



QUALITY
INTEGRITY
PERFORMANCE
VERSATILITY

Benefits of Building Information Modeling (BIM)

Darrin B. Sanders, PE, RCDD, LEED® AP

Building Information Modeling (BIM) in its simplest form is using software to design, schedule, construct, and evaluate a building or civil project in a three-dimensional virtual world long before the contractor is mobilized to begin construction. A BIM model of a project is not just a 3D model of a building, but it also includes detailed information for each component of the project, from the type and color of metal used in a stair railing to the photometric performance of each light fixture. Hunt Electric is excited to use BIM in many ways. Some of these are described below.

Visualization:

Hunt Electric uses BIM software tools to provide accurate 3D interactive models of projects that can be virtually explored, animated, in addition to being easily revisable for constantly changing design requirements. This aids conceptualizing different aspects of the project for owners, municipalities, and design/construction team members.

Coordination of Trades:

Coordinating structural steel and available ceiling space with mechanical piping/ductwork, electrical conduits, and all other trades involved is exponentially enhanced when the task is performed in 3D vs. the traditional 2D methods. Conflicts can be automatically detected and design revisions made early on in the process of design. Traditional 2D methods often leave a majority of this coordination until the construction phase, creating costly project revisions and delays.

General contractors, who most often face the monumental task of coordinating all of the trades while meeting the requirements and specifications of the architects and engineers, have been quick to recognize and utilize the advantages of BIM. Hunt Electric has adopted this coordination tool and has found this capability to be in great demand for our valued clients.



Accelerating the Project Schedule:

4D phasing is currently a hot item in the BIM world. With a coordinated 3D model of the project, the contractor can integrate the model with their project schedule and “build” the project virtually. This is the 4th “D”. 4D phasing assists the contractor in identifying constructability and sequencing issues earlier in the construction process.

Energy Efficiency:

BIM models can provide faster and more accurate analysis of building energy performance, and help evaluate the performance vs. cost of different building components.

Project Costing:

Detailed BIM models can provide more accurate summaries of building materials and components to help in budgeting and pricing of construction costs.

Building Service and Maintenance:

At the end of a project, the owner is provided with an accurate 3D model of the building that can provide a user friendly and interactive database of information for each building component such as light fixtures, electrical panels, and pumps. This model can be interfaced with Building Automation Systems (BAS) to track the usage of and schedule maintenance for building equipment such as pumps, air conditioning units, and light fixture lamps.

For many reasons, the design-build procurement method for projects is advantageously suited for BIM. With design-build, the designer and constructor are under the same roof, and what is to be placed in the model can be more accurately represented in the BIM model earlier in the overall process

BIM is the now and the future of modern building design and construction. It is the now because it currently holds many advantages and can greatly enhance the success of any project, big and small. It is also the future. As BIM becomes more adopted, and the software tools become more powerful, the changes will continue to occur and the process will continue to improve for years to come.



Darrin B. Sanders, PE, RCDD, LEED® AP

Darrin Sanders is a licensed professional engineer with Hunt Electric. He has worked as both an independent engineering consultant and currently as an in-house engineer. His 15 years of experience in the electrical construction industry includes healthcare, K-12 and higher education, resort/hospitality, telecommunications, commercial, industrial, renewable energy, and BIM projects throughout the intermountain region.