

Reappraising Ad Gefrin

New field research by the Gefrin Trust

Since 2006, the Gefrin Trust has been involved in developing a new research strategy around the famous palace site of Yeaveering, Northumberland. Working with staff and students from the Department of Archaeology at Durham University, the Trust has trialled a range of existing and new field techniques and approaches at the site, with a view to establishing the most effective methodologies for working on the early medieval settlements of the Milfield Basin. A primary aim of the work has been to establish a comprehensive understanding of the famous site of Yeaveering in terms of its extent and full prehistoric to medieval archaeology. This work has primarily been undertaken by Sarah Semple and Phil Howard from Durham University, with the extensive assistance of Alex Turner (Newcastle University). Numerous volunteers have assisted in the survey to date, including student volunteers from Durham and University College London.

The underlying geology of the Yeaveering plateau and its environs is composed of a free-draining gravel terrace. This has resulted in many problems over the years: the acidity of the gravels has of course proved an inhospitable environment for human remains and artefactual survival. This gravel terrace has continued to prove problematic for the new survey, hindering the success of geophysical prospection at the site.

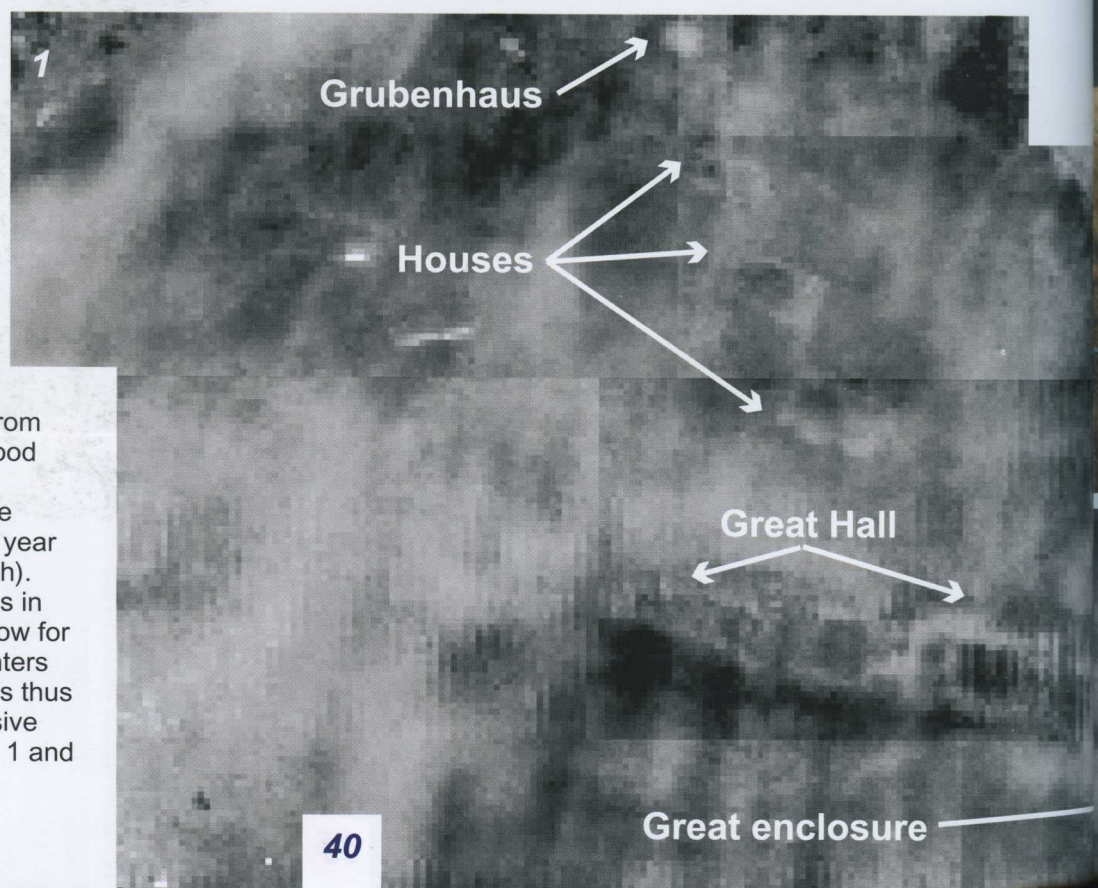
Fluxgate Gradiometry (undertaken by Emma Rouse and Nick Warley-Cummings, MA students of Durham University, in 2005) and **Caesium Gradiometry**, trialled on the palace site in 2006 by Phil Howard produced only mixed results (fig 2). Sands and gravels are known to produce highly variable results and this proved to be the case with poor differentiation between the sub-surface archaeology and surrounding geology. Resistivity from 2007 produced in contrast, very good results, although its successful application was possible only in the wettest and darkest months of the year (from late November to early March). The moisture content of the gravels in the Spring to early Autumn is too low for successful survey. Successive winters spent using resistivity on the site, is thus producing a valuable, comprehensive survey of the palace complex (figs 1 and 4).

This is picking up the details of the known hall complexes and great enclosure excavated by Brian Hope-Taylor, and revealing features hitherto unrecognised: potentially new prehistoric and early medieval features at Yeaveering positioned in and around the known prehistoric monuments and Anglo-Saxon palace complex. Ground Penetrating Radar was trialled in 2008, again with limited results, the high water content within the topsoil precluded significant penetration of the GPR's electro-magnetic signal. GPR will be tested again on the site in the Summer months, when the significantly lower level of sub-surface moisture should produce better results. Finally, the Trust has also been exploring LiDAR as a technique (fig 3) for above ground sensing and survey, adding a further new element to their studies of the site (see *Archaeology of Northumberland Vol 17*). The preliminary phase of survey is near completion, with continued resistivity planned for 2010 in the field to the south of the palace site, in which air photos revealed further potential prehistoric and early medieval structures and where excavations by Anthony Harding in the 1980s established the presence of a henge complex and an area of early medieval metalworking/industrial activity. A more extensive survey is intended in 2011, using resistivity and perhaps GPR, with the aim of establishing the full

perimeters and extent of activity around the palace complex. In summary, it is clear that combined geophysical prospection, utilising gradiometry, resistivity and GPR, selectively trialled at different points in the seasonal cycle, is establishing a successful methodology for applying geophysical prospection in areas of the Milfield basin and for testing the extent and survival of early medieval structures in these geological and geographic environs. It is also without question resistivity, which is of course more labour intensive, that has proved the most successful of applications at Yeaveering, and rendered the most exciting results so far, although ultimately the combined and integrated results of all methods applied may render the most significant new contribution to our understanding of the site and its environs.

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1. Interim results of the resistivity survey
2. Results of the fluxgate gradiometry survey
3. Location of the building groups (including D on the left) overlaid on a LiDAR aerial photograph
4. Resistivity survey in progress



Framing Yeaveering Views from the lost palace

In addition to explorative field survey, the stimulation of postgraduate student projects at Durham University has also been facilitating the exploration of new methodological approaches to Yeaveering and early medieval settlement in the north of England. One of the most exciting applications of Geographic Information Systems (GIS) to the archaeological record has been found in its ability to re-frame and combine existing data sets at varying scales. By relating the excavation plans produced by Brian Hope-Taylor with subsequent aerial photographs of the Yeaveering site, one postgraduate student research project has begun to re-evaluate the layout of the complex and its interpreted phasing.

Through the incorporation of information about Yeaveering's wider surrounds – topography, aerial transcriptions, surveys and excavations – the landscape of the site and its relationships, not least with Yeaveering Bell, are being explored. One striking characteristic of the complex discussed by Hope-Taylor was that of alignments guiding the layout of hall structures on the site. Study using GIS has confirmed these alignments and demonstrated that unexcavated buildings south of the road fit with this arrangements of buildings. This, integrated with wider study of early medieval structures at settlement complexes such as Thirlings, Northumberland and Chalton, Hampshire, suggest the positioning of the door jambs in structures with opposed doors, marked an initial act in

setting out these buildings. Viewsheds from doorways, could thus be considered significant in the placing of buildings and the structural development of early settlements. At Yeaveering a GIS has established that the building of numerous structures produced precise vistas focusing upon or acting with discretion towards other structures (early medieval buildings and prehistoric monuments) at a site and landscape level (fig 5).

This is demonstrated most effectively by the visual relationship between groups of buildings at Yeaveering and visibility of the Yeaveering Bell hillfort. While the viewsheds of the Group A buildings focus upon the fort itself, those of Groups C and D consistently avoid the scope of the hillfort and the Bell (figs 6 and 7). The research is on-going but points to interesting visual relationships with the surrounding landscape which seem to have changed over time, with the Bell ceasing to be a visual focus for the later buildings and structural orientations and changes on the site.

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- 5. View-sheds from building group D towards and away from Yeaveering Bell**
- 6. Views of Yeaveering Bell from Building group C and D**
- 7. Views of Yeaveering Bell from Building group A (The Great Hall)**

