AECOsim Building Designer

Unrivaled Information Modeling for Multi-discipline Building Teams
What Are the Barriers to Achieving Information Modeling ROI?

The building industry is making the transition to 3D information modeling to improve design quality and performance while saving time and minimizing errors. However, many organizations are not achieving the returns they had hoped for due to the technical limitations and workflow restrictions that many software tools impose, including:

- Greater risk of miscommunication due to inefficient collaboration and unreliable deliverables
- Higher costs from onerous hardware and long-term training and support requirements
- Restrictive design environment limiting the scale and complexity of projects that can be modeled
- Increased errors due to required translations, manual re-entry, and inability to integrate relevant data
- Disjointed workflows that make it nearly impossible for geographically distributed teams to work together

Maximizing the return on investment in information modeling requires software that eliminates barriers and streamlines workflows through a unified design environment providing tools that deliver rigor in analysis and simulation.

AECOsim Building Designer: Unrivaled Information Modeling for Multi-discipline Building Teams

AECOsim Building Designer uniquely provides a comprehensive set of capabilities in a single, unified environment in order to effectively design, construct, document, and visualize buildings of any size, form, and complexity. It enables multi-discipline building teams to:

1. Integrate Disciplines:
   Advanced tools, a shared library of building components, and inherently interoperable workflows are delivered into one single, unified design environment for multi-discipline building teams.

2. Simulate Buildings:
   Information modeling tools specifically suited for buildings empower users to make informed design decisions and to effectively communicate design intent from the design phase through construction.

3. Model Anything:
   Advanced capabilities provide total modeling freedom, regardless of geometry or project scale, to create virtually any form, size, and complexity.

4. Collaborate Efficiently:
   Distributed teams of any size can work on models simultaneously, regardless of geographic location, to enable an integrated project delivery.
Integrate Disciplines for Streamlined Workflows

Seamlessly bridge gaps between building disciplines
AECOsim Building Designer makes it possible for project participants to adopt a streamlined, common workflow that encourages collaboration and adherence to project standards through the use of a consistent and coherent set of tools and libraries for all building disciplines.

Architectural: Model anything imaginable and produce precise documentation
Create with unlimited freedom and explore more design options to make better informed design decisions, and predict costs and performance. Leveraging Bentley's GenerativeComponents for computational design, including panelization and fully customizable parametrics, architects can easily model buildings of any form, size, and complexity. Users can also shape data with Bentley's AECOsim Energy Simulator and other energy analysis programs.

Structural: Integrate world-class modeling with leading analysis and fabrication
Improve project quality while reducing risk, and saving money in the design and documentation of structural systems. Integrate with world-class modeling that provides leading analysis and fabrication with detailing applications including Bentley's ProStructures. Users can leverage Bentley's RAM, STAAD, and ProStructures product families for the most productive structural analysis and design of building and plant projects.

Mechanical: Incorporate energy analysis with highly flexible and efficient modeling
Create airhandling and plumbing systems for buildings and industrial plants with unlimited freedom to explore more design options, make better-informed design decisions, and predict costs and performance. Users can model fully parametric mechanical systems in a highly flexible and efficient environment with access to component product manufacturer libraries.

Electrical: Design building electrical systems with power and lighting analysis
All phases of the engineering workflow are supported, from conceptual to detailed design, from modeling of complex electrical subsystems to analysis, documentation, and management, integrating design, visualization, drawing production, and reporting of quantities and costs. Users can design building electrical systems with power and lighting analysis and exchange data bidirectionally with other industry-standard lighting analysis programs.
Simulate Buildings to Perfect Designs

Efficiently create, explore, simulate, document, and communicate building designs

AECOsim Building Designer includes discipline specific information modeling tools that allow users to easily reuse existing data, explore designs, make informed design decisions, and produce reliable deliverables – resulting in better designs, in less time, with less risk.

True Interoperability

True interoperability allows for the reuse of existing data, regardless of format, by incorporating data from an extensive range of AECO and geospatial formats. Users can share and view live design information across multiple formats in real time with project participants. For instance, users can share and interact with project information regardless of authoring application through Bentley’s i-models, containers for the open exchange of infrastructure information.

• Share and interact with complex project information regardless of authoring application using Bentley’s i-models

• Support common formats including DGN, RealDWG™, IFC, DXF, SketchUp SKP, PDF, U3D, 3DS, Rhino 3DM, i-models, IGES, Parasolid, ACIS SAT, CGM, STEP AP203/AP214, STL, OBJ, VRMLWorld, Google Earth KML, Collada, Esri SHP, and more

• Employ point clouds of virtually any scale natively within the modeling environment as context for designs

• View and share live design information across multiple formats in real time with project participants, regardless of location, facilitated by flexible file referencing

• Integrate geospatial information and ensure proper display within the proper context

Immersive Interaction

Interact with all available design information, presented within the context of the model to make better informed decisions by exploring and interacting with designs. Through hypermodeling, users can incorporate interrelated information within the spatial context of the 3D model including: drawings, images, documents, media, web links, and more.

• Information is available directly in context

• Incorporate interrelated information within the spatial context of the 3D model including: drawings, images, documents, media, web links, and more

• Create virtually any geometry with comprehensive modeling toolset

• Utilize discipline-specific information and associative parametric modeling tools
Building Performance
Quickly explore options and predict real-world performance to discover the best design choices through iterative modeling, simulating, and exploring a broad range of “what-if” scenarios using computational design tools. Users can produce lifelike visualizations and analyze models quickly to resolve clashes and visualize results.

- Perform height, slope, solar exposure, and shading analysis
- Analyze models to resolve clashes and visualize results, as well as perform schedule simulations with add-on application
- Produce lifelike visualizations of models supporting point-and-shoot, photorealistic materials, lighting libraries, distributed network rendering, and key frame and time-based animation tools

Trusted Deliverables
Efficiently produce reliable deliverables that consistently communicate design intent with the ability to create 2D documentation dynamically directly from, and embedded within, the 3D model. Users can review and share markups of models and documentation easily, made possible by a unifying production environment that reflects the same up-to-date design.

- Produce the highest quality deliverables with precision 2D and 3D plotting
- Deliver documentation in less time due to robust design and production standards management
- Apply site, project, enterprise, and international standards throughout design and documentation
- Review and share markups of models and documentation easily

i-models: Delivering Information Mobility
i-models are containers for the open exchange of AECO deliverables developed by Bentley to enable the fast, easy exchange of precise engineering content. Team members can share information generated from various applications without requiring recipients to have the source application used to create the data.
Model Anything with Complete Freedom

Create virtually any building of any form, size, and complexity

AECOsim Building Designer’s robust scalability provides the ability to model projects of virtually any size, shape, and geometric complexity. Users can pursue designs of any scope, without being limited by their information modeling software. Generative design modeling tools, through integration with Bentley’s GenerativeComponents, enables design teams to immersively and rapidly explore a much wider range of design alternatives.

Collaborate Efficiently to Enable Integrated Project Delivery

Effectively work and communicate across distributed project teams

AECOsim Building Designer allows teams of any size, including extended multi-discipline teams and key stakeholders, to efficiently collaborate and communicate from the conceptual phase through construction. With a federated approach, users can share and work on models simultaneously regardless of geographic location. Whether located in the same office or distributed across the globe, design teams of any size can work as one to successfully deliver any scale building project, without the need for supercomputers, hardware accelerators, and complex manual document coordination procedures. The integration with Bentley’s ProjectWise enhances capabilities including work sharing, content re-use, and dynamic feedback.
**What Users Are Saying**

*"With AECOsim Building Designer, we now have one very flexible tool that provides a consistent and cohesive way of working across all disciplines. With its federated data approach, we can work with data in many formats stored in many places to streamline design and simplify working together with our partners."

Anna-Brita Krakenberger, SWECO

*"The biggest impact that AECOsim Building Designer will have for us will be the use of hypermodeling—the next generation of Bentley’s dynamic views technology. The ability to incorporate rendered 3D views into the design drawings will make it easier to explain complicated design intent than the traditional use of multiple 2D sections."

Bill Peterson, LJB Inc.

*AECOsim Building Designer lies at the heart of our collaborative approach—allowing us to provide design team leadership whilst tightly integrating our client’s project aspirations and commercial needs into the solutions we develop. Design is a collaborative process of working hard to find solutions to complex problems. AECOsim Building Designer enables our design thinking: our finished product is exquisite buildings."

Gerard Outram, Building Studio Architects

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**AECOsim Building Designer** is a market leader used by leading firms worldwide. To learn more about how Bentley users are achieving Building Success, see the software in action, or download a free trial, please visit: [www.bentley.com/BuildingSuccess](http://www.bentley.com/BuildingSuccess)

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Learn More

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