Streets Ahead

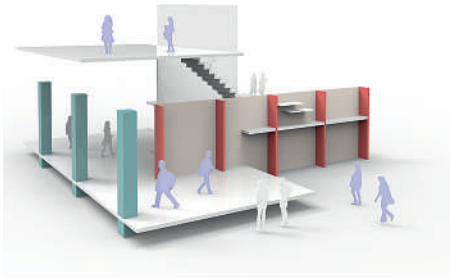
James Nolan explains how 3D GIS techniques are being used to identify the best locations for new retail units and support accurate commercial property valuations

The delivery of digital street plans has evolved over time. Once supplied on CD, plans had to be uploaded into a GIS for interrogation and printing. Now, the provision of static plans via a web page provides instant and wide user access. The use of web portals has allowed plans to be delivered with search-and-selection functionality; it also allows updates to be made on a regular basis.

Up my street

A street plan holds valuable detailed information concerning a single street or shopping centre. A 3D viewer allows the addition of background mapping to show adjacent features and structures such as roads, car parks and sports stadia. Plans with shops on multiple floors can be displayed and stacked on one another, using a fixed extrusion level to generate the perception of height. The layers are coloured, and added translucency allows retail units to be visualised on all levels. Shops trading over several floors can be identified by extrusion, using an attribute in the plan.

By combining two plans into a single 3D scene, adjacent shops can be seen together,



Plans with shops on multiple floors can be displayed and stacked on one another, using a fixed extrusion level to generate the perception of height. Image: Minoru Suzuki / Shutterstock

providing a coherent view of a shopping environment. In a city, the combined shopping environment will be more attractive to investors as it will show how a unit will benefit from accessibility to all shopping streets. Out of town shopping centres and adjacent retail parks can be viewed together. This is especially useful when valuing a specific large unit - highlighting its proximity to a source of high customer footfall.

Publishing the 3D models using an online viewer allows for web delivery and data interrogation in three dimensions. Having a single combined view of all floors is very important in a regional shopping centre or in a multi-story centre within a town; it saves time, and gives a true perspective of selected units

relative to others. The viewer can highlight units with specific criteria or can classify them by user requirements. Transparency can be added to layers in the 3D view - aiding visualisation. The model can be rotated to view a shop unit from any angle. Added functionality allows building shadows to be cast according to time of year - potentially identifying the 'sunny side' of the street.

The attribute information concerning the shop unit footprint remains accessible in 3D plans and this is important as it is used for calculating zone values for rental comparisons. It is accepted that ownership and fascia change regularly; buildings, however, remain stable over time - unless a new development is built.

As easy as xyz

3D modelling can be extended by using a terrain model in the latest release of proprietary GIS software. Previously, there was a need for spot heights to be loaded and for manipulation of a vector layer to create a surface. Height differences in a street plan can now be shown using an extrusion with a constant 'z' value - which is exaggerated when applied to the terrain model. Changes in topology in a small area can be observed. If a street is on a slope or if a town is on different levels, undulations can be examined in three dimensions with a critical eye, and line-of-site and accessibility for individual units can be established from the desktop.

A detailed street plan will continue to have an important role and it remains a staple for the property profession and commercial surveyors; but now all property sectors can use familiar data in a third dimension using a simple web link.

Street Plan of Central London shopping area: Copywrite Ordnance Survey

A sharp 3D image created from vector plans can be used directly in marketing brochures - to promote a new store or office, to provide information about adjacent premises and to inform staff about the immediate trading environment.

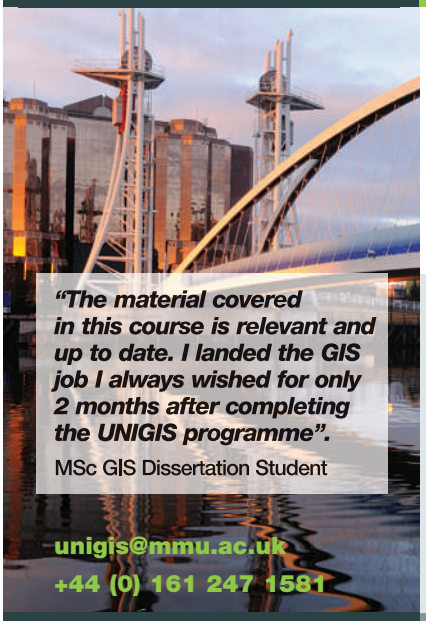
And not least, a 3D street view makes accurate spatial and attribute data accessible to a wider audience. It presents factual plans in a format designed for the specific needs of the end user.

James Nolan (www.Jimnolan.uk) is a freelance PropTech consultant, using commercially available digital plans with proprietary GIS to create online 3D- viewable models

DISTANCE LEARNING GIS PROGRAMMES

UNIGIS UK

Study for a postgraduate qualification in GIS by online distance learning



UNIGIS UK has been at the forefront of GIS education for over 25 years, providing online distance learning-based postgraduate education and training in Geographical Information Systems and Science. Our part-time programmes support the personal and career development of GI professionals and those seeking to enter the GI industry. We support you with personal tutors, online resources and web collaboration software for surgeries and tutorials. There are no examinations, our courses are delivered through our bespoke VLE, and are 100% coursework assessed.

- part-time online, distance learning
- flexible entry requirements
- 3 years Masters programme, with exit qualification options available following completion of year one (PgC), and year two (PgD)
- specialist pathways in GIS, Applied GIS, and GI Technologies
- degrees awarded either by Manchester Metropolitan University or the University of Salford
- annual intake in September
- competitive fees with instalment options
- key textbook and industry standard software included

Educating GIS Professionals Worldwide

Manchester Metropolitan University

University of Salford MANCHESTER

www.unigis.org