INTEGRATED PROJECT DELIVERY:
AN UPDATED WORKING DEFINITION

VERSION 3 UPDATED 7/15/14

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INTRODUCTION

This document, *Integrated Project Delivery: An Updated Working Definition*, contains the recommendations of the AIA California Council's Definitions Committee of the Integrated Project Delivery Task Force. Several years have passed since the initial development of this document in 2006. While the original document, on the surface, is surprisingly intact, there is recognition that the document could benefit by refreshing the definiton and principles based on implementation of actual Integrated Project Delivery projects. To date, we are aware of over 200 projects that use multi-party contracts to incentivize and reward their teams in project execution, with likely 100s or even 1,000s that use the principles of Integrated Project Delivery to improve project outcomes.

It is largely this proliferation of projects using IPD principles that has prompted this Updated Working Definition. Projects using incomplete models of integration, often called "IPD-ish," have caused much confusion in the industry. This document proposes drawing a line in the sand as to what is IPD and what is not IPD. This document identifies what IPD is; either a project is providing all the ingredients and it is IPD or it is not.

"Projects using incomplete models of integration, often called "IPD-ish," have caused much confusion in the industry. This document proposes drawing a line in the sand as to what is IPD and what is not IPD."

The organization of the *Updated Working Definition* is similar to that of the original document, with the addition of a section containing a comparison between Integrated Project Delivery and more traditional delivery models. This document also amends the text with real world experiences from the use of Building Information Modeling, large collaborative project spaces, aka "the big room" and implementation of risk sharing/incentive rewards on projects that have gone well.

The Task Force will continue to use the *Updated Working Definition* as the basis for developing recommendations for best practices, integrated project delivery models, and risk allocation. Why is the document still a "Working Definition?" Integrated Project Delivery is still in its infancy.

When this delivery model is being used more commonly, there will be sufficient data to clearly define the boundaries of Integrated Project Delivery. Until then, the group invites you to comment on the *Updated Working Definition*, by writing to IPD@aiacc.org.

TABLE OF CONTENTS

IPD—THE DEFINITION:

Integrated Project Delivery (IPD) is a project delivery method that integrates people, systems, business structures and practices into a process that collaboratively harnesses the talents and insights of all participants to reduce waste and optimize efficiency through all phases of design, fabrication and construction. The Integrated Project Delivery method contains, at a minimum, all of the following elements:

- **Continuous involvement of owner and key designers and builders from early design through project completion**
- **Business interests aligned through shared risk/reward, including financial gain at risk that is dependent upon project outcomes**
- **Joint project control by owner and key designers and builders**
- **A multi-party agreement or equal interlocking agreements**
- **Limited liability among owner and key designers and builders**

IPD requirements, as a project delivery model, are noted above. Projects using components of IPD, not in its entirety, are not IPD. This document's goal is to state that projects wanting to use IPD must incorporate all aspects of the definition for it to be considered IPD.

Note: Integrated Project Delivery teams will usually include members well beyond the basic triad of owner, designer and contractor. At a minimum, though, an integrated project includes tight collaboration between the owner, architect/engineers, and builders ultimately responsible for construction of the project, from early design through project handover.

Many of the essential elements of Integrated Project Delivery may be applied to a variety of collaborative project delivery methods, such as Design-Build or CM at Risk, that may not inherently contain every required IPD element mentioned above.

FURTHER EXPLANATION:

- **Integrated Project Delivery (IPD) is a project delivery method:** IPD is a unique and separate project method, distinctly different from Design-Bid-Build, Design-Build, CM at Risk, and Multiple Prime. All benefits for innovation and efficiency return to the project team as opposed to the individual firms. All parties agree to the business terms to share the financial savings for optimizing the Owner's business case.
- **Integrates people, systems, business structures and practices:** The foundation for IPD is the development of a virtual project organization. The organization of "the firms" includes the individual team members for the owner, designer(s), consultants and builder(s). The project organization's mission and responsibilities are committed to "best for project" decision making, and this commitment is supported by alignment of the firms' business interests through shared risk and reward.
- **Collaboratively harnesses the talents and insights of all participants:** The primary purpose of the virtual organization is collaboration. The project firms and individuals are committed to create a team culture of joint decision-making. Team members are formally organized in multidisciplinary clusters responsive to the project goals. Team members are individually accountable to contribute alternatives to design and construction issues. Builders' input is not left until the construction phase, when it is typically too late to benefit the design.
- **Reduce waste and optimize efficiency:** IPD incentivizes minimization of waste. In addition to integration and collaboration, the method utilizes formal tools to achieve maximum results. Typical tools include: Building Information Modeling (BIM), prefabrication, manufacturing of larger integrated units, process improvement metrics and LEAN design and construction techniques.

TABLE OF CONTENTS

IPD—THE VALUE PROPOSITION:

The owner's "business case" defines the need for and the requirements of a capital project. The ultimate goal for an owner is to complete a project to meet very specific business goals within very specific constraints. Typically these constraints, at the highest level, are budget, schedule and a level of quality required to support operations, all within a predicable level of risk. Generally speaking, the industry suggests that the owner can expect to optimize any two of the three constraints but not all three; Integrated Project Delivery enables optimizing all three.

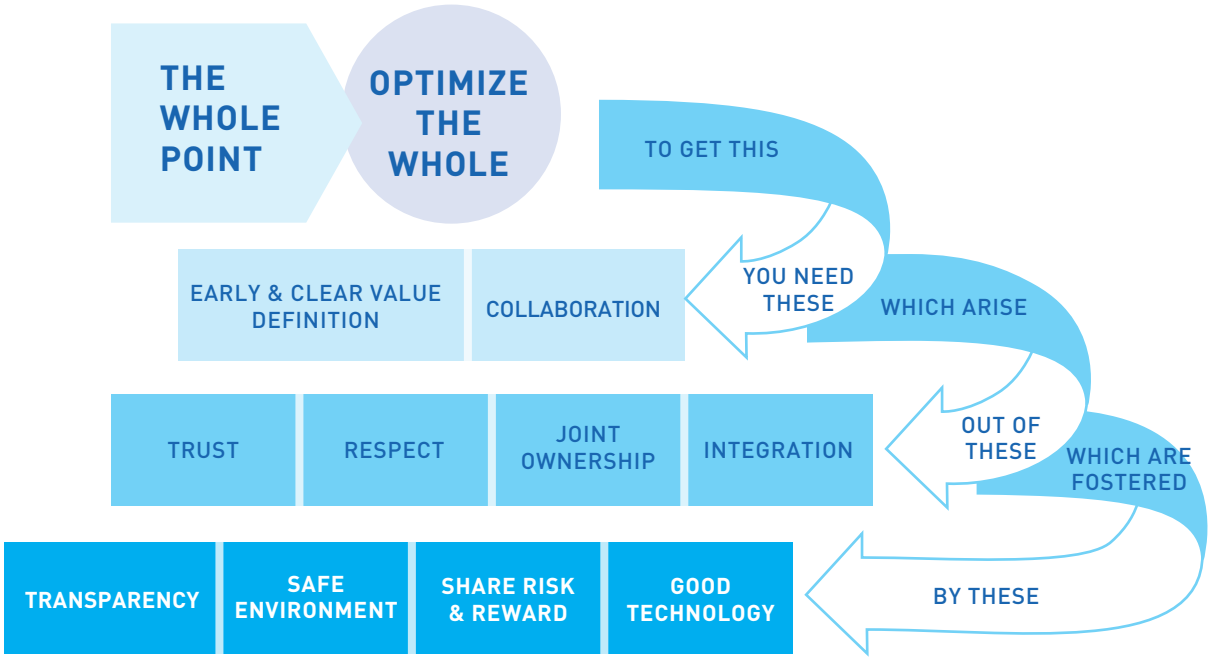
Previously, there were four main project delivery models available to owners: Design-Bid-Build, Design-Build, CM at Risk, and Multiple Prime. Each offers a different level of predictability to project outcome and risk.

Integrated Project Delivery (IPD) is a fifth delivery model that is gaining momentum. IPD offers owners the maximum opportunity to optimize their business case within predicable risks.

WHAT IS THE VALUE PROPOSITION FOR IPD?

1. **Flexibility:** Consider for example, that a business case includes additional goals and constraints such as: aesthetics, sustainability, operating efficiency, life cycle costs, community relationships, local workforce, and numerous others specific to an owner's project. Often not considered, however, is the need for flexibility to accommodate change during design or construction without sacrificing the owner's constraints! Projects are becoming more complex; technology, equipment, innovations in products, manufacturing, and prefabrication are becoming available faster than projects can be completed. The owner may require late incorporation to stay competitive or respond to an unanticipated change in their business environment. IPD's shared financial incentives between owner, designer(s) and builders(s) and integrated and collaborative processes enable the team to collectively find the project solution to optimize and support the business case.
2. **Speed:** After an initial investment in learning how an integrated team works, The information flow on IPD projects moves more quickly for the following reasons: First, designers and builders coordinate directly during design, thus preventing the misunderstandings and poorly informed design decisions that typically create delays during construction. Secondly, by fostering an environment in which the team collaborates well, questions get answered in the speed of a conversation instead of a paper trail that starts with an RFI and ends with a change order, typically taking weeks to process.
3. **Less litigation:** At the date of publication, no IPD project has gone into litigation. This is because IPD projects create a structure wherein all core team members benefit or suffer together, incentivizing them to help each other prevent problems. Disputes that typically would lead to claims are either prevented or settled in a collaborative manner.

IPD—ESSENTIAL PRINCIPLES:



1 **Optimize the Whole, not the parts:** The point of integrating the project team is to deliver the whole project in a way that gives owners what they value. Whether that is optimized design solutions, increased efficiency over the building's lifetime, or a fast track schedule, higher performance requires that all parties make decisions that are best for the project, rather than their own slices of the pie.

2 **Early and Clear Goal Definition:** In order to optimize the whole, the team must agree on what the "whole" is. Project goals are developed early and agreed upon by all participants. Project budget is set early and the team designs to the price, rather than pricing a design.

3 **Collaboration:** In order to optimize the whole, the project team must collaborate closely, deeply, and continuously.

4 **Integration (people and systems):** People can't collaborate unless they can easily share information, find appropriate times and spaces to communicate, understand how their different design processes interact, get their billing departments to work in harmony, and get many other systems (big and small) integrated together across company lines.

5 **Joint Ownership:** Meaningful collaboration requires participants to have a sense of ownership over the project and end goals.

6 **Respect:** Collaboration also requires respect. The project team mutually commits to treating each other with respect and valuing each professional's input. Innovative solutions can come from any team member, so roles are not as strictly defined as on traditional projects, but rather assigned to the best qualified person.

7 **Trust:** Meaningful collaboration cannot occur without trust. Trust is fostered through experience together, as well as purposeful decisions.

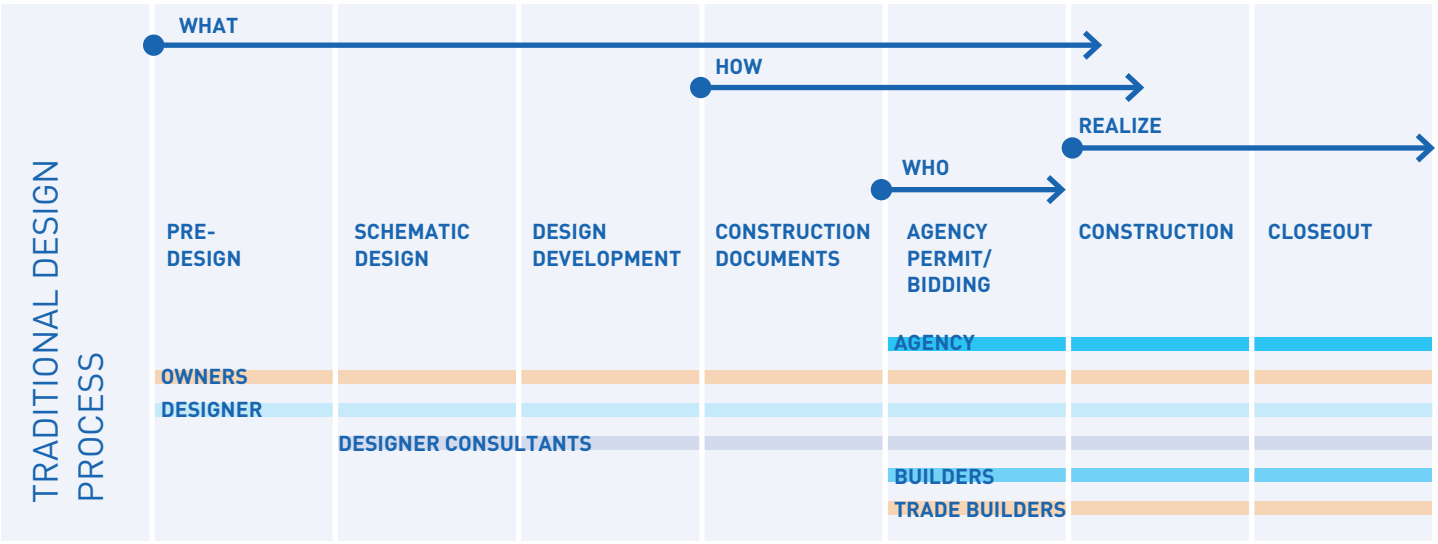
8 **Transparency:** Trust requires transparency. Communication among the team is not limited to traditional silos or top-down distribution. Information of all types, from design rationale to Building Information Modeling (BIM) lives in a central location so all team members have access to accurate and current information. Often an investment in technology compatibility will be necessary to ensure that all team members have access to the information they need to coordinate.

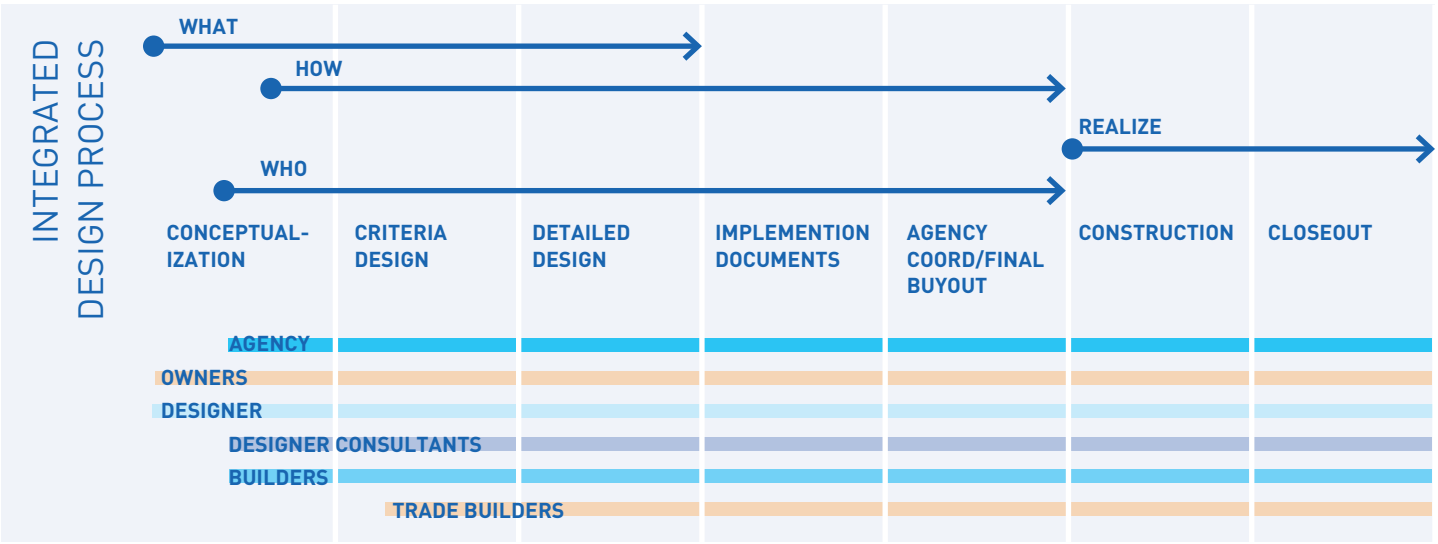
9 **Safe Environment:** Trust also requires a project environment in which team members are safe to experiment and suggest innovations without fear of being wrong.

10 **Shared Risk and Reward:** An integrated project depends on best-for-project decision-making. However, it is very rare that a firm will actually sacrifice its own profitability for the good of a project. Under IPD, risk/reward sharing structures are set up to cost or benefit the participants according to *project* outcomes rather than *individual firm* contributions. This aligns the decision-making influences – a decision that is best for the project will benefit all participants, one that attempts to benefit one firm at the expense of the project will reduce profitability for all participants.

11 **Good Technology:** Integrating systems together across company lines becomes much easier when using good technology. For projects requiring high levels of integration, technology like Building Information Modeling (BIM), cloud servers, teleconference tools, and others become crucial to making it all work. It is important to factor in the investments in both money and time to get these up and running smoothly.

IPD—PHASES:





- **Who:** The project participants
- **What:** The physical and functional requirements of the project
- **How:** The means and methods that will be used to make the "What" real
- **Realize:** The act of making the "What" real – i.e. construction

The phases of an Integrated Project differ from traditional phases (Schematic Design, Design Development, Construction Documents, etc.) in order to take advantage of two critical factors:

- In addition to the design expertise of a traditional design team, expertise in construction aspects (cost, scheduling, material performance and availability, means and methods, etc.) is available throughout the design process.
- Building Information Modeling (BIM) tools and processes enable the team to integrate this broader range of knowledge in order to provide effective support for design decisions.

These factors enable the team to make better-informed design decisions earlier in the process and to optimize the design for construction means and methods. In essence, *how* and *who* are addressed much earlier in the process, enabling elimination of the traditional overlap of *what* and *how* with *realization* that is typically a source of expensive changes and rework during construction.

This is not to suggest that there is a rigid, sequential order to phasing in an integrated project. The expanded knowledge base and enhanced collaboration tools in an integrated team allow a great deal of flexibility in the sequencing of the design effort. A major advantage of the integrated approach is that the team makes the decisions regarding this sequencing. In traditional projects design decisions are often deferred - sometimes even until after start of construction - at the sole discretion of the designers, without complete knowledge of the impact on construction. In an integrated project, however, the availability of both design and construction expertise enables the team to sequence the design effort to better accommodate such issues as fast-track delivery or procurement of long-lead items.

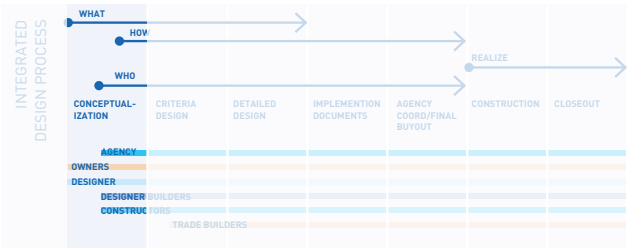
SETTING THE STAGE

Prior to actual kickoff of the design process, or concurrent with the very earliest steps, significant preparatory work will need to be done.

- **Key project participants are selected and brought on board. The actual personnel should be brought in.**
  - Owner
  - Prime Designer
  - Key Design Consultants
  - Prime Builder
  - Key Trade Builders
  - Key Regulatory Agencies
- **Team communication/coordination processes are set up.**
  - Collaboration training
  - Communication technologies
- **The business model for the project is determined**
  - The risk/reward structure that will best incentivize the accomplishment of the Owner's goals for the project is developed
  - IPD contract(s) is (are) negotiated
  - Project management structure is set up
- **Key technologies are identified and protocols are set up for their use. Examples:**
  - Building Information Modeling
  - Change control protocols
  - Model management responsibilities
  - Performance simulation tools
  - Document Management System
  - Data exchange protocols
- **Extent of co-location is determined, and co-location facility is designed and set up**

1 CONCEPTUALIZATION

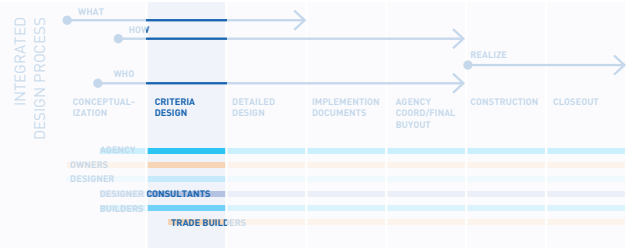
Conceptualization begins to determine WHAT is to be built.



- **All key stakeholders are involved in the programming process; input is obtained from as many participants as possible.**
  - Key project parameters are captured, such as:
  - Size
  - Schedule
  - Sustainable or green criteria or goals
  - Performance metrics (economic, energy, maintenance efficiency, operational, etc.)
- **Initial cost structure is developed. Benchmarks by which cost targets for the project will be determined are identified.**
- **Preliminary schedule is developed.**

2 CRITERIA DESIGN

During Criteria Design the project is defined and the targets and metrics by which the success of the project will be measured are agreed upon.

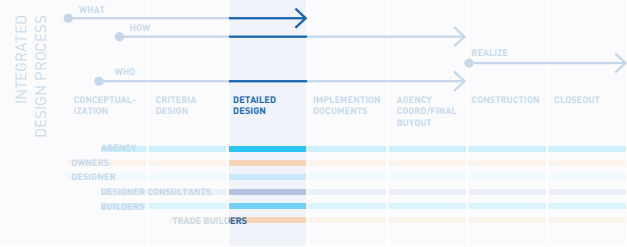


- **Key project parameters such as the following are fixed:**
  - Scope
  - Basic design (massing, elevations, floor plans, etc.)
  - System selection (structural, skin, HVAC, etc.)
  - Quality levels for finishes
  - Target Cost
  - Overall schedule
  - Building components to be prefabricated
  - Sustainability targets
- **All key trade contractors are engaged.**
- **Procurement schedule is developed.**
- **Cost structure is refined to a system level, in a manner that enables the team to use the cost information to guide the design.**

3 DETAILED DESIGN

The Detailed Design phase concludes the WHAT phase of the project. Note that the Detailed Design phase is longer and more intense than traditional Design Development because more is accomplished. The team will decide the level of detail required.

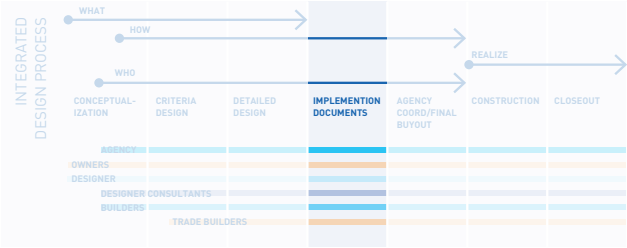
During this phase, all design decisions necessary to ensure that changes during construction will not be necessary are finalized, and the design is fully and unambiguously defined.



- **All building elements are defined.**
- **All building systems are fully engineered and coordinated. This includes final system coordination that in traditional delivery models is usually deferred until the construction phase because trade contractor input is not available until then.**
- **Specifications are developed based on agreed and prescribed systems.**

4 IMPLEMENTATION DOCUMENTS

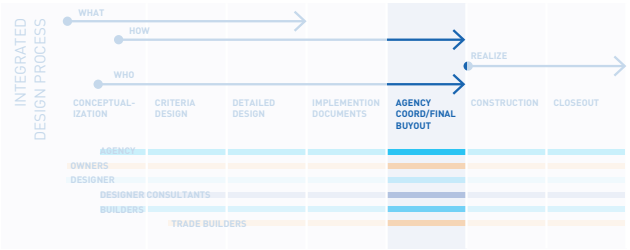
During this phase, focus shifts from WHAT is being created to documenting HOW it will be implemented. At the beginning of this phase the entire building and all systems are fully defined and coordinated, so it is significantly shorter than the traditional Construction Documents phase.



- **The traditional shop drawing process is merged into the design as the contractor, trade contractors, and suppliers document the construction intent of building systems and components.**
- **Prefabrication of some systems can commence because the design is fixed.**
- **Specifications are developed to provide narrative documentation of the design intent wherever necessary.**
- **Documents are generated where needed for processes such as:**
  - Financing
  - Procurement
  - Permitting
- **Implementation Documents include information for**
  - Assembly
  - Layout
  - Detailed schedule
  - Procedural information (testing, commissioning)
  - Legal requirements (whatever needs to be included to be legally binding)

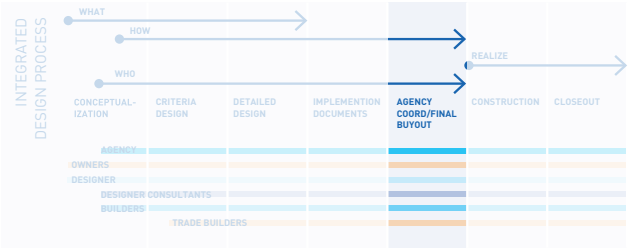
5 AGENCY REVIEW

This phase actually runs concurrently with Criteria Design, Detailed Design, and Implementation Documents. During the earlier phases the regulatory agencies provide high-level compliance information and work with the team to develop a mutually agreeable permit submittal schedule. Because of their involvement in the design process, builders and trade builders will need to be involved in submittal preparation and response to agency comments.



6 BUYOUT

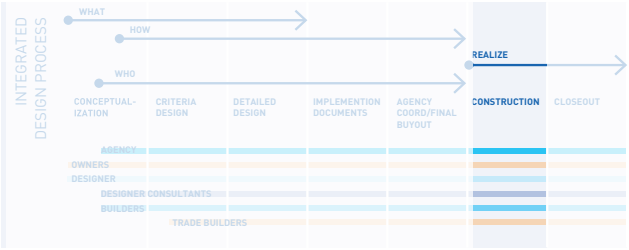
The bulk of an IPD project is not "bought out" as in traditional projects because the major trades develop their prices during the design process. In addition, long-lead items are identified and defined during design and their procurement is begun as early as necessary. This Buyout phase completes the buyout of remaining contracts.



7 CONSTRUCTION

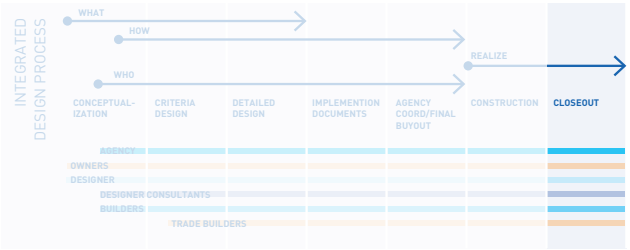
In traditional projects construction is often treated as the final stage of design where issues that were not addressed during the design phases are worked out. In an Integrated Project, due to the availability of construction expertise as well as the ability to integrate this expertise into the design using BIM, final design is completed during Detailed Design and means and methods are worked out during Implementation Documents.

Some elements of IPD construction administration will remain similar to traditional practice. For example:



- **Quality control, inspection and testing will be relatively unchanged.**
- **Change orders, particularly for owner directed changes, must be formally negotiated and documented.**
- **Scheduling and progress will be periodically reviewed.**

8 CLOSEOUT



Many aspects of the closeout of an Integrated Project will be similar to those of traditional projects. Some examples:

- **Finalization of as-built models or other documentation**
- **Punch list correction**
- **Warranty obligations**
- **Occupancy and completion notification**

In addition, the painshare/gainshare arrangement will be resolved.

OPTIMIZED IPD

The elements of IPD listed on page 4 are at IPD's core. Below is a discussion of the key constructs that enable an optimized IPD project. These constructs comprise the optimal business model, contractual structures and team behaviors. Also included is the critical discussion as to how each construct contributes to enabling an IPD team to be more successful than other delivery models. These constructs are characteristics that are specific to those members directly signatory to a single or multiple interlocking IPD agreement(s).

BUSINESS MODEL

Separate Profit from Cost

Establish a fixed profit. Separating profit from units of labor or materials eliminates the incentive to increase the number of units to increase profitability. Instead, the incentive should be to increase margin by reducing the underlying costs while maintaining a fixed profit amount. Ideally, 100% of a parties' profit should be at risk. Moreover, the at-risk profit provides the owner with a buffer against cost overruns, and less than full profit at risk can result in an inadequate buffer.

Guaranteeing Costs To Perform The Work

There are several reasons for the owner guaranteeing costs without a cap. First, whenever a cap is placed on costs, the capped party wisely includes contingencies in its costs to protect against the potential cost overrun. Second, if there are any project disruptions, the parties will begin the claims/change order process to avoid losing claim rights that may be important if the project continues to suffer additional costs. This creates an antagonistic project atmosphere—often from early in the project. Finally, the variable cost guarantee is a fair trade for the fixed profit being at risk and the limits on change orders.

Profit Based on Agreed Project Outcomes

Tying profit to achieving agreed project outcomes assures goal alignment and increases the likelihood of aligned action. The agreed outcomes can be whatever is most important to the owner and the team. Often this will be cost and schedule, but can also be quality, sustainability, functionality, life cycle costs, owner satisfaction or whatever else the team may agree upon. By tying profit to project, instead of individual outcomes, the team is incentivized to collaborate in pursuit of common objectives and disincentives selfish behavior.

Limited Entitlement for Change Orders

Increasing project costs by change orders is limited to owner elected changes. Team caused impacts, such as errors and omissions in the drawings, construction errors or productivity issues are issues for the team to resolve, not opportunities for additional revenue. This attribute, in conjunction with limited liability and profit based on project outcome, creates a closed system. If problems arise, the team must collaboratively resolve them regardless of cause. Entitlement for change orders and claims is largely eliminated in IPD. Once understood, this attribute leads to more effective constructability evaluations, coordination and response to problems as they occur.

CONTRACT STRUCTURE

Early Involvement of Key Participants

The key parties are contractually engaged at the earliest responsible moment. Key parties are those that have a substantial stake or material effect on project outcome. Involving these parties early has many beneficial effects. First, it increases the overall knowledge base before design is developed, allowing for coordination and constructability to be built into the process rather than applied after the fact, enabling target value design, and eliminating value engineering. This improves the designer's understanding of systems, equipment, alternatives and costs implications before they initiate design. It also increases the diversity of opinions and perspectives—a key determinant of creativity. It avoids much of the rework inherent in the transfer of design information to builders and can allow for an efficient distribution of design effort between the licensed design professionals and the design/assist or design/build trades.

Joint Project Control & Decision Making

Joint project decision making is an essential step in creating a virtual organization. By empowering the team to jointly manage the project, decision making is accelerated and situated closer to the sources of knowledge and information. Because major decisions are not unilateral, there is a check-and-balance that reduces the likelihood of errant decisions. Joint project decision making also increases overall ownership of the project, leading to higher levels of commitment. It is also fair. Parties that have placed their profit at risk should have a voice in project management.

Shared/Risk Reward Based on Project Outcomes

This is the contractual tie between profit based on agreed outcome and limitations on change orders. By putting both of these attributes in an enforceable agreement, the business model becomes an obligation, not an aspiration. This is one

of the distinctions between true IPD and other collaborative approaches, such as partnering, that seek to achieve behavioral changes—but these can be abandoned mid-project because they are not a contractual obligation.

Jointly Developed Validated Targets/Goals

The jointly developed and validated targets/goals are an enforceable "mission statement" for the project. Because they are used to determine project success—and compensation—they align the team's actions to the agreed goals. Agreement to goals also leads to commitment to achieving them. In addition, they provide a check, through the validation process, on the feasibility of the project. Aggressive goals also create the stress that leads to behavioral change, but because the stress is felt by all project members, it becomes a shared incentive to jointly develop new and more effective approaches.

Reduced Liability Among Risk/Reward Members

Reduced liability is an element in closing the system, forcing the participants to take responsibility for the project rather than attempting to blame other participants in an attempt to escape the impact of a problem. But perhaps more importantly, it removes disincentives to direct and continuous communication between the parties. Because parties who suffer because of incorrect information can often claim against the information provider, project participants (particularly the design professionals) have become wary of providing early and incomplete information to contractors. But without an understanding of where the designers are headed, the builders cannot effectively plan. Similarly, builders are chary of providing advice about design that might draw them into a design issue. But if the team is to be effective, communication must be rapid, direct, and continuous. Reducing liability among risk/reward team members removes much of the anxiety around communication.

ENABLING BEHAVIORS

Optimize the Whole, Not the Parts

Essential change in IPD is that the project is viewed as an indivisible whole. Every action, every decision should be judged by whether it will lead to improving the overall project outcome. This is the critical difference from other project delivery methods as compared to IPD. All participants, including the owner, designers and builders, in an IPD arrangement work together to optimize the project result rather than benefit the individual firms.

Trust

Trust is a critical element of IPD. But it is not blind trust. It is trust built on transparency and respect and measured accountability to meet commitments. When trust is created, the entire project is accelerated. The parties can trust their colleagues to perform as they promised allowing everyone to plan based on those promises. Moreover, the parties can trust that their colleagues will respect their interests and ideas, creating a safe environment to extend their capabilities. Earned trust catalyzes every transaction between the parties. This kind of trust is seen with firms that have proven track records, renown reputations or past experiences working on previous projects before with other team members.

Integration (information, people and systems)

High performance projects and project delivery requires integration throughout the process. Integrated information provides a means for information exchange and developing a common understanding. Integrated organization melds the disparate companies and individuals into a virtual organization. Integrated processes lead to coordinated and efficient action. Integrated systems enable optimization of the entire project. Integration creates the possibility of utilizing the capabilities of the entire team and creating results that are greater than the sum of the parts.

Continuous Improvement/Learning

IPD is not a static concept. It is a process of continual examination and improvement. In IPD, learning is not just the subject of retrospectives. It is a daily process where learning is turned into action, tested, modified, tested again, throughout the project. Processes are studied and challenged, experiments undertaken, and the results immediately fed back into the project. The goal of IPD is is to deliver this project better than originally envisioned.

Appropriate Technology

IPD does not demand any specific technology and technology should not be seen as a crutch for failed procedures. Systems and procedures should be optimized before being automated. But most IPD projects will rely on appropriate technologies, particularly Building Information Modeling. BIM is an important vehicle for collaboration. It is a platform for rapid prototyping and simulation, creates a common understanding between the parties and is a tool for identifying and resolving conflicts. Astute IPD teams take advantage of project websites, simulation and optimization software, 3, 4 and 5D models, and any appropriate tool that will increase understanding, promote communication, collaborate virtually, and better achieve the project objectives. Thus, while no specific technology is required, not using technology appropriately violates the principles of continuous improvement and optimizing the whole.

Collaboration

IPD requires collaboration, not just cooperation. Collaboration is working together to achieve the agreed goals by building on and improving each others' ideas. It is synergistic and creates results that exceed what can be achieved by coordination, alone. Collaboration in IPD is most visibly shown through co-located activity, where the parties are not just meeting together, they are performing their daily work together in cross-functional groups composed of the best suited individuals drawn from all of the IPD participating firms. They engage in a vigorous exchange of ideas and perspectives to develop solutions to project problems and to achieve the common goals. Peter Senge and others referred to this exchange as dialogue. It is not an exchange seeking to win a debate, but a joint exploration leading to solutions.

IPD—IN COMPARISON WITH OTHER DELIVERY MODELS

IPD allow for a dynamic, transparent and holistic process that benefits all project participants. These charts represent qualitative assessments of how IPD can be differentiated from other delivery models. The delivery models show traditional delivery methods, but do not take into account various contract models such as Guaranteed Maximum Price (GMP). The delivery models chosen are comparators to IPD; Design Bid Build, Multi-Prime, Construction Manager at Risk (CM at Risk) and Design Build represent the predominant delivery models used in the industry. We did not include Turnkey or Public Private Partnerships as they embrace one of the four models to deliver the design and construction of the building within the umbrella of the longer contract for the building operation. The charts were developed from the broad experience of the IPD Steering Committee members and contributors and do not represent any research or collected field data from any specific projects. The overarching message, we believe, will not change with any significant research, in that the only delivery model where all the project stakeholders can benefit in all the studies is Integrated Project Delivery, and sometimes Design Build.

CHART 1: Who benefits if the costs comes in lower or the schedule shorter depending on delivery model type?

	Owner	Designer	Builder	Trade
Design Bid Build	No	No	Yes	Yes
Multi-Prime (hard bid)	No	No	Yes	Yes
CM at Risk	No	No	Yes	Yes
Design Build	No	Yes	Yes	Yes
IPD	Yes	Yes	Yes	Yes

In **chart one**; one might not understand why the owner does not benefit with the costs coming in lower than initially contracted. Traditional contracts do not require the sharing of savings on a project with the owner. Project stakeholders are incentivized to reduce costs for their own benefit, yet the owner does not always receive this benefit if the contract is not transparent and does not share these outcomes.

CHART 2: Who is incentivized to keep the cost down or reduce the schedule for the owner when changes occur?

	Owner	Designer	Builder	Trade
Design Bid Build	Yes	No	No	No
Multi-Prime (hard bid)	Yes	No	No	No
CM at Risk	Yes	No	No	No
Design Build	Yes	No	No	No
IPD	Yes	Yes	Yes	Yes

Chart two shows that under traditional methods the owner is incentivized to keep costs reduced as project requirements change, but the other project stakeholders are not. This characterization of change is true for both owner generated changes, un-foreseen conditions and errors / omissions. Under IPD, though, the team is incentivized to keep costs down on a project when changes occur because the team is all being supplied from the same source that will reward them. The transparent and single pool of monies in an IPD model enables ownership from all project stakeholders for project success.

CHART 3: Who is incentivized to improve construction processes?

	Owner	Designer	Builder	Trade
Design Bid Build	Yes	No	No	No
Multi-Prime (hard bid)	Yes	No	No	No
CM at Risk	Yes	No	Yes	Yes
Design Build	Yes	Yes	Yes	Yes
IPD	Yes	Yes	Yes	Yes

Chart three begins to identify who wants to improve the quality and methodology of how the project is delivered. Our industry is in a transition to embrace more advanced methods of making buildings, as other manufacturing fields have. IPD, and sometimes Design-Build, offer all the project team stakeholders the benefit when advanced delivery methodologies are coordinated with others and the impact might not be cost neutral.

CHART 4: Who is incentivized to improve building performance for the lifecycle

	Owner	Designer	Builder	Trade
Design Bid Build	Yes	No	No	No
Multi-Prime (hard bid)	Yes	No	No	No
CM at Risk	Yes	No	No	No
Design Build	Yes	No	No	No
IPD	Yes	Yes	Yes	Yes

Chart four aligns project delivery with building performance. We think the main message is that only through dynamic, transparent and holistic process benefiting all project participants will our industry be incentivized to move the needle on how buildings perform. Building system technologies and the actual functional requirements are constantly changing. Traditional contracts are set up where the requirements and functionality are fixed. In addition, design fees are also considered to be part of first cost competitive analysis by owners and do not allow for lifecycle design. Since the lifecycle of a building is a significant portion of the building's cost for the initial capital outlay, our industry needs to provide a methodology where the project delivery can support the eventual operations of the building.

CONCLUSION

This document refreshes and hones what IPD is. Specifically, it requires that for a project to call itself an IPD model it must embody the minimum characteristics previously stipulated on on page 4 for all key participants:

- Continuous involvement throughout the project
- Aligned business interest
- Joint project control
- Interlocking agreements or Multi Party Agreements
- Limited liability

We believe this is a necessary clarification to distinguish IPD from other delivery models that offer some of these improvements, but do not use the whole system to achieve full integration.

As stated in the introduction, this is a working definition, and in the future, we might find reason to further define, or broaden the requirements of what stipulates an IPD model. The goal of this document is to be a reference for industry practitioners who want to optimize their projects and have their entire project team participate with them in concert, as opposed to other delivery models that have silos where services and work are traditionally provided. We welcome feedback and hope you can contribute to: ipd@aiacc.org

Also, be sure to visit our Online Education page for a full listing of Project Delivery Courses.

A GLOSSARY OF TERMS ASSOCIATED WITH IPD

Best-for-Project
Describes a decision making standard where decisions are measured against shared goals / objectives about what is best for the project vs. individual stakeholder outcomes.

Big Room
A shared space which includes at a minimum; the owner, the design team and the constructor to encourage collaboration and communication between all parties.

Building Information Model
A Building Information Model, (BIM) is a digital representation of physical and functional characteristics of a facility. Source: National Building Information Model Standard (NBIMS) committee. For a more complete definition, see: http://www.wbdg.org/pdfs/NBIMSv1_p1.pdf

Buyout
Buyout is the process of obtaining price commitments for all work packages in a project. There are several methods by which this can be accomplished, ranging from sealed bids to direct negotiations. In the IPD approach most of the price commitments are developed through a continuous effort, with many of the trade contractors and suppliers participating in the design and refining their prices as the project progresses.

Builder
Builder refers to the General Contractor who is responsible for the project by providing all of the material, labor, equipment and services necessary for the construction of the project. Builder is also sometimes used to refer to trade contractors.

CM at Risk (Construction Manager at Risk)
Construction Manager at Risk (CM at Risk) is a project delivery method that allows the client to select the Construction Manager (CM) before the design stage is complete. The CM is chosen based on qualifications, and then the entire operation is centralized under a single contract. The architect and CM work together in order to cultivate and assay the design.

Cost Model
A breakdown of the construction and project budget into detailed "cost targets." The cost targets are developed collaboratively by the integrated team prior to commencing the conceptualization phase of the project process. The structure provides the benchmark for the team to support continuous cost management as the project progresses to ensure that it will be completed within the targeted budget.

Designer
The design professional on the project responsible for performing and overseeing overall project design. Designer is also sometimes used to refer to design consultants.

Design Consultant
The professional consultant(s) on the project responsible for performing and overseeing design in specific areas of the work (i.e., structural, mechanical, landscape, electrical, civil, etc.)

Integration
The coming together of primary participants (which could include owner, designer, constructor, design consultants, and trade contractors, key systems suppliers, etc,) at the beginning of a project, for the purpose of designing and constructing the project together as a team.

Interlocking Agreements
Agreement(s) used in an IPD project between the owner and key designers and builders establishing shared risk/reward, joint project control and limited liability.

Multi-party Contracts
Bind all the parties — client/owner, designers, constructor and trade partners — into a single agreement which requires them to share risks and rewards. This encourages everyone in the team to think of the project first as their commercial interests are clearly bound up with the overall success of the project. In turn this means that leadership and decision making is both more inclusive and distributed.

Multi-Prime
A method of contracting for construction wherein an owner contracts directly with several (usually major) trades under separate contracts to perform their work either simultaneously or sequentially without employing a General Contractor to be in overall charge of the work. The owner may provide the management of the project, or hire a construction manager to provide construction administration, coordination, and scheduling of the work of the different trades.

Open Book
Contractual rights owners have to review and audit the financial records of contractors performing cost-plus contracts, may also include key team members.

Trade Builder
The party on the project responsible for performing and overseeing construction for specific building systems on a project.

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