Building Information Modeling (BIM) and Integrated Project Delivery (IPD) are relatively new concepts that are generating a significant amount of interest with owners, designers, engineers and contractors. The implementation of these new concepts requires the members of the design and construction industry, including owners, to work together more than ever and establish common goals, risk allocation and insurance options.

At this time, almost everyone in the design and construction industry understands BIM is a drawing tool used by design professionals with structural engineers at the forefront, and contractors to draw/model the project prior to construction. BIM has been defined as “a digital representation of physical and functional characteristics of a facility,” by the National Institute of Building Sciences Model Standard 22 (2007). BIM may be used in a variety of applications, including:

1) design visualization and comprehension,
2) structural analysis,
3) energy analysis,
4) preparation of design drawings,
5) systems coordination,
6) constructability reviews,
7) “4D” scheduling and sequencing, and
8) layout and field coordination.

IPD is an approach to project delivery in which major project participants (minimally, the owner, design professional and constructor, and potentially, lower-tier design and construction participants) execute a single contract under which they agree to collaborate in the design development process and, to a degree, share economic risk associated with design and construction. For projects where the structural design is complicated and the structure is a substantial portion of construction costs, the structural engineer should have a “seat” at the table to assist in the critical decisions.

Advantages Associated With the Use of BIM and IPD

The use of BIM on a project allows for simultaneous collaboration, interaction and integration among project participants in the planning, design, fabrication, construction, operations and maintenance processes. Among other things, the use of BIM allows the contractors and subcontractors to understand and make early decisions relating to means and methods, and accurately report to the owner and designers of construction and construction costs. Certain designs are more expansive and complicated than others and an early understanding of this during design will assist in making informative design decisions.

Potential advantages associated with the use of BIM include:

- Improved spatial program validation
- Enhanced ability to visualize and comprehend designs, complicated details and sequences
- Better coordination and timely detection of conflicts and clashes
- Improved design details
- Compression of the design period
- Real-time identification and resolution of potential fabrication and constructability issues prior to start of construction
- Identification and resolution of design questions prior to start of construction
- Greater communication and collaboration among owners, designers, constructors, suppliers and other lower-tier project participants

Potential advantages associated with the use of IPD include many of the BIM advantages listed above, plus potential alignment of project interests and sharing of profits and risks.

Standard Form of Agreements for Use on BIM and IPD Projects

Today, there are standard forms of agreements available from the American Institute of Architects (AIA) and ConsensusDOCS® for use on IPD and BIM projects.

AIA Documents

Below is the list of AIA agreements available for use on IPD and BIM projects.

- C191-2009, Standard Form Multi-Party Agreement for Collaborative Project Delivery
- C195-2008, Standard Form Single Purpose Entity Agreement for Integrated Project Delivery and companion agreements

ConsensusDOCS

Below is the list of model ConsensusDOCS agreements available for use on IPD and BIM projects.

- ConsensusDOCS 300, Standard Form of Tri-Party Agreement for Collaborative Project Delivery
- ConsensusDOCS 301, Building Information Modeling Protocol Exhibit
- E202, 2008, Building Information Modeling Protocol Exhibit
- E201, 2007, Digital Data Protocol Exhibit
probably the Exhibit that will take the longest to complete is with an additional seven exhibits to complete. Exhibit D is anticipated to be completed over time and added to the Agreement by amendment.

In order to define the Target Criteria, seven exhibits need to be completed: Exhibit AA, Target Cost Breakdown; Exhibit BB, Project Definition; Exhibit CC, Project Goals; Exhibit DD, Integrated Scope of Services; Exhibit EE, Project Schedule; Exhibit FF, Digital Data Protocol Exhibit based on the E201 2007 agreement; and Exhibit GG, AIA E202 BIM Protocol Exhibit.

The intent of both AIA IPD Agreements is to create a collaborative environment in which to deliver the project. These agreements include provisions that address, among other things: risk sharing, waivers of claims, waiver of consequential damages and subrogation claims, indemnifications shared project incentives and goals, and identifying a project neutral to assist with dispute.

AIA Document E202™ – 2008 Building Information Modeling Protocol Exhibit is the AIA’s standard form of agreement for use on BIM projects. This document is an exhibit and is intended to be attached to any AIA agreement. E202 could be used as an exhibit with other agreements, after careful review and modification. This BIM exhibit primarily focuses on specific responsibility for the development of each BIM element; it assumes traditional project roles and responsibilities, and risk allocation.

ConsensusDOCS takes a different approach to their IPD agreement and does not require or promote the establishment of a Single Purpose Entity Agreement (SPE). ConsensusDOCS 301 Building Information Modeling (BIM) Addendum defines roles and responsibilities; risk allocation, in a fairly traditional manner. This BIM addendum addresses and focuses on the management of electronic information.

Insurance Coverage for IPD and BIM Projects

As a general matter, insurers underwrite the risk of insuring only legal conduct. Insurance concerns that should be discussed and addressed prior to entering into an IPD contract, including:

• A design professional’s liability exposure may be increased if other project participants to whom design responsibility is distributed do not maintain adequate, or any, insurance coverage for defective design.
• If design responsibility for permanent project work will be delegated to contractors and trade subcontractors, they should have adequate professional liability insurance.
• In instances in which insurance coverage for defective design is not maintained by the constructor, trade subcontractor, or specialty designer, the design professional’s professional liability insurance is often called upon to defend and indemnify.

Conclusion

Integrated Project Delivery may not be the right project delivery approach for every project. At a minimum, design professionals need to know associated risks, professional liability, and insurability issues related to IPD projects. BIM continues as the appropriate drawing tool for every project, no matter how big or small.

David J. Hatem, PC, is a Founding Partner of the multi-practice law firm, Donovan Hatem LLP. He leads the firm’s Professional Practices Group. Mr. Hatem can be reached via email at dhatem@donovanhatem.com.

Sue Yoakum, Esq., AIA, is an attorney and a licensed architect. At Donovan Hatem LLP, Ms. Yoakum focuses her practice assisting design professionals. She can be reached via email at syoakum@donovanhatem.com.

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