



Local government is a major consumer of geographic information. Knowing what is where, is a basic prerequisite for effective planning and management of our town and countryside, and for delivering efficient public services. So not surprisingly, planners, highway engineers, and those working with the environment have long been some of the heaviest local government users of maps and aerial photography. Today their ranks are being joined by a new breed of professionals – emergency planners.



Emergencies such as flooding, major accidents, the outbreak of infectious diseases, or terrorist attacks all happen somewhere. And when they do happen, the severity of their impact depends very much on the geographic context in which they take place. Emergency planners have been quick to recognise that the same geographic information which is used to support their colleagues in public service delivery can be repurposed to support them in dealing with emergencies. As we describe below, geographic information is invaluable in all phases of emergency planning, from risk assessment, and preparation, through to response and recovery



Vertical Aerial Photography

Getmapping specialises in high resolution orthorectified aerial photography, which we capture and process ourselves on a regularly updated programme. We deliver it as a map-accurate seamless layer which aligns perfectly with, and complements traditional base-mapping products in a Geographic Information System. By combining maps as transparent overlays with aerial photography, the photography fills-in' what is very often left as empty or 'white-space' in conventional map products. This can be invaluable to emergency planners who use imagery to answer questions which base-mapping often overlooks. It is possible to get a vehicle into a particular location? What is the turning space? Are there any temporary and unrecorded structures we need to know about? What activities are being carried out on a piece of land? Where are the drains and water culverts?



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Even when aerial photography is being used as little more than a backdrop against which to depict objects such as emergency centres or cordon zones, it remains a powerful tool for visualisation and communication - especially for those sections of the public who have difficulties reading maps.



Oblique Aerial Photography



There are occasions when emergency planners need to view the world in three dimensions, and not just the two dimensions of maps and vertical aerial photography. For example, they may need to know the both the height and make-up of a building to help them prepare for and respond to incidents such as terrorism and flooding. Getmapping offers a complete solution for the acquisition and analysis of high resolution oblique aerial photos. We capture overlapping oblique photos, taken at 45° from the horizon from four different directions. Getmapping is the sole UK distributor of the Multivision oblique imaging solution, we are able to add a 3D co-ordinate system to each image which allows the user to see four oblique views that are synchronised with the 2D map view providing a rich 3D information source. The software also has sophisticated functionality to accurately take a variety of measurements in 3 dimensions as well as a comprehensive set of tools to allow the creation of photo-textured 3D models. Getmapping is also available to commission oblique imagery to be captured following an incident such as flooding. The imagery can not only provide an accurate spatial record which can be used to refine predictive models, but is also a vehicle for damage assessment and reconstruction.



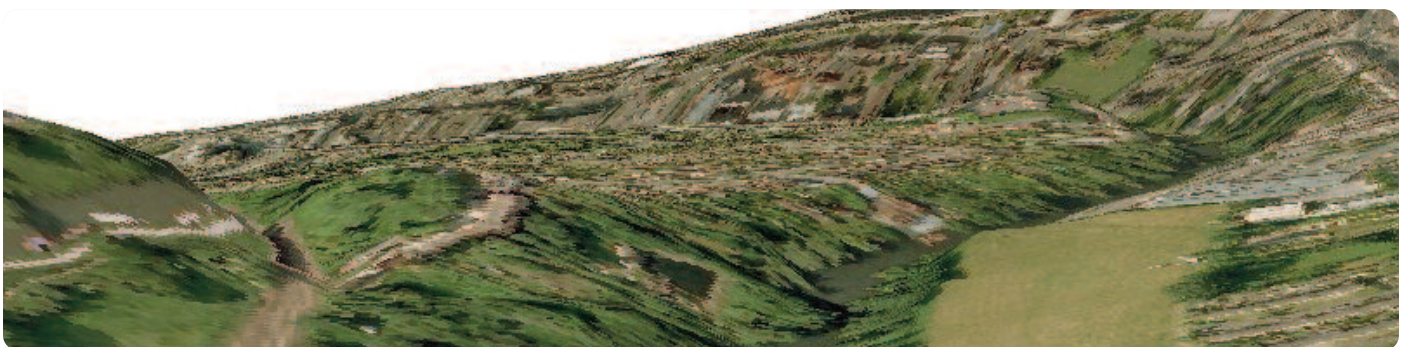


Height Information



This image demonstrates Getmapping's High resolution imagery draped over DTM data.

Getmapping can provide DSMs (Digital Surface Models), DTMs (Digital Terrain Models), Contour data sets, and 3D building data, through a combination of third party and own solutions. Such products can be central to analytical and predictive exercises such as flood modelling and prediction, and applications involving line of sight. Our own height data products are derived photogrammetrically from our own aerial photography, and can be invaluable in the creation of highly detailed terrain and building models. Third party products include those captured using LIDAR (Light Distance and Ranging) and IFSAR (Inter-Ferometric Synthetic Aperture Radar).





3D Virtual Reality Models



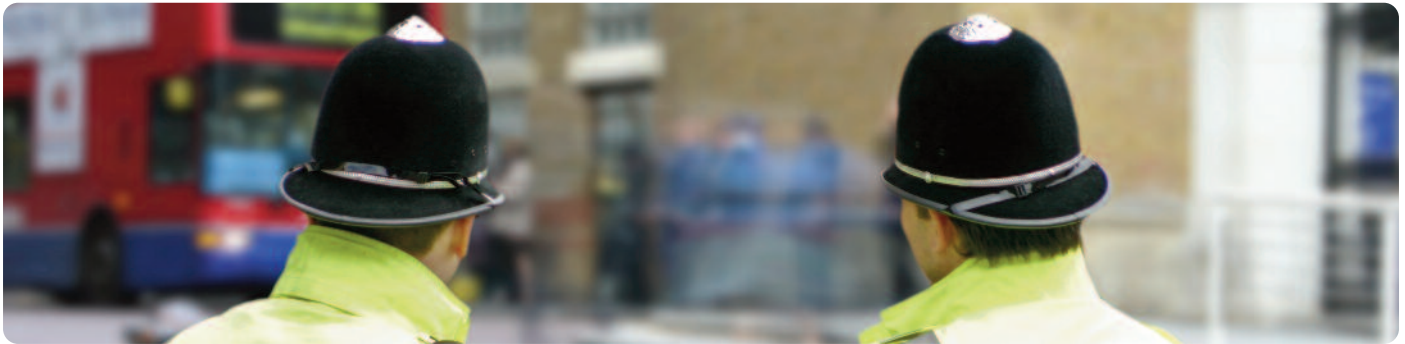
Virtual environments can be especially valuable to emergency planners as vehicles for simulating incidents and emergencies. Getmapping provides a complete solution for producing, viewing, and manipulating 3D models. It is a solution which combines software, height data, vertical imagery, and map data into a single package. Local authorities can use the solution to carry out the following:

- assemble the components
- modify the terrain surface
- create, insert, edit, move and delete objects on the terrain
- extrude buildings to specified heights from a building footprint
- add photographic facades to generated building model
- provide realistic views from given viewpoints, simulating for example CCTV cameras
- fly through the terrain
- export models
- view models through free viewing software
- share models over the internet





Data Sharing



The Civil Contingencies Act (2004) places a duty on emergency planners working in local government to share information with other agencies in times of emergency. The exercise of that duty is very much dependent on the local authority having an IT infrastructure in place that supports data sharing. Getmapping can help in this respect. We can deliver both imagery and map data (including OS maps) as a hosted service over the internet. Since we support the industry-standard Web Mapping Service (WMS) protocol, it is a simple matter for us to deploy valuable geographic information to literally hundreds of GIS in minutes. And the fact that the information derives from an off-site hosted data service provides an extra layer of resilience for a GIS service, which can be significant when local IT services are affected by emergencies.



Some authorities want the benefits of a data hosting service, but remain unable to provide data access via the internet and require the data to be held internally. For these, Getmapping's 'Image Server' solution provides them with the same benefits eg accessible managed data, while allowing them to retain ownership of data securely within their own local or wide area network.



Emergency Planning Is Different



The context in which local government emergency planners have to make decisions is undoubtedly different to the context in which a town planner or highway engineer is used to operating. It has been pointed out that for the emergency planner, ‘crises as well as civil turbulences or terrorist actions, can characterised by “un-ness” – unexpected, unscheduled, unplanned, unprecedented, and definitely unpleasant’^[1]. Yet for all the difference in context, decision-making in emergency planning is enhanced when the emergency planner becomes ‘location aware’. Getmapping can help supply that location awareness.



^[1]Crichton, M. (2003). *Decision Making in Emergencies*, Paper presented at NATO/RUSSIA ARW Forecasting and Preventing Catastrophes Conference, June 2003 and quoted in MacFarlane, R (2005), *A Guide to GIS Applications in Integrated Emergency Management*, Cabinet Office, Emergency Planning College.