

ASSESSMENT OF A WOOD FRAGMENT FROM DRAINAGE IMPROVEMENT WORKS, LYDNEY, GLOUCESTERSHIRE

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Assessment of a wood fragment from drainage improvement works, Lydney, Gloucestershire

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1. Summary

Assessment of a single wood fragment sample retrieved from drainage improvement scheme at Lydney, Gloucestershire was undertaken on behalf of Birse Civils Limited during intrusive works within the salt marsh flanking the Severn Estuary.

*Microscopic analysis of the wood identified the fragment as being *Ulmus (elm) sp* whilst visual assessment of the wood indicated that its burial was very recent as it exhibited none of the indicators that would typically be encountered with wood that was taken from a waterlogged archaeological context.*

It is the belief of the authors that the wood was recently introduced to the deposit from which it was retrieved although no certain age could be determined for the wood fragment itself due to the lack of diagnostic features and the long time frame in which elm has been a component of British woodland.

2. Introduction

An assessment of a wood fragment recovered during intrusive works at Lydney Drainage Improvement Works, Lydney, Gloucestershire (National Grid Reference SO 6304 0041) was undertaken on behalf of Birse Civils Limited.

2.1 Aims

The aim of the assessment was to establish whether the wood had been in-situ for a prolonged period of time or whether it had recently been introduced to the alluvium underlying the salt marsh.

3. Methods

3.1 Fieldwork and sampling policy

The wood sample was recovered by a subcontractor of Birse Civils Ltd in November 2010 from a clay deposit at a depth of 4.0 metres below the salt marsh surface approximately 60 metres from the River Severn. The Mean High Water level is 1.5 metres higher than the level at which the timber was found and the salt marsh itself is inundated during Spring High Tides (Terry Tuck, pers comm).

The sample was passed to Worcestershire Historic Environment and Archaeology Service (the Service) on 21 January 2011 with the assessment occurring on the same day.

3.2 Assessment

The sample was visually assessed by Dr Alan Clapham and Nick Daffern of the Service with notes being made regarding dimensions, colouration, tool marks, structure and preservation.

Microscopic assessment of the wood was undertaken by Dr Alan Clapham with the cell structure of the sample being examined in three planes under a high power microscope with identifications being carried out using reference texts (Schweingruber 1978, Brazier and

Franklin 1961 and Hather 2000) and reference slides housed at the Worcestershire Historic Environment and Archaeology Service. Nomenclature follows Stace (2010).

4. Results

4.1 Wood identification

The sample was in three pieces upon arrival at the Service with the largest of these measuring 1.02m in length, 0.08m in width and 0.05m in depth. The two smaller fragments were originally joined to the larger piece although it is unclear whether this fragmentation occurred prior to or post retrieval.

The preservation of the wood sample was very good with no evidence for chemical, biological or mechanical decay and no mineralization of the sample was apparent. The wood structure itself was still fibrous indicating that little or no degradation of the tissues had occurred.

There were no indications of skewing, warping or compression upon the sample with the structure of the sample still evident and "fresh" on both the interior and, more notably, the outer margins.

Colouration of the wood varies with the internal core exhibiting a fresh, pale yellow colour whilst the outer core was a mid-dark greyish brown. Some of the external colouration can be attributed to sediment deposition upon the outer surface of the sample.

There was rare evidence for working upon the largest fragment of wood with the most notable being a possible stake or nail hole which penetrated almost entirely through the sample although this is currently undiagnostic and specialist examination would be required to make a statement regarding the date and/or function.

Sectioning of the sample for microscopic analysis was difficult due to the robustness of the sample yet it was eventually achieved and suitable thin sections were created for species identification.

In this case, the sample was identified as being *Ulmus* (elm) sp, the identification has been taken only to genus level as there is more than one native species of the genus and the cell structure of these is very similar.

5. Discussion

Unfortunately, the identification of the sample as being elm does not assist in meeting the aims of the project as the genus has been a Holocene component of British woodland since at least the Mesolithic.

Archaeological wood from suitable deposits i.e. peat, can be incredibly well-preserved but despite the present sample being only slightly fragmented and in overall a very good state of preservation, there is no indication of chemical damage or discolouration which are associated with wood preserved in these anaerobic conditions. This is also supported by the lack of tissue degradation which would be expected in a wood from waterlogged conditions.

The lack of decay to the outer margins of the wood is particularly notable as "decay always starts from the outside and moves towards the inside. Artefacts therefore often consist of a well preserved inner core surrounded by a decayed soft outer layer. Degraded waterlogged wooden artefacts may be much more fragile than they first appear. Indeed, if of any size, they are unlikely to be able to bear their own weight once removed from the ground. Loss of water from the most degraded outer surface begins as soon as the wood is exposed during excavation" (English Heritage, 2010). This description of archaeological wood is dissimilar to the traits exhibited by the wood fragment retrieved from Lydney whose outer layer was still

very robust and was resistant enough to withstand cutting with a razor blade, the standard thin sectioning method used for archaeological wood.

The lack of skewing, warping or compression upon the sample, a feature typically witnessed in wood from archaeological contexts especially those from great depth, is of great interest as this process can commence immediately upon deposition of organic remains and therefore the absence of these processes indicates a short burial period.

The assessment of the sample indicated that the 4.0m depth from which the sample was retrieved is not the samples true context and it has spent only a very limited period of time in the context from which it was retrieved.

No age can be determined for the wood fragment due to the lack of diagnostic features and the long time frame in which elm has been a component of British woodland. One of the only true ways to determine antiquity would be to undertake radiocarbon dating of the wood fragment but this would only provide the date for the wood itself and not its introduction to the deposit and therefore is likely to be of little use in determining the samples true context.

6. **Significance**

No significance is placed upon the wood sample due to its intrusive nature.

7. **Recommendations**

Due to the uncertain context and nature of the material, no recommendations are made for further work.

8. **The archive**

The archive consists of:

- 3 Wood slides
- 2 Observation notes

9. **Discard Policy**

The sample will be discarded after a period of 6 months after the submission of this report, unless there is a specific request to retain them.

10. **Acknowledgements**

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