BRINGING TOGETHER EMERGENCY CALLS, PHOTOS AND ON-SITE REPORTS WITH GEOSPATIAL INFORMATION ABOUT BUILDINGS AND SAFETY ASSETS MAKES PREPARING FOR AND DEALING WITH EMERGENCIES MORE ACCURATE, MORE INTERACTIVE AND MORE EFFECTIVE. CHRIS HOLMES REPORTS ON A SYSTEM THAT BRINGS TOGETHER CLOUD COMPUTING AND AUGMENTED REALITY FOR EMERGENCY MANAGEMENT.
Every large building needs a fire-safety plan – you’ve probably seen a small version displayed on the back of a hotel room door or on a wall in a train station or a shopping centre. The plan should include escape routes and meeting places, as well as details about safety doors, lifts, fire extinguishers, fire hydrants, and danger areas such as kitchens and flues. It also needs to tell staff what they need to do in the event of an evacuation.

As safety workers and first responders need access to information in a wide range of locations, SafetyNext is a fully cloud-based platform that uses Bing Maps and Azure services. Bing Maps for Enterprise is used for mapping and geocoding, with geocoded assets stored in SQL Azure Database, Microsoft’s cloud-based RDBMS, and Azure Storage. Structured data for assets is stored in SQL Azure, including geographical co-ordinates; the geospatial database, Michael’s cloud-based RDBMS, and Azure Storage.

Augmented reality environment
That’s what fire protection experts hhpberlin wanted to develop when it worked with Fichtner IT Consulting (FIT) to create ARE firechief as part of its SafetyNext platform – ARE standing for ‘augmented reality environment’. This combines an admin tool for geotagging assets and building a fire safety plan in advance with an interactive 3D map to guide rescue workers responding to an emergency and staff and visitors trying to escape.

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The detailed firechief interface shows 3D maps and assets to help the office in charge of the scene coordinate the response.

HOW CAN A CHINESE TOURIST IN BERLIN CALL THE FIRE DEPARTMENT? WE ADDED A CHINESE TO GERMAN TRANSLATION TO HELP

Workers responding to an emergency and staff and visitors trying to escape.

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isn’t as static plan as the tents, generators, toilet facilities and first aid areas will only be in place for a few days. That means it needs to be fast and easy to add new assets and get updates signed off by managers. The admin portal can also incorporate real-time information such as social media posts, where citizens might be sharing pictures that could help emergency responders understand the situation better.

Safety information isn’t static. Whether it’s hiring more staff, reporting a faulty lift, completely renovating the office or putting on an event, the details of escape and rescue plans need to be kept up to date. Not all venues are permanent, either – for a football tournament or a beer festival, there isn’t a static plan as the tents, generators, toilet facilities and first aid areas will only be in place for a few days. That means it needs to be fast and easy to add new assets and get updates signed off by managers. The admin portal can also incorporate real-time information such as social media posts, where citizens might be sharing pictures that could help emergency responders understand the situation better.

Network connectivity can be unreliable in emergencies, so the system uses Bing Maps offline support to automatically switch to locally stored maps when necessary. Admin users get a different interface – an HTML5 responsive website built with the Bing Maps AJAX APIs, for entering and updating geocoded infrastructure assets such as fire hydrants and designated meeting points. They can also use the same maps and geocoded assets as the first responders for planning.

“You can analyse things such as ‘How many fire hydrants with a volume of at least 5,000L per minute are within 100m of this shopping mall?’ or ‘How close can you park the fire engine to the entrance?’” Brack notes.

The future
What more could firechief do? How about a public version to help people evacuate? After all, if there’s a fire alarm, you might look at the safety map on the back of the door before you leave your hotel room, but you’re not going to pry it off and take it with you.

Interactive maps on your phone could get you safely out of the hazard area and to a meeting point where emergency responders are waiting to help. A digital map built into a hotel loyalty app or city guide or accessed using a QR code on the wall of a building could translate fire alarms to help overseas visitors who may not understand them and even guide you to the nearest train station, pharmacy or hospital.

The life-saving possibilities are endless.

Chris Holmes is consulting technology writer for Grey Matter (www.greymatter.com). With thanks to Peter Brack