

Is technology and advanced software changing the way we build?

We've come a long way since the traditional methods of building and with the advancements in technology, we've never looked back. Together with Oasys Ltd, we consider how software has been used in the planning process of city spaces.

Managing a crowd

[Crowd simulation](#) is a type of software that is often used in urban planning projects. It is capable of simulating thousands of people so that they can be imported into digital models of city spaces. The simulated agents can act intelligently according to set guidelines.

Businesses around the world are taking advantage of the opportunities presented by this type of software. For architects designing a new building or arena that has the potential to host thousands of people, this technology can be used to simulate an evacuation. The crowd can be monitored to see what collisions they come across and how well they can achieve the goal of escaping the building.

This software can be used to help plan for emergency situations, whether this is in a shopping complex or a transport interchange to ensure the safety of those within the build. With the rise of terror incidents across Europe, the use of crowd simulation and preparing for unlikely situations is more important than ever.

How geographic information systems (GIS) can help a project

To help a range of users, the GIS can scrape geographic data from a wide variety of sources through a reliable computer system.

The beauty of using GIS on a project is having the freedom to carry out multilayer mapping. Similar to a density map, this feature allows the user to see a range of measures on one area. For example, potential agricultural land, areas which are prone to flooding and erodible land can all be visible on one map. This allows urban planners to visualise areas that would not be suitable for building on.

It also gives those working on the project the opportunity to see whether a permit has been granted. The success of potential businesses can be analysed too by measuring their proximity to potential competitors and customers.

The use of building information modelling (BIM)

Through a visual presentation, BIM can help propose projects within the planned environment before they get built. This technology is becoming more important in the design of 'smart cities', to test out the impact of the building before construction goes ahead.

Architects and urban planners can face many difficulties when they are building in an already established area. However, BIM can inform system managers of a wide range of factors. For example, the software could show how deep to dig in order to not crash into a fibre optic cable.

BIM allows for more people to join the project from different areas of the planning stages to create a more collaborative experience. For example, workers on drainage construction and landscaping can consult the same model to help better inform their decisions.

"Some of the drilling that we did for this project was within centimeters of the existing underground tunnels in London. It was absolutely incredible" commented Tony Andrews, Solutions Executive of Asset Management at Bentley systems.

Technology in the future for design

We're seeing constant developments of technology and new software coming into the hands of architects — helping improve projects across the globe. One of these, not used for urban planning yet, is an open-source software that has been developed in New York. It is currently a system that creates a map using data to visualise how people move through cities. Heat spots on the map become more intense when areas are popular.

It allows those in managerial positions to look at city spaces and discuss who inhabits them. At the moment, the data is collected from Flickr and Twitter uploads, and this is planned to expand to other social networks.

It will allow urban planners to see how software cities are occupied, as well as analysing real time data. It will also be possible to make comparisons between cities and replicate planning of structures if it has been successful in a city that runs in the same way.

Sources

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