WHAT THE HECK IS BIM? AND WHAT CAN IT ACTUALLY DO?

By Stephanie Zucchi, *ZBRELLA*

BIM, or Building Information Modeling, means a lot of different things to a lot of different people. Surprisingly, there is still a large number of AEC professionals, both young and old, that don't grasp the concept, or even worse, don't know what BIM stands for at all. If you're one of those AEC professionals who are unsure on the topic, welcome to BIM 101, an introduction into an important technology that's changing your industry.

What Is BIM?

BIM at its bare basics is an accurate 3D modeling software. It displays a digital representation of a structure's design onto a screen using 3D imaging. The building can be viewed at a full 360 degrees, and BIM allows users to physically move through all the spaces in a building as if they are moving through the real-life built structure.

BIM, however, is more complex (not in its complexity to understand it, rather in the complexity of its capabilities). It is not only a 3D modeling software, but a way to help improve the processes involved with the designing and building of a structure. David de Yarza, BIM Director of Lydig Construction Inc., explains it as this:

> *"What it really represents is a series of processes that are technology enabled and they are meant to increase understanding of a project. They are meant to help a design and construction team communicate to each other and to their clients what the project is all about. It's not a piece of software. It's about a process. It's about a way to do things."*

What Can BIM Do?

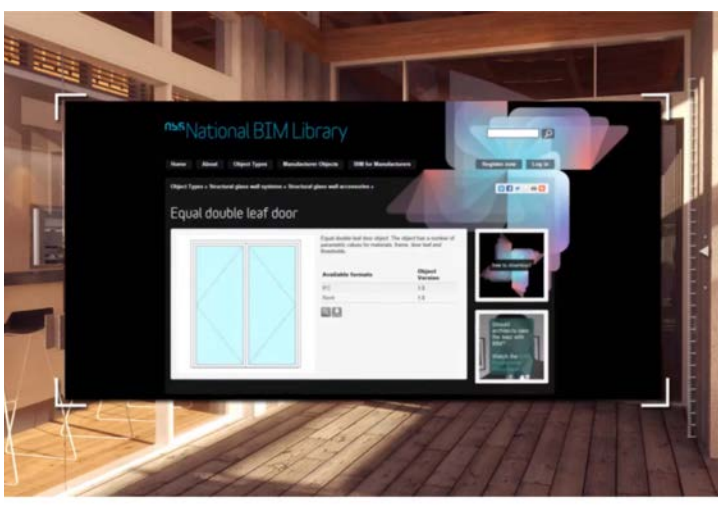
What makes BIM more than just a basic 3D modeling software is its capability to capture information about the structure being built. Instead of looking at BIM as Building Information Modeling, look at it as this: Information Builds the Model. BIM pulls together information about everything. BIM can tell us what materials are being used for the ceiling, the walls, the floor, or about what furniture is going in the space by just clicking on specific areas for information. Every part of the design and construction process is captured in BIM, and the information literally builds the model you are working on. It brings all the information about a project to one centralized location.

The information BIM provides also offers construction teams benefits in terms of the actual construction process beyond just a basic 3D model of a building. From purchasing materials to seeing what materials are already there to looking at one of the materials and seeing its specifications, BIM provides teams with accurate project detailing. How something should be installed and maintained can be acquired through BIM, offering key benefits to construction like managing, altering, or refurbishing buildings even in the future.

Let's take a look at specific examples from the NBS National BIM Library:

Using BIM, I can view the entire structure in 3D. While digitally moving through my space, I stop at the front door of my structure. Here, I can not only see my door to scale in the space, but I can find out additional information about the product I chose, including:

Model Number
Manufacturer
Dimensions
Price
Etc.

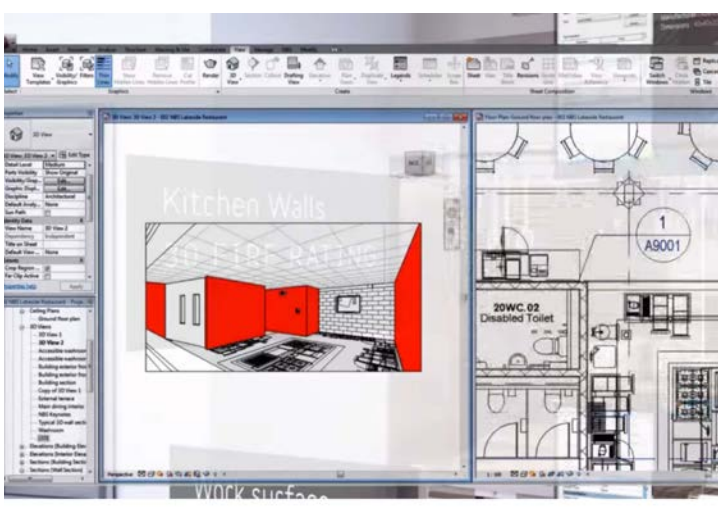


Now, I am moving through my building. I want to learn information about the walls in the kitchen space of this particular structure. I can do the following:

What is the current fire rating?

I can now adjust the fire rating to meet standards.

BIM gives users information about all the products and materials being used to build a specific structure, it shows users the properties of particular products (such as thermal performance), and can test a buildings performance.



The software literally contains all of the parts and pieces of a building in a virtual environment, and allows users to see how those parts and pieces operate and look together. If something (i.e. a material or product) doesn't fit correctly or clashes, BIM is intelligent and will notify users that the design or elements cannot work. For example, BIM can recognize that standard windows made for walls cannot go on ceilings.

BIM's central repository system allows for all members on a project to see changes being made to a project, standards that need to be met, and anything and everything else that has to do with the project. All information is in one central location, allowing for seamless collaboration between all members.

If a building is good enough to build once, it's good enough to build twice: once digitally and once physically. Utilizing the advantages of a software like BIM certainly proves the adage true, and the benefits BIM offers the construction industry are little to scoff at. If you didn't know what BIM was, you know what it is now, and hopefully, understand what a paradigm shift the industry is facing with the introduction of something as big as BIM.

*Note, all pictures are courtesy of NBS National BIM Library.