The Geographical Information System

By Nigel Wardell

We have recently commenced a project to utilise a GIS – a Geographical Information System – to record historical data. After some searching, I found some free software, NRDB, which was devised originally to record environmental data in the Philippines. Richard D. Alexander developed it through the assistance of the Voluntary Services Overseas.

A GIS allows information to be stored and displayed against geographical features. It uses various types of information.

- Maps or pictures to provide backgrounds to the information
- Polylines or polygons to depict features such as parish boundaries, fields, roads, houses.
- Numerical and text information stored in a database.

The GIS software (NRBD in our case) brings all that information together.

The first step in setting up the GIS is to obtain a suitable map image, and then use the NRBD utility to pinpoint key features in the landscape, such as a road junction, and record the known coordinates for that point (we use extended Ordnance Survey coordinates). This creates a file that provides the georeferenced for the map image that allows us to superimpose maps on the same coordinate 'grid'. Once we have the first map in the correct position, we can do the same with other maps and superimpose them to show a sequence in time. With the maps in place (georeferenced), we can record features from the maps for comparison. We can draw a polygon to represent each house on the map, building up a database of house shapes and locations. We can then use the database to compare house locations with a later period. The picture below shows my first attempt at superimposing the houses of c.1840 (the Tithe Map) on the 1910 Ordnance Survey map.

Most of the houses of 1840 correspond well with those on the 1910 Ordnance Survey map (note that the 1910 map shows barns and sheds as well as houses). There are discrepancies due to inaccuracies in the tithe map and drawing of the polygons. An obvious area of change is around the square, where houses came and went between 1840 and 1910.

I am planning to record historical information about the houses, such as the owners and occupiers at different times, together with information about each occupant, such as occupation. This project has just started and will tie in with the Census records.

We can also use GIS to record field boundaries, hedges, tec. Sue Burnay is undertaking this in connection with her land usage research.