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About AIA Document Reference Material

“2008 AIA Documents Advance the Use of BIM and Integrated Project Delivery,” by Suzanne H. Harness, Esq., AIA

This article, “2008 AIA Documents Advance the Use of BIM and Integrated Project Delivery,” by Suzanne Harness, Esq., AIA, includes a discussion of AIA Document E202™–2008, Building Information Modeling Protocol Exhibit. Since the article was written, the American Institute of Architects has published new digital practice documents. Parts of this article are still relevant even though new digital practice documents have been published.

New AIA digital practice documents:

- AIA Document [C106™–2013](#), Digital Data Licensing Agreement
- AIA Document [E203™–2013](#), Building Information Modeling and Digital Data Exhibit
- AIA Document [G201™–2013](#), Project Digital Data Protocol Form
- AIA Document [G202™–2013](#), Project Building Information Modeling Protocol Form

To assist users of these documents, the AIA also published the [Guide, Instructions and Commentary to the 2013 AIA Digital Practice Documents](#), which is available to download free of charge.

2008 AIA Documents Advance the Use of BIM and Integrated Project Delivery

by Suzanne H. Harness, Esq., AIA

In 2007 the American Institute of Architects (AIA) introduced to the industry a new method for delivering a construction project that integrates people, systems, and practices from the beginning of the design phase. Called Integrated Project Delivery (IPD), this new delivery method, which intends to increase efficiency and reduce waste, is described in [Integrated Project Delivery: A Guide](#). Written by a collaboration of the AIA's Documents Committee and AIA California Council, the IPD Guide sets forth several IPD principals and provides a roadmap, by project phase, for achieving those principals. The AIA took additional steps to lead the design and construction industry toward this more efficient and collaborative working environment through the 2008 release of new standard form contract documents. More fully discussed below, the new documents include agreements for implementing IPD and, additionally, an exhibit that serves as a practical tool for managing the use of Building Information Modeling (BIM) across the entire life of a project.

In its BIM and IPD contract documents, the AIA defines a building information model (the model) as a digital representation of the physical and functional characteristics of the project. BIM is defined as the process and technology used to create the model. As a technology and process, BIM is agnostic regarding project type and may be used on any design and construction project, regardless of project delivery method. For that reason, the AIA's 2008 BIM exhibit may be used with any project delivery method, from design-bid-build to construction management to design-build to IPD.

Although not essential for achieving IPD principals, which include, among other things, mutual respect and trust, collaborative decision-making, open communication, and early involvement of key participants, BIM serves as a catalyst for IPD. BIM gives the project team the ability to build the project virtually before the first shovel of dirt is moved at the site by incorporating into the model not only the architect's design information, but also the contractor's shop drawings and other means and methods of construction. Through this synergy, the design professionals benefit from the contractor's expertise, conflicts between building systems may be discovered and avoided prior to construction, construction may proceed more efficiently, and construction claims may be reduced. Plainly, the most efficient and effective use of BIM demands that architects, engineers and contractors collaborate during the pre-construction phase of the project. BIM opens the door to increased collaboration and the achievement of IPD goals. For that reason, the AIA's IPD agreements all require the use of BIM.

E202–2008, Building Information Modeling Protocol Exhibit

The AIA was the first in the industry to advance the sharing of digital information when, in early 2007, it launched AIA Documents E201™–2007, Digital Data Protocol Exhibit, and C106™–2007, Digital Data Licensing Agreement. Those documents took the “fear factor” out of information sharing by allowing the project team to identify how, and in what file format, information could be transmitted and used across a project. E201–2007 may be used to transmit models, but was not written exclusively for BIM. In late 2008, the AIA introduced E202™–2008, Building Information Modeling Protocol Exhibit, to provide the contractual structure needed to manage the use of BIM. E202–2008 is not a stand-alone agreement, but is an exhibit to attach to any agreement for design services or construction on a project where the project team will use

BIM. Parties executing E202 agree to incorporate it into any other agreement for services or construction on the project, thus ensuring consistency in BIM protocols and procedures across the project.

E202–2008 creates an environment that encourages model authors to share their models with downstream users, other designers, contractors, schedulers, cost estimators and fabricators. Written by industry practitioners, the exhibit is a practical, working tool that the project team can customize for each project. It divides a digital model into component elements, using the well-known Construction Specifications Institute's Unifomat™ system, assigns model element authorship by project phase, establishes five progressive levels of model element development and the authorized uses associated with each level, identifies file formats and standards, and defines and assigns model management responsibilities. It also establishes protocols for model ownership, conflict resolution, storage, viewing and archiving.

AIA Integrated Project Delivery Agreements

The traditional design process follows three familiar phases: schematic design, design development, and construction documents. Because it posits a different approach to the preconstruction phases, IPD adjusts the traditional project phases to allow for more intensified planning at the beginning of design, and for incorporating the contractor's shop drawings prior to the start of construction. The IPD preconstruction phases are identified as follows: conceptualization, criteria design, detailed design, implementation documents, and buy-out. When providing standard form contracts for IPD, the AIA created two new families, both of which require the use of BIM and follow the IPD phase sequencing identified above. These two families, the A295 family, and the Single Purpose Entity (SPE) family, are more fully described below.

A295 Family

The A295 family consists of B195–2008, an owner-architect agreement, and A195–2008, a guaranteed maximum price (GMP) owner-contractor agreement, both of which incorporate A295–2008, General Conditions of the Agreement for Integrated Project Delivery. The A295 family provides a smooth transition from traditional delivery methods because it is based on a commonly used delivery model whereby the general contractor provides pre-construction services, such as cost estimating and constructability reviews, working in tandem with the architect during the design phase. The A295 General Conditions document departs from tradition, however, because instead of setting forth the duties of the owner, architect and contractor in separate silos, it creates a collaborative working environment by integrating the duties of each participant with the activities of the other two, and describes them sequentially for each of the IPD phases, from conceptualization through construction.

The contractor prepares its GMP proposal for the owner's acceptance at the conclusion of the detailed design phase. Although the owner and contractor may agree to bring certain specialty trades onboard prior to execution of the GMP, in most cases GMP execution will trigger the contractor to commence the buy-out of subcontracts. Having the trades under contract permits the flow of shop drawings that the architect and/or the contractor may incorporate into the implementation documents using BIM software. At the conclusion of the implementation documents phase, the implementation documents are incorporated into the GMP and the contractor uses them to construct the project.

SPE Family

The SPE family, by contrast, is not based on a traditional delivery model, but represents an entirely new way to deliver a project. To create a contract that would achieve the IPD goal of mutual benefit and reward

to the maximum extent for all members of the project team, the AIA emulated the business model used for sophisticated product design and construction, such as automotive or aircraft manufacturing. In those arenas, one company designs and builds a product through a combination of its own forces and independent contractors. When key players are employed in the same company, their interests are the most closely aligned--all must pull together to achieve a common goal: the company's success. To achieve a similar alignment of interests, the AIA provided C195--2008, Standard Form Single Purpose Entity for an Integrated Project.

Using C195, the owner, architect, construction manager, and perhaps other key project participants, each become members of a single purpose entity, the SPE, whose purpose is to provide the skilled services necessary to design and construct the project. The SPE is a limited liability company, a business entity readily recognizable and available in all jurisdictions, that provides the benefit of limited liability to its members. The owner-member provides funding for the project under C196--2008, the agreement between the SPE and the project owner. The architect, construction manager and other non-owner members provide services to the SPE using C197--2008, an agreement between the SPE and any non-owner SPE member. The SPE itself does not perform professional services, but provides those services through contracts with its own members or with other licensed professionals. Under C197, the non-owner members are reimbursed for the costs they incur in providing services. They may earn profit through the achievement of project goals (goal achievement compensation), and a shared savings provision (incentive compensation). If one member earns profit, all members earn profit. For that reason, members are motivated to help each other achieve goals and monitor costs.

The owner, architect and construction manager could invite other project participants to become members. For example, if the project involved the design of a building and an adjacent park, perhaps the landscape architect would be a member. If the project required substantial mechanical processing systems, perhaps the mechanical contractor would become a member. The construction manager would provide management expertise only and would not construct the building with its own forces, although the construction manager could construct the building under a separate contract with the SPE, if the other SPE members agreed it was in the best interest of the project. Under the terms of C195, the SPE is committed to managing costs and is required to enter into either a stipulated sum or guaranteed maximum price agreement with any construction contractor.

At the beginning of the project, the members form a management team for managing design and construction. The management team must make all decisions unanimously. The management team, which includes the owner, establishes goals for the project and the amount available to the non-owner SPE members as goal achievement compensation upon achievement of each goal. The management team also prepares a target cost proposal for the owner's acceptance. The members share, as incentive compensation, any savings achieved between the target cost and the actual cost of the project. Significantly, all members agree to forgo the right to sue each other or to file for arbitration, except through the disputes resolution procedures of the SPE agreement. Members also agree to assign all claims against non-members to the SPE for resolution under the same SPE disputes provisions, so that all claims on the project may be resolved out-of-court.

This highly collaborative, all-for-one and one-for-all approach has the potential to result in a high quality project for the owner, and substantial monetary and intangible rewards for the other members.