

BIM for Contractors: What are the benefits?

BIM's key factor when it comes to construction projects is collaboration. The whole project team can benefit from the collaboration and coordination benefits BIM brings. With clients starting to use BIM on their projects, they are also imposing this technology on contractors. The construction stage of any project is very challenging usually comprising of a lot of reworks and waste of time and resources. These can be better managed by using BIM, especially to a LOD 500. A majority of contractors who are already using BIM globally find the possibility to reduce reworks as the greatest benefit of BIM as it can help keep budgets in line.

BIM enhances the partnership of the contractors with sub-contractors, building owners, engineers and architects. During the ongoing construction phase, BIM-ready 3D models act as the single source of information for the project teams and on-site engineers as well as contractors. It is helpful for the contractor to have access to a 3D model to understand further the details of the intended design and how he must achieve the end product. This also makes room for accurate schedules and cost estimates. BIM offers an actual visual representation for the contractor and helps him manage risks and validate costs. Buildability can also be tested through the BIM model. Shop BIM models can be created and used for ordering exact quantities of expensive items like cable and pipes, reducing costs.

The integration of BIM allows increased use of off-site fabrication of common components, which eliminates over-ordering, reduces waste and allows offcut materials to be reused or recycled. Production drawings can be generated from the BIM model for pre-fabrication purposes which helps reduce waste, boost efficiency, improve quality and reduce material and labor costs, resulting in lower overall construction cost for the contractor.

When bidding on projects, contractors need to estimate the cost of building materials and equipment. 2D take-off do not reflect exact sizes, lengths, quantities and actual costs. BIM enables more accurate and quick cost estimation since the model contains exact information.

The 3D BIM model is the key to all phases of the project including design, construction and post construction phase. An as-built model is handed over to the project owners once the construction is finished. BIM allows full, detailed component information to be embedded in the model. This becomes the resource for facility managers to refer to for efficient operations and maintenance, during renovations and retrofitting.

BIM IN REVIEW

On-site visualisation with AR

Augmented Reality (AR) can help project team visualise a complex installation prior to its start, thereby enabling contractors to properly plan the sequence of work and enable their foremen to have a clear insight of how the installation will be. Builder's work requirements are easily established and coordinated throughout the construction stage.

We are now proposing the use of AR on-site where the team is able to cross-check the installation with the super-imposed BIM model. This enable the contractor to monitor the progress of work as well as ensure that the on-site installation follows the principle set by the consultant. The contractor is also able to track progress effectively by overlaying the BIM model on-site and compare it to completed works.

