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Intro to Building Information Modeling: A tool to help architects streamline design/construction process

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The last few years have brought forward a breakthrough in technology for the building industry with the introduction of Building Information Modeling (BIM). A tool that helps architects streamline the design and construction process, BIM will soon become a common part of the real estate landscape.

BIM offers the power of a comprehensive database with limitless information in tandem with the development of a dynamic virtual model of a building and its systems. After design, this model can be used throughout a building's lifespan - from the architect designing, the contractor building and to an owner managing a facility.

As BIM becomes more widespread sophisticated owners will ask for models as part of a proforma and the existence of a model may contribute to a property's attractiveness. The model can also act as a marketing tool, allowing quick studies of spaces, both in terms of quantities (square footages) as well as quality (three dimensional views).

In the past, architects have designed buildings using two-dimensional drawings to describe enclosures and spaces. These drawings existed on their own, with no connection to other pieces of information about a project. If a window needed to change, pieces of that change would need to be made across multiple drawings. BIM involves creating a virtual model of a building, where all of the pieces are linked. Rather than a series of disconnected drawings, BIM creates a database containing all information about a building that can be viewed and manipulated as a virtual three dimensional model.

While still a developing technology, there is quite a bit of promise for the streamlining of construction processes, marketing and other aspects of building maintenance. During construction and design the model can be used to determine if building elements are clashing - for example, a beam and a duct interfering with each other. After completion, BIM can be used as the basis for facilities management, providing a centralized location for product warranty and maintenance information. Owners will be able to use the model on an ongoing basis to monitor building operations. Information about how systems were intended to operate can be embedded in the model, available for reference in the building's lifespan.

At Spagnolo Gisness we've recently designed two residential developments in New London, Conn. using Revit, a BIM software program. In addition to developing the construction documents, we used the model to immediately benefit the owner and marketing team. Rather than calculating areas on a space by space basis, we used the program to develop an automatic spreadsheet of apartment units and square footages, saving time and money.Quick three dimensional views of the exterior provided confirmation that the projects were proceeding in line with early conceptual sketches, speeding up the process and keeping it on track.

Many of these same features will be of benefit to owners and brokers after the project is complete. The model will allow quick studies of any proposed changes to the building. It can be used to generate images for use in marketing efforts. Building assets can be tracked, including furniture, workstations and even intangibles such as departmental space allocations. In addition, the model can be expanded to encompass information about operations, including equipment IDs, service contract information and preventative maintenance information.

As BIM technology develops and computers become more robust, Building Information Models will become further embedded in the industry. Beyond the use in design and construction, these models are proving themselves important to all parties involved in the real estate market.

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