

Image courtesy of China Aerospace Construction Group Co., Ltd

AECOsim Building Designer CONNECT Edition

Explore Design Alternatives and Deliver Innovative Buildings Faster

AECOsim Building Designer is Bentley's multi-discipline building design application that enables BIM strategies and allows designers to efficiently explore design alternatives. It provides information-rich models for the design, simulation, analysis, and documentation of buildings. This single application includes capabilities for architectural, structural, mechanical and electrical systems design, and construction documentation. Its innovative capabilities help you lower project costs, save time, reduce project risk, and enhance overall project quality – while providing building owners with higher returns on their investments.

Collaborate Efficiently with Single Multi-discipline Application

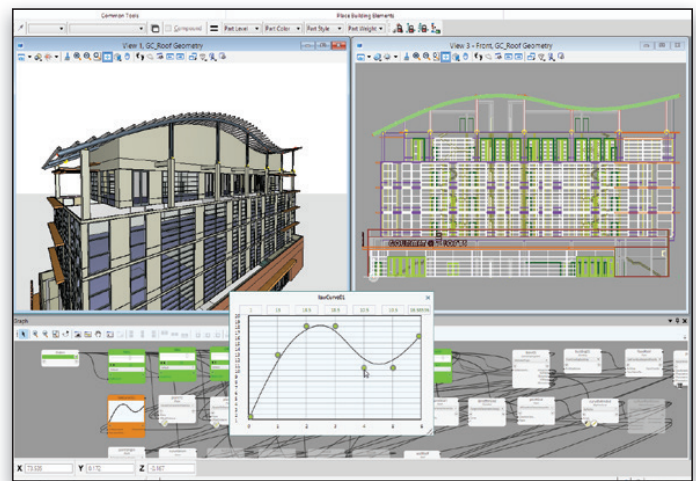
Collaborate efficiently in a design environment, and work within a shared set of libraries and workflows. With Bentley's federated approach, you can work on models simultaneously, even across geographically distributed teams.

Integrate Information with True Interoperability

You can reuse information by incorporating existing data from an extensive range of AECO and geospatial formats, which reduces time spent on translations and re-work. You can view and share live design information across multiple formats in real time with project participants, regardless of location, facilitated by flexible file referencing. Using Bentley's i-models, containers for the open exchange of infrastructure information, project team members can share information and interact with complex project data regardless of authoring application. You can also employ point clouds of virtually any scale natively within the modeling environment as context for designs.

Model Freely in an Unrestrictive Environment

AECOsim Building Designer supports highly complex building geometry and designs of virtually any scale. You can quickly and easily create, visualize, and interact with variations of the model, and explore a broad range of "what if" alternatives. Model with total freedom, regardless of geometry or project scale, to create virtually any form, size, and complexity.



Explore more possibilities in less time, create better designs, and efficiently create and manage complex geometric relationships.

Predict Real-world Efficiency with Building Performance

AECOsim Building Designer allows you to predict real-world performance and produce lifelike visualizations of models. You can explore and make informed design decisions by modeling and simulating a range of scenarios. The technology performs height, slope, and solar exposure and shading analysis, and resolves clashes with built-in clash detection.

Communicate Design Intent with Information-rich Deliverables

AECOsim Building Designer produces the highest quality of deliverables with precision 2D and 3D plotting. Its robust design and production standards management delivers reliable documentation in less time. You can consistently communicate design intent and create 2D documentation dynamically directly from, and embedded within, the 3D model. Reviewing and sharing markups of models and documentation is made easy by a unifying production environment that reflects the same up-to-date design. Through hypermodeling, all manner of interrelated design information for interaction is presented within the spatial context of the 3D model, including solids, surfaces, meshes, drawings, specifications, images, videos, documents, business data, reports, web content, and more.

System Requirements

Supported Operating Systems

Windows 10 (64 bit) –
Home, Pro, Enterprise, and Education

Windows 8.1 (64 bit) –
Standard, Pro, and Enterprise

Windows 8 (64 bit) –
Standard, Pro, and Enterprise

Windows 7 SP1 (64 bit) –
Home Basic, Home Premium,
Professional, Enterprise, and Ultimate

Windows Server 2012 (64 bit)

Windows Server 2008 R2 SP1 (64 bit) –
Standard and Enterprise

Internet

Internet connectivity is required to use some of the features of the product and installation of software pre-requisites, if not already installed on the machine

Communications Protocols

- Internet Protocol version 4 (IPv4)
- Internet Protocol version 6 (IPv6)

Virtualized Environments

Citrix XenApp 7.8 64 bit on
Windows Server 2008 R2

Software Prerequisites

The prerequisites for Bentley desktop applications are automatically downloaded and installed to your workstation while you install MicroStation. The contents of the prerequisites for Bentley desktop applications include:

- Microsoft .NET Framework 4.5.2
- Microsoft Visual Basic applications core
- Microsoft Visual Basic for applications localized

**Find out about Bentley
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AECOsim Building Designer At-A-Glance

Architectural

- Produce lifelike visualizations of models supporting point-and-shoot, photorealistic materials, lighting libraries, distributed network rendering, and key-frame and time-based animation capabilities
- Design buildings and structures with comprehensive architectural and industry-leading free-form modeling capabilities
- Create truly curved and double-curved surfaces, solids, and architectural assemblies
- Produce coordinated architectural documentation directly from the model (plans, sections, elevations, details, and schedules)
- Leverage computational design with Bentley's GenerativeComponents
- Evaluate and simulate the energy performance early in the design process
- Conduct peak loads, annual energy calculations, energy consumptions, carbon emissions, and fuel costs with integrated conceptual energy analysis

Structural

- Model steel, concrete, timber structures including beams, columns, braces, walls, slabs, foundations, steel plates, and other structural components
- Produce plans, framing layouts, sections and elevations, quantity reports, and volume and weight analyses
- Integrate with detailing applications including Bentley's ProStructures, and others via ISM, CIS/2, and SDNF
- Through ISM, roundtrip models with Bentley's RAM, STAAD, and other structural analysis and design products
- Add fireproof coatings to structural steel members
- Structural assemblies such as steel trusses, bar joists, handrails, ladders, and stairs can be modeled, shown on drawings, and included in reports and schedules

Mechanical

- Model fully parametric air-handling, piping, and plumbing systems
- Size ductwork correctly based on air flow, velocity, and friction rate both manually or by utilizing automated duct sizing capabilities
- Create and configure air handling units using standard modules with the AHU Builder
- Standard user preferences allow for defining components placed automatically while routing
- Define components placed automatically while routing HVAC, piping systems, and during automated route hookups
- Route systems dynamically with slope applied or apply as a post process
- Export to Trimble's Vulcan for fabrication

Electrical

- Design lighting and other electrical subsystems
- Model raceways including cable trays and baskets, conduits, and wireways
- Manage circuit devices, cable routes in raceways, and distribution board circuits
- Accomplish point-to-point orthogonal and raceway routed length calculations
- Exchange room and lighting data bidirectionally with RELUX
- Produce plans, sections and elevations, schematic and block diagrams, lighting and panel schedules, labeling and drawing legends, and bills of materials

Interoperability

- Support common formats including Bentley i-models, DGN, Revit Family File (RFA), RealDWG™, IFC, DXF, SketchUp SKP, PDF, U3D, 3DS, Rhino 3DM, IGES, Parasolid, ACIS SAT, CGM, STEP AP203/ AP214, STL, OBJ, VRMLWorld, Google Earth KML, COLLADA, Esri SHP, and more
- Share and interact in real-time with project information with i-models regardless of authoring application
- Employ point clouds natively within the modeling environment as context for designs
- Integrate geospatial information and ensure proper display within the proper context
- Export and open IFC2x3 Coordination View 2.0 files (building SMART-certified) and create COBie spreadsheets

Building Performance

- Perform external fin shading analysis and analyse effect on cooling loads
- Perform whole building energy analysis with analytical space models and conceptual mass models using industry standard EnergyPlus
- Calculate daylight factors using industry standard Radiance engine
- Access an extensive library of predefined standard HVAC System templates available

Information-rich Deliverables

- Create 2D documentation dynamically directly from, and embedded within, the 3D model
- Produce precision 2D and 3D plotting
- Access 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
- Manage and sort data easily with in-place editing and bi-directional editing in excel
- Incorporate interrelated information within spatial context of 3D model, including drawings, images, documents, media, web links, and more with hypermodeling

Unrestrictive Modeling Environment

- Model, simulate, and explore a broad range of "what-if" scenarios using computational design applications
- Create virtually any building of any form, size, and geometrich complexity
- Define rules to capture design intent dimensional constraints, assembly relationships, and more
- Leverage Bentley's GenerativeComponents

Integrate Modeling and Documentation Workflows

- Access personalized learning, communities, and project information
- Share personal files including i-models and PDFs directly from your desktop
- Review project details and status, and gain visibility into project performance
- Coordinate work and share information with real-time project visibility