Supporting high quality fieldwork using free maps and GIS from the internet.

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Digital resources and new mapping technology must represent the cornerstone of support for fieldwork at the beginning of the 21st century. In particular they can:

1. help question and understand a range of primary and secondary data
2. enable multiple interrogation of complex data
3. make use of 3D representations, e.g. the use of Google Earth in fieldwork
4. provide opportunities for modelling and decision-making, therefore adding value to the fieldwork experience

Digital resources from the internet deliver a number of advantages in the context of fieldwork:

- The vast majority of digital maps can be obtained free, or at least you have the ability to 'grab' still images from the screen to use in an educational context.
- Maps and resources can be 'live' or at least updated on a more regular frequency than traditional printed versions.
- Teachers and students can access to a host of specialist maps and resources which can stimulate young minds and improve spatial awareness. These can even be used as the foundation for an enquiry question.
- Digital maps and resources are easy to store and retrieve – saving space and time.
- Welcome to the 21st century! The future of maps lies in digital resources which can be easily updated. The future workforce will be using digital maps. Just about every conceivable sector of industry and public service depends on digital maps – its essential to retail, agriculture, the emergency services, building and planning.

Introducing the 'pre-during-after' model

Another significant role of high quality maps, GIS and other digital resources is to support the entire fieldwork process, i.e. before going out (pre) and on return to the classroom (post). Once a model such as this is adopted (see Figure 1 – based on the Field Studies Council model), the whole fieldwork experience becomes more valuable as the fieldwork is seen less a 'one-off' day visit, but more as integrated within a whole scheme of work.

Figure 1 shows the Field Studies Council's model of the pre-, during and post-fieldwork experience – the hamburger bun.

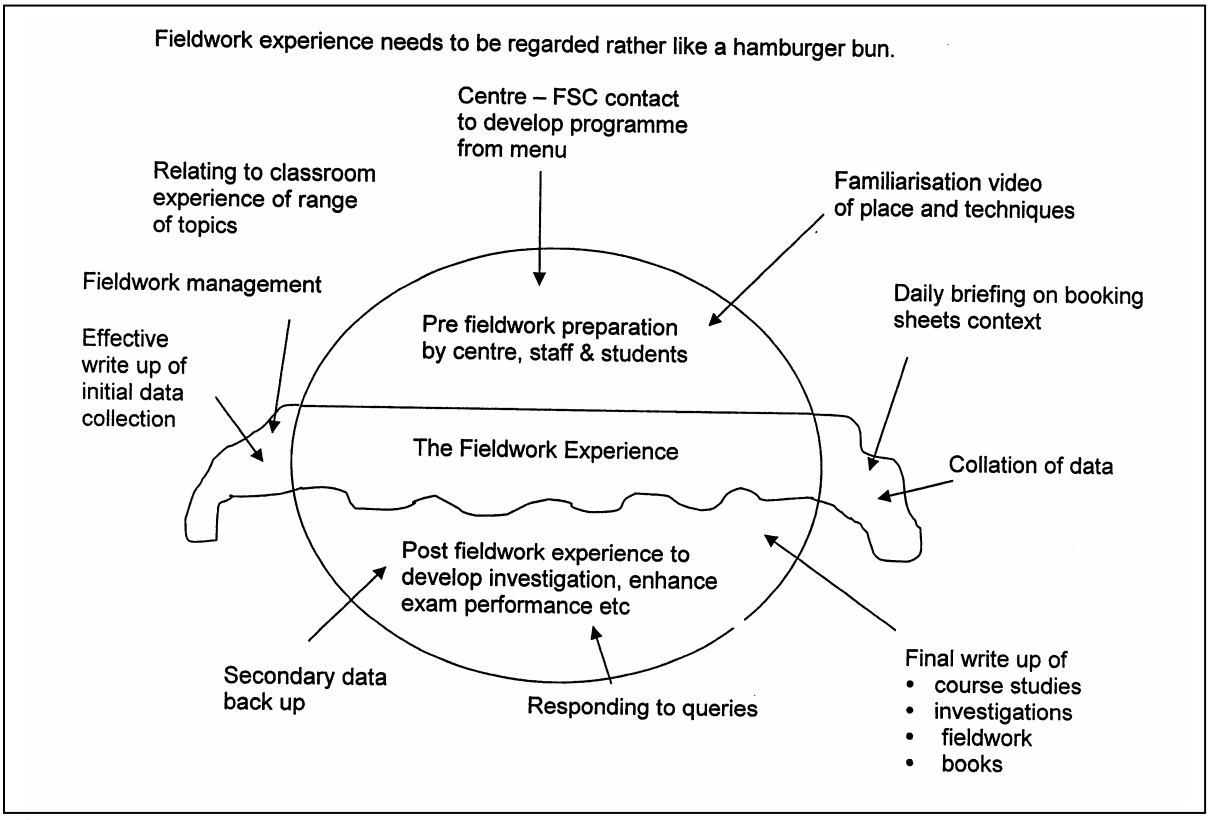

Figure 1

The basic maps sites

Probably the best maps resources for detailed and large scale maps is the 'Get-a-map resource' from the Ordnance Survey (http://www.ordnancesurvey.co.uk/oswebsite/getamap/ - Figure 2). Here you can get your hands on an extract of a map available at different scales including 1:50,000 and 1:25,000. A map extract is easily selected simply by entering a postcode or place name. This can be used to find out what a place is like in terms of its physical and human geography (site, situation, aspect, relief, drainage, land-use etc).

One of the other key benefits of the site is that the license permits *free* individual copies of the same map for all students. Use the command on the top-right of the window 'print/save/copy' . The map can then be laminated and used for fieldwork in the local area or to contextualise a 'virtual' fieldtrip to a contrasting place.

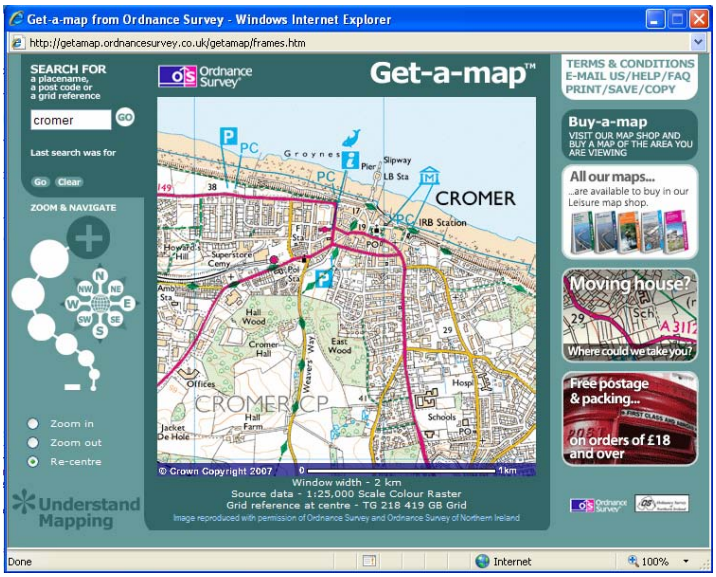

Figure 2

Image produced from the Ordnance Survey Get-a-map service (www.ordnancesurvey.co.uk/getamap). Image reproduced with kind permission of Ordnance Survey (www.ordnancesurvey.co.uk) and Ordnance Survey of Northern Ireland (www.osni.gov.uk)

Another excellent map resource is 'Multimap' www.multimap.com (Figure 3). Multimap seems to work best when its viewing window is maximised (click on the button on the toolbar). This makes the map more prominent in comparison with the banner advertising which surrounds the web window.

Another recommended feature of the site is to use the air-photo element – again found on the toolbar at the top of the map window (it can only be used with larger-scale maps, i.e.>1:500,000). Once the aerial view is active try hovering the mouse over the image to reveal the map underneath. This is an excellent method of linking air and satellite imagery to map features.

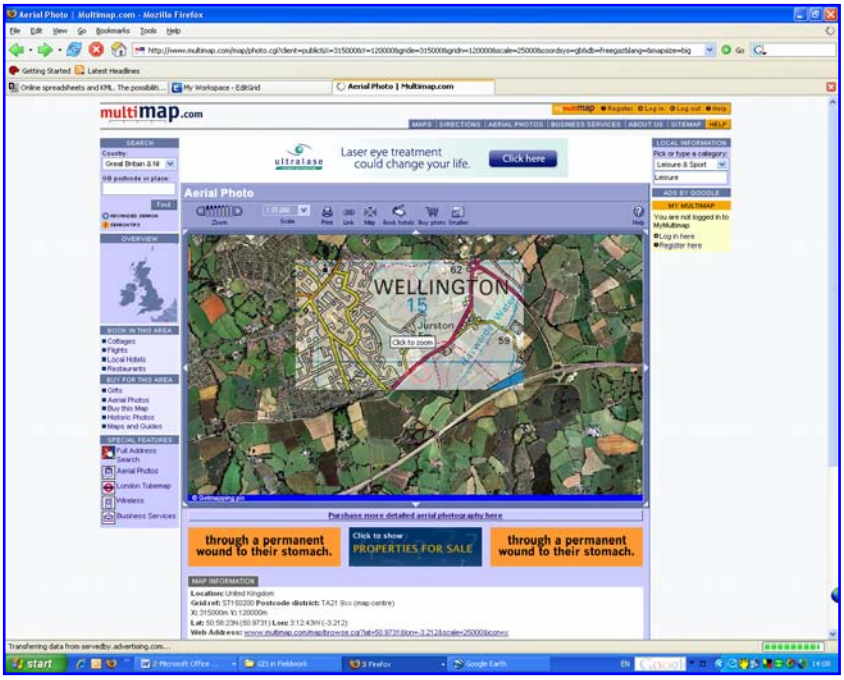

Figure 3

Table 1 provides a summary of these and other map sites suitable for supporting high quality fieldwork.

	What its best for	**Not so good at…..**
OS Ordnance Survey	Go to the "Get-a-map" section to get a free section on an OS map anywhere (England, Wales, Scotland) down to 1;25,000 scale. Also searchable by postcode. Good for project work. Individual copies permitted.	Map coverage at larger scales (!:50,000 and 1:25,000) is restricted to a few square km.
multimap.com	Coverage of most major countries. Ability to overlay map information on to an air photo of a selected area. Also gives latitude and longitude.	Resolution of detail is poor at large scales, especially in rural areas. Lots of adverts on the site.
streetmap.co.uk	Maps are very much focused towards being an electronic street map. Roads clearly marked and easy to read. Range of search options.	No one way system details. Heavy on adverts in the top and side frames of the web page.
Google Local UK BETA	http://local.google.co.uk/ has a range of local maps which are good at street level. A clever feature is the ability to search for particular shops, e.g. banks which are then shown on the map.	Detail best in urban areas, no contours, few boundaries etc. Satellite imagery resolution is questionable for much of the UK, especially in rural areas.
MAPQUEST	Looking at world atlas maps – small scale maps, but lots of coverage. Also has a good little country summary, including ' current environmental issues' which is quite quirky.	Fairly heavy on adverts and sponsored links. Strong US bias. Can be tricky to navigate to the map you are interested in.

About	The 'About Geography' website http://geography.about.com/ has lots of good map resources, including free outline maps of countries of the world.	Lots of adverts clutter the site – this can make it tricky to navigate and find exactly what you are looking for. There are also lots of 'sponsored links' which you should avoid.
old-maps.co.uk	This site specialises in free downloads of old maps from around 120 years ago. Easy search system and maps are fully scalable. Seems to have full coverage of most of Britain.	The resolution of the maps is not so great, especially at large scale. Sometimes, its also difficult to match locations on old and new maps – best to use roads as guides.

Table 1

Using electronic maps in an appropriate manner is a really important way to add value to a piece of fieldwork. Look at the difference in quality in Figure 4a and Figure 4b. The use of a digital map (as opposed to a photocopied version) has added considerable worth.

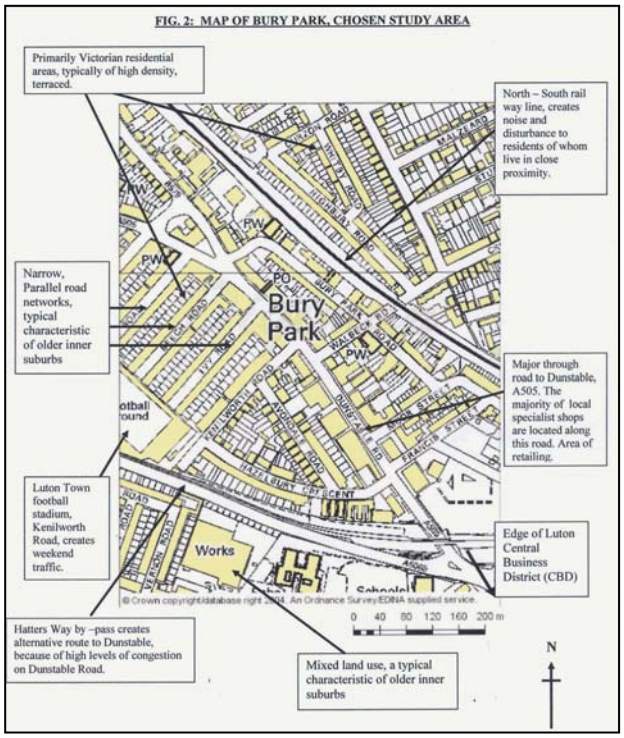

Figure 4a

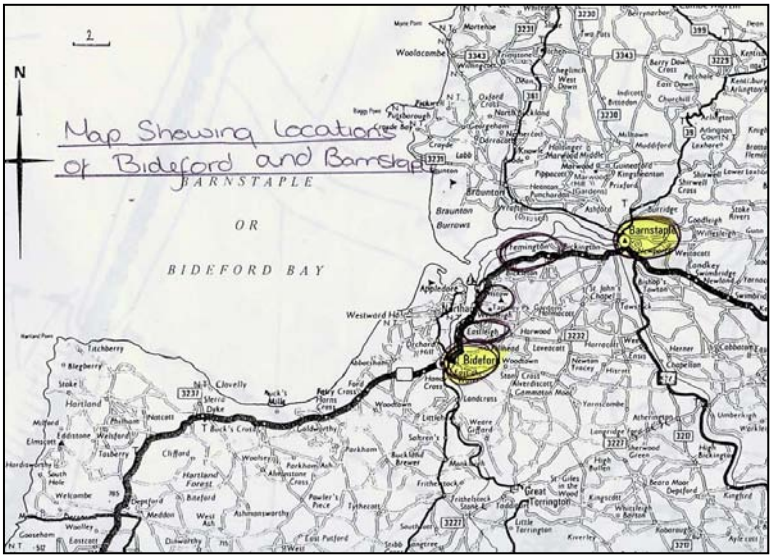

Figure 4b

What is GIS?
A geographical information system (GIS) has the ability to store, retrieve, manipulate and analyse a range of spatially related data. With a GIS the user may ask questions of data related to the map, search for patterns and distributions and investigate the underlying relationships between different sets of data.
GIS handles data quickly and efficiently, proving mapping facilities that may have taken many hours to complete manually.

Free GIS from the web to support fieldwork
The internet is becoming much more sophisticated in terms of the type of geographical data it can deliver, not just limited to maps and map data, but there are a host of other sites that may be useful in terms of supporting GIS – Geographical In formation systems – see box opposite.

There are too many good sites to list at length but here are a few of my favourites!

(1) www.ononemap.co.uk see properties and prices in an area that are for sale (uses the Google local platform). Good for comparing across areas, regions or postcodes.

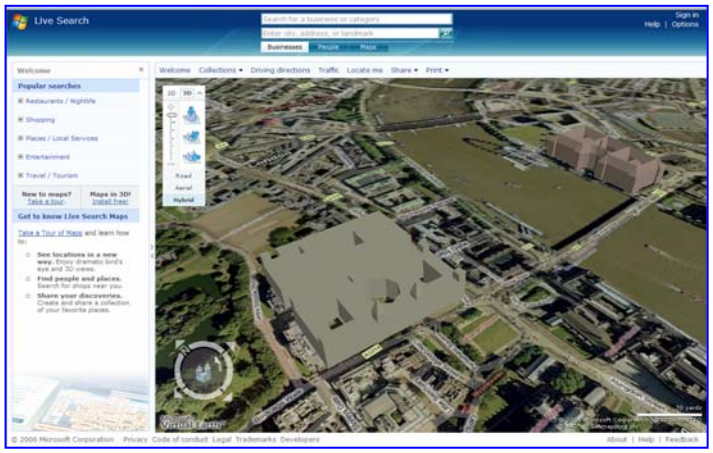

Figure 5 – Windows Local Live. Add 3D buildings in parts of London! Fancy stuff.

(2) Windows Local Live is an excellent site (http://maps.live.com/). Similar to Google Earth, but the air-photo resolution is often much higher. It also has some clever searching technology. Try as an alternative experience for the 'virtual fieldtrip'

(3) The Magic site (www.magic.gov.uk) is a really good way of getting into some free GIS, simply by using the internet. The site advertises itself as a multi-agency countryside resource. Type in a place or postcode to see a map with countryside information (Figure 6). The best thing is that you can change and manipulate the maps layers.

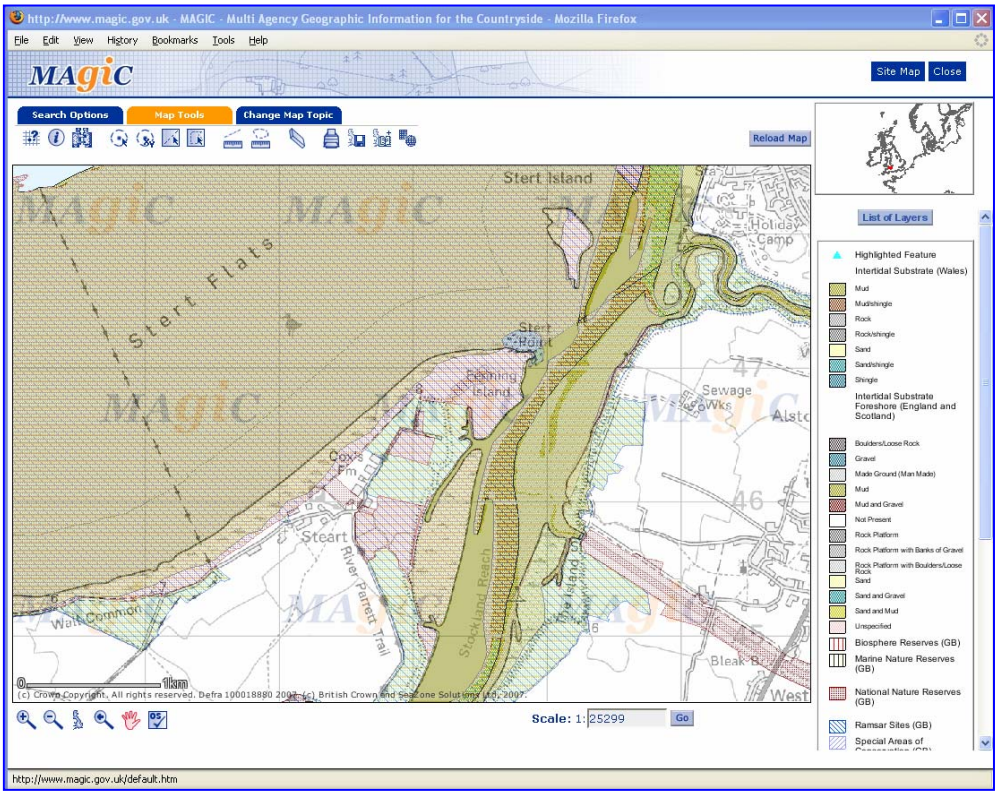

Figure 6

(4) A real favourite is this weather site which uses the 'Google Local' Whilst the BBC and the Met Office offer excellent educational map based resources, this site has the edge for me as it shows both highly localised *and* live information.
Selecting any of the sites (indicated by the circles) allows the user to see a graph of past weather history and to find out more about the geography of the weather station. The colours of the circles correspond to air temperatures (blues and greens colder and yellows / reds warmer) and 'arrowtails' on the circles indicate the wind direction – see Figure 7. The wind strength is indicated by the number in the centre of a circle. This is the strength in mph. A full key is included on the website.

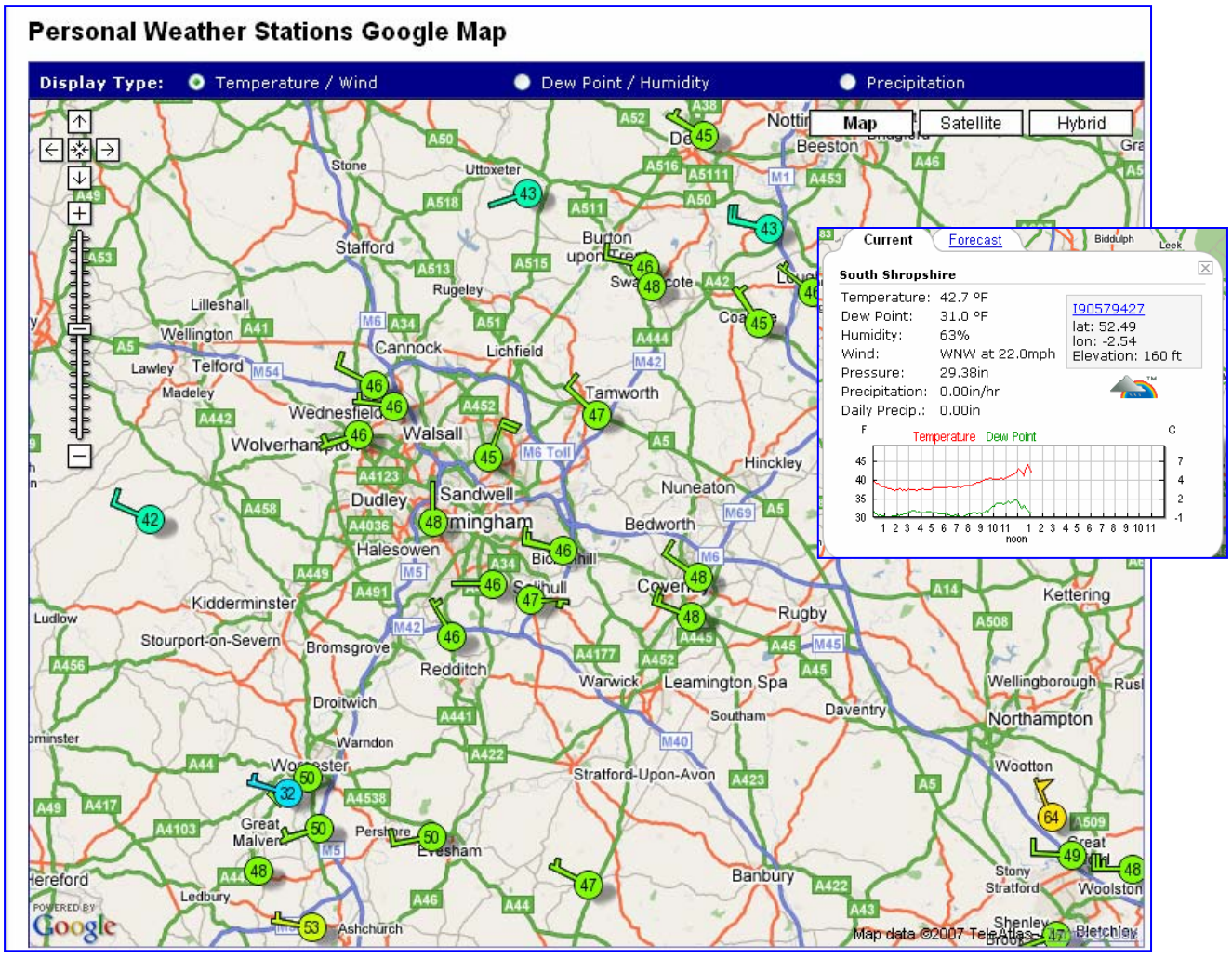

Figure 7

http://www.wunderground.com/stationmaps/gmap.asp?zip=00000&wmo=03535&theprefset=WPHO&theprefvalue=0

This site offers enormous potential in terms of pre, during and post fieldwork support. Students can track the passage of a depression and compare their primary observations to published information. How and why are there differences?

(5) A final recommendation is the Quikmaps site. Draw pictures and label things on a Google map using simple clicks and drags (Figure 8). Easily move the map to anywhere in the world. www.quikmaps.com The user-friendly nature of the site makes it ideal for students to create maps of their local or personal geographies and fieldwork activities.

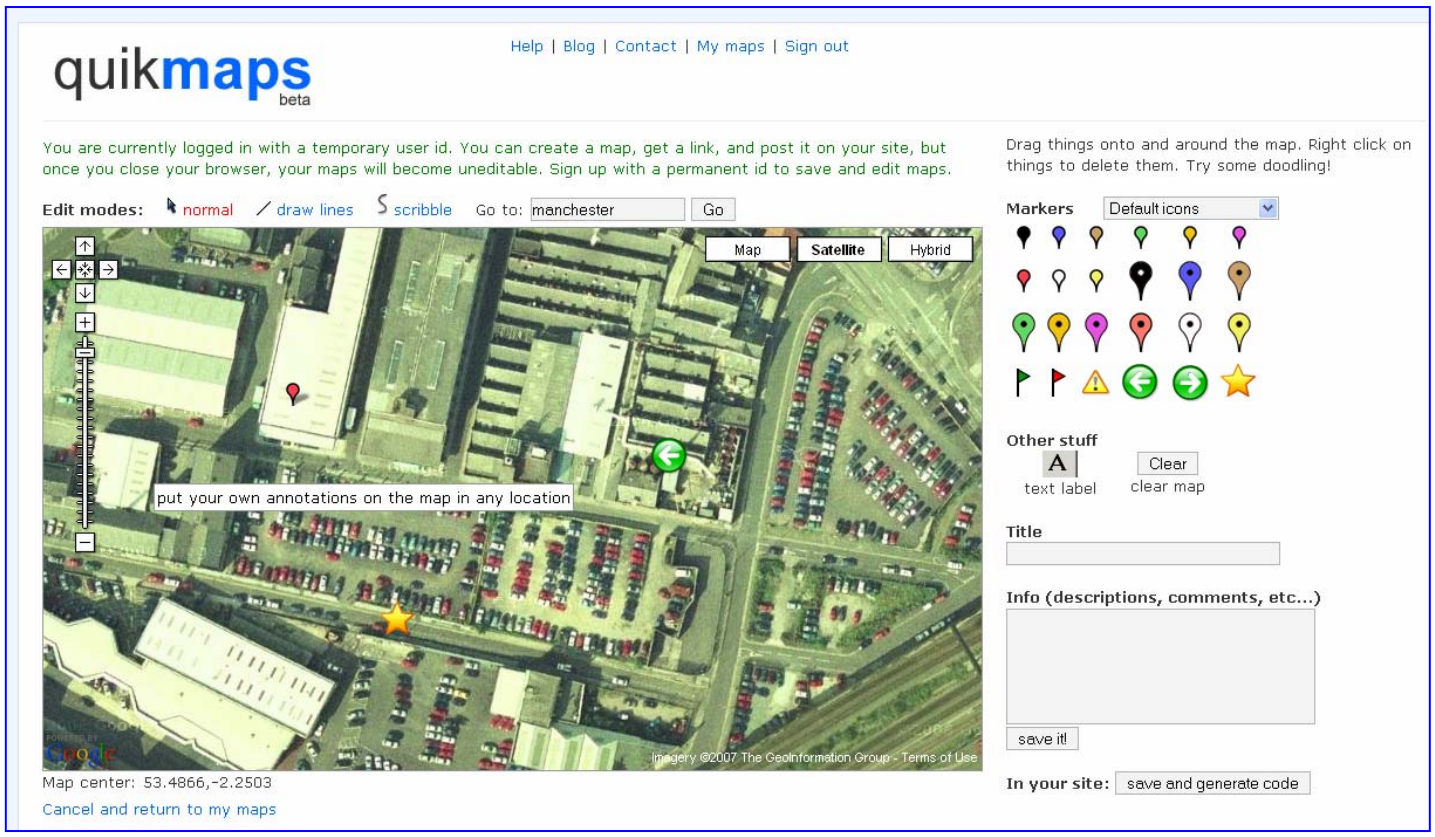

Figure 8

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