

Autodesk®

BIM Solutions for Building Construction

Building a better world.



Autodesk®

Foundations for Success

Improve cost, scheduling, and coordination of building projects with Autodesk solutions for construction.

Gilbane Building Company

Gilbane Building Company, a US-based non-self-performing construction company, continually strives to provide clients with value through exceptional team, cost, and schedule management. On a recently completed operations center for a large financial institution, Gilbane used model-based construction and Autodesk® building information modeling (BIM) software to streamline the construction process before even breaking ground on the \$51 million, 96,000-square-foot facility.

Kevin Bredeson, Gilbane's director of virtual construction, explains, "We identified and resolved more than 1,500 clashes during planning. And with clash resolution and 4D scheduling, it was easier to coordinate the arrival and production of more cost-effective prefabricated materials."

In projects such as this, Gilbane knew that BIM saved time and money over traditional 2D building processes; however, Gilbane was unable to clearly quantify the benefits until the company undertook a cost/benefit analysis. The results were striking. Compared to traditionally managed construction, BIM has helped Gilbane to be able to:

- Identify and resolve thousands of design clashes before construction
- Decrease the number of RFIs and change orders by up to 70 percent
- Save clients more than \$1 million on typical projects
- Accelerate project schedules by as much as 10 percent
- Increase the use of cost-effective prefabricated materials

View the complete Gilbane Customer Success Story at www.autodesk.com/construction.

The construction industry is rapidly evolving as owners demand increasingly complex projects to be delivered at a faster pace and at lower cost. With coordination, material, and labor inefficiencies consuming up to 30 percent of construction costs, construction companies of all sizes must find solutions for these critical business problems.

Win New Work

In the face of global economic strain, fewer construction projects are available. This increases competitive pressures on companies actively working to win new business.

Improve the Bottom Line

As competition grows, construction companies must be able to provide more accurate material quantifications and cost estimates—or risk reduced profits on projects that exceed budgets.

Streamline Productivity

Successful adoption of lean construction principles requires that companies evaluate projects holistically in order to identify opportunities to reduce costs and maximize productivity.

Reduce Errors

Project delivery timelines are shrinking, making it increasingly critical to manage a project with as few time- and cost-intensive RFIs and change orders as possible.

Deliver on Time

The coordination and execution of complex building projects is a difficult and time-consuming task. Seemingly small setbacks in scheduling have the potential to create significant delays in project delivery.



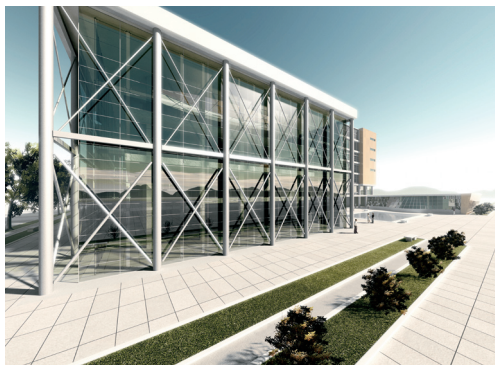
Build Competitive Advantage

Discover the benefits of Autodesk BIM solutions for building construction.

Autodesk® building information modeling (BIM) solutions for building construction can help provide ways for both small and large construction organizations to address the challenges that face their business.

Project Visualization

The development of accurate project visualizations plays a key part in winning work for a construction company. During the bidding process, project visualizations can be used to gain a competitive advantage through convincing presentations of your company's capabilities. Visualizations can also be used to establish a clear understanding of the construction strategy, leading to increased owner confidence. Additionally, visualizations can assist in defining the project scope to improve time and space coordination and help reduce workflow issues in planning.



Constructability

BIM technology enables construction companies to contribute insights to projects earlier, when they will have more impact, and better validate the building design according to construction standards. BIM models can also be used to better manage costs, logistics, and material consumption, including easier coordination of more cost-effective prefabricated materials.

Cost Reliability

Collect and synchronize building system and component design data with BIM to more accurately calculate material quantities. Automate the laborious process of manual counting and measurement in order to perform estimates earlier and more often. Generate an unlimited number of component assemblies to better evaluate the cost implications and alternative cost trade-offs of design options.



Building Complexity

Use BIM tools to better manage complex building projects by combining data of various file sizes and formats into a single view for more effective 3D coordination. Aggregate project data to improve time and space coordination and identify design conflicts even before the onset of construction. With improved coordination between designers and contractors, the volume of time- and cost-intensive RFIs and change orders can be reduced.



Construction Execution

Autodesk BIM solutions enable schedulers to create, review, and edit 4D scheduling models more frequently, resulting in better, more reliable schedules. Visually communicate the planned construction process with project stakeholders by linking schedules directly to 3D models. With the ability to compare a visual as-built schedule against forecasts, project managers can improve schedule oversight and better determine if a project is on track or behind schedule.



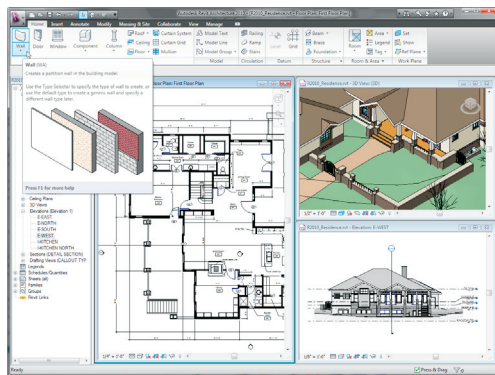
Build Faster, Smarter, and More Cost-Effectively

Overcome inefficiencies in traditional construction workflows with BIM.

The broad portfolio of Autodesk BIM solutions for building construction enables companies to use coordinated digital design data with their extended teams throughout the building construction process. These software solutions include cutting edge technology that supports building professionals in designing, executing, and delivering projects with an unmatched competitive advantage.

Autodesk Revit

Purpose-built for building information modeling, software based on the Autodesk® Revit® platform helps construction professionals create coordinated, consistent information to deliver projects faster, more economically, and with reduced environmental impact.



AutoCAD

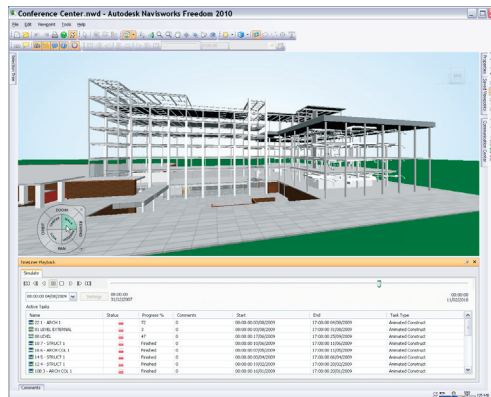
For the people who shape everything around us, AutoCAD® software delivers the power and flexibility needed to take construction documentation and design further.

Autodesk 3ds Max Design

Explore, validate, and communicate construction project details, from initial concept models to final presentation with cinema-quality 3D.

Autodesk Navisworks

Aggregate existing design data to visualize the whole project, simulate scheduling, and identify interferences in construction projects, while improving productivity and quality.



Autodesk Ecotect Analysis

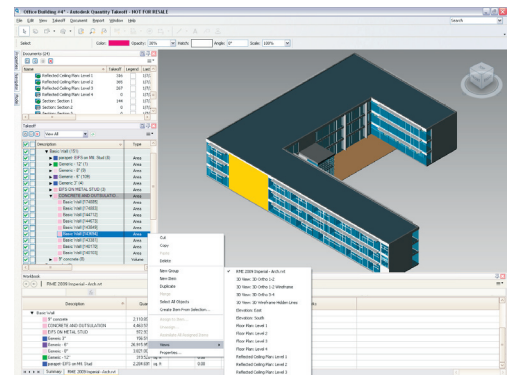
A comprehensive, concept-to-detail sustainable design analysis tool, that provides a wide range of building simulation and analysis functionality.

AutoCAD Civil 3D

Create, predict, and deliver transportation, land development, and environmental projects faster and with improved accuracy with BIM software for civil engineering.

Autodesk Quantity Takeoff

Rapidly generate material takeoffs on construction projects to maintain more accurate project budgets and better evaluate the cost of design alternatives.



Autodesk Buzzsaw

Better collaborate with construction partners by centralizing and coordinating project-related documents and data at the outset of the project.

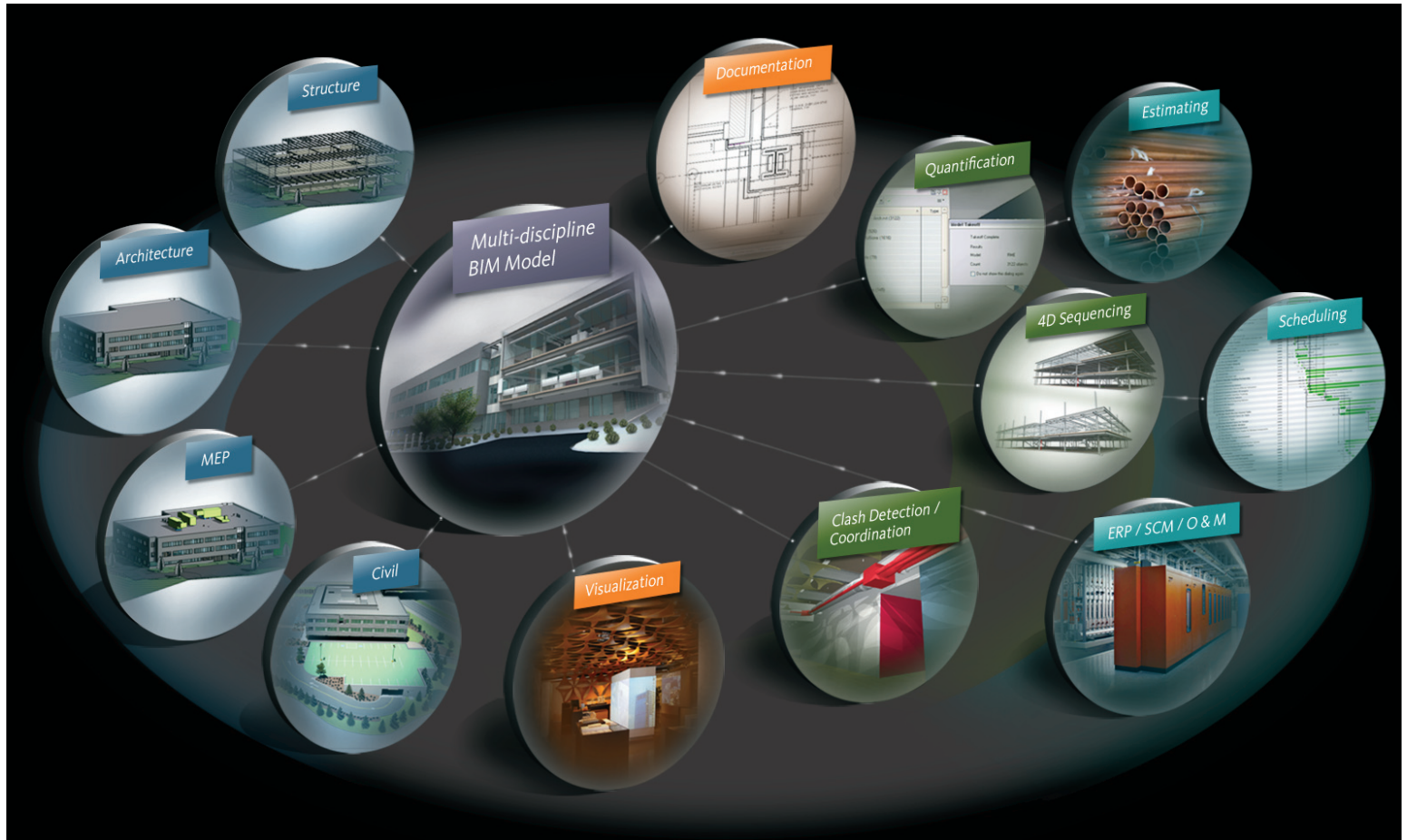
Autodesk Constructware

Standardize and optimize business processes and control costs, in order to support projects so they run more smoothly and can be delivered on-time and on-budget.

Autodesk Partner Network Solutions

Autodesk BIM solutions for building construction offer integration with industry-leading cost estimating and scheduling applications. Contact your Autodesk authorized reseller for more information.

Move construction into the digital age



BIM is an integrated process that enables building professionals to explore a project digitally before it's built. Coordinated, reliable information is used throughout the process to design innovative projects, accurately visualize appearance for better communication, and simulate real-world performance for better understanding of important characteristics such as cost, scheduling, and environmental impact.

BIM for Building Construction

Building construction is a complex undertaking. Companies that are able to better coordinate the flow of information are more likely to deliver their projects on time and on budget.

Autodesk BIM solutions for building construction extend through all phases of construction, from building design to planning, scheduling, cost forecasting, and construction management. At the hub of these solutions are building information models that provide a basis to produce accurate 3D visualizations during business development, quantity takeoffs during preconstruction, design conflict resolution during project coordination, and 4D scheduling during construction execution.

BIM Is More Than 3D

Autodesk BIM solutions provide more than just 3D design capabilities; they enable entirely new ways of working. BIM workflows provide building professionals with the ability to design, visualize, and simulate their ideas before they are built. Companies using Autodesk BIM solutions for building construction can save time and money, encounter fewer errors, and experience greater productivity.

BIM Is for Projects of All Sizes

While Autodesk BIM solutions are capable of handling large and complex data sets, the benefits of BIM can be realized on projects of all sizes.

BIM Adoption Is Accelerating

More and more, owners are mandating the use of BIM in construction projects to improve efficiency and reduce costs. Companies that adopt BIM solutions for building construction broaden their opportunities for new business.

With BIM, we can model not only the design of a building, but the end-to-end construction process itself. So whether we're managing a project or constructing the structure ourselves, we can analyze the constructability, coordinate the process, address clashes, and schedule every step before construction begins. It's a proven approach that helps us win new projects.

—Ricardo Khan
Integrated Construction Manager
M.A. Mortenson Company

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