BIM BASICS

An estimator's guide for understanding building information modeling

Introduction

Estimators in today's fast-paced, slim-margin world have their work cut out for them. Buildings are increasingly complex. Market demands and client expectations are exceedingly difficult to meet. And it's becoming increasingly difficult to ensure zero cost overruns.

With so many variables to keep estimators up at night, it's no wonder builders are discovering—and adopting—model-based cost estimating, also known as 5D BIM.

BIM: the catalyst for better building

BIM eliminates a range of issues that plague contractors like cost, schedule, constructability, and rework. It also facilitates collaboration with your team, so that you can do more work faster.

While BIM tools are widely used in architecture, engineering, and construction, they haven't made it easy for estimators to build estimates using model and 2D content—until now.

Let's take a closer look at what BIM can do for you.

Solution, not software

On the surface, BIM is a digital representation that communicates the physical and functional characteristics of a project. But it provides much more than 3D modeling software.

BIM involves a business process and provides collaborative tools to facilitate positive results. It's also a shared resource that establishes a basis for decision making throughout a project's lifecycle, and assists in problem solving, solution simulations, and impact analysis.

More contractors are adopting BIM

34% of contractors expect an increase in BIM projects.

Source: Construction Hiring and Business Outlook 2017; AGC America and Sage.

What's the ROI?

On a case-by-case basis, the return on investment in BIM can range from 15-1600%. But even more important is the hidden cost associated with failing to embrace an industry standard.

5D BIM is a powerful asset

Adopting BIM to create estimates gives you three distinct advantages: visualization, speed, and collaboration.

Visualization

A 3D building model provides you with an interactive, information-rich representation that makes it easy to see individual elements and how they relate to each other. It also contextualizes the complexity of a project and helps you identify potential risks.

Faster takeoffs, more analysis

Every object in your model can contain dimensional information, like length and width, so you can build estimates faster. BIM tools integrated with estimating software also accelerates the development of quantities and variances whenever changes occur on a project.

Collaboration

The BIM process enables collaboration, so you can provide early and accurate cost feedback to both your design team and your customers.

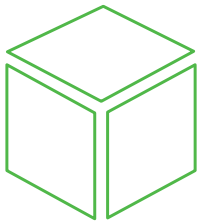
5D BIM will change the way you do business

Get the tools you need to do more work in less time, make it easier to collaborate, and provide more value with every estimate.

- ☑ Enhance how estimating input is captured and information is exchanged.
- ☑ Innovate by calculating the optimum design-cost scenario.
- ☑ Reduce unbudgeted changes on projects.
- ☑ Improve estimating accuracy.
- ☑ Generate cost estimates faster.
- ☑ Identify incongruences before you have to pay for them.
- ☑ Increase quality control and design coordination to decrease remedial work.

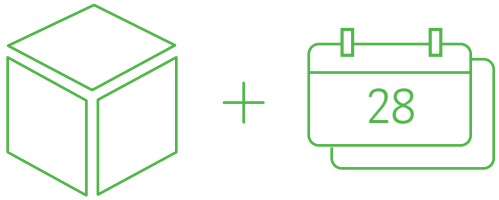
3D, 4D and 5D BIM summarized

BIM's rising appeal: Communication, collaboration, and a contractor's ability to impact the design process for higher quality project delivery.



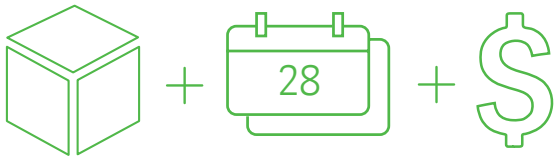
3D is the intelligent, object-oriented design of a built asset.

- Visualize and inspect projects through realistic representations of elements.
- Detect constructability issues and clashes.
- Better communicate project scope to stakeholders.



4D links 3D model components to timelines.

- Determine appropriate resource scheduling.
- Identify potential bottlenecks.
- Develop phasing plans.
- Track and verify milestones.



5D takes costs into consideration.

- Bring together design and scheduling with costing.
- Link the BIM model so that a change in the design reflects in the budget.
- Review design-schedule-cost what-if scenarios.
- Provide project teams with detailed project cost risk analyses.

Today's contractors are looking for better ways to work collaboratively with owners and other project stakeholders to find the most cost-effective way to complete complex projects. With the advances of 5D BIM technology, the stage is set to visualize and understand cost impacts quickly and easily.

Overcome the challenge of incomplete models

As today's designers build models, they're still learning how to provide useful model information to estimators and the rest of the building team. As a result, it's up to you to fill in any missing information with 2D plans.

Today's technology makes it possible to easily create estimates with both 2D and 3D content.

Spend less time on model takeoff

Today's software gives you access to model information you can put into your estimate quickly. It allows you to link construction objects from a model directly to assemblies, like walls, in an estimating database.

This provides you with time-saving shortcuts, like taking off all 3-5/8 metal stud walls in a single step.

Power through design change management

There are always questions around how design revisions, updates, or scenarios impact cost.

Providing cost-analysis answers quickly accelerates the decision-making process. The latest 5D BIM technology makes it easy to update the estimate any time there's a design change.

BIM is here to stay

Before you choose a BIM solution, identify and communicate the changes you anticipate in your current processes.

BIM combines design and construction, so it's important to establish a process that encourages feedback, knowledge sharing, and ongoing collaboration. Proper training, awareness, and adaptability will ensure a smooth deployment.

Conclusion

BIM is changing the individual roles of estimators for the better. It helps contractors reduce cost overruns, meet and exceed client expectations, and boost their bottom lines.

To understand the power of BIM, just think about how communication and collaboration accelerates workflow. It brings your project to life visually and speeds up the time it takes to discuss and approve project changes.

If producing estimates and reviewing constructability accurately and confidently is good for business, it may be time to consider a BIM solution.

Learn how Sage, Autodesk, and eTakeoff make it easier to produce model-based cost estimates.

Get the details by downloading **"Model-based cost estimating with Sage"** or send an email to: BIMintegration@Sage.com.