Insight

BIM - Client holds the key to true collaboration

By Dave Monswhite, Associate Director

When it comes to making confident decisions about the delivery and operation of their infrastructure assets, some clients are failing to fully leverage the power of information. Owning your information strategy is the first step in this journey.

Around the world, major infrastructure projects continue to grow in size and complexity. The challenges are multiplying: from satisfying the often conflicting requirements of regulators, customers and investors; aligning global supply chains; to managing rising costs and scarce resources as many global markets begin to pick up.

In this delivery environment, access to objective, relevant and accurate information is crucial to improve the agility of decision-making. This is aided by new technology and collaborative approaches, such as building information modelling (BIM), but they are often underutilised.

Unfortunately, many clients are only exposed to visualisations of the 3D design aspects of the BIM process, often focusing on design and engineering-related elements. What they often don’t see is the impact of the information sitting behind those graphics.

Take light fixtures in a train station, for example. You can see the object as a 3D image in a building information model, but it may have other parameters attached to it, for example the type of street light it's mounted on, the spare parts it needs, maintenance cycles and power usage.

Data extracted from a model such as this can be used to make powerful decisions - this is the world of information management.

Unfortunately, many clients aren’t in control of how information is produced or communicated to them, which can result in uncertainty about the factors affecting key decisions.

Beyond the traditional

Clients generally request and receive design information in traditional formats; drawings, plans and sections, for example. Traditional approaches supply traditional results - a more effective tactic is to be specific from day one about the information you will need to make decisions throughout the lifecycle of your asset.

A well-defined and communicated information strategy, from the outset, is key to achieving this. Think about the questions you will ask later in your project. In an airport, for example, how will retail spaces work? Will queue flows be efficient? Or in a school, will the corridors be wide enough for pupils to safely use?

The answers can fundamentally affect your asset’s design so it’s essential to decide early on your information and data capturing requirements for future decision-making. This also means that the process of gathering information can be written into contracts.

A better solution

I’ve seen a project recently where a building was designed using a traditional, architectural-led approach. It was designed using floor plans and elevations, but the client struggled to understand the information presented and therefore the implications of the design choices.
at an early stage. Finding out late that a concept is flawed will impact on schedules and costs - and probably mean a compromise solution.

However, a building that is mass-modelled in BIM from the start (showing simple floors and walls, primary cores, orientation and its relationship with other buildings, for instance) allows you to objectively demonstrate whether the concept is worth progressing. If so, you can start populating the model with more detail about individual objects, for example the doors, heating systems and windows, as long as these have been defined from the outset.

Studies demonstrate that this can shorten overall design times because you’re developing the right solution earlier. An accurate mass-model allows cost managers to understand more about details like wall-to-floor ratios and so develop a robust early cost estimate. Strong information management also helps you to understand the capital and operational expenditure implications of your decisions and leads to improved quality through minimised rework.

Culture is the biggest barrier to true collaboration - the client is key to changing this.

The client’s view

The new city of Lusail will eventually be home to 250,000 people and is set to take centre stage when Qatar hosts the 2022 FIFA World Cup. Information management is playing a key role in keeping this visionary programme on track, says Khalid Alhammadi, Infrastructure Director at Lusail Real Estate Development Company.

“We are one of the first projects in the Middle East to systematically collect and centrally store structured information relating to our assets, starting from design, through construction to operation.

Put simply, clients who don’t define their BIM information requirements early enough are throwing away money. The cost of employing third parties to collect data retrospectively further down the line is much higher. The quality of the information will also suffer.

My advice is to integrate a dedicated BIM manager into the project team to take ownership and ensure that pre-agreed BIM project standards are implemented as early as possible. It’s too important to leave this for someone else to pick up in addition to their standard responsibilities.”
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