Reality Capture Breakthroughs Unlock Productivity for BIM in Construction

After a slow start, the digital transformation is rapidly accelerating in the construction industry. These recent breakthroughs in reality capture are set to improve efficiency for the entire industry.

According to McKinsey, the construction industry has seen only a 1% increase in productivity over the past 20 years. The industry may have been on a slower path to digital transformation than others, but adoption is speeding up. Here we look at the recent breakthroughs in reality capture – namely mobile devices and real-time solutions – that are delivering instant insights to BIM. We believe this has the potential to bring considerable improvements in efficiency, with positive knock-on effects for the entire industry.

Since its introduction, Building Information Modelling (BIM) has helped improve construction processes. It moved the industry from using 2D renderings to working from accurate 3D replicas of a site. These replicas make the detail of a site visible to other team members and any third parties involved in a build. They have uses at every stage of construction, from changing the footprint, all the way through to planning plug sockets. It's important not to simplify BIM as just the 3D data. For example, the inclusion of time data will show the order of construction. BIM can also include information about materials. However, regardless of the objective, reality capture technology plays an essential role in the process of creating the data to form the basis of BIM.

Reality capture technology allows real-world locations to be instantly captured in detail using geospatial technology. The development of Light Detection and Ranging (Lidar) solutions – where lasers capture millions of data points per second – improved both the speed and accuracy of reality capture and solutions based on Lidar, and can create digital twins of spaces within minutes.

Game-changing mobility

Demand for more portable and quicker solutions is driving innovation in reality capture. In hardware, devices have become lighter and able to be included in Unmanned Aerial Vehicles (UAVs), radically increasing the ground they can cover. Scanning devices have become able to operate while the user is moving, recording where they have been. The capture of instant 3D analytics is thanks to the integration of SLAM technology. SLAM is Simultaneous Localization and Mapping and does what it says – accurately following a user's location as it maps a site. Here are a couple of examples of devices that can give real-time insights into any building or construction site.

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