



Helping to protect people & places



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Staying safe and secure wherever you are is fast becoming a data-driven process. **Colin Henderson** of SNC-Lavalin's Atkins business looks at how geospatial data is leading the way

Everything happens somewhere. That seems a simple enough concept, but when I tell people I work in Geographic Information Systems (GIS) I'm often met with complete bafflement.

One of the best ways I can demonstrate the power of GIS, or the effective management of spatial data, is by putting it in the context of one of the most important things to all of us – our safety. Below are five ways that GIS can help us protect people and places.

Planning site visits: On large construction sites, it's essential we know where we're going and the safest way to get there. When working on the A9 upgrade project in Scotland, for example, we brought together a range of health and safety data into a map to help people visiting the site see the safest routes, points of entry and places to park.

Mapping hazards: Once we're on site, it's important we know where potential hazards are so we can avoid them. With GIS, we can create report views that can be printed out for site visits or mobile views that can be accessed on the go. For East West Rail, one of the UK's largest transport projects, we produced a colour-coded hazard map so that people could easily spot - and avoid - the danger areas on site. When this is not possible, GIS enables us to

To ensure safety for the diagonal crossing makeover for London's Oxford Circus – one of the world's most congested intersections with more than 80 million pedestrians crossing it each year – Atkins Global employed a range of 2D and 3D tools and geodata for transport planning and pedestrian modelling. Photo: Atkins

plan appropriate modes of working and to create safety plans.

Preventing crime: At a macro level, looking at data spatially can help police identify crime hot spots, or areas of higher activity, which is particularly useful for crime prevention. If they can pinpoint where the majority of crimes are occurring, they can prioritise their strategy by location. So, if police see a higher incident of muggings in one location, GIS specialists can add additional layers of information to help them make sense of it. For example, we might look at the locations of ATMs and see a correlation between them and the cluster of muggings; the police can then use this information to target their resources more effectively and increase public awareness efforts in those areas.

Monitoring buildings: Modern buildings are constantly gathering data on temperature, lighting, usage and of course, security. If you put this data into a spatial format, you can visualise exactly what is happening in your building, and where. In a safety context, this is particularly useful for mapping out where your CCTV is, its range and potential dead spots. Using GIS, you can easily identify which areas your CCTVs are picking up, and which they're not. Analysing the patterns of security access might help you derive information about common routes through your building, which could be useful for creating more effective evacuation routes.

Planning flight routes: Another area where spatial data comes into play is in finding safe flight paths and optimal routes for aircraft. By bringing outside data in to our flight path planning, we can quickly determine whether aircraft will stay in a 'safe zone' during their journey.

The power of GIS is its ability to layer information and enable us to make sense of it in context. I truly believe that when we make spatial data available, great things can happen. Embedding this in our safety and security measures should be our first priority.