



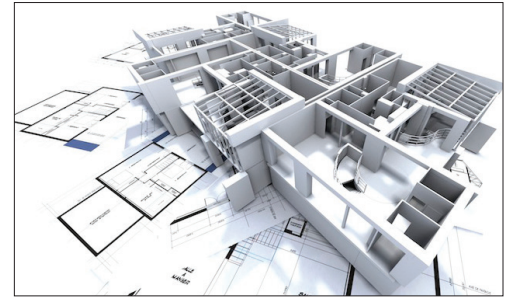
Top 10 Benefits of BIM

The move from 2D drawings to 3D models is well underway and gaining momentum in the architectural, engineering, and construction industry, thanks to tangible bottom-line returns from streamlined workflows.

The model-based approach increases efficiency within individual organizations, and truly shines during coordinated project delivery. Here are the top 10 benefits of building information modeling (BIM) and how it can drive time and budget savings for building and infrastructure projects

➤ 1. Capture Reality.

The wealth of information that's accessible about project sites has expanded greatly with better mapping tools and images of Earth. Today, project starts include aerial imagery and digital elevation, along with laser scans of existing infrastructure, accurately capturing reality and greatly streamlining project preparations. With BIM, designers can have all of that input compiled and shared in a model—in a way that paper isn't able to capture.



➤ 2. Waste Not, Want Not.

With a shared model, there's less need for rework and duplication of drawings for different requirements of building disciplines. The model contains more information than a drawing set, allowing each discipline to annotate and connect their intelligence to the project. BIM drawing tools are faster than 2D drawing tools, and each object is connected to a database. The database aids such steps as the number and size of windows for quantity takeoffs that are updated automatically as the model evolves. The quick, computerized counting of components alone has been a significant labor and money saver.



➤ 3. Maintain Control.

The digital model-based workflow involves such aids as autosave and connections to project history so that users can be certain they've captured their time spent working on the model. The connection to the version history of the model's evolution can help you avoid disastrous disappearances or corruption of files that can make blood boil and impinge productivity.

➤ 4. Improve Collaboration.

Sharing and collaborating with models is easier than with drawing sets because there are a lot of functions that are possible only through a digital workflow. Much of this added project-management functionality is now being delivered in the cloud. Here, there are tools for different disciplines to share their complex project models and to coordinate integration with their peers. Review and markup steps ensure that everyone has had input on the evolution of the design, so they are ready to execute when the concept is finalized and moves to construction.



➤ 5. Simulate and Visualize.

There are an increasing number of simulation tools that allow designers to visualize such things as sunlight during different seasons or the calculation of building energy performance. The intelligence of software to apply rules based on physics and best practices provides a complement for engineers and other project team members. The software is able to do so much more of the analysis and modeling to achieve peak performance, condensing knowledge and rules into a service that can run with the click of a button.

➤ **6. Resolve Conflict.**

The BIM toolset helps automate clash detection of elements such as electrical conduit or ductwork that run into a beam. By modeling all of these things first, clashes are discovered early, and costly on-site clashes can be reduced. The model also ensures a perfect fit of elements that are manufactured off-site, allowing these components to be easily bolted into place rather than created on-site.

➤ **7. Sequence Your Steps.**

With a model and accurate set of sub-models for each phase during construction, the next step is a coordinated sequencing of activities, materials, and crews for a more efficient construction process. Complete with animations, the model facilitates coordination of construction activities and processes, delivering a predictable path to the expected outcome.

➤ **8. Dive into Detail.**

The model is a great end point for a lot of knowledge transfer, but there's also a need to share a traditional plan, section, and elevation, as well as other reports with the rest of the project team. Using automation and customization features, these added sheets can save valuable drafting time.

➤ **9. Present Perfectly.**

With all of the design completed on a capture and alteration of existing reality, the model is the ultimate communication tool to convey the project scope, steps, and outcome. The fact that the design is fully 3D also means that there are fewer steps to render impressive views and fly-throughs that can be used to sell commercial space or gain necessary regulatory approvals.

➤ **10. Take It with You.**

With the added benefit of a model that's tied to a database, you have a great deal of intelligence at your fingertips. Combining this capability with the cloud means that you have access to the model and project details from anywhere, on any device.



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