American Buildings Company

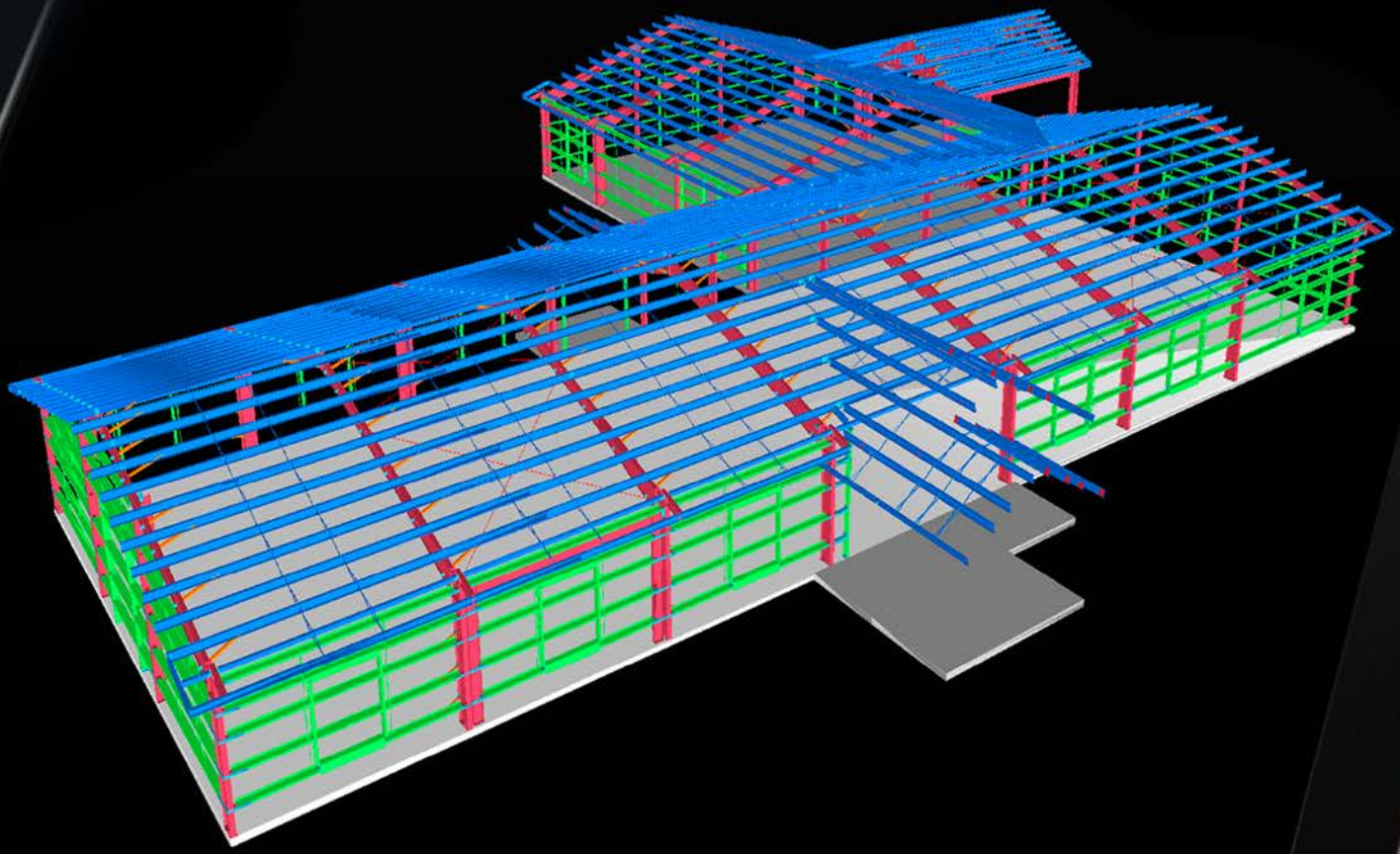
ABC & BIM

BIM is driving an unparalleled revolution in the construction industry using 3D digital modeling software.

AMERICAN BUILDINGS
a NUCOR company

INNOVATION.
TECHNOLOGY.
SOLUTIONS.

The BIM process produces a digital prototype of your project, allowing you to build it virtually before building it in reality.



Building Information Modeling (BIM) is the process of generating and managing building data and its various components throughout the building's life cycle.

Using 3D, real-time, dynamic building modeling software to increase productivity in building design and construction, the process produces the Building Information Model.

Unlike past 3D innovations in the building industry, BIM is more than a conceptual modeling tool. BIM encompasses building geometry, spatial relationships, geographic information and quantities and properties of building components. When the modeling software is used by manufacturers and principals involved in a building project, the resulting BIM is usable for fabrication. It involves ground-up reality rather than top-down theory.

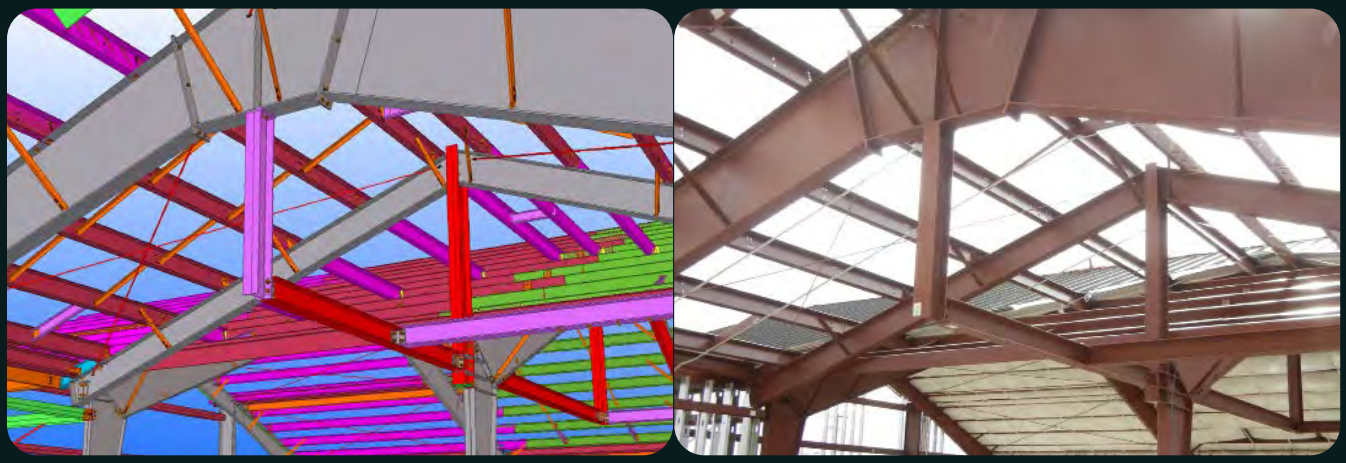
The Benefits of BIM

ABC is pairing its proven track record of quality and service with the future of 3D modeling to give builders, general contractors, engineers and architects an edge over competitors in the market. Providing you with a modeling system that can display an exact replica of your building leads to confidence and peace of mind for the life cycle of the project.

From Virtual To Reality with Digital Prototyping

The BIM process produces a digital prototype of your project, allowing you to build it virtually before building it in reality. A BIM project is not "drawn" in the traditional sense; rather, it's "built" digitally as a database in BIM software. Instead of having to look at hundreds or thousands of separate drawings, schedules, specs and cut sheets for all the information on a particular element, all the pertinent information is built into the object in the BIM.

In addition, the building owner gets a digital copy of the completed project model that can be used for decades of operation and maintenance. Considering that 85% of the cost of a building over 30 years is in maintenance and operation, having a digital copy of the completed project that includes all information related to the building eases the task of ongoing maintenance. This is why virtually all governments require building contractors to use BIM for public construction.



The advanced capabilities of BIM 3D modeling allow you to view an exact replica of your building, meticulously rendered to show every single detail of the project – ensuring that what's onscreen aligns with what's being erected.

BIM seamlessly bridges gaps in communications between builders, owners, architects, engineers and contractors.

Utilizing BIM with an Integrated Project Delivery System, or IPD, leverages the power of modeling to facilitate collaborative decision-making. IPD allows the project principals to produce a design that is optimized for quality, aesthetics, constructability, affordability, timeliness and seamless flow into life-cycle management. The ability to collaborate and fix problems in the early stages of development, before construction has begun, means resolving issues virtually before money is spent on the job site.

Solve problems before breaking ground

Design issues can be addressed and modified early in the process, saving time and money. Visual representations of potential issues enable you to identify clashes and conflicts between architectural, structural and MEP systems. This means you can resolve potential problems before a building is actually built.

BIM is the choice of leading builders, architects, fabricators, erectors, engineers, designers, manufacturers and owners

- Allows for easier coordination of various software and project personnel through Integrated Project Delivery (IPD) systems
- Serves as a significant resource for erectors
- Produces a working model usable for fabrication
- Leads to increased productivity
- Enables improved communication across project team members, which can significantly reduce change-order costs
- Enhances quality control, including clash detection
- Provides comprehensive life-cycle management

By offering this added value to their projects, ABC Builders gain a huge advantage over competitors.

Integrated Project Delivery System

LOD describes the level of completeness and clarifies what you can expect from a BIM model.

With the Level of Development (LOD) Specification, the American Institute of Architects (AIA) is working to standardize various models so a broader understanding is gained that leads to more efficient communication.

LOD specification addresses model element geometry with the three most common BIM uses in mind. They include quantity take-off, 3D coordination and 3D control and planning.

What LOD does not dictate is what levels of development should be reached at a certain point in a project. This detail progression remains in the hands of the document user. To accomplish the document's intent, its primary objectives are:

- To help teams, including owners, to specify BIM deliverables and to get a clear picture of what will be included in a BIM deliverable.
- To help design managers explain to their teams the information and detail that needs to be provided at various points in the design process.
- To provide a standard that can be referenced by contracts and BIM execution plans.

LOD Specification is intended to be used in coordination with a project BIM Execution Plan (BIMXP) to aid in communication, design specifics and deliverables.

BIM LOD has been defined in six levels by the AIA.

LOD 100-350 (traditional 2D project delivery method)

LOD 100 – Conceptual design

LOD 200 – Generic placeholders with approximate quantities, sizes, shapes, location and orientation

LOD 300 – Specific assemblies accurate in terms of quantity, size, shape, location and orientation

LOD 350 – Has detail accuracy for cross-trade coordination and construction layout

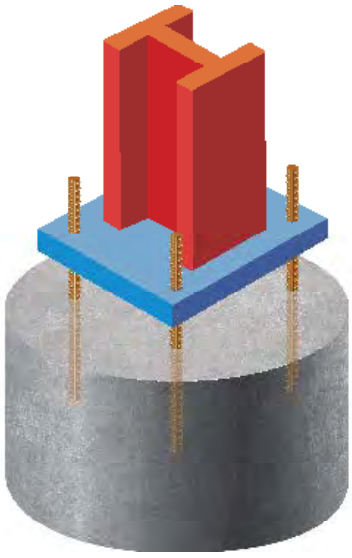
LOD 400-500 (specific to the BIM process)

LOD 400 – High-definition detailed assemblies suitable for fabrication and assembly

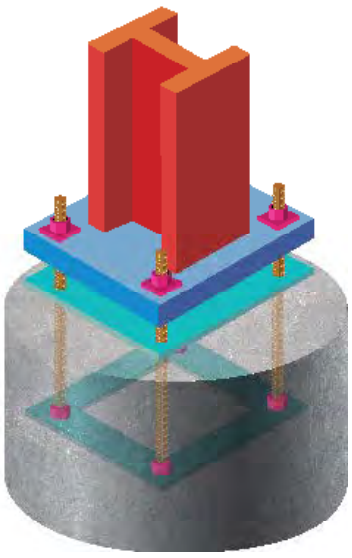
LOD 500 – The model includes field location and rebar placement, and is a field-verified representation in terms of size, shape, location, quantity and orientation.

ABC DETAILS TO LEVEL 400 AS STANDARD

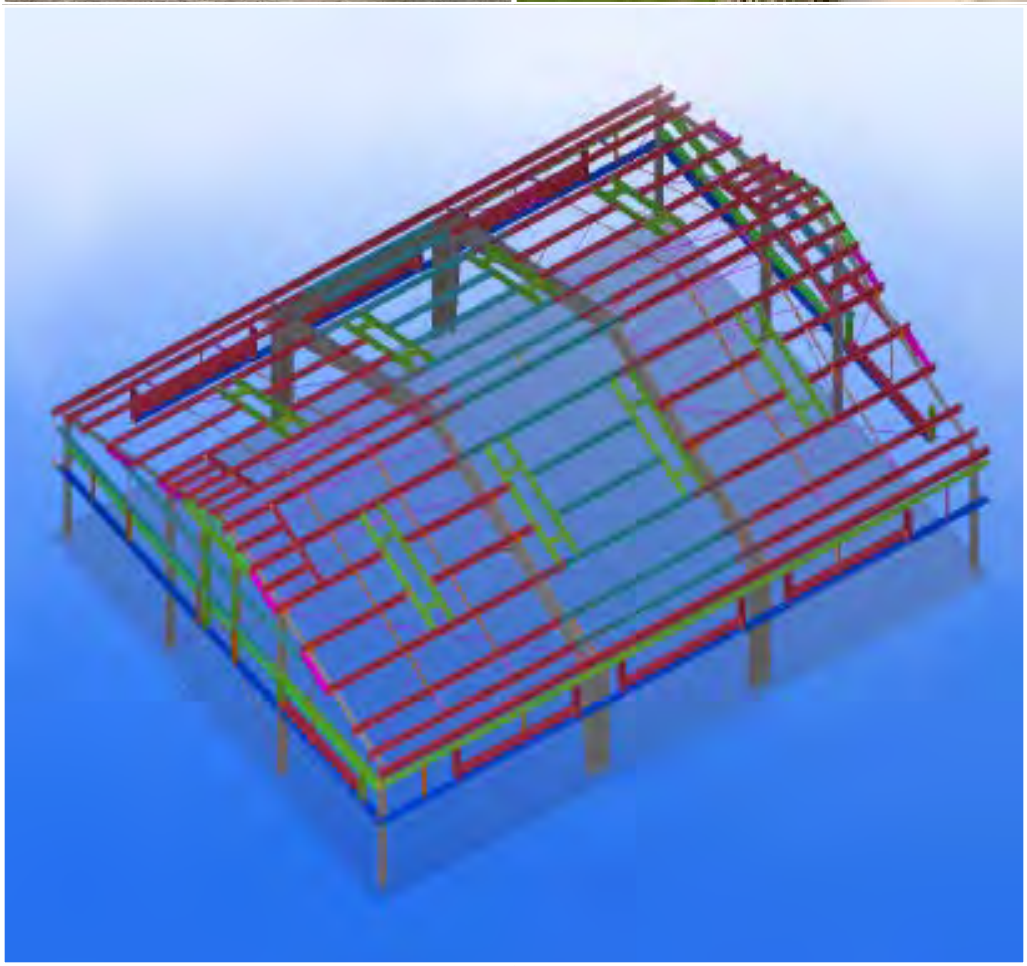
LOD 300
Permit



LOD 350
Coordination



LOD 400
Placement

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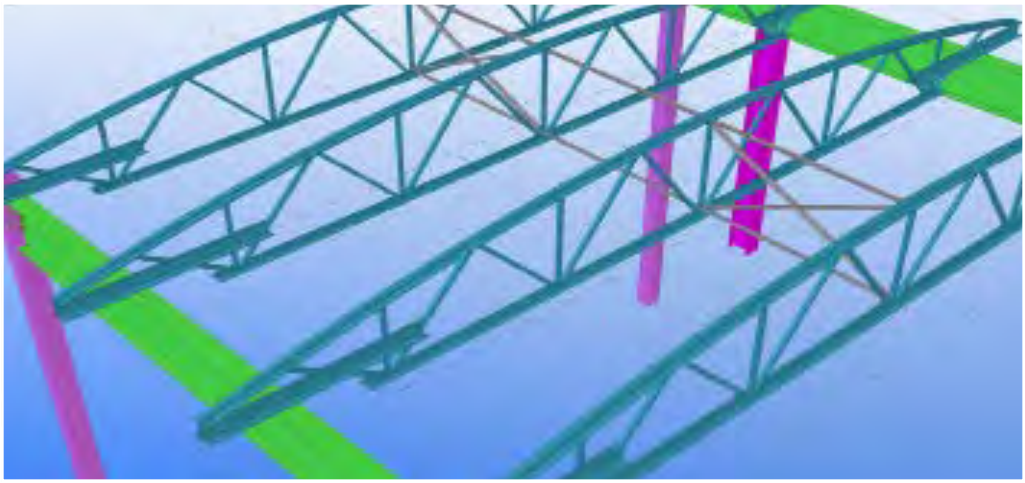

American Buildings Company surpasses expectations and exceeds industry standards.

For more than 70 years American Buildings Company has been pioneering the design, manufacture and delivery of metal building and roofing systems that set the industry standard. From industrial and commercial structures to tailored projects for the automotive, retail and transportation industries, the ABC family of more than 850 authorized Builders has the expertise to exceed expectations for custom-engineered metal building projects in a variety of industry segments. With engineering and manufacturing centers located throughout the U.S., ABC delivers a proven combination of products, technology and customer service to accurately execute projects on time and on budget.

ABC & Nucor are committed to advancing technology and productivity in the construction industry through continued investment in BIM technology.

Nucor companies with major BIM initiatives include the Vulcraft Group, American Buildings Company, Harris Rebar and Nucor Grating.

The impact of BIM on the Vulcraft Group

Vulcraft, the leading manufacturer of joists and deck in North America, is pairing their proven track record of quality and service with the future of 3D modeling to give fabricators, erectors, general contractors, engineers and architects an edge over competitors in the market.

When viewing the BIM model provided by Vulcraft, replicas of the steel joists represent the “as-built” product that will be delivered to the job site. While viewing designs of the joists in BIM, contractors and other parties have the advantage of reviewing the actual size of the member and panel layouts.

The impact of BIM on Harris Rebar

Harris Rebar is North America’s leading fabricator, installer and distributor of concrete reinforcing steel and related products.

Harris Rebar’s team of BIM experts utilize BIM 3D modeling technology to provide concise and reliable information to work collaboratively, reduce risks, quantify feedback and truly add value to customer projects. BIM increases productivity, provides cost-saving information and enables better decision-making.

BIM visualization provides clearer RFIs by showing 3D representations, resulting in a faster decision process. The same visualization helps internally for detailers and externally for contractors and with placing crews.

The impact of BIM on Nucor Grating

Nucor Grating is a supplier of high-quality gratings for major capital projects around the world. Tru-Weld and Fisholow products may be found in places as far away as Asia and South America, and in environments as diverse as the Arctic or the tropics.

Armed with BIM 3D software, the company can take requirements from structural drawings to detailed grating drawings and then on to completely fabricated ready-to-install grating.

Collaboration

BIM provides true 3D connectivity and integration between Nucor divisions to facilitate collaboration on projects and processes.

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GOING GREEN IS EASIER WITH METAL BUILDING SYSTEMS FROM ABC

As an ISO 14001 certified manufacturer, ABC is dedicated to protecting our environment and reducing waste. All four ABC divisions have achieved accreditation under the International Accreditation Service (IAS) AC472 Inspection Program for Manufacturers of Metal Building Systems. Every ABC teammate is responsible for environmental protection, and we also require contractors, vendors and suppliers to comply with applicable environmental laws.

Metal building systems are the poster child for sustainability and "green," as steel is the most recycled material on the planet. Nucor typically recycles 22 million tons of scrap annually, including 9 million cars. Recycled steel reduces mining waste by 97%, air pollution by 86% and water pollution by 76%. Producing steel through recycling also uses significantly less energy than conventional steel making. In fact, the energy Nucor saves through recycling compared to conventional steel production is enough to power Los Angeles for 8 years. The typical ABC building is manufactured from at least 70% recycled steel. To top that, at the end of its useful life, 100% of an American building can be recycled into a variety of steel products, including new cars, appliances, buildings and bridges.

ABC was the first metal building manufacturer in North America to switch to 100% "cool" paint systems as standard, with no up-charge, for all roof and wall panels. This environmentally friendly cool technology was originally developed for stealth aircraft in the U.S. Military. These coatings help generate lower environmental temperatures, reducing smog and the heat island effect. What's more, they help reduce cooling costs in hot summer months.

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