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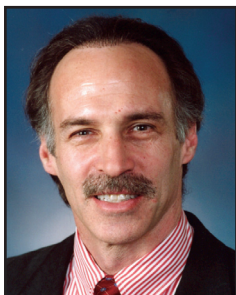
Benefits result from the use of Bim Technology

Building information modeling (BIM) has been transforming the way construction projects are designed and built. By creating a three-dimensional virtual simulation of a project, BIM can reduce costs, increase quality and reduce conflicts. BIM uses construction information to form a three-dimensional simulation of a construction project that can be digitally viewed, tested, modified, redesigned, constructed and deconstructed.

Designers can use BIM to explore alternative concepts and optimize their designs. Contractors can use the model to “rehearse” construction, coordinate drawings and prepare shop and fabrication drawings. Owners can use the model to optimize building maintenance, renovations and energy efficiency, as well as to monitor life cycle costs.

Some of the ways a project can benefit from the use of BIM are:

Single Data Source: BIM allows project parties to capture everything known about a building in a single project database. Plans, elevations and section drawings, all generated from a single design model, are then always consistent. By having a single, unified data source, the risk of errors in



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data entry or translation is greatly reduced, and the risk that parties will proceed based upon conflicting information is minimized.

Clash Detection: In complex construction projects, design drawings must be coordinated to assure that different building systems do not clash and actually can be constructed in the allowed space. System conflicts are a primary source of contractor claims and unexpected delays. BIM greatly increases the ability to detect system clashes and conflicts during design review by allowing integration of all key systems into the model. This allows conflict checking to occur rapidly and accurately in three-dimensional visualization, before construction begins.

Take-Offs and Estimating: To determine a project's construction cost, contractors traditionally perform

material “take-offs” manually, a process fraught with the potential for error. With BIM, the model includes information, which allows a contractor to accurately and rapidly generate an array of essential estimating information, such as materials quantities and costs, size and area estimates, and productivity projections. As changes are made, estimating information automatically adjusts, allowing greater contractor productivity.

Shop and Fabrication Drawings: Because BIM can provide accurate construction details, the models can reduce fabrication costs by limiting the fabricator's detailing effort and providing greater assurance that prefabricated components will fit in the field. As a result, more construction work can be performed offsite in controlled factory conditions

and then efficiently installed at the site.

Energy Efficiency and Building Life Cycle Management: BIM models are being used to model and evaluate energy efficiency, monitor a building's life cycle costs and optimize facilities management. BIM allows the owner to evaluate upgrades for cost-effectiveness, and provides an accurate as-built model for operations and maintenance throughout a building's life cycle.

Because BIM's benefits are so compelling, it is transforming how buildings are designed and built, and redefining the traditional roles of designers, contractors, subcontractors and fabricators. With its great promise of increased productivity, decreased costs, shorter delivery times and fewer disputes, all through true project party collaboration, BIM is on its way to becoming the standard practice for all design and construction.

Robert Epstein is a shareholder with Greenberg Traurig in Florham Park, where he heads the construction group. Jacqueline Greenberg Vogt and David Jensen are of counsel in the construction group. This article is presented for informational purposes only. ■