed ground disturbance (paragraph 3.10.106); and
- Micrositing can assist in the avoidance of unforeseen impacts, thus flexibility in the design needs to be embedded into the consented scheme (3.10.129).

### The Rationale for Approaching Solar PV Developments as a Special Case

The rationale for singling out solar PV development as different from other types of development is obvious and clearly expressed within EN-3. While it is accepted that some elements of the infrastructure needed at solar farms require ground disturbing work capable of adversely affecting buried archaeological remains, the impacts of piling will be in the vast majority of cases non-existent or so minimal as not be material.

Thus, elements comprising deep excavations for cabling, access roads, inverter stations and compounds (potentially temporary) will require a different approach to assessment than that adopted for those areas where piling is proposed.

To further explore this matter, the cross-section of a typical pile footing for a fixed tilt solar array is 50mm x 100mm, with two 12mm 'returns' to create the 'c-shape' (see image showing a cross section of the plan view of a pile).



The thickness of each pile frame is only 3mm. Thus, the total area of ground disturbance for each pile footing would equate to circa. 0.000672m<sup>2</sup> per pile. If one is to assume that each pile, during insertion and then removal, was to displace all the material within its extent (i.e., as if it were a solid shape, not the thin frame that it is) the total area for each pile would be 0.005m<sup>2</sup> (50mm x 100mm). For a typical fixed tilt system solar farm, one would expect c. 1,200 piles per hectare (or per 100m x 100m). This

would equate to 6m<sup>2</sup> of displaced (horizontal) material per 10,000m<sup>2</sup> or 0.06% of the area. As a comparison, the effects of construction for residential or commercial developments, for new road schemes, water infrastructure projects and new high-speed railways, is typically determined to be 100% of the developed area.

In a common rural scenario, but allowing for a densely saturated archaeological site, buried remains would not cover more than 1/3rd of any development area. Thus, it is reasonable to assume that the likelihood of piles encountering buried archaeological remains is very low (i.e., most would simply miss / avoid buried remains). For instance, remains of pits, post holes or stake holes, similar to those that one might encounter within late prehistoric or Roman period settlement sites, occur very infrequently. It is exceptionally unlikely that any given pile would be located at exactly the same position as one of these 'discrete' (small) features. If physical interactions were to occur, for instance at the location of larger archaeological features, such as infilled boundary ditches, the displaced material from a pile or even several piles would be insignificant (tiny fractions of a percentage) compared with that which would remain unaffected / still in situ.

The key consideration is that the archaeological interest (significance) of the buried remains would be retained within the solar farm i.e., (as per the definition within EN-1 and the NPPF) the *"evidence of past human activity worthy of expert investigation at some point"* would not be affected.

Further to this point, as is recognised in policy, any surviving buried archaeological remains located within (beneath) the solar PV areas would be protected and safeguarded from plough damage. No other form of development has the same scope and potential to protect large areas of buried archaeological remains from on-going adverse impacts.

The matters described above are referring to those buried archaeological remains most typically encountered on rural sites. However, for some especially rare and sensitive buried archaeological remains, the disturbance caused by piling may have a material effect on archaeological interest. Particularly sensitive buried archaeological remains comprise:

- waterlogged remains, whereby the soil chemistry and ground conditions could be affected;
- human remains, whereby even minimal disturbance could result in a potentially disproportionate loss of archaeological evidence, alongside the ethical considerations; and
- complex structured deposits, such as those associated with burials but also structural remains, such as floor surfaces.

In these rare examples, alternative solutions can be designed to further minimise or completely avoid adverse impacts. This primarily comprises the use of 'no-dig' options such as development exclusion zones or ballast (instead of piled) foundations (such as concrete shoes). Again, this further demonstrates that a suite of mitigation options, to prevent or reduce impacts on buried archaeological remains, is available for solar farms, in a way that is not accessible to other forms of development.

There was a solar farm planning application approved by Rushcliffe Borough Council in 2023 on land to the west of our Site (application ref: 22/00303/FUL). That application did not require any pre-determination trial trenching which was secured via an appropriately worded planning condition, to be completed prior to construction of the development commencing. Furthermore whilst an extensive search has not been undertaken the following applications determined in the past 1 to 2 years locally did not require pre-determination trial trenching:

- 22/00319-FUL - the geophysics report produced some anomalies that would warrant further evaluation via trial trenching in order to inform whether archaeological mitigation is required as per paragraph 194 of the NPPF. It was recommended that these matters can be dealt with by way of a pre-commencement condition.
- 22/02241/FUL – no objection from NCC Archaeology Officer subject to pre-commencement conditions.
- 22/00809/FUL – Planning condition attached to the decision notice requiring pre-commencement archaeological investigation.

## Summary

The policy position is clear, solar PV development is acknowledged as having a 'generally limited' impact on buried archaeological remains. Through design and making use of the geophysical survey potential areas of greatest concern have been avoided by the Development.

Well executed desk-based assessments completed by competent experts, exploring a range of information sources, complimented by geophysical surveys, are acknowledged by the majority of stakeholders as useful and proportionate techniques to assess the likely extent and significance of buried archaeological remains. This is what has been undertaken to date for this application.

Bespoke and tailored programmes of archaeological assessment are required to support the decision-making process. Schemes of archaeological trial trenching for solar farms that simply mirror the scope and scale of those that might be adopted for other developments, those that cause vastly greater areas of ground disturbance (and in most cases will be permanent), is contrary to government policy that strives for a proportionate response.

Heavy machinery / plant operations are the single biggest on-site carbon emitters during construction work; this is the same case for programmes of archaeological work such as trial trenching. Excavation of trial trenches (or any form of similar groundwork that disturbs the plough soils) releases captured carbon into the atmosphere. Thus, it is essential that programmes of archaeological trial trenching are kept to the absolute minimum to reduce carbon emissions.

Furthermore, consideration should be given to deciding whether these (trial trenching) works need to be employed at the pre-determination stage. The environmental impact of this work can, in part, be mitigated by the scheme benefits (renewable energy and cessation of ploughing etc...); however, only if the solar farm application is granted consent. Therefore, emphasis should be given to the advantages of undertaking any necessary work as a condition, especially as the available suite of mitigation options can adequately manage the inherent risks of unexpected discoveries post-consent.

It is further noted that the solar farm adjacent to the west of the Site, and others locally, were able to secure trial trenching post determination as part of an appropriately worded planning condition and as such it is requested that the same approach be taken for Old Wood Energy Park.