Integrated Project Delivery

For Public and Private Owners

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Integrated Project Delivery
For Public and Private Owners

A Joint Effort of the National Association of State Facilities Administrators (NASFA); Construction Owners Association of America (COAA); APPA: The Association of Higher Education Facilities Officers; Associated General Contractors of America (AGC); and American Institute of Architects (AIA)

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www.nasfa.net
www.coaa.org
www.appa.org
www.aia.org/ipd
www.agc.org/projectdelivery

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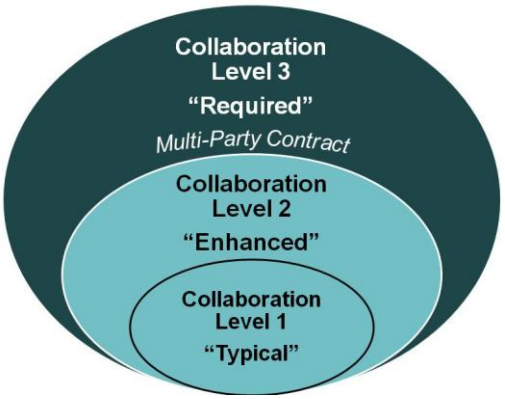
Introduction

Degrees of Collaboration: An Evolutionary Process

In construction, there are degrees of collaboration. Owners, more than any other stakeholder, drive the degree of collaboration they receive on their projects. They influence this early in projects through their procurement and contracting process. In this manner, owners may establish the baseline for the level of integration that they may expect on each project.

Integration is often used interchangeably with "collaboration," and both terms are broadly used. With the emergence of the term "Integrated Project Delivery" (widely known by its acronym of "IPD") the use of the term "Integrated" has been even more broadly applied. Most owners are determining on a project-by-project basis whether there is any benefit to trying to establish a higher level of integration and what the tradeoffs might be.

Levels of Collaboration



"Integrated Project Delivery for Public and Private Owners" offers a tiered approach to achieving collaboration based on three levels. The three levels represent the typical spectrum through which owners move. Whether it is legislative restrictions, policy limitations or cultural barriers, there are a number of reasons that affect where on this collaboration spectrum public owners—indeed all owners—fall. The Three Collaboration Levels are:

1. Collaboration Level One – Typical; collaboration not contractually required
2. Collaboration Level Two – Enhanced; some contractual collaboration requirements
3. Collaboration Level Three – Required; collaboration required by a multi-party contract

It is acknowledged that many of the integrated principles discussed both here and elsewhere are not new and to varying degrees have long been applied: Level One (Typical Collaboration) would be the way many owners have been working for years. It is assumed that owners understand the concepts of collaboration and integration at least to the level of "typical collaboration" whether they are able to apply the concept or not.

Based on the Levels of Collaboration above, this publication further divides its examination of IPD into two areas:

1. IPD as a PHILOSOPHY (Non-multi party contracts or Levels 1 or 2 as described above)
2. IPD as a DELIVERY METHOD (Multi-party contracts or Level 3 as described above)

Within that dual framework, the Overview of IPD addresses the questions: “What is IPD?”; “Have we not already been doing IPD?”; “Should we be doing IPD?” and if yes, “Which variation of IPD should we be doing?”

This publication progresses to explore the highest form of collaboration by today’s standards: IPD as a DELIVERY METHOD. Perhaps public and private owners not currently able to use multi-party contracting will try this approach as a “pilot” or “test project,” obtaining a one-time exception or variance to do so if required.

For those owners not able to use a multi-party contract, but who wish to take collaborations to another level, the question “How much ‘IPD’ can I do without a multi-party contract?” is explored next in the IPD as a PHILOSOPHY section.

As collaborative delivery models increase in use and popularity, all owners will be increasingly tasked with evaluating how much integration or collaboration is appropriate or desired on their projects. This publication is offered to help them better understand and communicate their options and decide how best to drive their projects to the most successful outcome.

1. Integrated Project Delivery (IPD): An Overview

A. Forces Driving Change

Much material from this section is from "Integrated Project Delivery: A Guide", with permission from the American Institute of Architects, available at no cost at www.aia.org/ipd.

The design and construction industry, essentially unchanged for well over a century, is looking at a future significantly different than its world today. A range of forces are at work; new tools, methodologies and roles are influencing and shaping fundamental cultural and business shifts. We stand in the early stages of an accelerating, pervasive and positive transformation.

Industry culture and methodologies evolve in response to a wide range of factors. Significant forces influencing design and construction today include the following:

- Waste and lack of productivity
- Technological evolution (software)
- Owner demand for value

Waste and Lack of Productivity

A U.S. Bureau of Labor Statistics study shows that productivity of the construction industry has decreased since 1964 while all other non-farm industries have increased by almost 200%. A 2004 study by the National Institute of Standards and Technology (NIST) shows that lack of software interoperability costs the industry almost $16 billion annually. A 2004 Construction Industry Institute / Lean Construction Institute study suggests that as much as 57% of time, effort and material investment in construction projects does not add value to the final product, as compared to a figure of only 26% in the manufacturing world. The construction industry should, therefore, be well positioned to find and eliminate waste.

Technological Evolution

Software for the design and construction industry has become able to manage an enormously wide range of complex data, and at the same time, has become simpler to use. Building Information Modeling-capable packages can deliver benefits to stakeholders in every part of the construction process. Younger professionals are coming into the industry with new tech-savvy skills and are comfortable with new tools. McGraw-Hill's 2008 SmartMarket Report on Interoperability suggests that 2008 was the "tipping point" year for Building Information Modeling (BIM)—it's become an inevitable technology. Current industry research supports this fact.

Owner Demand for Value

Owners are becoming increasingly focused on demanding more value. They are aware of waste and productivity issues, technological advancements and are demanding change. In 2004, the Construction Users Roundtable (CURT) generated two whitepapers urging significant change throughout the construction process.

The need for consideration of new project delivery methods is driven by the reoccurrence of numerous problems related to the current delivery methods available. Many owners share the frustrations associated with the traditional methods and repetitively experience many of the same problems as other institutions and corporate construction projects. A rise in the number of projects completed utilizing alternative delivery methods demonstrates owner dissatisfaction with the traditional Design-Bid-Build process.

This point was highlighted by CURT (sponsored by Architectural Record in 2007) when they characterized the difficulties experienced on typical projects as "artifacts of a construction process fraught by lack of cooperation and poor information integration." Typical problems cited included: errors, omissions, inefficiencies, coordination problems, cost overruns and productivity losses.

CURT went on to state "the historical reasons for this dysfunctionality are many, including multiplicity of participants with conflicting interests, incompatible cultures among team members and limited access to timely information." Indeed, the goal of everyone in the industry should be better, faster, more capable project delivery created by fully integrated, collaborative teams.

B. Result: Integrated Project Delivery

None of the above factors are likely to go away, and most will only increase in their scope of influence. These forces are leading owners to change how project teams behave. If they want change, if they want teams to behave differently, if they want collaboration, if they want teams to be integrated…they have to find new ways to make these things happen. It is the owners that must point their teams in the direction that they want them to go.

Some owners are successfully applying a fresh alternative approach to the way they are contracting and incentivizing their project teams to collaborate. They are using a form of contract that involves more than two parties to the agreement: a "multi-party contract" that allows multiple parties to all agree to a common set of terms and expectations. At a minimum, the owner, its architect and its contractor all sign the single agreement, and in some cases, other members of the project team that are deemed to be critical to the project success are also brought into the multi-party agreement. Besides the parties all signing a single agreement, what is also unique is how risks are shared and how compensation is tied not to an individual party's performance, but rather the team's performance on the overall project.

Integration of project teams is proving to yield better results. Though many have been using practices that are now labeled as "integrated," the idea of taking a fresh look at how owners contract to incentivize team behaviors to collaborate and focus on the project's best interest has arrived. Whether with a multi-party contract or

under alternative project delivery methods, both new practices and updated approaches to old practices are emerging to help change the way owners may get more value out of their investments in capital assets.

Based on principles of trust and mutual respect, mutual benefit and reward, collaborative decision-making, early involvement of key project participants, early goal definition and intensified planning, and open communications, IPD is emerging as an effective project delivery choice for the industry. Leveraging new technologies like Building Information Modeling (BIM), organizing in new ways and implementing "best-for-project" thinking, teams are achieving significant benefits in terms of project outcomes for all involved.

The following table excerpted from *Integrated Project Delivery: A Guide* (2007, AIA and AIA California Council) suggests some of the ways in which IPD differs from traditional project delivery:

Traditional Project Delivery		**Integrated Project Delivery**
Fragmented, assembled on "just-as-needed" or "minimum-necessary" basis, strongly hierarchical, controlled	**Teams**	*An integrated team entity composed of key project stakeholders, assembled early in the process, open, collaborative*
Linear, distinct, segregated; knowledge gathered "just-as-needed;" information hoarded; silos of knowledge and expertise	**Process**	*Concurrent and multi-level; early contributions of knowledge and expertise; information openly shared; stakeholder trust and respect*
Individually managed, transferred to the greatest extent possible	**Risk**	*Collectively managed, appropriately shared*
Individually pursued; minimum effort for maximum return; (usually) first-cost based	**Compensation / Reward**	*Team success tied to project success; value-based*
Paper-based, 2 dimensional; analog	**Communications / Technology**	*Digitally based, virtual; Building Information Modeling (3, 4 and 5 dimensional)*
Encourage unilateral effort; allocate and transfer risk; no sharing	**Agreements**	*Encourage, foster, promote and support multi-lateral open sharing and collaboration; risk sharing*

As understanding about trends and issues in the design and construction industry continue to mature, project delivery discussions will continue to evolve. The important thing is that the process is already well underway: IPD is a new and significant player on the project delivery scene.

Collaboration and integration are not new. However, all owners, both public and private, are taking a more proactive approach to how they establish integrated teams and ensuring that they receive the level of collaboration they desire.

C. Levels of Collaboration and IPD: "Delivery Method" versus "Philosophy"

This publication assumes a tiered approach to IPD based on three levels of collaboration. The three levels represent a typical spectrum through which owners move.

The **Three Collaboration Levels** are:

Collaboration Level 1 – **Typical**; collaboration not contractually required
Common Contract Types:
Open-book, cost-plus with a Guaranteed Maximum Price (GMP); fixed fee
Common Procurement Methods:
Design: Qualifications Based Selection (QBS)
Construction: QBS or Best Value (fees)

Collaboration Level 2 – **Enhanced**; some contractual collaboration requirements (early participation of stakeholders, use of BIM and sharing of models, etc.)
Common Contract Types:
Open-book, cost-plus with a GMP; fixed fee
Common Procurement Methods:
Design: Qualifications Based Selection (QBS)
Construction: QBS or Best Value (fees)

Collaboration Level 3 – **Required**; collaboration required by a multi-party contract
Common Contract Type:
Multi-party, Open-book, cost-plus without a GMP
Shared financial risk/reward tied to project outcome
Common Procurement Methods:
Design: Qualifications Based Selection (QBS)
Construction: QBS or Best Value (fees)

Within this framework, one may further examine IPD both as a *philosophy* and as a *delivery method*:

	Level One "Typical" Collaboration	Level Two "Enhanced" Collaboration	Level Three "Required" Collaboration
Level of Collaboration	lower ⟷ higher		
Philosophy or delivery method?	IPD as a Philosophy	IPD as a Philosophy	IPD as a Delivery Method
Also known as...	N/A	IPD-ish; IPD Lite; Non Multi-party IPD; Technology Enhanced Collaboration; Hybrid IPD; Integrated Practice	Multi-Party Contracting; "Pure" IPD; Relational Contracting; Alliancing; Lean Project Delivery System™
Delivery Approaches	CM at-Risk or Design-Build	CM at-Risk or Design-Build	Integrated Project Delivery

i. IPD as a Philosophy (IPD "Lite" or "IPD-ish"/ Non Multi-party IPD)

IPD as a Philosophy occurs when integrated practices or philosophies are applied to more traditional delivery approaches such as CM at-Risk, Design-Build or Design-Bid-Build (where the owner is not party to a multi-party contract). In addition to not having a multi-party contract, IPD as a Philosophy is characterized by "traditional" transactional CM at-Risk or Design-Build contracts, some limited risk-sharing (e.g. savings splits), and some application of IPD principles. See Appendix B: Levels of Collaboration.

IPD as a Philosophy goes by many names: IPD "Lite;" "IPD-ish;" Non Multi-party IPD; Hybrid IPD; Technology Enhanced Collaboration to name a few.

By definition, based on the three Levels of Collaboration, IPD as a Philosophy (IPD "Lite" or "IPD-ish"/ Non Multi-party IPD) is Level 1 or Level 2, depending on the degree of application of IPD principles.

"Haven't we already been doing IPD?"

The answer is probably yes. To some degree, many have been creating collaborative teams for years. Many owners have been using collaborative contracts, using practices such as early contractor involvement; contract provisions incentivizing behavior (shared savings clauses); preliminary guaranteed maximum price (GMP) targets established during design; and other practices that are now considered "integrated".

So yes we have been doing "IPD", however, this has been done in an environment that was constrained by "transactional" contracts that created "silo behavior" and disincentives to collaborate and to focus on the project's best interests versus those of each stakeholder. Improved practices that directly result from the paradigm shift that IPD "Relational" multi-party contracts (IPD as a Delivery Method) have created are emerging. Many owners have realized it is time to take a fresh look at the behaviors that directly result from our contracts.

Many industry participants who are introduced to the concept of Integrated Project Delivery and who have also been participating in collaborative projects using practices that are now described as an "integrated practice" (for example, bringing trade contractors on-board early), often share a feeling that they "have been doing IPD for years. Rather than debate this point, it is probably easier to agree and acknowledge that to varying degrees many have indeed been using IPD practices for years (IPD as a Philosophy).

ii. IPD as a Delivery Method ("True" IPD / Multi-party IPD)

Integrated Project Delivery as a Delivery Method (True IPD or Multi-party contracting) is when the owner has elected to sign a multi-party contract with the prime designer, contractor and/or other key members of the project team. In addition to the multi-party contract, IPD as a Delivery Method is characterized by a contract that incentivizes collaborative behavior, team risk-sharing and other IPD principles and practices. See Appendix B: Levels of Collaboration.

IPD as a Delivery Method goes by many names as well: Multi-Party Contracting; Lean Project Delivery; "Pure" IPD; Relational Contracting; Alliancing to name a few.

By definition, based on the three Levels of Collaboration, IPD as a Delivery Method ("True" IPD/Multi-party IPD) is Level 3.

D. IPD Principles and Catalysts

Whether one is pursuing IPD as a Philosophy or IPD as a Delivery Method on any project, there is a range of fundamental principles that can inform project foundations. Any project delivery method may be improved through implementation of these principles. A primary distinction between "IPD-ish" (IPD as a Philosophy) and "true" IPD (IPD as a Delivery Method) may be that these principles are optionally employed in delivery methods other than "true" IPD, but are all intrinsic to and fully realized in IPD as a Delivery Method. It is recognized that not all project contexts will allow for all of these principles to be implemented: those that implement some but not all of the principles may be "IPD-ish" and still deliver much of the value of IPD, but cannot deliver the full range of benefits of a "true" IPD project.

These principles may be divided into two categories: contractual (those that may be written into agreements) and behavioral principles (those that are necessary for project optimization but are ultimately choice-based). There is an additional range of "catalysts" that can be greatly beneficial for optimizing project results.

Contractual Principles

Key Participants Bound Together as Equals

- *Whether it is a minimum of Owner, Architect and Contractor, or a broader group including all project participants essential to project success, a contractually defined relationship as equals supports collaboration and consensus-based decisions.*

Shared Financial Risk and Reward Based on Project Outcome

- *Tying fiscal risk and reward to overall project outcomes rather than individual contribution encourages participants to engage in "best for project" behavior rather than best for stakeholder thinking.*

Liability Waivers between Key Participants

- *When project participants agree not to sue one another, they are generally motivated to seek solutions to problems rather than assigning blame.*

Fiscal Transparency between Key Participants

- *Requiring and maintaining an open book environment increases trust and keeps contingencies visible—and controllable.*

Early Involvement of Key Participants

- *Projects have become increasingly complex. Requiring all participants essential to project success to be at the table early allows greater access to pools of expertise and better understanding of probable implications of design decisions.*

Intensified Design

- *The cost of changes to projects increases in relation to time. Greater team investment in design efforts prior to construction allows greater opportunities for cost control as well as enhanced ability to achieve all desired project outcomes.*

Jointly Developed Project Target Criteria

- *Carefully defining project performance criteria with the input, support and buy-in of all key participants ensures maximum attention will be paid to the project in all dimensions deemed important.*

Collaborative Decision-Making

- *Requiring key project participants to work together on important decisions leverages pools of expertise and encourages joint accountability.*

Behavioral Principles

Mutual Respect and Trust

- *Nurturing a positive environment requires deep appreciation for the motivations of all project participants: if they do not operate in an environment of mutual respect and trust, performance erodes and participants retreat to "best for stakeholder" behaviors.*

Willingness to Collaborate

- *Collaboration is ultimately a behavioral choice. It is important to nurture an environment that supports and encourages participants to choose to collaborate.*

Open Communication

- *Collaboration requires open, honest communication: if project participants are reluctant to share ideas or opinions, opportunities for innovation and improvement may be missed.*

Catalysts for IPD

Multi-Party Agreement

- *A contract between all key project participants that includes all of the contractual principles outlined above as well as aspirational language about behavior can support IPD projects.*

Building Information Modeling

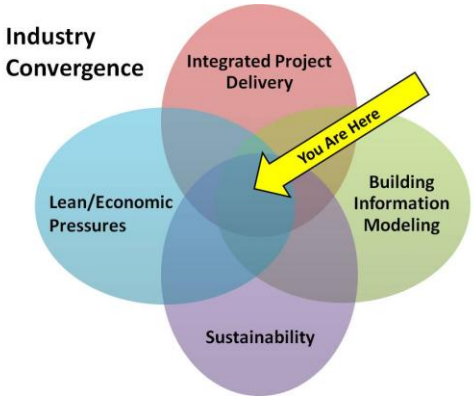
- *The tool of Building Information Modeling, especially employed in a collaborative setting, can greatly enhance collaboration, sharing of information, and streamline project design and construction.*

Lean Design and Construction

- *Focused on maximizing value, minimizing non-value added support, and elimination of waste, lean design and construction techniques are a natural fit for IPD projects.*

Co-location of Team

- *When key project participants can be co-located, opportunities for collaboration and innovation increase. Project commitments are more likely to be met when one becomes closer to one's teammates.*



Lean Construction/Lean Project Delivery

The Lean Approach to Construction is drawn from principals developed in manufacturing. The overriding goal of the lean approach is to minimize the waste in the delivery of the project through the optimization of all resources without duplication of efforts.

A common definition of lean construction is: ***The continuous process of eliminating waste, meeting or exceeding all customer requirements, focusing on the entire value stream, and pursuing perfection in the execution of a constructed project.***

Key Definition 1: Waste
- *Overproduction*
- *Waiting*
- *Unnecessary Transport*
- *Over-Processing*
- *Excess Inventory*
- *Unnecessary Movement*
- *Defects and Rework*
- *Not using employee talent*
- *Environment/energy*

Key Definition 2: Value Stream
The entire flow of information and material flow that make up a process and include identification of the Value Added, Non Value Added but Required and Non Value Added activities within the process.

Lean is not a set of rules but an approach to project-first thinking (i.e. subordinating individual gain for the improvement in the delivery of the project). Themes within this approach include:
- *Standardization of metrics*
- *Long-term commitment*
- *Management Commitment and application with enthusiasm at all levels*

E. Convergence: Related Industry Trends

Anecdotally, industry stakeholders communicate that complexity of projects is increasing, workloads are growing under shorter and shorter timeframes (productivity continues to be a major concern), risk management and liability control are increasingly expensive, and the industry exists in a litigious culture with a wide range of motivations under sometimes strong stereotypes. These factors all contribute to creation of an environment of increasing pressure. Three in particular warrant closer attention.

i. Lean Construction / Lean Project Delivery to Increase Efficiency

Lean Project Delivery

Another term often used to refer to a form of Integrated Project Delivery is Lean Project Delivery System ™ (LPDS), a term developed by the Lean Construction Institute (LCI). Many of the principles attributed to Lean Project Delivery are similar to those attributed to IPD. In fact, in this era of evolving terminology, many refer to IPD as "Lean Project Delivery" where the application of "lean thinking" and lean principles are applied throughout the project.

Followers of IPD treat lean principles along with the resulting efficiencies and elimination of waste as givens. Followers of lean treat collaboration and the use of technologies as givens. In the end, lean and IPD are both striving for the same ultimate outcome, just two different paths to get to the same place: to a project that has been optimized to maximize the value. Whether the project is optimized by applying lean principles first, then IPD principles, or by applying IPD principles, then lean, does not matter. Early adopters of both have shown that the application of both lean and IPD principles is natural and will lead to more successful outcomes.

The ideal application of lean begins during the design with the value stream and project schedule mapped by the team. Production of documents proceeds based on the commitments each party makes to the team. This process develops a sense of camaraderie amongst the team that should carry through the construction phase of the project. During construction, the project is scheduled throughout as a team from the milestones developed during the pre-construction phase. Each "pull-planning session" results in a more detailed schedule that clearly and accurately shows all of the activities that must occur prior to or concurrently with the next activity.

The key to the increased efficiency of lean is the measurement of adherence to the project schedule. Each party reports on its ability to meet the schedule commitments made the previous week. If commitments are not met, constraints are identified and removed by the team. The power of peer pressure, built on a foundation of mutual respect and understanding over the course of the project is a powerful motivating force for team members to meet

Common Suggestions for Lean Implementation include:

- *Continuous Training*
- *Just-in-Time Delivery*
- *Shared Risks and rewards*
- *Computer Modeling (BIM)*
- *Decision-making at the last responsible moment*
- *Last Planner Scheduling*

BIM Implementation: An Owner's Guide to Getting Started

This recently released publication from the Construction Users Roundtable (CURT) may prove beneficial for owners who want to implement Building Information Modeling (BIM). Because each project and each owner's enterprise is inherently different, there is no fully developed, off-the-shelf, one-size-fits-all solution for BIM implementation. This guide is intended to help owners develop a BIM implementation process that best suits their own situations and needs. Information can be found at www.curt.org.

commitments. Each party is incented to be the project leader rather than the project laggard in an effort to move the project forward towards successful completion as defined by the value stream.

ii. Building Information Modeling (BIM) as a Catalyst

BIM is technology that supports the delivery of projects in a more collaborative and integrative way. Collaborative, integrated teams are using building information models in a collaborative, computable way to achieve better decision-making. Collaborative decision-making strategies are, of course fundamental to the IPD process. Even if, hypothetically, an IPD project may be delivered without using BIM and vice-versa, the real benefits will be seen only when BIM methodologies are applied to IPD processes.

The consistency of the "I" is the real value that BIM can provide to an IPD process: information integration, reliability and interoperability are at the heart of the tool. This can only happen when the information model is shared transparently and becomes an integral part of the decision-making process throughout the design, construction and management of the building.

BIM can be of great value for all owners, both public and private. In the public arena, most owners are also managers of their buildings, and it is here that BIM adds major value. Most have experienced the loss of major project information between the end of construction and beginning of the management phase; as a result, most owners understand how difficult it is to collect, organize, manage and store the many different types of information required for long-term facility management. BIM can help the owner in this major task: it can be seen as a repository of major sets of information or be linked to other information perhaps not stored within the model. BIM for facility management is the next big step for a real use of this new technology. At this point, little research exists documenting the benefits of BIM for facility management, but it is a natural step in the building lifecycle to capture information at the end of construction and beginning of operations.

iii. Sustainability

Building owners everywhere, public and private, are thinking about sustainability. Governing bodies, municipalities, and code authorities are also jumping in, establishing aggressive requirements in terms of energy reduction or sustainability rating system outcomes. Why? U.S. Energy Information Administration research and other studies show that the construction and operation of buildings are responsible for as much as 48% of total U.S. annual energy consumption and 76% of annual U.S. electrical consumption, making the built environment the single largest contributor of greenhouse gas emissions.

Recent research[1] has shown that the level of integration has an impact on the level of sustainability that can be achieved on capital projects. The study, sponsored by the Charles Pankow Foundation and the Design-Build Institute of America (DBIA), was led by Dr. Keith Molenaar (University of Colorado) and Dr. Douglas Gransberg (University of Oklahoma) and examined the influence that project delivery methods and selection types had on the level of sustainability that can be achieved.

Using the metric of the percentage of projects that achieved either their original U.S. Green Building Council (USGBC) LEED Sustainability Rating System goal or higher, the results showed CM at-Risk was the most successful method at 94% (Design-Build was 82% and Low Bid was 77%) and QBS was the most successful selection type, at 95% (Best Value was 87% and Low Bid was 78%).

By optimizing the project and maximizing value, owners try to get the most out of their projects, but they must be smart about how they accomplish this. Lean, BIM, and IPD can all be utilized separately, but they are strongest when used together. IPD can be both a collaborative process and a relational contract that drives different behavior and teamwork. Lean is a mindset and a way of thinking that helps to promote behaviors that inherently help to improve project efficiency and collaboration. BIM is a tool that can be used to practice Lean and apply IPD. It is the medium through which these collaborative, efficient behaviors are best employed. Sustainability benefits from all of these factors to provide a more energy-efficient and less wasteful product.

1. Sustainable, High Performance Projects and Project Delivery Methods - A State-of-Practice Report. September 1, 2009, Research sponsored by the Charles Pankow Foundation and the Design-Build Institute of America (DBIA).

2. In Pursuit of Integrated Project Delivery

A. Why Adopt IPD Philosophies?

Owners have been collaborating with their design and construction teams for years and receiving corresponding benefits. Level 1 Collaboration projects are typically delivered using Construction Management at-Risk (CM at-Risk, CMAR, CM@R, CM as Constructor or CMc) and Design-Build (DB) facilitated by open book, guaranteed maximum price (GMP) contracts. Many in the industry today refer to these Level 1 projects as variations of Integrated Project Delivery. In the context of this publication, these projects would be applying "IPD as a Philosophy." However, there is a growing school of thought of the idea that even though the first level of collaboration has been working well for years, there is an even higher level of collaboration achievable without having to use a multi-party contract.

Achieving a higher level of collaboration, Collaboration Level 2, is proving to be possible by applying some of the IPD principles to the traditional Level 1 contracting approaches. Some of the potential areas that could differentiate Level 2 Collaboration from the typical Level 1 approach include:

- Design team involvement in performance incentives and risk sharing
- Construction team incentivized for productivity
- Subcontractor participation in performance incentives and risk sharing

Level 1 or Level 2?

As an owner, how do you know when you begin collaborating at Level 1, Typical Collaboration? Further, how do you know when you move from Level 1 to Level 2 Collaboration? Based on your organization's previous history (e.g. it has a history of not being very collaborative) and relative to other owners in your region, it might feel that your organization is at a higher level than the levels described here. There is really no need to be concerned about whether your organization is collaborating at Level 1 or Level 2; the important concept is that they are both IPD as a Philosophy and that Level 2 is a higher level of collaboration than Level 1. The key is that your organization is moving in the direction of increasing collaboration. Whether you are at Level 1 or Level 2 is not really that significant.

As collaborative as Typical Collaboration has been, Collaboration Level Two (Enhanced Collaboration, also IPD as a Philosophy) has proven capable of being even more successful. Level Two teams are able to work even more collaboratively to achieve cost savings, shorter schedules, and more efficient handling of changes.

Though perhaps not to the same level as possible with the multi-party contract, Level 2 projects have shown they have the ability to encourage teams to "focus on optimizing the whole." Participants are discouraged from focusing on optimization of only their own best interests. The result is teams that are focused on solutions, which yields higher quality, higher predictability, happier clients and users, overall better value and better projects. Teams are able to establish common goals and align themselves to achieve them. These outcomes may not get to the level that a Level 3, multi-party contract achieves, but much better than the traditional manner that the industry has been collaborating with for years.

B. Why Adopt IPD as a Delivery Method?

Level 3 Integrated Project Delivery evolved in part in response to the very issues identified with the CURT whitepapers. Many people ask "why do I need to contract to collaborate?" Traditional contracts that are transactional

(and often adversarial) in nature are often at the heart of the dysfunctional issues and elements of the construction process. Projects consist of a complex web of technical requirements coupled with a network of interrelated commitments. How do owners align conflicting interests with seemingly incompatible cultures while fostering real time communication and eliminating waste? The answer is found by getting all of the parties on the same page.

Level 3 IPD, using a multi-party contract, where the Owner, Design Team and Constructor all sign one agreement, is one way to get everyone on the same page. The contract is relational in nature rather than transactionally driven. This is fundamentally different from traditional contracts since the multi-party contract defines behaviors, requires intense collaboration and incentivizes the parties for positive behaviors that are measured only by the ultimate success of the project. Decisions are made by consensus with the core group (Owner, Design Team and Constructor at a minimum) and must be in the best interest of the project even if the decision is not necessarily in any one party's best interest.

Among the key differences between Level 2 and Level 3 Collaboration is that Level 3 projects elevate project relationships by making responsibilities contractual obligations. Risk is managed by the core group in the best interest of the project instead of being shifted to the party least able to manage or control it. Level 3 also lends itself to incorporating lean construction principles and BIM seamlessly to improve the overall results.

Even with all of these attributes, there are risks associated with using Level 3. It is a relatively new approach and with only a handful of projects completed, there is very little precedent to look to for guidance. The contract requires significant trust between the parties, and some participants may find it difficult to change their old ways and make decisions that are in the best interests of the project.

Most Level 3 IPD projects do not require a GMP. Some owners may not be able to give up the perceived control that a GMP offers. The decision-making process is truly collaborative and some owners may not be able to give up the command and control that they typically have using the traditional approach. In addition, the insurance industry is still coming to grips with this approach and there is virtually no legal precedent at this time, since there have been very few known disputes. Some owners may wait and see if Level 3 IPD "gets legs" and continues to produce good results before they give it a try.

There are tradeoffs using a multi-party contract or Level 3 collaboration that increase risk. IPD is not for everyone. These risks include:

- Trying something new and untested
- Risk issues are still new
- Building without a GMP
- Surrendering command and control
- May not get what we are looking for after huge investment of time
- Owner is taking some of the risks back – will benefits outweigh the risks?
- Measuring the benefit is difficult (to prove)
- What might happen if things go wrong

The Voice of Experience

It almost seems that those that have participated in a multi-party contract have shared something that the rest of us who have not cannot understand. The experience is better than anything they have experienced before, they tell us anecdotally. Even the participants who have been collaborating for years under traditional transactional contracts explain that their own organization collaborated at an even higher level under this relational, multi-party contract. For now, until we have a more collective industry experience with these relational contracts, it may be difficult to move past the anecdotal stage. Clearly, contracting collaboration and changing the contract structure is increasing collaboration. Articulating in detail the changes in behavior and the resulting collaboration driven by these multi-party contracts may just take time.

The results, however, have been powerful on projects that have embraced Level 3. Interests and cultures are aligned, everyone is focused on the project, intense collaboration starts early and continues throughout the project, problems are identified early and collectively resolved, waste is driven out, changes are reduced or eliminated entirely, conflict is avoided and disputes are resolved by the core group, schedules are improved and people have fun. The 2007 CURT study indentified (and many Owners, Designers and Contractors have experienced) the "broken system" of the traditional approach to construction projects; Level 3 IPD may not be the answer for every problem, but it has produced exceptional results on the projects where it has been utilized.

C. IPD as a Delivery Method

IPD (Level 3 Collaboration) is a delivery methodology that fully integrates project teams in order to take advantage of the knowledge of all team members to maximize the project outcome. Integrated Project Delivery is the highest form of collaboration because all three parties (Owner, Architect, Constructor) are aligned by a single contract.

i. Applying Principles and Practices with IPD as a Delivery Method

There are several different contract agreements for Level 3 Collaboration, ranging from ConsensusDOCS™ 300 Tri-Party Agreement for Collaborative Project Delivery, AIA C191 Standard Form Multi-Party Agreement for Integrated Project Delivery, and the AIA C195 Standard Form Single Purpose Entity Agreement for IPD, as well as customized agreements used on projects such as Washington State, Sutter Health, and Autodesk Waltham.

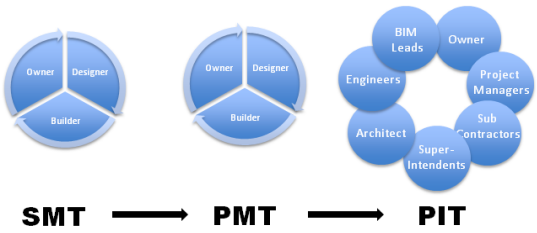
*See **Appendix C** for examples of contract agreements.*

Whichever contract form is used, what's important are the principles for implementing IPD, including: early involvement of all key participants to provide knowledge when it can make the greatest impact; joint project management to encourage all participants to be meaningfully engaged throughout the project; zero litigation to enable project teams to act in the best

interest of the project; and joint risk sharing to encourage the project team to proactively accept and minimize collective risk.

It is crucial that all three parties (Owner, Architect, Constructor) not only agree on the contract, but also believe in the process. Because the contract is much different than conventional project experience, the teaming approach is also different. IPD is a fundamental cultural shift that should not be taken lightly. Project success depends upon the entire team adapting to a new way of working.

There are several different aspects of an IPD team. Establishing a structure at the start of the project and clearly documenting the approach are most important. Different team structures can be arranged to best suit the project. One example is the Autodesk AEC Headquarters structure:



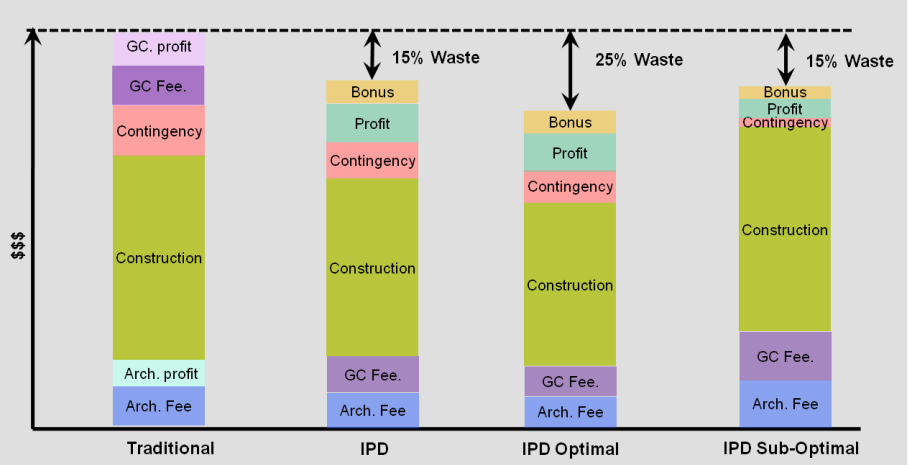
- SMT = The Senior Management Team comprises one person representing each of the three primary parties (Owner, Architect, and Constructor), typically the Project Executive of his/her respective firms.

- PMT = The Project Management Team comprises one person representing each of the three parties, responsible for the shared project schedule, budget, and decision making.

- PIT = The Project Implementation Team is a larger group and comprises members from the three organizations plus additional design consultants and subcontractors involved on the project. The PIT members are determined by the person(s) most responsible for designing, detailing, and constructing the project.

Outlining the team structure assists the team in establishing decision-making procedures. The PMT is primarily charged with making all day-to-day decisions. However, a consensus must be reached by all three people. If a consensus is not reached, the SMT is consulted. The owner should carefully identify its PMT representative, as this individual will need to make decisions on the project. Slow response by any member of the PMT will delay the project, and potentially hinder the outcome.

The PMT is also responsible for budget management. With IPD, there is joint sharing of profits and losses through a profit/incentive pool. In order to be profitable on the job, team members must maintain the project budget. Therefore, all team members are incentivized to stay on track and validate the design, not only at the end of project phases, but throughout the process.



KlingStubbins IPD Budget Graphic

Level 3 Collaboration not only changes process but also team dynamics and behavior as well. Team members must believe that they are working for the project instead of their respective companies. Individuals must accept responsibility jointly, with a "we've got each other's backs" mentality instead of the "cover yourself" mentality. By "owning" design intent as well as budget and schedule performance, the entire team is compelled to focus on quality instead of making changes for the individual company's best interest.

One method of establishing this cohesiveness is co-location. Co-location during both design and construction brings together the right people at the right time, aiding in establishing team relationships. Co-location is most effective for the PIT (Project Implementation Team), as these are the ones responsible for designing, detailing, and constructing the project. It is beneficial for the Owner PIT member to take part in co-location. These activities are more productive in a collaborative environment. The PMT responsible for the shared project schedule and budget have found that weekly conference calls with both audio & visual are effective ways of working together.

Co-location involves not only the design and construction team members, but also early involvement of trade contractors and suppliers. In order to leverage the knowledge of the trade contractors, it is best for them to be part of the IPD contract. These subcontractors, like the three primary parties, should be incentivized to construct a better project. While not all subcontractors are necessary as part of the IPD agreement, it is best to determine which have a significant role, and include them in the agreement. This way both the architect and engineer can have a direct relationship with subcontractors during design and construction instead of through the contractor only.

While co-locating, team members should determine who is best suited to complete a task in order to eliminate redundant effort. For example, fire protection branch piping layout can be designed and modeled by the

subcontractor (with design engineer input) instead of the fire protection design engineer modeling and then the subcontractor. This will result in a better coordinated project as well as project savings.

ii. Early Lessons Learned – Practices to Consider

Following are lessons learned from an Integrated Project Delivery experience. While these are based on a "true IPD" contract for Level 3 Collaboration, these principles can be incorporated into other teaming arrangements.

Team behavior is crucial for a successful IPD project. Everyone must be willing to participate and operate as a unified team. Trust is essential to a strong team and should be established early on in the project by building relationships. Leadership behavior should be substituted with ownership mentality.

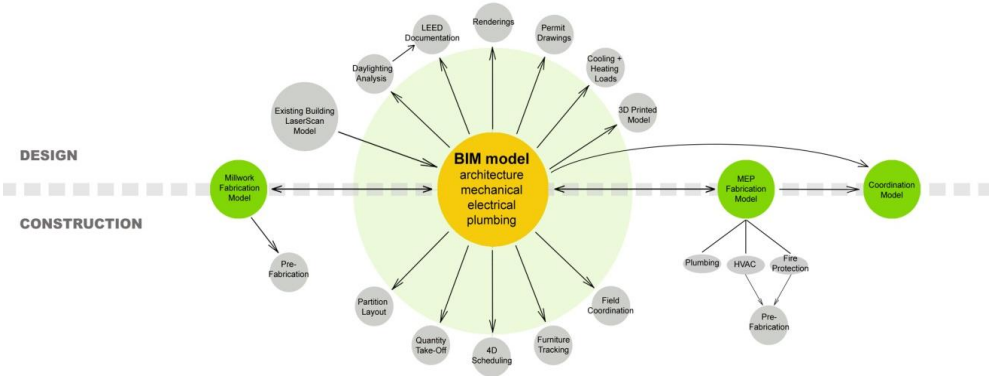
Clear communication is necessary. IPD fosters greater communication among all team members. As more essential team meetings and collaboration take place, there is still a need to document decisions. By establishing reporting mechanisms, you won't hinder discussions with the traditional project chain of command.

A scoping exercise should be conducted at the beginning of the project. It is beneficial to the project for the team to confirm that the project will meet all of the expected needs. Some IPD participants believe the team should agree on a scope document and include it as part of the contract.

As project phases are evolving, find ways to leverage the traditional project phases. During pre-construction, validation of the design is no longer only at the end of every phase. Validation and optimization should be a continuous effort throughout design, in order to eliminate "Value Engineering" at the end of design. Coordination is an on-going process with all parties involved early on instead of after the construction documents are issued. Because the contractor is part of the project team at Day 1, the permitting process can begin early. Determine what is needed for permit directly with the approvals agencies. With IPD, there isn't a true bid phase at the end of design; pricing and buy-out can be sequenced as the project proceeds.

BIM enhances IPD. A BIM Execution Plan (BEP) should be completed at the start of the project for model sharing among all team members. Model setup is determined by the needs of all parties. BIM is successful in an IPD environment if the design and construction team shares one BIM model, as separate BIMs are less efficient. The BIMs should be easily accessible in the

field office to review issues with subcontractors during site visits.



Project BIM Strategy Example, KlingStubbins

Early involvement of trade contractors and suppliers is beneficial to the project. It allows the team to design what will be built instead of designing for intent, saving time and money. The team is also working collaboratively throughout the project for a better price. As stated previously, it is best for key subcontractors to be part of the IPD contract, but some of the subcontractors not included in the IPD team do not have a strong incentive to act as team players. Determine a method to incorporate smaller subcontractors (such as glass, ceilings, security) for consistent project goals.

An Independent Judge is sometimes used in determining how well the team met the project goals. The judge, agreed on by the three primary parties, is brought in at project completion to assess design quality. This encourages all team members to strive for design quality, as individuals cannot lower design standards for the benefit of project budget and schedule. An Independent Judge can talk with people using the space to qualitatively measure how well the design achieved the users' goals. This can also be achieved by including comparable projects in the contract.

iii. IPD Case Studies

Much material from this section is from "Integrated Project Delivery: Case Studies", with permission from the American Institute of Architects, available at no cost at www.aia.org/ipd.

Currently, there are relatively few IPD projects that have used multi-party contracts that have been completed. The American Institute of Architects (AIA) recently released *Integrated Project Delivery: Case Studies* (AIA and AIA California Council, 2010) which examined six real-world, completed projects that used IPD "in as pure a form as possible."

For the purposes of the case studies, the AIA publication defined IPD using six (6) characteristics:

1. Early involvement of key participants
2. Shared Risk and Reward
3. Multi-party contract
4. Collaborative decision making and control
5. Liability Waivers among key participants
6. Jointly developed and validated project goals

Case Study Projects						
IPD Characteristics	**Autodesk AEC Solutions Division Headquarters**	**Sutter Fairfield MOB**	**Cardinal Glennon Children's Hospital Expansion**	**St. Clare Health Center**	**Encirlce Health Ambulatory Care Center**	**Walter Cronkite School of Journalism, ASU**
Early Involvement of Participants	Yes	Yes	Yes	Yes	Yes	Yes
Share Risk and Reward	Yes	No	Yes	No	Yes	No
Multi-Party Contract	Yes	Yes	Yes	Yes	Yes	No
Collaborative Decision Making	Yes	Yes	Yes	Yes	Yes	Yes
Liability Waivers	Yes	No	No	No	No	No
Jointly Developed Goals	Yes	Yes	No	Yes	Yes	Yes
"Level of Collaboration"	3	3	3	3	3	2
IPD: Philosophy (IPD-ish) or Delivery Method?	Delivery Method	Delivery Method	Delivery Method	Delivery Method	Delivery Method	IPD-ish

The above graphic reproduced from the AIA Case Studies summarizes the report.
(Note: The grey areas in the graphic have been expanded for this document to show how the projects studied align with the "levels of collaboration" and the IPD definitions used in this paper.)

Amount of Collaboration within Levels

Also noteworthy from the AIA publication, of all of the projects that used a multi-party contract, only the Autodesk project used all six characteristics of IPD. This raises the point that within Level 3 Collaboration or IPD as a Delivery Method, there is also a spectrum. Even contracts using multi-party contracts may vary from lower to higher levels of collaboration through the use of more IPD practices. As the use of multi-party contracts expands and the field of study is broadened, future work will likely provide more insight into which IPD practices have the greatest impact on degree of collaboration achieved.

A key to point out is that the AIA Case Studies did not formally recognize IPD as a Delivery Method versus IPD as a Philosophy. The analysis did include one project that did not use a multi-party contract: the Walter Cronkite School of Journalism. Therefore, all but this project, using this paper's definition, were Level 3 Collaboration and IPD as a Delivery Method. The Walter Cronkite project, which still did use highly collaborative IPD principles, was IPD-ish and Level 2 Collaboration.

In addition to the six characteristics, the following additional characteristics were identified as "highly desirable for IPD" for the purposes of the case studies document:

- Mutual Respect and Trust Among Participants
- Collaborative Innovation
- Intensified Early Planning
- Open Communication within the Project Team
- Building Information Modeling (BIM) Used by Multiple Parties
- Lean Principles of Design, Construction and Operations
- Co-Location of Teams ("Big Rooms")
- Transparent Financials (Open Books)

All of these additional characteristics are not unique to multi-party IPD projects. In fact all of these are available to some degree with traditional

contracts and can even be applied to Level 1-Traditional Collaboration. However, these characteristics are good examples of IPD principles and when most of them are applied to a project this would be typical of the difference between Level 1 and Level 2 Collaboration.

Other observations from the AIA publication include:

- Aligning of Goals: Teams felt that "IPD's promise is its ability to manage and mitigate risk for all three principal parties…by aligning the goals of these parties around what is best for the project and making each party responsible for the behavior of the others, all three parties gain more control of the overall process. Increased certainty means lowered risk."

- Ability to Address Issues: Teams believed that under the relational contracts they were able to address issues and accomplish things that they could not have been able to address with traditional transactional contracts.

- Results Speak for Themselves: Anecdotally, most participants articulated that these projects were the "best project" of their careers.

D. IPD as a Philosophy - What can you do if you can't do multi-party?

For discussion of two owner experiences with "IPD-ish" (Emory University and Commonwealth of Massachusetts) see Appendix A.

IPD as a Philosophy, sometimes called "IPD Lite," "IPD-ish" or Level 2 Collaboration here, reflects owners' interests in enhancing collaboration and the benefits to be gained from collaboration without establishing a multi-party contract between the owner, designer and contractor. The variations of implementation of IPD as a Philosophy (or IPD Lite or Level 2 Collaboration) by owners cover a broad spectrum, depending on the perspective, goals and requirements of owners. A good example of Level 2 Collaboration can be seen in the Walter Cronkite project from the AIA Cast Studies discussed on page 17.

Applying Principles and Practices with IPD as Philosophy (IPD "Lite" or Level 2 Collaboration)

Many owners, especially public owners, do not have the authority to enter into multi-party agreements, to agree to not litigate on projects, to accept insurance policies with provisions that do not meet current statutory requirements, and to bring subcontractors into the design process. However, to take advantage of some of the key benefits of IPD-type delivery, many contract provisions and project procedures can be modified and additional benefits delivered. These include using BIM, bringing the Construction Manager (CM) into the project early in the study process, co-locating team staff, and establishing a team decision-making process and structure, with special attention given to ensuring that issues are resolved in a timely manner at an appropriate level.

Owners that seek to enhance collaboration on projects but do not have the authority or desire to pursue a true IPD project with a multi-party contract can still benefit from many of the features of collaborative models explored in this paper. Here is a range of considerations:

Delivery Method

See AIA National/AIA California Council paper, Integrated Project Delivery: A Guide (2007) which, in Part 7, describes how different project delivery methods are more or less suited for IPD.

For a more detailed discussion of CM at-Risk, please see AGC Item #2912, CM/GC Guidelines for Public Owners, 2nd Edition (2007).

Level 2 Collaboration can be accomplished by adding IPD principals to more typical CM at-Risk projects; however several of the principles described above can be included in Design-Build contracts, as well. There are many ways to incorporate a higher level of collaboration into your project without having to use a multi-party contract. Below are some of the key elements of Level 2 Collaboration:

- Co-location of team members
- Design team involvement in performance incentives and risk sharing
- Construction team incentivized for productivity
- Subcontractor participation in performance incentives and risk sharing

Team Selection

Where possible, selection criteria for project designers and contractors should include experience and success with IPD/Collaborative projects or long-term experience working collaboratively with CMs selected early in the design phase. (Note: owners will need to carefully define "working collaboratively.")

Performance-Based Incentives

Level 2 Collaboration involves a more significant commitment to providing pain/gain cost sharing for all parties. Many owners have implemented some type of bonus program for CMs as part of a traditional CM at-Risk process ("Level 1"); however, bringing designers into the equation involves additional creative approaches. In Level 2 Collaboration, this could be done even if the parties execute separate contracts with the owner, such as through the establishment of incentive pools.

Owner's Role

Owners need to remain involved throughout the process, working as a team member, not an adversary. In most cases, owners will need to lead the process and guide the team in the collaborative direction. Owners need to recognize that successful collaborative processes require more staff time than traditional Design-Bid-Build processes. Staff needs to be empowered to make decisions at meetings where all team members are present. Furthermore, owners that are working with clients on a project need to ensure that the client is equally committed to collaborating with the project team.

Be aware of and develop an approach that is compatible with the owner's culture. Support and commitment of the owner – from top to bottom – are

essential to the success of a Level 2 collaborative project. Identify the appropriate individuals in the organization to implement a Level 2 collaborative process and be willing to replace staff who do not embrace this type of project approach.

Owners need to be aware of the chemistry of all the key team members, and recommend if changes are needed on any one of the constituent members' staff to ensure that the goals for collaboration are met. It is the owner's responsibility to create a sense of shared, common ownership of a project.

Decision-Making

Identify the most important issues and commit to solving them. Rely on the expertise of the most knowledgeable party for a particular issue. Complex projects benefit from common ownership of decisions.

BIM

BIM is a tool that is a powerful incentive to use a more collaborative process. Require all parties to use BIM and to share the information electronically with the owner. BIM greatly facilitates the process by clarifying intent and recording and sharing accurate, better coordinated information about a project.

Since Level 3 Collaboration may not be a possibility for some owners, it is important to consider the above principles when the goal is to have a project that benefits from the collaboration that IPD brings. Though collaboration may not be contractually bound, IPD as a Philosophy can offer many advantages that IPD as a Delivery Method brings.

3. Trying Integrated Project Delivery: First Steps

When an owner believes using Integrated Project Delivery is an approach to consider, where do they start? Do they have internal buy-in? Are they able to procure using a process that best facilitates collaboration? Are there other regulatory hurdles necessary to overcome? If the organization is at least at Level 1, using traditional collaboration approaches with CM at-Risk or Design-Build, the chances of increasing collaboration to Level 2 using IPD as a Philosophy are probably very high. Going from Collaboration Level 1 to Level 3, IPD as a Delivery Method using a multi-party contract, is probably more challenging, but less challenging than if the organization is not even at Level 1 yet.

The following offers a few suggestions that should help owners move their organizations in the direction of early implementation of IPD, regardless of which level of collaboration they are striving for:

A. Culture – Willingness to Change; Take Risks and Trust

The Culture of Trust

A truly integrated project is incredibly different from all other delivery systems. The required commitment by all of the parties to see the project succeed and the contractual relations that tie the parties together necessitate a team culture based on risk-sharing and trust like no other.

Willingness to Change

Change is most often motivated by dissatisfaction with the status quo. Have projects that have been delivered to date not met expectations? Has the inherent conflict built into traditional delivery methods left an owner frustrated, and paying the bill? The first IPD project at Sutter Health was motivated by the realization that escalating costs, missed completion dates, and projects wrought with claims were not meeting the owner's needs. With similar motivation, change can occur.

Change is Coming

While studies show that alternative delivery systems routinely result in safer, faster, lower cost and higher quality projects, the vast majority of projects are still delivered in the traditional Design-Bid-Build lump sum manner with the designers and the builders operating in separate silos and often pitted against each other. Why? Political expediency! Most buyers of construction services know that the easiest way to differentiate proposals is via cost. So many other measurements are subjective in nature that it takes a significant amount of expertise to decipher the varied responses that can come from a request for proposal (RFP). When justifying a decision to go with Contractor X, a facility manager can usually feel secure in going with the low bid. With such an

emphasis on costs, the Design-Bid-Build lump sum delivery offers a known first cost on a project. Any other delivery method means that the cost might not be known until sometime later in the project; in such cases owners must trust the builder and the architect to treat them fairly.

Get Your Own House in Order

Once an owner decides that change needs to occur and IPD is the desired direction, the first challenge faced is likely an internal one, and the bigger the organization, the bigger the challenge. Selling the concept of IPD to legal staff, purchasing departments, facility managers, let alone a direct supervisor may be a huge challenge. The range of experience buying construction varies considerably from one purchasing department to another. Facility managers may like the current process and some internal owner departments may find a false sense of comfort in the "risk" that has been contracted away. The key in almost all cases is to engage the various parties in the organization and understand their concerns and involve them in the discussion to use collaboration to improve the delivery of capital projects.

The number of IPD successes that have occurred in the marketplace will have to be explained as well as the true realities of the status quo. Only after one's own house is in order should one begin the process of looking at outside partners.

Big First Step

The next really big step—the contract—if not managed well, can easily turn an IPD project into a snowball rolling out of control. The multi-party contract dramatically changes the whole concept of control and teamwork. The owner is now a key part of the core team, involved in the decision-making process developed by the team. The builder is now a partner during the design phase and must now recognize sub-tier contractors as equal partners. Both the designer and the sub-tier contractors are now in very different positions. Each party has different risks that need to be addressed. Finding a contract that will satisfy all of the parties 100% is next to impossible. To have a successful IPD project, the parties must develop a level of trust among each other so they know that they will not be taken advantage of during the project even though all of their concerns might not be met in the contract. This is easier said than done.

For a good discussion of understanding the various motivations of team members (including owners), see AIA's "On Compensation: Considerations for Teams in a Changing Industry," available for download at no cost at www.aia.org/ipd.

The key to smoothing the downhill slope with the multi-party agreement is goal alignment. There are many measures of success on a project: satisfied clients, a stellar safety record, on-time delivery, reduced cost, no claims, and public recognition are just a few. However, almost all of the entities involved in the project will have some sort of monetary goal buried in their hopes for the project. The owner typically has a pro-forma budget for their project. Designers are typically compensated on an hourly basis. Builders are looking

to beat their estimates. While they do not have to be, most of the time in Design-Bid-Build lump sum delivery, these goals are mutually exclusive. The most successfully integrated projects are able to align the risks while encouraging behaviors that will result in achieving project goals. As discussed in the lean section, decisions must be made for the good of the project and not for the good of the individual. It takes leadership by the owner to implement this project culture and trust among all of the parties that their decision to bend on a point will not break them later in the project and start the snowball rolling again.

All contracts are based on the covenant of trust. In an IPD project, the element of trust is taken to a higher level. Owners must trust that: 1) They have the support of those to whom they are accountable; 2) They have the ability to select a team that will treat them fairly; and 3) They can align the goals appropriately to ensure project success. This can be radically different from other projects, but through embracing change, it can also be very rewarding.

B. Addressing Potential Barriers or Limitations

Most owners who are trying to move from an environment using little or no collaboration will run into issues that will prevent or limit their ability to evolve to higher levels of collaboration. Every owner's situation will be unique; however, there are a few typical barriers that have been addressed enough times by owners in the past that there are some lessons that can be shared:

i. Selection / Procurement Options: Buying Value

Experience thus far has shown most owners choosing to use IPD as a delivery method are typically using Qualifications Based Selection processes for the procurement of their partners. This includes the design team and the construction team.

The typical selection processes used in construction include the following four types and their application to IPD is shown in parentheses:

- Qualifications Based Selection – QBS (Most conducive to collaboration)
- Best Value–Fee Proposal (Helpful for collaboration)
- Best Value–Competitive Sealed Proposal (Not collaborative)
- Low Bid (Not collaborative)

The first two, QBS and Best Value–Fee Proposal favor the ability to select the team early and support the ability to fast-track the design and construction schedule when necessary. Also, given the high degree of collaboration that is not only desired but is contractually required on true IPD, most owners elect to use Qualifications Based Selection for multi-party contracts. Best Value–

Competitive Sealed Proposals and Low Bids generally require a significant percentage of the design to be complete to use as the basis of the pricing portion of these selection types. This significantly inhibits the ability to bring teams together early to collaborate as well as the ability to fast-track the design and construction.

Those who are "required to have price be part of their selection process" would typically select "Best Value–Fee Proposal." Caution is offered here to not weigh the fees any more than necessary to avoid providing the wrong incentive to the proposers on the project. The focus should be on finding the team that through their involvement can add the greatest value by being on board as part of the team, not the team that can offer their services at the lowest price.

ii. Regulatory / Legislative

How Some are Working Around Current Procurement Rules?

Public owners are often unable to share in the risk or the reward outside of the ways in which this is done under traditional collaborations today. Some owners are able to identify one project as an exception or a prototype and get special permission to try some level of IPD on that one project. This is recommended as a more expeditious way to try IPD than trying to change the applicable rules, regulations, or legislation that might apply to all projects.

4. Summary | Recommendations for all Owners (Not Just Public)

Integrated Project Delivery (IPD) and collaboration are being used almost synonymously. Is every owner organization, whether public or private, going to evolve to IPD as a delivery method using contractual collaboration? Probably not, but for those interested in trying to achieve the benefits of greater collaboration or improving upon their current level of collaboration, sorting through this maze can be confusing. The landscape is still changing and likely will continue to change for some time to come. This publication is a snapshot of where the industry is today.

Using the differentiator of the multi-party contract to separate IPD into two types (1. a philosophy and 2. a delivery method) and then further examining IPD based on the three levels of collaboration (1. typical collaboration; 2. enhanced collaboration; and 3. required collaboration), owners can have a clearer vision of what options may be available, and have the ability to make a more informed decision of which options to pursue.

There are several recommendations that apply to all owners, public and private alike. These include:

- Keep striving to increase collaboration
- Consider testing new concepts on pilot projects
- Learn from the experiences of others

Will Integrated Project Delivery (IPD) be a lasting trend or just a passing fad? The term may fade away and be replaced by the newest way to describe collaboration, but a recognition that the power of people working together with a shared vision and common goals will always be much greater than any individual working alone will last forever. Equip these teams with technology to improve their efficiency, remove the shackles of institutionalized transactional contracts that create the wrong behaviors, and replace them with relational contracts that incentivize behaviors that benefit the goals of the team and the ability of these groups will likely go far beyond what can even be imagined today.

Of course, all of this is simply theory without the ability to find partners in the process. How does one go about looking for willing participants? Finding them is not so different than searching for people interested in other new ventures. One must first identify what stakeholders are needed to fulfill the various roles (designers and contractors to start with) and demonstrate a willingness to venture into the unknown. If the topic has been properly researched and a reasonable plan of action has been developed, one will find that there are many who are willing to step out to try new methods. When one

considers that this presents an entirely new opportunity for businesses to gain commissions for new work, the task is an easy one.

Owners make many decisions that ultimately determine the potential for success on their projects. Among them are choosing which process to use, which team members to work with and which contracts are going to be used. Each of these decision points has implications about their migration toward improved collaboration, and ultimately into the IPD arena.

Appendix A: "IPD-ish" at Massachusetts and Emory

Example of IPD "Lite": Commonwealth of Massachusetts

The Division of Capital Asset Management (DCAM) of the Commonwealth of Massachusetts is responsible for managing study, design and construction projects for Executive Branch agencies, including higher education, as well as for the Judiciary. DCAM administers over $300 million of construction work annually.

Since 2004, DCAM has had the authority to utilize Construction Management at-Risk (CM at-Risk) for projects with an estimated construction cost over $5 million. CM at-Risk is DCAM's preferred project delivery method. Key provisions that differentiate DCAM's CM at-Risk process from that which may be used by other owners, and which affect the extent to which we can implement an IPD-type project, include:

- Early subcontractor involvement: Massachusetts law restricts our ability to bring subcontractors on-board early. The CM solicits bids from prequalified firms in 17 trades categories, and the prequalified firms are selected based on lowest eligible and responsible bid. Thus, the design needs to be well-developed before the subcontractors can bid/participate in the project.
- Ability to use a multi-party contract: Massachusetts can't bring on all parties at one time, thereby eliminating the ability to execute a multi-party contract. DCAM's Designer Selection Board selects the Designer, who is required to execute a state Designer contract. Massachusetts' CM at-Risk legislation articulates several of the contract provisions that must be included in the CM contract.
- CM at-Risk contractor selection is not a purely Qualifications Based Selection. As described in Massachusetts' CM at-Risk statute (Massachusetts General Law Chapter 149a), DCAM utilizes a two-step RFQ/RFP process, whereby after the awarding authority evaluates firms' qualifications in the RFQ. Cost is a factor in the ultimate selection, but it is not the determinative factor.
- Massachusetts has not established a pool for sharing risks/rewards. DCAM is exploring whether CM bonus provisions and our ability to offer Designer bonuses can be arranged to serve this purpose.

<u>How Massachusetts Incorporates Key IPD Elements in its CM At-Risk Process?</u>

DCAM recognizes the value and benefits of working collaboratively with its project partners – client agencies, designers and contractors, as well as the subcontractors involved with the projects. To that end, DCAM has incorporated a number of processes into its CM at-Risk projects that reflect IPD principles. For example, Massachusetts:

- Instructs DCAM staff to take a collaborative approach to working with project team.
- Has the right to approve the CM project manager and other key designer and contractor staff.
- Uses BIM to varying degrees, depending on the project.
- Develops work plans and decision-making structure early in the project.
- Does not limit the number of meetings.
- Holds meetings face-to-face.
- Ensures that project staffers are on-site regularly during construction (more than on a conventional project).
- Periodically supplements the architect's fee to enable the architect to be on-site to help expedite RFIs and to answer questions. This supplemental fee allows the on-site architect to serve as a liaison between the CM and the architect's project personnel at the main office.

Massachusetts has added some general language to its standard Designer contract that expresses DCAM's intention to pursue a modified form of IPD:

Attachment to Designers Contract: Collaboration and Integrated Design. DCAM's use of a modified form of "Integrated Project Delivery" (IPD) intended to be used as a collaboration tool to achieve project goals. Designer's services related to the IPD process and goals shall be included in BASIC SERVICES and the BASE FEE. More specifically, such BASIC SERVICES shall include, but not be limited to the Designer's participation on a "Core Team" established for the Project consisting of representatives from DCAM, DCAM's Client agency, the CM and the Designer, with each member bringing differing expertise and perspective to the Project regarding the design, program, cost and schedule. The IPD process shall require the Core Team to engage in extensive collaboration and perpetuate the continuous flow of information via protocols established by the Core Team so that the full weight of the entire Core Team's expertise will be integrated throughout the design process and the goals of the Project are attained. Core Team meetings shall be held every two (2) weeks during the entire design process to expedite decision making and collaboration.

What Can Massachusetts Do Under Current Laws to Enhance IPD Principles and Practices in its Projects?

There are other IPD principles that Massachusetts has NOT yet incorporated into its projects, but which it is looking to do in the future. These include:

- Enhancing/expanding our use of BIM.
- Basing selection of a Study Consultant/Designer contingent upon its experience with IPD and its willingness to work with DCAM and its CM in an IPD-like process.

- Providing bonuses for exceeding project requirements.
- Detailing the conditions for awarding bonuses.
- Identifying desired IPD-type services to be provided by Designers and CMs, and structuring contracts to reimburse the team for such extra costs.
- Co-locating project staff during design and construction – if there is sufficient staff to cover all our projects.

Massachusetts' Division of Capital Asset Management identified a demonstration project which is incorporating the following IPD features:

- Early involvement of participants. The architect and CM were selected through separate processes, but close succession.
- Multi-party contract. Due to statutory constraints, Massachusetts cannot use a tri-party contract; however, the Commonwealth will be using a tri-party agreement (Project Management Plan) which will be collaboratively developed as soon as the CM is selected.
- Collaborative decision-making.
- Jointly developed goals as part of the Project Management Plan.
- Lean principles and techniques will be used to facilitate and accelerate the schedule by focusing on cost, program and quality as high visibility, high priority objectives

The project is the Western Massachusetts female Correctional Facility in Chicopee. It is a relatively small job, which will allow Massachusetts to focus and concentrate on the process (IPD) and its tools (BIM, Lean).

Example of IPD "Lite": Emory University

As a private institution, Emory enjoys a higher degree of flexibility in the way it approaches capital projects than many public universities. Consequently, there are a variety of delivery approaches that have been employed over time to meet the specific needs of project goals, including Design-Bid-Build, Negotiated, Design-Build and CM at-Risk. Over the years the CM at-Risk process gained favor as the predominant method of choice by Emory's project management staff. Among the many reasons that this approach was favored included the ability to assemble a team that exhibited the traits needed to deliver a successful project, yet this occurred many times almost by accident and was impossible to predict. We were searching for an approach that could produce a more predictable outcome for success.

The introduction of IPD seemed to offer an opportunity to build upon the positive attributes of the delivery methods that were already utilized while providing an opportunity to discard the elements that didn't necessarily add value to the process. Although IPD in its purest form might provide the optimal approach to improving opportunities for success in project delivery,

like many other institutions, we were not yet prepared to deal with everything that IPD implies, particularly the concept of multi-party agreements. There remain impediments to the idea of multi-party agreements that will take time to overcome, so we have concentrated our efforts on the elements of IPD that can be embraced with limited involvement from those outside the Planning, Design & Construction office.

Using the framework from the IPD model combined with some of the strategies and best practices of successful projects can produce an improved project delivery approach with or without requiring the use of multi-party agreements. The framework Emory has utilized when deploying the IPD approach focuses on these elements:

- Develop specific project goals and measurable benchmarks that would define success.
- Issue an RFP to qualified design teams and CM's that clearly articulates the project description, scope, budget, schedule and intended goals.
- Require potential contractors and design firms to form their own teams and make a team selection based on interviews that examine the full team's commitments to achieving the pre-established project goals. Asking the teams to select each other prevents the owner from "forcing marriages" and allows contractors to have a say in the design team selection while confirming the entire team's commitment to the process.
- Establish a target savings goal utilizing the project goals as a guideline.
- Develop a "shared savings" pool to be shared among all project participants when they successfully meet target benchmarks. One model would have the owner retaining the initial 50% of all savings and the team splitting the balance, but any agreed upon deviation from this formula would work just as well.
- Challenge the team to utilize recognized "lean construction" principles to improve team performance and project deliverables and include measurable goals to validate successes.
- Establish a firm, but achievable project budget and schedule.

One of the fundamental differences with this modified version of IPD and the more traditional CM at-Risk or Design-Build delivery approach is the potential elimination of the GMP. This is a radical departure from today's delivery methods and would, on the surface, appear to shift all of the financial risk to the owner. In fact, some people perceive that some contractors minimize their risk by inflating their GMP estimates during design. This is often followed by agonizing value engineering (VE) sessions in an attempt to maintain the project budget. We are typically not in a position to dispute their estimates without delaying the progress of the work due to the amount of time and effort required to validate and/or challenge their numbers. This is less of a

problem for the Design-Build process since the GMP is established with the original submittal.

The elimination of the GMP removes the incentive to inflate the GMP for risk protection and relies on the owner's ability to prepare a realistic budget at the inception of a project (a necessary and fundamental project requirement anyway). One could argue that this "shifts" the risk from the CM to the owner, but an equally compelling argument states that the owner owns the risk regardless of how the budget is ultimately developed and agreed to. The contract basis can still utilize current CM contract language, but would eliminate the use of a GMP and rely on an agreed upon a "target budget" for cost targets and sharing incentives. Utilizing Design-Build contracts for IPD is more problematic. The fundamental language supporting the D-B approach simply does not apply to many of the processes embraced by IPD.

Appendix B: Levels of Collaboration

	Level One "Typical" Collaboration	Level Two "Enhanced" Collaboration	Level Three "Required" Collaboration
Level of Collaboration	lower ⟷ higher		
Philosophy or delivery method?	IPD as a Philosophy	IPD as a Philosophy	IPD as a Delivery Method
Also known as...	N/A	IPD-ish; IPD Lite; Non Multi-party IPD; Technology Enhanced Collaboration; Hybrid IPD; Integrated Practice	Multi-Party Contracting; "Pure" IPD; Relational Contracting; Alliancing; Lean Project Delivery System™
Delivery Approaches	CM at-Risk or Design-Build	CM at-Risk or Design-Build	Integrated Project Delivery
Typical Selection Process	Qualifications Based Selection of all team members or Best Value Proposal	Qualifications Based Selection of all team members	Qualifications Based Selection of all team members
Nature of Agreement	Transactional	Transactional	Relational
Key Characteristics	• No contract language requiring collaboration • Limited team risk sharing • CM or DB share in savings	• Contract language requiring collaboration • Some team risk sharing • Co-location of team	• Owner-Designer-Contractor (and possibly other key team members-IPD Subs) all sign one contract that contracts collaboration • Team risk-sharing-incl. A/E • Team decision-making • Optimizing the Whole • Pain / Gain sharing • Limits on litigation • Co-location of the team
Typical Basis of Reimbursement	GMP	GMP	GMP or No GMP (some costs guaranteed)

Appendix C: Standard Form Agreements

A. IPD Multi-party Contracts (Delivery Method) – Level 3 Collaboration

ConsensusDOCS

ConsensusDOCS 300: Tri-Party Collaborative Agreement

The Owner, Designer and Constructor all sign the same agreement, binding them to collaborate in the planning, design, development, and construction of the project. This agreement incorporates lean principles in order to drive out waste. A core team at both the project management and project development levels is created to make consensus-based project decisions (including project incentives and risk-sharing) to increase project efficiency and results.

American Institute of Architects

AIA C191–2009, Standard Form Multi-Party Agreement for Integrated Project Delivery

AIA Document C191–2009 is a standard form multi-party agreement through which the owner, architect, contractor, and perhaps other key project participants execute a single agreement for the design, construction and commissioning of a Project. C191–2009 provides the framework for a collaborative environment in which the parties operate in furtherance of cost and performance goals that the parties jointly establish. The non-owner parties are compensated on a cost-of-the-work basis. The compensation model is also goal-oriented, and provides incentives for collaboration in design and construction of the project. Primary management of the project is the responsibility of the Project Management Team, comprised of one representative from each of the parties. The Project Executive Team, also comprised of one representative from each of the parties, provides a second level of project oversight and issue resolution. The conflict resolution process is intended to foster quick and effective resolution of problems as they arise. This collaborative process has the potential to result in a high quality project for the owner, and substantial monetary and intangible rewards for the other parties.

B. IPD Non Multi-Party Contracts (Philosophy) – Level 2 Collaboration

American Institute of Architects

AIA A195–2008, Standard Form of Agreement Between Owner and Contractor for Integrated Project Delivery

AIA Document A195–2008 is a standard form of agreement between owner and contractor for a project that utilizes integrated project delivery (IPD). A195–2008 primarily provides only the business terms and conditions unique to the agreement between the owner and contractor, such as compensation details and licensing of instruments of service. A195–2008 does not include the specific scope of the contractor's work; rather, it incorporates by reference AIA Document A295–2008, General Conditions of the Contract for Integrated Project Delivery, which sets forth the contractor's duties and obligations for each of the six phases of the project, along with the duties and obligations of the owner and architect. Under A195–2008 the contractor provides a guaranteed maximum price. For that purpose, the agreement includes a guaranteed maximum price amendment at Exhibit A.

AIA A295–2008, General Conditions of the Contract for Integrated Project Delivery

AIA Document A295–2008, provides the terms and conditions for AIA Documents B195–2008, Standard Form of Agreement Between Owner and Architect for Integrated Project Delivery, and A195–2008 Standard Form of Agreement Between Owner and Contractor for Integrated Project Delivery, both of which incorporate A295–2008 by reference. Those agreements provide primarily only business terms and rely upon A295–2008 for the architect's services, the contractor's pre-construction services, and the conditions of construction. A295–2008 not only establishes the duties of the owner, architect and contractor, but also sets forth in detail how they will work together through each phase of the project: conceptualization, criteria design, detailed design, implementation documents, construction, and closeout. A295–2008 requires that the parties utilize building information modeling.

AIA B195–2008, Standard Form of Agreement Between Owner and Architect for Integrated Project Delivery

AIA Document B195–2008 is a standard form of agreement between owner and architect for a project that utilizes integrated project delivery (IPD). B195–2008 primarily provides only the business terms unique to the agreement between the owner and architect, such as compensation details and licensing of instruments of service. B195–2008 does not include the specific scope of the architect's services; rather, it incorporates by reference AIA Document A295–2008, General Conditions of the Contract for Integrated Project Delivery, which sets forth the architect's duties and scope of services for each of the six phases of the project, along with the duties and obligations of the owner and contractor.

C. Modified CM at-Risk Agreements and/or Design-Build – Level 1 Collaboration

CM at-Risk

ConsensusDOCS

ConsensusDOCS 500: Agreement and General Conditions Between Owner and Construction Manager (Guaranteed Maximum Price (GMP) with Option for Preconstruction Services)

An integrated agreement and general conditions document, the ConsensusDOCS 500 also provides an option for preconstruction services, such as providing estimates of the Project, reviewing drawings and specifications for constructability problems, creating schedules for procurement of long lead items, and developing Trade Contractor interest in the Project. It may be used in a variety of negotiated contract situations in which the Owner desires a comprehensive set of preconstruction and/or construction services from the Construction Manger and seeks the assurance of an overall project cost ceiling.

American Institute of Architects

AIA A133™–2009 (formerly A121™CMc–2003), Standard Form of Agreement Between Owner and Construction Manager as Constructor where the basis of payment is the Cost of the Work Plus a Fee with a Guaranteed Maximum Price

AIA Document A133–2009 is intended for use on projects where a construction manager, in addition to serving as adviser to the owner, assumes financial responsibility for construction of the project. The construction manager provides the owner with a guaranteed maximum price proposal, which the owner may accept, reject, or negotiate. Upon the owner's acceptance of the proposal by execution of an amendment, the construction manager becomes contractually bound to provide labor and materials for the project and to complete construction at or below the guaranteed maximum price. The document divides the construction manager's services into two phases: the preconstruction phase and the construction phase, portions of which may proceed concurrently in order to fast track the process. A133–2009 is coordinated for use with AIA Documents A201™–2007, General Conditions of the Contract for Construction, and B103™–2007, Standard Form of Agreement Between Owner and Architect for a Large or Complex Project.

CAUTION: To avoid confusion and ambiguity, do not use this construction management document with any other AIA construction management document. NOTE: A121CMc–2003 expires on May 31, 2010.

Design-Build

ConsensusDOCS

ConsensusDOCS 410 Agreement and General Conditions Between Owner and Design-Builder (Cost Plus with Guaranteed Maximum Price)

ConsensusDOCS 410 is a balanced document that addresses the entire design-build process. This Agreement addresses risks associated with relatively new construction issues, such as the use and maintenance of electronic data, while clarifying several risk provisions common to most standard form design-build Agreements. For example, this Agreement simplifies claim procedures, identifies excusable compensatory damages, and adopts the limited consequential damages provision that has become popular among Contractors and Owners.

American Institute of Architects

A141™–2004, Agreement Between Owner and Design-Builder

AIA Document A141–2004 replaces A191™–1996 and consists of the agreement and three exhibits: Exhibit A, Terms and Conditions; Exhibit B, Determination of the Cost of the Work; and Exhibit C, Insurance and Bonds. Exhibit B is not applicable if the parties select to use a stipulated sum. A141–2004 obligates the design-builder to execute fully the work required by the design-build documents, which include A141–2004 with its attached exhibits, the project criteria and the design-builder's proposal, including any revisions to those documents accepted by the owner, supplementary and other conditions, addenda and modifications. The Agreement requires the parties to select the payment type from three choices: (1) Stipulated Sum, (2) cost of the work plus design-builder's fee, and (3) cost of the work plus design-builder's fee with a guaranteed maximum price. A141–2004 with its attached exhibits forms the nucleus of the design-build contract. Because A141–2004 includes its own terms and conditions, it does not use A201™–1997.

D. IPD: Single Purpose Entity (SPE) – "Level 4" (beyond Level 3) Collaboration

This is a form of agreement where the team is under a legal entity created for the purpose of a specific project.

American Institute of Architects

AIA C195–2008, Standard Form Single Purpose Entity Agreement for Integrated Project Delivery

AIA Document C195–2008 is a standard form single purpose entity (SPE) agreement through which the owner, architect, construction manager, and perhaps other key project participants, each become members of a limited liability company. The sole purpose of the company is to design and construct a project utilizing the principles of integrated project delivery (IPD) established in *Integrated Project Delivery: A Guide*. C195–2008 provides the framework for a collaborative environment in which the company operates in furtherance of cost and performance goals that the members jointly establish. To obtain project funding, the company enters into a separate agreement with the owner. To design and construct the project, the company enters into separate agreements with the architect, construction manager, other non-owner members, and with non-member consultants and contractors. The compensation model in the non-owner member agreements is goal-oriented and provides incentives for collaboration in design and construction of the project, and for the quick and effective resolution of problems as they arise. This highly collaborative process has the potential to result in a high quality project for the owner, and substantial monetary and intangible rewards for the other members.

AIA C196–2008, Standard Form of Agreement Between Single Purpose Entity and Owner for Integrated Project Delivery

AIA Document C196–2008 is a standard form of agreement between a single purpose entity ("the SPE") and a project owner, called the owner member. C196–2008 is intended for use on a project where the project participants have formed the SPE utilizing AIA Document C195–2008, Standard Form Single Purpose Entity Agreement for Integrated Project Delivery. C196–2008 is coordinated with C195–2008 in order to implement the principles of integrated project delivery, including the accomplishment of mutually-agreed goals. C196–2008 provides the terms under which the owner member will fund the SPE in exchange for the design and construction of the project. The SPE provides for the design and construction of the project through separate agreements with other members, including an architect and construction manager, utilizing AIA Document C197–2008, Standard Form of Agreement Between Single Purpose Entity and Non-Owner Member for Integrated Project Delivery. The SPE may also enter into agreements with non-member design consultants, specialty trade contractors, vendors and suppliers.

AIA C197–2008, Standard Form of Agreement Between Single Purpose Entity and Non-Owner Member for Integrated Project Delivery

AIA Document C197–2008 is a standard form of agreement between a single purpose entity ("the SPE") and members of the SPE that do not own the project, called non-owner members. C197–2008 is intended for use on a project where the parties have formed the SPE utilizing AIA Document C195–2008, Standard Form Single Purpose Entity Agreement for Integrated Project Delivery. C197–2008 is coordinated with C195–2008 in order to implement the principles of integrated project delivery, including the accomplishment of mutually-agreed goals. All members of the SPE, other than the project owner, will execute C197–2008. C197–2008 provides the terms under which the non-owner members provide services to the SPE to complete the design and construction of the project. The specific services the non-owner members are required to perform are set forth in the Integrated Scope of Services Matrix, which is part of the C195–2008 Target Cost Amendment and is incorporated into the executed C197–2008. In exchange for the non-owner members' services, the non-owner members are paid the direct and indirect costs they incur in providing services. Additionally, C197–2008 allows for the non-owner members to receive profit through incentive compensation and goal achievement compensation.