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Julian D. Richards

From Site to Landscape: multi-level GIS applications in archaeology

In Old World Archaeology it is apparent that GIS have yet to live up to their promised potential, with many applications being content to put dots on a map. The aim of these papers is to show how GIS can be applied to archaeological research questions at a variety of scales, ranging from the individual graveyard, through city and rural landscape projects, to the region. Each of the four papers has three things in common:

1. Firstly, each of the papers is concerned with the archaeology of York and Yorkshire, where the Department of Archaeology at York University has a number of research projects (fig. 1).
2. Secondly, each of the papers features applications of a particular family of GIS. The first demonstrates an application of ARC/CAD running on a 486 PC; in this example ARC/CAD was felt to offer sufficient functionality to allow the extraction of layers from an AutoCAD drawing according to simple database queries. The following three papers all have need of more advanced GIS functions and make use of ARC/INFO version 7 running on a Unix compute server. Whilst the authors would agree that ARC/INFO has a very steep learning curve, and some charming idiosyncracies, we feel it provides the degree of power and potential for customisation that our applications demand. We believe there are advantages in archaeologists adopting industry standard software.
3. Thirdly, each of the papers starts with an archaeological problem and demonstrates an application of GIS to solve it, and that was our primary purpose in organising the session at the Leiden CAA Conference. We believe that each of our papers demonstrates that archaeological GIS have come of age and can now be used routinely in answering archaeological research questions.

We have chosen to illustrate the use of GIS at four very different research scales. We start with an individual site, a parish cemetery, and Harold Mytum looks at the use of ARC/CAD to study the chronological development of Kellington graveyard. From the rural churchyard we then move to a special class of site, the urban core of York,

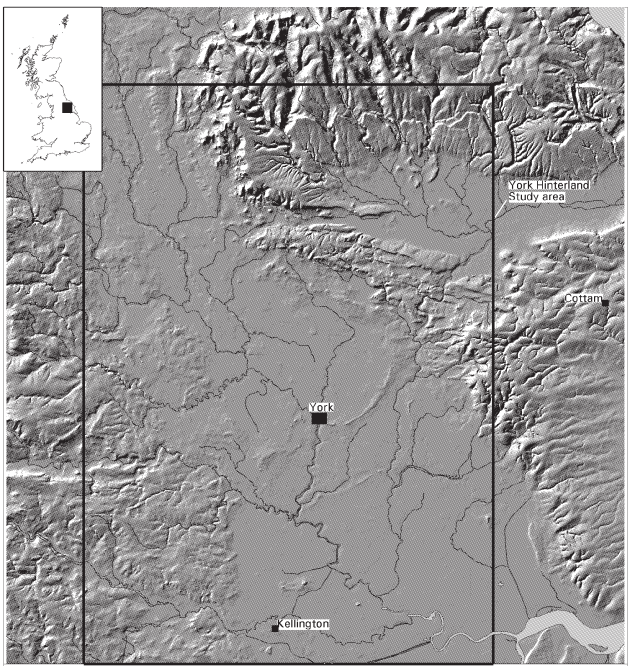

Figure 1. Departmental project areas within Yorkshire.

where Paul Miller has been using ARC/INFO to pose questions about the build-up of urban archaeological deposits. Then from town to country again, and Julian Richards describes the use of GIS in the study of the development of an early medieval rural settlement pattern in its setting in a local landscape project. Then finally, from the micro-landscape survey we shall move to the macro-landscape, and Jeff Chartrand discusses the application of GIS to the study of visibility of Roman archaeology within Greater Yorkshire.

However, whilst each of these papers represents an application in its own right, with its particular problems and solutions, it is the interface between them that is of particular interest. Rural churchyards and settlements, towns and

landscapes, whilst they tend to be studied in isolation, are part of a seamless whole. Current archaeological research agendas need tools which allow the integration of data collected at different scales. It is the power of GIS that allows us to shift resolutions and move from site to landscape and back again.

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