

BIM: Managing the risks of revolutionary change

Contrary to popular belief, the construction industry is not technologically stagnant. Each year, innovations change the way designers and contractors draft, estimate and schedule. Taken together, these innovations have significantly transformed the construction industry, making it possible to build bigger and better structures.

These innovations have not, however, changed the construction process. Rather, for decades, the construction industry has used an inefficient construction process that promotes self-protective behavior and rewards adversarial tactics. Too often, this zero-sum construction environment leads to cost overruns, schedule delays and litigation. The end result: honest contractors get burned, and owners pay too much to build.

However, many industry leaders agree that a revolutionary change is imminent: Building Information Modeling (BIM). BIM uses computer technology to centralize all information about a construction project into a three-dimensional virtual representation of the project before construction commences. In addition, it includes fourth and fifth dimensions that contain scheduling and cost information, respectively.

Imagine being able to foresee fabrication dates, physical characteristics, coordination conflicts, etc. associated with a certain project component, such as a steel beam, simply by clicking on it with your mouse. Further imagine a construction process where collaboration is not only encouraged, but required for the success of project participants. This is the world of BIM, and the benefits are significant. Among other things, BIM vastly improves the ability of project participants to identify and resolve construction conflicts during the pre-construction phase, thereby dramatically reducing costly change orders.

Whether you like BIM or not, one thing is certain: you cannot afford to ignore it. In 2006, the largest procurer of construction services in the world, the United States government, required the use of BIM on most new projects. Perhaps more significant, companies like General Motors, Disney and Intel are following suit. Not surprisingly, designers and contractors are responding to this demand. Indeed, in a recent survey per-

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LEGAL STRATEGIES

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formed by a joint committee of the American Institute of Architects and the Associated General Contractors of America, almost 75 percent of U.S. architecture firms reported using BIM for at least one phase of their work.

Of course, BIM is not without flaws. Interestingly, some of the most notable flaws do not involve the

effectiveness of the technology, but rather the legal implications of implementing the technology. Simply put, construction lawyers are struggling to develop a legal model that appropriately allocates the risks associated with putting an inherently collaborative process in place. That said, there are a few simple ways to protect your interests. At a minimum, BIM participants should ensure that their construction contracts address the following issues.

- **Make all expectations clear at the outset.** BIM incorporates information and design elements from numerous parties, including subcontractors, vendors, engineers and even software providers. Therefore, at times, the issue of who performs what, and when, can become complicated. Contractors and designers must make sure their contracts carefully outline four important areas: (1) the required content of each BIM deliverable, (2) the type of electronic media required, (3) the due date for the deliverable, and (4) the party responsible for delivering the model.

- **Make sure your contracts protect you from modeling errors caused by the negligence of other parties.** Include a clause in your contract that requires parties who input faulty information to indemnify, defend and hold harmless your company from claims arising from their negligence.

- **Negotiate a contract clause that limits liability caused by software malfunction.** BIM participants will typically not be able to shift the risk of modeling errors caused by faulty input to the project owner. Most owners simply have too much bargaining power in typical commercial transactions. However, project owners should bear the risk of software malfunctions (assuming that the designer and contrac-

tor followed software protocol) when the owner mandates the use of a specific software program. As always, owners should insure themselves against this risk, if possible.

BIM contracts should define who owns the final BIM database and model. The final model in a BIM project can be extremely valuable. Such models are the product of thousands of man-hours and can contain both confidential information and trade secrets. Therefore, in order to avoid ownership disputes, project agreements should include a clause stating that all ideas, drawings and other information contained in the model – including the information provided by collaborating parties – is the property of one party.

BIM is no longer an abstract concept or even bleeding-edge technology. Owners across the world are requiring the use of BIM, and it is changing the construction process. Project participants need to be aware of the new legal issues presented in the areas of risk allocation, insurance and intellectual property. Embrace the technology, but know and anticipate your risks.

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