

INTEGRATED PROJECT DELIVERY: THE OBSTACLES OF IMPLEMENTATION

by

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Abstract

The purpose of this report is to provide information on Integrated Project Delivery (IPD) as a construction project delivery method and identify some of the obstacles that are limiting its implementation into the design and construction industry. This report includes a general overview of IPD and a comparison to traditional project delivery methods: Design-Bid-Build, Design-Build, and Construction Manager at Risk. The advantages of IPD and its possible positive impact on the industry is introduced followed by the three major obstacles that must be evaluated and resolved before this delivery method can begin to be embraced by the industry. The three major obstacles include: contracts, insurance, and IPD structure for facilitation. Each of these obstacles is explored in detail and solutions being successfully implemented by industry professionals are presented. Finally, conclusions about the future of IPD are presented along with future research that needs to be conducted for a better overall understanding of IPD.

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Dedication

I would like to dedicate this report to my parents, Jerry and Laura Hageman, and my husband, Jared Fish. Their constant support and faith in all my goals have shown me that I can accomplish anything with hard work and dedication.

1.0 Introduction

This report reviews the Integrated Project Delivery (IPD) method of building design and construction and the main obstacles that are preventing it from being regularly adopted throughout the industry. IPD is referred to by many names such as whole building design, integrated building design, etc. For the purposes of this report IPD will be the nomenclature used throughout for consistency. IPD is a construction method in which the design team, owner, and contractor work together to develop a building from the initial concept through handover and operation. This report covers briefly the background of IPD, how it is implemented, and reviews its advantages and disadvantages compared to other construction methods. The last portion of the report identifies some of the largest obstacles to IPD implementation and provides methods that can be used to overcome these issues. The purpose of this report is to provide solutions to some of the obstacles that are arising with IPD and help industry professionals see ways in which this method can be more regularly implemented.

Chapter 1.0 provides an introduction to IPD and the main reasons that IPD is advantageous. Chapter 2.0 starts with a brief introduction and explanation of traditional project delivery methods: design-bid-build, design-build, and construction manager-at-risk. The chapter then moves on to discuss the key attributes and unique features of IPD by focusing on the details of implementation and key participants involved. This chapter concludes discussing the specific advantages of IPD in the different phases of a project's design and construction. Chapter 3.0, 4.0, and 5.0 discuss the main obstacles of implementation of IPD. Chapter 3.0 covers the contracts of IPD beginning with the issues that arise in the different contracting methods and concludes with contracting solutions that are being implemented in IPD projects today. These contracts documents are many pages long, averaging fifty pages each, and were overly cumbersome to include in this report as appendices but are available as attachments for reference. Chapter 4.0 discusses the obstacle of insurance specifically for multiparty contracts to cover the project and the parties involved as required by IPD and what the insurance industry is doing to resolve this issue. Chapter 5.0 explores the last major obstacle, IPD facilitator versus core group. This issue is the most controversial between the proponents of IPD. This chapter articulates the multiple perspectives and presents the advantages of each. Lastly, Chapter 6.0 is the conclusion which includes recommendations for future research.

Limited research and documentation concerning the success and failure of IPD projects has been published therefore making professional opinions from those that have experience in the implementation of IPD critical for this report. The biographies of those professionals that have provided their input are provided as Appendix A. These profiles are included to reinforce their credibility on this topic. These individuals were chosen based on their extensive involvement with an IPD project. Most were included in the publication by The American Institute of Architects “IPD: Case Studies.”

1.1 Why Integrated Project Delivery

IPD is the next step in the evolution of project delivery for the design and construction industry. For economical purposes, getting a better building, faster, for less should be a top priority for all owners, designers, and contractors. Based upon research this is what IPD can deliver. IPD can offer much more than the traditional project delivery methods. When utilizing these traditional project delivery methods:

Between 40% and 50% of all construction phases are running longer than planned making it likely that the project will exceed budget (FMI & Construction Managers Association of America, 2005, p. 2).

These statistics are bad for the industry but are avoidable with IPD because of the extensive coordination that occurs early on in an IPD project. According to Scott Simpson, IPD is the answer to the search for a system that is creative: allowing the exploration of options, the generation of ideas, and the comparison of alternatives, while also being predictable - getting what you want (personal communication, November 23, 2010).

Major advantages of IPD are that better buildings are created and good working relationships are formed from working on an IPD team. IPD can allow for the creation of better buildings because of the intensified collaboration between the owner, architect, and contractor from day one of the project. This collaboration results in greater coordination of the disciplines involved which can help to decrease issues later in the project. Everyone has a vested interest in the project with IPD and therefore will usually do what is in the best interest of the project as a whole. This mentality results in higher quality buildings being constructed with shorter timelines and smaller budgets. According to the case studies done by Kent and Berckerik-Gerber, “the most commonly observed benefits are fewer change orders (70.3%), cost savings (70.3%), and shorter schedule (69.4%)” (2010, p. 820). Forming IPD team relationships has numerous advantages.

One of the main advantages is the good references that could result in more work. In turn, more work results in additional profit for each company involved. IPD can also lead to major advantages for the design and construction industry as a whole. The trust that is formed between those involved can lead to good reputations throughout industry and for the industry based on the quality buildings that come from use of IPD. These are just a few of the major advantages of why IPD is so important to the design and construction industry and why it is the new up-and-coming way of building construction. In order for this project delivery method to be accepted, related issues/conflicts must be addressed and solved. Chapters 3.0, 4.0, and 5.0 of this report focus on these issues and what the industry is doing to resolve them.

2.0 Integrated Project Delivery

This chapter provides a working definition and background information on IPD as a construction method. Currently, not everyone agrees on the definition of IPD or what differentiates it from other delivery methods. In order to define IPD it is first necessary to review and define today's more commonly used or traditional delivery methods because they are the basis of comparison.

2.1 Traditional Project Delivery Methods

The most popular delivery methods today include design-bid-build (DBB), design-build (DB), and construction manager at risk (CM at Risk). One of the reasons that IPD is being brought into the industry is because these traditional methods of project delivery “suffer because participant success and project success are not necessarily related” (The American Institute of Architects & AIA California Council, 2007, p. 7). The disconnect between the parties can cause a separation between the design phase and the construction phase of a project in the traditional design methods (Jorgensen & Emmit, 2009).

2.1.1 Design-Bid-Build

DBB is the construction delivery method used most often in the United States (Autodesk, 2008; The American Institute of Architects & AIA California Council, 2007). This method allows the owner to enter into separate contracts with the designer, which is generally the architect, and the contractor. This contractual relationship is shown in Figure 1. After the design is complete the project is released for bid by contractors. The owner selects from these competitive bids to award the contract for construction. The lack of integration between the designer(s) and contractor(s) in this process often results in problems that do not get recognized or resolved until after the construction process is under way (The American Institute of Architects & AIA California Council, 2007). Identification of problems so late in the project implementation results in project construction delays, change orders, competitive/adversarial relationships, etc.

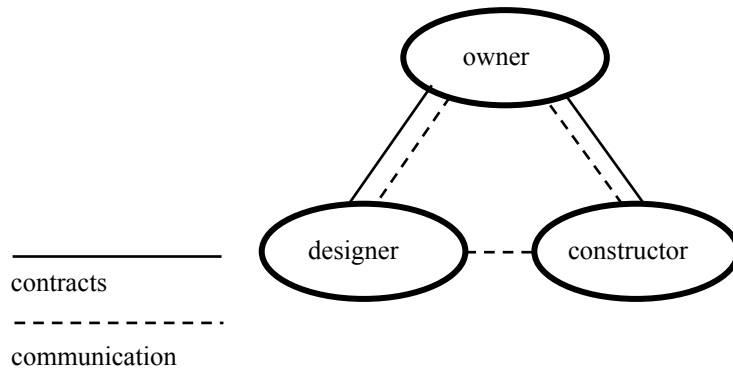


Figure 1: Design-Bid-Build

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At first glance DBB seems to be the best design method for an owner because they get to choose the most competitive price for the construction of the project. Although this appears to be the manner to get the best price, the issues that can arise during construction can cause more money to be spent prior to project completion. Ultimately, DBB can result in a more expensive building than the other delivery methods.

2.1.2 Design-Build

The reason the owner would choose DB over another construction delivery method is to have one contractual agreement to help transfer risk from the owner to the design-build team and increase coordination between disciplines (The American Institute of Architects & AIA California Council, 2007). Figure 2 shows how the owner enters a single contract with the DB entity and then that entity enters a contract with both the designer and the contractor. This means that by choosing DB the owner would have more of the team members working on the project from earlier on which should increase the overall coordination.

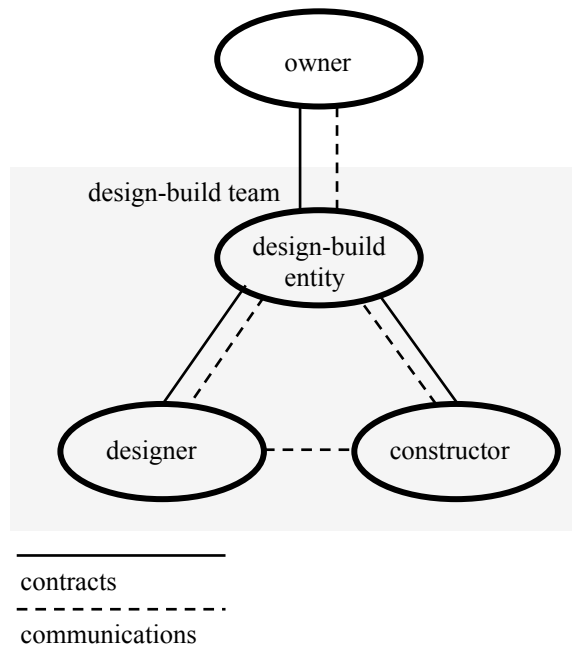


Figure 2: Design-Build

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This method of design and construction follows the same approach as DBB but takes out the “bid” step. This allows for the design and construction entities to be more coordinated and integrated throughout the project. This method is becoming more popular as the industry moves toward integrated project delivery (Autodesk, 2008).

These agreements and methods do cause increased first cost since more parties are involved toward the beginning of the project. However, since this method requires contractors and designers to work together, the integration during the design and construction processes can help prevent some of the coordination issues that occur in the DBB method. Even though this method moves toward a more integrated project team, this is still nowhere near the level of integration that IPD requires.

2.1.3 Construction Manager at Risk

CM at Risk has the same contractual agreement as DBB and the early cost commitment like that of the DB method. As shown in Figure 3, the contractual relationship between the owner, designer, and contractor is identical to that of DBB.

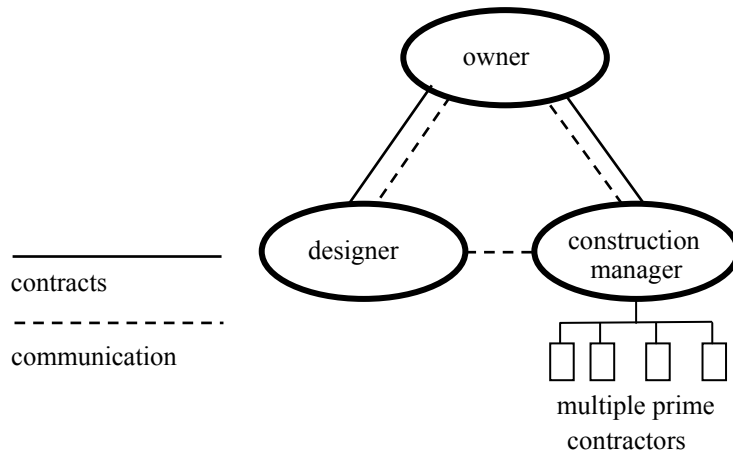


Figure 3: Construction Manager at Risk

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CM at Risk is a project delivery method in which the “construction manager is hired early in the process to deliver an early cost commitment and to manage issues of schedule, cost, construction and building technology” (The American Institute of Architects & AIA California Council, 2007, p. 46). This method is most closely related to IPD but still does not include the contractual relationship and trust that is required in IPD.

2.2 Definition of Integrated Project Delivery

Many variations of a common definition have been formulated for IPD. However, the definition that commonly reoccurs in different publications is from AIA California Council (2007, p. 1) and The American Institute of Architects & AIA California Council (2007. p. i):

Integrated Project Delivery is a project delivery approach that integrates people, systems, business structures and practices into a process that collaboratively harnesses the talents and insights of all participants to optimize project results, increase value to the owner, reduce waste, and optimize energy efficiency through all phases of design, fabrication, and construction.

This definition reinforces that IPD is different from other delivery methods in the fact that early and continual collaboration of all the parties involved in the design and construction process is essential. Ultimately the goal of IPD is to “make better buildings faster for less” (Thomsen, 2008). Through mutual collaboration and shared project goals the IPD process can be highly

effective. The collaboration can result in a better end product for the owner since all parties are invested in the project and working toward common goals.

This is a well-written definition of IPD but it does not give detailed insight on actual implementation. The following sections discuss the principles of IPD, which include key participants and implementation, and advantages as a delivery method both in the design and construction phase of a project.

2.3 Principles of Integrated Project Delivery

Principles are critical for effective business implementation and the construction industry is no exception. Nine key principles are required to make IPD most effective. If all of these are implemented and used together better collaboration is created, which in turn creates a better project output both in design and construction. The nine principles of IPD used as discussion for this chapter are adapted from The American Institute of Architects & AIA California Council (2007) and Kent & Becerik-Gerber (2010) are:

- Mutual Respect and Trust
- Shared Risk and Rewards
- Collaborative Innovation and Decision Making
- Early Involvement of Key Participants
- Early Goal Definition
- Intensified Planning
- Open Communication
- Organization and Leadership
- Multiparty Agreement

Although there is no specific order to the list, these nine principles are very important when trying to implement IPD as a design process. For the purposes of explaining these principles they have been grouped into two categories: key participants of IPD and implementation of IPD. Refer to Table 1 for the principles included in each of these categories. Each of these categories is explained and then the principles that apply to that category are discussed.

Table 1 : Principles of IPD

Principles of IPD	
Key Participants	Implementation
Mutual Respect and Trust	Shared Risks and Rewards
Collaborative Innovation and Decision Making	Early Involvement of Key Participants
Early Involvement of Key Participants	Early Goal Definition
Open Communication	Intensified Planning
Multiparty Agreement	Organization and Leadership

2.3.1 Key Participants of Integrated Project Delivery

The most critical item to IPD success is the people involved. The people involved are known as the “core group”. These individuals are involved with the project from the early stages of design through construction, building occupancy, and operation (AIA California Council, 2007).

The individuals involved usually consist of the owner, architect, and general contractor (AIA California Council, 2007). This group of three will be referred to as the core group. The owner can elect to choose a representative that acts on his/her behalf to serve in their position within the core group in the case he/she lacks the technical knowledge or time to participate. The owner’s representative is usually well educated or experienced in the construction industry and/or building design process and is in tune with the owner’s needs/desires allowing them to make fair, educated decisions on the behalf of the owner. In the context of this report, owner and owner’s representative are interchangeable terms. Another term that is interchangeable is designer and architect. Some sources use the term designer rather than architect to allow for any member of the design team to be in this role but more commonly it is the architect. This is a result of the head designer role being taken by the architect in other design methods. This is not required in IPD but is how it has traditionally been. Due to experience in this role as project administrator the architect is better equipped/trained to work in this capacity than the engineer. The core group is designed to be the decision making body and the go-between from the owner to the remainder of the design/construction parties. Refer to Figure 4 for the contractual relationship in IPD. The core group is responsible for every aspect of the project from design collaboration to administrative details. In most situations if the core group cannot make a decision the owner reserves the right to break a deadlock (Post, 2010; The American Institute of Architects& AIA California Council, 2007). Within this group of individuals is where the principles of mutual respect and trust, collaborative innovation and decision making, and open

communication are absolutely critical. These principles drive the core group to work toward a set of common goals.

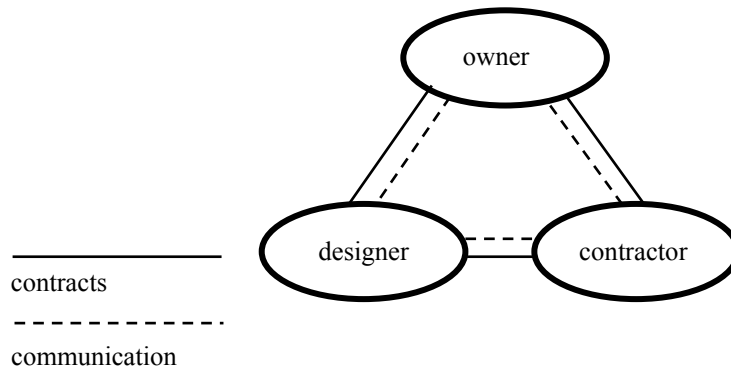


Figure 4: Integrated Project Delivery

Other groups of people that need to be included early on in the project but are not part of the core group are the designers, sub-contractors, manufacturers, etc. Manufacturers are not typically regarded as an important part of the early design process but they generally have better knowledge about product availability. This is especially important today with the continually changing availability of products to address sustainable design. The collaboration of engineers and contractors with the manufacturers in the beginning of the project may “reduce time to market, reduce costs, and optimize quality for their products” (Walczak, 2009, p. 1). Due to being included early in the project, the contractor will most likely have more involvement in the design processes and vice versa for the designer in the construction process improving overall collaboration (The American Institute of Architects & AIA California Council, 2007). This is due to each entity’s expertise in their own area that they could bring to help the others understand what is considered or influenced by design/construction decisions. This would, in theory, reduce the errors, questions, and change orders that happen in traditional delivery methods due to lack of coordination. The sub-contractors should also be included early on in the project to ensure that all aspects of the design and construction is effectively communicated through their representation in the core group so any issues that arise can be found and resolved early in the project. All of these parties can also help with the principle of collaborative innovation and decision making by working together early on in the project and implementing economic ideas in the beginning of the project rather than waiting until the end.

Last of the principles is the multiparty agreement. A multiparty agreement is one contract encompassing all concerned parties (Kent & Becerik-Gerber, 2010). This is different from the

methods used in the previously discussed delivery methods where each entity has their own contract with each of the other concerned parties/groups. A multiparty agreement is made to create a unified group and to eliminate separate motives and separate contracts (Kent & Becerik-Gerber, 2010). This is still one of the largest issues in the implementation of IPD as a design and construction method because current contracts do not include the parameters of IPD. This issue will be discussed in depth in Chapter 3.

2.3.2 Implementation of Integrated Project Delivery

The key participants and related principles are important but establishing a core group alone does not result in a successful project. Principles related to implementation are also required: multiparty agreement, early involvement of key participants, early goal definition, intensified planning, organization and leadership, and shared risks and rewards (Kent & Becerik-Gerber, 2010).

The first principle discussed is the shared risk and reward of all members. This will be dictated by the contract and the timelines set forth by the core group. This principle is designed to create a unified core group and hopefully add more incentive for the parties to work together to create a better project for the owner. An example of shared risk and reward is “covering budget overages with each entity’s overhead and profit, but if the project is under budget the team may receive a compensation bonus” (Kent & Becerik-Gerber, 2010). This means that if the project goes over budget, the funds to cover this overage will be paid by the members of the core group from their overhead and profit. On the other hand if the project is under budget, this can be achieved with good team collaboration, the core group would receive a bonus that is typically a percentage of the money saved. This way of thinking could be very helpful in the uniting of entities and promoting collaboration in a way that the industry has never seen. However, shared risks and rewards can also be seen to have adverse effects on some people that are involved in the core group.

IPD success can be measured in a variety of ways. Some measure it on the project outcome, others on the happiness of the owner, but according to The American Institute of Architects and AIA California Council IPD success is based on project collaboration (2007). This means that the success of an IPD project is measured and quantified by how well the core group’s set goals are achieved. Since IPD is a team effort the team either all fails, all succeeds, or are all somewhere in the middle and is reflected in compensation.

The next set of principles encompasses the idea of “early” in IPD. In IPD “early involvement” is from the onset of the project, before any decisions regarding design or construction are made. The principles that embody this idea are: early involvement, early goal definition, intensified planning, and organization and leadership. Although this is pretty self-explanatory, it is the most important principle of IPD. Early involvement is referring to the fact that in pure IPD all disciplines involved in the process are involved and make decisions from the project’s beginning. This moves directly into early goal definition. If the goals of the project are set early on everyone will be on the same page and know what is expected of them throughout the entirety of the project. Intensified planning is very similar. Since all parties are involved from the beginning all of the planning takes place in the early stages of project design and collaboration. None of these would be possible without organization and leadership of the core group and those individuals that the three core participants are responsible for. If all parties are not on board or do not have the shared values of the group early on in the design process, the IPD process will not function properly. These principles are all items that must occur at the beginning stages of a project to ensure proper implementation of the IPD process.

Although the definition and principles of IPD are important, the advantages of IPD are what convince owners to choose this project delivery method and encourage the designer and contractor to participate. The main advantages to choosing IPD as a project delivery method are discussed in the following section.

2.4 Advantages of Integrated Project Delivery

IPD offers many great features. For the purpose of this report only advantages that are most prevalent and embraced by building design and construction professionals are discussed. Most of these refer to reduction of time spent in all phases of design/construction, overall project cost/money spent, and relationships created between the key participants. These then have a domino effect on other aspects of the project causing more positive outcomes to occur. The design phase and the construction phase have very distinctly different advantages that IPD offers during each which will be discussed in the following sections.

2.4.1 Design Phase Advantages

The first advantages of IPD are related to the design phase, the time in which the architect/engineers prepare scaled plans and specifications of the components of a project. The

team formation and the early decisions of the core group are unique to IPD and critical to its success. Probably the most important and well known advantage for IPD is that “all parties are present and involved from the earliest design phase” (Kent & Bercherik-Gerber, 2010, p. 816). This is essential because all key players will know what is happening throughout the project reducing the potential of conflict related to the design as well as between team players. Improving relationships between contractors, designers, and owners is a major advantage of IPD. The fact that IPD is a team “sink-or-swim” environment, through shared risk and reward, helps to foster these working relationships.

The fact that all parties are involved from the earliest stages is very helpful in the event that one of the core group members would need to be replaced. This would be a very extreme circumstance as this would not be conducive to the success of IPD. A reason that may cause this to happen would be a company going out of business, legal issues, etc. However, if this were to occur when the team member gets replaced no loss of information should occur because the remaining core group already has that information and does not rely on one person to take care of everything in their area of expertise. Although each person is responsible for their discipline, everyone in the core group has an overall idea of what is happening in each area and this information should be well documented. This would result in easy changeover of team members if necessary (DeBernard, 2007).

One of the most important advantages of IPD to the design phase is that the team environment helps to “foster economical decision making” (DeBernard, 2007, p. 2). Since everyone in the core group benefits from the success of the project, better communication occurs from early involvement of team members. Information sharing occurs prior to completion of the design allowing the economic decisions to be made early on in the process instead of at the end when it is difficult to implement some of the ideas and changes can more easily and cost effectively be made. This collaboration during the design phase allows for a much more innovative design than would be possible with traditional delivery methods and minimizes if not eliminates the need for rework. This contributes to a better end product and this will reflect well on the reputation of all individuals involved. “Shared rewards and risks among stakeholders create incentives for exceptional results; reduce waste through better planning and shared costs” (Kent & Bercherik-Gerber, 2010, p. 817).

2.4.2 Construction Phase Advantages

The positive influences of IPD during the design phase dealt mostly with the early involvement of all concerned parties while advantages in the construction phase of the project are primarily related to the reduction of waste and time.

One of the major advantages during the construction phase is the ability to reduce construction time. Because of detailed planning and early communication between the contractors and design team, construction coordination and planning can begin earlier in the process (The American Institute of Architects & AIA California Council, 2007). In addition to reducing the time line, the coordination between all disciplines reduces construction/installation conflicts. The reduction of project delivery timelines, which comes from time invested in collaboration of the early planning phase rather than conflict resolution during construction, ultimately results in the opportunity to take on more projects resulting in greater fiscal reward for the parties involved.

Collaboration between disciplines results in everyone knowing what is happening within the project and can result in reduced requests for information (RFIs) and reduced number of change orders (DeBernard, 2007). “It also reduces the likelihood of construction delay, because problems are solved by the team before the problems reach the field” (Post, 2010, p. 1).

There are also some general advantages that occur throughout the entire IPD process and even come as a result of using IPD as the chosen delivery method. IPD helps to create and foster better working relationships between designers, contractors, manufacturers, owners, etc. This relationship can result in good future references and more work with these individuals. The IPD process also creates better quality buildings since the IPD core group is invested in the project and work for the best interest of the building. This results in better design since time is invested in quality design rather than fixing problems.

The final advantage that occurs during both the design and construction phase of a project is that the “sink-or-swim environment reduces the likelihood of designers and contractors padding costs” (Post, 2010, p. 1). Padding costs, slightly increasing prices, would ensure that the designers and contractors overhead and profit margins were met. However in IPD everyone on the team has a vested interest in the project and therefore will do what is best for the project as a whole which can result in a greater profit for the companies involved.

Throughout research many believe that IPD could be the best project delivery method since it can provide a better quality building for a lower price, but there are also some unresolved issues that are slowing its implementation.

2.5 Concerns with Integrated Project Delivery

IPD has many great features but every new idea or method is going to have some issues that require attention. These concerns must be addressed and accounted for before implementing IPD as a construction delivery method. Three significant implementation issues for IPD are: contracts, insurance, and the IPD facilitator. These issues are important enough that a chapter has been devoted to the discussion of each of the topics and their solution. This section will focus on discussing the lesser concerns that make implementing IPD difficult.

2.5.1 Involved Parties' Inexperience

The inexperience of the members of the core group is one of IPD's largest drawbacks. It is typically the owner that decides on the project delivery method with help from the architect or contractor and if those parties do not have enough information about IPD or do not understand why it would be in their best interest, IPD will most likely not be the project delivery method of choice. As stated by Angelo in *Improving Building Industry Results Through Integrated Project Delivery and Building Information Modeling* "many inexperienced (parties) don't know how to navigate the system" (2005, p. 1) therefore this method could sit on the backburner until someone takes the initiative to make sure the individuals are well educated on the topic or encouraged in this direction. The importance of the core group members to learn this new system is great and education must be the priority of IPD advocates to get this method implemented into the industry.

At the beginning of an IPD project, the owner determines the core group. If an owner is uninformed or inexperienced they will not understand the proper team selection and alignment. It is very important for an owner to understand so that the core group is on the same page and shares a common set of goals and values. If the core group is not united in their goals, IPD will not work. The core group needs to function as a team and it is only with their knowledge and understanding of IPD that this can be a success.

Another issue that arises when IPD discussion occurs is that of compensation allocation. The IPD contracts lay out a compensation package that the core group is to decide. This is

discussed in Chapter 3.0. However, no one that has implemented IPD is willing to share how the compensation is actually allocated to each party and the determination of the factors that go into the compensation portion of the contract. This issue is one that cannot be avoided if full implementation of IPD is to take place. What percentage does each party get and how much are they responsible for should something go wrong? These must be answered and this is why compensation package/structure/distribution is a topic of further research in the conclusion to this report.

These are important issues surrounding the implementation of IPD but the more significant issues discussed in the following chapters can halt the adoption of this method. This chapter has shown the difference between traditional project delivery methods and IPD. Table 2 is a quick reference table to see the differences in the contractual relationships, advantages, and disadvantages of DBB, DB, CM at Risk, and IPD.

Table 2 : Comparison of Traditional to Integrated Delivery Methods

Comparison Item	Project Delivery Methods			
	DBB	DB	CM at Risk	IPD
Contractual Relationships	> Owner & Designer > Owner & Constructor	> Owner & Design-Build Entity > Design-Build Entity & Designer > Design-Build Entity & Constructor	> Owner & Designer > Owner & Construction Manager	> Owner & Designer > Owner & Constructor > Designer & Constructor
Advantages	> Owner gets to choose most competitive bid	> Transfer risk from owner to DB entity > More parties involved earlier in project	> More parties involved earlier in project	> Collaborative & innovative design > Better buildings, faster, for less
Disadvantages	> No early collaboration > Could result in project delays, change orders, etc.	> Early Cost Commitment > No competitive bid for owner	> Early Cost Commitment > No competitive bid for owner	> Early Cost Commitment > No competitive bid for owner > Obstacles that need to be resolved

3.0 Obstacle 1 - Contracts

This chapter discusses issues that arise when utilizing traditional construction contracts while implementing IPD as the delivery method. The solution exists in creating new contracts. The final portion of this chapter will introduce some of the different contract options currently being used successfully.

3.1 Issues with Traditional Contracts

The construction contracts applied to traditional construction methods are not suitable for use with IPD projects. There are many reasons that they do not work for IPD. The three largest elements requiring change to accommodate IPD include: contractual relationships, compensation, and insurance.

The contractual relationships that occur between the different parties involved in construction are much different in IPD than other traditional delivery methods. Instead of parties entering into the project at different times and only worrying about their assigned task, IPD contracts must take into consideration the fact that all parties are involved from the beginning of the project and everything is a group effort. This contractual relationship is difficult because traditional contracts are not setup for teamwork. This is especially true across the disciplines and within the groups of contractors, manufacturers, etc. (The American Institute of Architects & AIA California Council, 2007). This exemplifies that traditionally each party manages themselves to minimize their own risks (The American Institute of Architects & AIA California Council, 2007), increasing the separation of the parties, and minimizing integration and collaboration in design. Contractual relationships, the way in which two or more parties are tied together through a contract, are the foundation for the IPD method. A good contractual relationship can lead to a good working relationship and in turn lead to a well-integrated design for the project. The American Institute of Architects (AIA) identifies several issues that arise from the parties involved in the core team that impact the formation of IPD contracts:

adversarial relationships between architects, engineers and constructors reinforced the traditional project delivery, compensation and risk allocation arrangements, short-term thinking on the part of owners who frequently seek the lowest cost for each phase of development, shared contracts that reinforce compartmentalization of team members, rather than support integrated and collaborative efforts (Fallon & Hagan, 2006, p. 6).

The current environment has created adversarial and strained relationships between the parties involved in the traditional construction process. Therefore the importance of well-constructed contracts is critical to allow the environment to change to one of collaboration and trust.

Being that IPD is a new delivery method and completely different from what was done in the past, there are no prior contracts to follow in the drafting of the IPD contract (The American Institute of Architects & AIA California Council, 2007). This can result in more negotiating when trying to reach an agreement resulting in higher legal and/or drafting cost because of the time required in establishing this agreement (The American Institute of Architects & AIA California Council, 2007). With all the parties having a vested interest in a well drafted contract the time involved in the writing and negotiation can be long and drawn out. To assist in resolving this issue “the AIA is currently developing standard forms to assist parties wishing to negotiate and execute an IPD agreement” (The American Institute of Architects & AIA California Council, 2007, p. 17). These forms are currently known as transitional agreements to help assist in the transition from a traditional contract to a totally integrated contract. These transitional agreements are not true IPD contracts but rather simply forms intended to assist those wanting to use an IPD agreement. This is not a solution to the need for contracts. Since these are just agreements, other parties have taken the initiative to create IPD contracts that will be introduced in the next section.

The design and construction industry like other business sectors are concerned with profit and compensation. In traditional contracts compensation is based on services provided and a value is set by each party since they have the ability to individually negotiate. In IPD type contracts compensation is handled differently. This is resolved by the wording of each contract and the choices that are made by the core group. Compensation is the largest area of difference between IPD contracts currently being utilized. In most cases it is up to the core group to determine compensation. Unfortunately there are no standards in the industry for the compensation arrangement right now.

An issue that relates to compensation that could be resolved with better contract drafting is the fact that most IPD contracts “do not include a guaranteed price” (Post, 2010, p. 2). A guaranteed price is a price value that is set not to exceed. This is most detrimental to the owner or the entity paying for the services. If the contract were drafted in such a way that this was included or the price/budget had to be set by a certain time this issue could be resolved.

The last area of concern with IPD contracts is how insurance coverage is provided for the project and the parties involved. In traditional contracting, insurance is covered in many different ways including: liability, workman's compensation, etc. Also, each party typically carries their own insurance to protect their company and portion of the project. Traditional insurance will not cover IPD projects because no one within the IPD core group can make a claim against anyone else within the IPD core group because of the inclusion of a "no suit" clause in the IPD contract. However, some contracts implemented in IPD do not contain true "no suit" clauses allowing the owner the right to make a claim and/or seek recourse against any member of the design team (D. Griggs, personal communication, January 7, 2011). Contracts that exclude the "no suit" clause are not truly IPD. How this is addressed within the contract will be discussed in the following sections. The issue of insurance and what type of coverage is a topic of its own addressed in Chapter 4.

3.2 Solution: Multiparty Agreement

One contracting method that offers a good solution to IPD contracting issues is a multiparty agreement. A multiparty agreement differs from a traditional contract in that it is one contract for the entire core group rather than for individual parties. This section will describe the characteristics of a multiparty agreement and then describe the three forms of multiparty agreements that are being utilized in the industry today.

The definition of multiparty agreement as defined by The American Institute of Architects and AIA California Council is where the "primary project participants execute a single contract specifying their respective roles, rights, obligations, and liabilities" (2007, p. 32). Multiparty agreements depend on trust between the parties (The American Institute of Architects & AIA California Council, 2007). Since the compensation of each party is dependent on project success and success of each party is dependent on working as a team, trust is the most important attribute of the multiparty agreement (The American Institute of Architects & AIA California Council, 2007).

Some characteristics important when creating a multiparty agreement include but are not limited to (The American Institute of Architects and AIA California Council, 2007, p. 32):

- Single or umbrella agreement
- Processes tailored to support team environment
- Decisions arrived at through consensus

- Compensation tied to project success
- Roles assigned to the person or entity best capable of performing the task

A “multiparty agreement” is the base for the actual contracts that are utilized for IPD projects. There are three multiparty contracts that have been successful for IPD projects according to those individuals interviewed. The three contract forms are: AIA C191-2009, ConsensusDOCS 300, and Sutter Health’s Integrated Form of Agreement/Integrated Project Delivery Agreement (IFOA/IPDA). The following sections introduce these multiparty contractual relationships being utilized in the industry today. The topics of how the contracts are organized, how the compensation is determined, and how insurance is included in the contract document will then be addressed as independent subsections.

3.2.1 AIA Document C191-2009

The first of the multiparty contract forms created by AIA was C191-2009 *Standard Form Multi-Party Agreement for Integrated Project Delivery*. This document was developed in reaction to the industry moving toward a more integrated project delivery. According to the AIA C191-2009 Document Commentary this contract:

establishes the basic legal framework for a multi-party agreement for integrated project delivery. C191-2009 integrates the owner, architect, contractor, and perhaps other key project participants, under one agreement from the onset of the project (2009).

Although this document was the first IPD multiparty contract to be drafted by the AIA, they do not recommend its use. Instead AIA supports the use of their transitional agreements to help ease the industry into the use of a multi-party agreement. These transitional agreements were developed in response to the resistance of industry to make such a drastic change from the more traditional contracts and delivery methods. The use of transitional IPD agreements “allows contracting parties to utilize many of the principles of IPD in a familiar contractual relationship” (The American Institute of Architects, 2009). AIA made this compromise as an attempt to encourage the transition and progress toward IPD because they believe it to be the best delivery method. Most individuals within the industry that have had success in implementing IPD projects do not agree with AIA’s recommendation to use transitional agreements. Most professionals interviewed tend to use one of the other two options for IPD contracts.

Even though this is not the preferred contracting method of the industry, it is still important to note that this contract document is available for use. It does have a good contractual

format and would work well as an IPD agreement. The document consists of the contract body and C191-2009 Exhibit B thru Exhibit D. Refer to the AIA C191-2009 pages 56 thru 84 for details and information about each exhibit.

3.2.2 ConsensusDOCS 300

A more highly utilized multiparty contract for IPD projects was created by the Association of General Contractors (AGC) in 2007 titled *ConsensusDOCS 300 Standard Form of Tri-Party Agreement for Collaborative Project Delivery*. This document was developed by the AGC in response to the need for a contract that included all concerned parties for IPD.

Most of the professionals contacted for this report with experience in IPD (identified in Appendix A and their respective companies) have used the ConsensusDOCS 300 as the contracting form when working on projects implementing IPD. This sample of individuals and their companies are a very small representation of the industry and do not necessarily represent the industry as a whole but it is important to have opinions from those that have had success with IPD projects. This contract is unique in that there are sections that contain choices which the IPD team must make that determine whether the contract follows a traditional contracting method or a pure IPD “no suit” method as will be shown in the following contract organization section. Contact with industry professionals shows that this contract and Sutter Health’s IFOA/IPDA are the two most commonly utilized multiparty contracts available today.

3.2.3 Sutter Health’s Integrated Form of Agreement/Integrated Project Delivery Agreement

According to the industry professionals contacted, the Sutter Health’s IFOA/IPDA is one of the most commonly utilized agreement contract for multi-party contracting. This agreement is a revised version of a document that was first utilized for health care facilities in California. This contract form was developed by Sutter Health and SSM Healthcare and then revised by Alberici Group, a Missouri based construction company, to make it useable in all fifty states. This revised form is titled: IFOA/IPDA.

IFOA/IPDA is very popular because most IPD projects being built right now are in the healthcare sector. This is easier to utilize in the healthcare sector because most medical buildings/companies do not have the issue with financial institutions and lending that the public sector tends to have. Since this agreement was drafted for a healthcare company it encompasses

issues specific to IPD implementation in health care but the revised contract is written to apply in most any area of design. As the industry progresses and more types of projects use IPD, it can be anticipated that more project type specific IPD agreements will become available.

3.2.4 Contract Organization

The most important item about contracts is how they are organized which consists of: which parties are included and how the responsibilities within the core IPD team are determined. All of these issues are usually addressed in the beginning of a contract and are directly stated so there will be no confusion. The next three sections discuss the organization of each of the three main multiparty contracts previously introduced.

3.2.4.1 AIA Document C191-2009

The C191-2009 is formatted with the intention of the integration of parties. All major players involved in the project, owner, architect, and contractor, will sign a single agreement with “the same incentive - completion of a successful project, efficiency and the least amount of waste” (The American Institute of Architects, 2009, p. 2). If other parties need to be included in the agreement for any reason a modified form of C191-2009 will need to be drafted (The American Institute of Architects, 2009).

This agreement establishes two project teams, the project executive team (PET) and the project management team (PMT). Both of these groups act as a core group for the project having a representative from the owner, architect, and contractor on each team. These groups work together and make decisions for the project unanimously (The American Institute of Architects, 2009). It is the responsibility of the PET to establish goals, make decisions on issues brought forward by the PMT, and project planning and management. The contract then states that it is the PMT’s responsibility to execute the decisions made by the PET and the day-to-day project management, meeting scheduling, etc. The members of both of these teams must reach all decisions unanimously and all have an equal vote in any dispute and/or issue resolution that may arise (The American Institute of Architects, 2009). Refer to AIA C191-2009 pages 3 through 5 for the actual documentation on “Management of the Project”.

3.2.4.2 ConsensusDOCS 300

ConsensusDOCS 300 is a contract that combines the collaboration of the owner, designer, and contractor. All three of these parties sign the agreement at the project inception

thus “binding them to collaborate in the planning, design, development and construction of the project and sharing of project risks and rewards” (ConsensusDOCS, 2010, p. 4).

The three members of the agreement become the Collaborative Project Delivery (CPD) team and are managers of the project. The team works through collaboration and consensus on all decisions regarding the project. “Within the scope of their respective expertise, the parties shall together actively and continually pursue collaboration in the best interest of the project” (ConsensusDOCS, 2007, p. 6). Although decisions are made unanimously, the owner is responsible for budget, scheduling, etc., the designer remains responsible for the design and the contractor remains responsible for construction and suppliers (ConsensusDOCS, 2007). Refer to ConsensusDOCS 300 Sections 3.1 through 3.7 for more information on the “Collaborative Principles.”

3.2.4.3 IFOA/IPDA

The IFOA/IPDA is very similar to the other two agreement forms in that it is run by a core group. “This core group will consist of, at a minimum, an owner’s representative, an architect’s representative, and the General Manager’s representative” (Aberici Group, SSM Healthcare, & Sutter Health, 2006, p. 5). The members of this team are not limited to only these three individuals but these are the minimums for this agreement. This core group will be “chaired by the owner’s representative” (Aberici Group, SSM Healthcare, & Sutter Health, p. 5).

This group has authority over the project as long as it remains in the best interest of the project. The core group, under the IFOA/IPDA, is responsible for every aspect of the project and for making unanimous decisions in the best interest of the project. Meetings, collaboration, project planning, scheduling, budget, etc. are all defined by the core group in the early stages of the project. Refer to IFOA/IPDA Section 4 pages 5 through 7 for more information on the “Formation and Functioning of the Core Group.”

3.2.5 Compensation

Compensation in IPD projects is a large area of concern in contract drafting. Many ways exist in which compensation can be set up from services provided to project based incentives. The following sections describe how each contract handles the topic of compensation and the structure it utilizes.

3.2.5.1 AIA Document C19-2009

The C191-2009 addresses compensation in a flexible manner leaving the IPD core group to determine the method and the amount of compensation that will be received by each party involved, but is contingent on the success of the project. Each party agrees to deliver their services at cost while profit is earned by goal achievement compensation and incentive compensation. “Both of these are directly related to the achievement of project milestones” (The American Institute of Architects, 2009, p. 2). Contract sections on compensation for C191-2009 are shown in Article 4 pages 7 through 9.

Goal achievement compensation is compensation that is received by the parties for “successful achievement of certain project goals” (The American Institute of Architects, 2009, p. 2). The IPD team works together to determine the project goals early on in the process and the amount of compensation that will be associated with the project goals. It is also up to the IPD team to determine how the success of these goals is to be measured. This form of compensation is an all-or-nothing form of profit. If the set goal is met, all non-owner IPD core group members receive the chosen compensation, but if the goal is not met no one receives compensation. “This serves to reinforce the team approach to project success” (The American Institute of Architects, 2009, p. 3).

“Incentive compensation will be paid to the parties as a portion of the difference between the actual cost and the target cost” (The American Institute of Architects, 2009, p. 3). The target cost is another item that is determined by the IPD team early in the process based on detailed estimates. Incentive compensation then becomes measured by this baseline target cost. Through this form of compensation it benefits all parties to try to determine ways in which to save money throughout the project. If the actual cost is less than the target cost, the parties within the IPD team will share the cost savings throughout the group. However, if the “actual cost exceeds that of the target cost not all is lost, the non-owner parties will continue to receive goal achievement compensation and will continue to receive payment for items included as a cost of work” (The American Institute of Architects, 2009, p. 3) with the possibility of not being reimbursed for labor costs. The exception of not being reimbursed for labor costs in the case that the actual exceeds the target cost is something that the team must choose at the original signing of the contract (The American Institute of Architects, 2009).

Even though in this contract the parties agree to give services at cost, there is a large opportunity for profit compensation in both goal achievement and incentives. These two

compensation structures work together to ensure that certain project goals are met while working to maintain a reasonable cost and encouraging economic design and team collaboration.

3.2.5.2 ConsensusDOCS 300

Different from prior contracts, ConsensusDOCS only addresses those profits to be made by the parties for the direct services each one provides. According to the ConsensusDOCS 300 Article 9 and 10, Designer's Compensation and Constructor's Compensation, each party shall be compensated for basic services and given the appropriate designer's or constructor's fee unless adjustment of that fee becomes necessary. Fee adjustment would occur in the event that the services were changed or project delays due to design or construction. Each party in the IPD core group can then also obtain incentive compensation that is determined at the start of the project by the group.

As stated in Article 11 of ConsensusDOCS 300, Incentives and Risk Sharing, the CPD team is to develop an incentive program that compensates the team members for successfully "exceeding the project expectations and benchmarks" (ConsensusDOCS 300, p. 23). A specific incentive compensation program is laid out in the contract but is left up to the members of the CPD to determine. The CPD members are responsible for determining "the method, manner, amounts, and timing of any payments made as a result of the financial incentives program" (ConsensusDOCS, 2007, p. 23). The contract states that this program shall be laid out by the CPD team and added in an amendment to the contract. However, if the project exceeds the target cost set by the CPD members, the team has two options within the contract of how that will be handled: (ConsensusDOCS, 2007, Section 11.5)

- Shall be borne by the Owner
- Shall be shared by the Parties on the following basis:
 - Indicate an agreed upon percentage
 - Other basis determined for sharing

Due to the fact that the parties are getting compensated for services and have an incentive program, any losses incurred by the project have the potential for being detrimental to all members of the CPD team. The compensation that is set up for this contract is quite different from C191-2009 but is still just as effective and is more commonly used than the C191-2009.

3.2.5.3 IFOA/IPDA

In the IFOA/IPDA each member of the core group shall be compensated based on the basic service that they are expected to provide. This will either be through a fixed fee or hourly fee. The determination of which compensation will occur is selected by the core group at the inception of the project. Other than the basic fees there is also incentive compensation within the IFOA/IPDA contract. For more detailed information on basic service compensation see IFOA/IPDA Sections 25 and 26 pages 37 through 39.

The compensation that takes place outside of basic fees is considered the “financial incentive program.” This program is in addition to the contract itself included as Exhibit K and is funded with project savings. The incentive compensation is based on “successfully achieving superior performance and successfully exceeding the project expectations and benchmarks” (Alberici Group, SSM Healthcare, & Sutter Health, 2006, p. 22). The core group establishes these benchmarks as well as the guidelines and incentive amounts for the incentive program. The contract also states that “the program should consider performance in the following areas (when determining incentive compensation): cost, quality, safety, schedule, planning system reliability, and innovative design or construction processes” (Alberici Group, SSM Healthcare, & Sutter Health, 2006, p. 22). Refer to IFOA/IPDA Section 14 page 22 for the contract section on “Incentives”.

3.2.6 Insurance

The final area of importance in an IPD contract is the issue of insurance and how it is addressed within the contract. The two primary issues for IPD that are important in the contracting of insurance is whether or not a “no suit” clause is included and what type of insurance the contract requires individual parties to carry. This section provides the differences between the contracts related to this issue because the topic is explored in much greater depth in Chapter 4.

3.2.6.1 AIA C191-2009

The first area of importance regarding insurance in a contract is whether there is a “no suit” clause or if the one party has the right to file a claim against other member(s) team if necessary. The AIA C191-2009 is a “no suit” contract. The information under the heading “Risk Sharing” (Section 8.1 of the contract) states that the parties are required to “waive liability

against the other” (The American Institute of Architects, 2009, p. 3). Exceptions to this waiver of liability are made when one of the parties knowingly and willfully shows misconduct or breach of contract (The American Institute of Architects, 2009). Refer to AIA C191-2009 Section 8.1 page 12 for risk sharing between the parties.

In AIA C191-2009 the insurance section states that it is the responsibility of the insurance company to determine a policy that would best fit the contract. The contract relies on the insurance companies to write new policies that will cover everyone included on the project. It also requires that all the parties retain traditional insurance until the group determines the insurance policy that will be used on the project. The agreement states that “the parties retain an insurance consultant to provide advice and assistance in identifying and obtaining the best types of insurance for the project” (The American Institute of Architects, 2009, p. 3). The insurance required by C191-2009 can be found on page 11 of the contract.

3.2.6.2 ConsensusDOCS 300

In Section 3.8 of ConsensusDOCS 300 the CPD team has two insurance options for the project Safe Harbor or traditional risk allocation. Safe Harbor is a process where decisions are collaboratively made by the CPD team and the parties involved choose to waive all liability from other members of the team. This is the same as the “no suit” clause of C191-2009. This choice is made acting in good faith and releases the parties from “any liability at law or in equity for any non-negligent act, omission, mistake or error in judgment” (ConsensusDOCS, 2007, p. 7). The second choice is traditional risk allocation where each party of the CPD team is completely liable for any negligence, breach of contract, and warranties on its part. This choice is similar to traditional contracting and project delivery methods (ConsensusDOCS, 2007). Traditional risk allocation strays from IPD goals in that it takes the trust needed for an IPD project out of the equation since all CPD team members are only liable for their own mistakes.

Article 21 Indemnity, Insurance, Waivers, and Bonds, Sections 21.2 through 21.6 dictate the insurance that must be held by each individual member of the CPD. These sections state that each member/company must maintain traditional insurance like that in traditional project delivery methods. Each of these sections goes through what exact types of insurance coverage are required of the designer, contractor, and owner. No special insurance is required to be obtained by ConsensusDOCS 300.

3.2.6.3 Sutter Health's IFOA/IPDA

The IFOA/IPDA contract is a “no suit” contract and has minimal discussion of insurance. There is one small paragraph that states that during the project the architect and contractors shall “purchase and maintain insurance as set forth in Exhibit I” (Alberici Group, SSM Healthcare, & Sutter Health, 2006, p. 49). This is another addition to the basic IFOA/IPDA contract that must be utilized but does not give direction on what type of coverage is required. Exhibit I allows for the core group to determine the coverage that will be applied to the project and requires that the parties purchase and retain that insurance throughout the course of the project. This agreement requires that each entity has its own insurance because there are not policies readily available for entire project coverage at this point. This type of insurance coverage is similar to that of the ConsensusDOCS 300 in that this contract requires that each party maintain its own liability insurance and/or any other type of insurance needed for the project. Section 32 on pages 49 through 50 of is the section in the IFOA/IPDA on “Insurance and Indemnity”.

The contract types mentioned above are the ones currently implemented into the industry for IPD projects. There are most likely other contract documents available, but these are the most accepted and utilized. There are many differences and deviations between the different contract documents. Refer to Table 3 for a quick reference guide of the information about each contract type discussed in this report. It is most likely that as IPD becomes more widely accepted this will change and a more common contract format will be seen throughout the industry for reasons of uniformity.

Table 3 : Contracts Comparison

Comparison Item	Contracts		
	AIA C191-2009	ConsensusDOCS 300	IFOA/IPDA
Creator & Year	> The American Institute of Architects > 2009	> Association of General Contractors > 2007	> Sutter Health, SSM Healthcare, & Alberici > 2006
Contract Organization	> Integration of Owner, Architect, and Contractor > (2) teams: PET & PMT	> Integration of Owner, Architect, and Contractor > (1) team: CPD team	> Integration of Owner, Architect, and Contractor > (1) teams: core group
Compensation	> Services at cost > Goal achievement compensation > Incentive compensation	> Compensated for basic services > Incentive compensation	> Compensated for basic services > Incentive compensation
Insurance	> Complete "no suit" contract > Responsibility of insurance company to determine a project policy	> Can be traditional or "no suit" contract > Traditional insurance used	> Complete "no suit" contract > Core group decides on insurance to be utilized

4.0 Obstacle 2 – Insurance

Insurance is a significant obstacle in moving toward the integrated design process. As shown in the previous section, IPD contracts are not consistent in regards to this topic. Some contract documents encourage “no suit” clauses that waive all liability between parties to promote team collaboration (The American Institute of Architects & AIA California Council, 2007) but even when the liability is waived, the insurance companies may not offer corresponding products (The American Institute of Architects & AIA California Council, 2007). As of right now, no insurance policies or products cover the multiparty agreements discussed in Chapter 3 (Post, 2010). Even if every party in the IPD core group carries its own liability insurance, the team/contract as a whole would not necessarily be covered. In IPD the goal is to have one coverage for all the parties and the project. IPD success is hinged upon the insurance companies providing ways to underwrite the insurance policies (Post, 2010).

A good way of describing the issue is that “liability insurance traditionally has been underwritten and triggered on a basis of claims and fault. But signers of most IPD contracts promise, in writing, not to sue each other or point fingers, which can render liability insurance dysfunctional and inoperative” (Post, 2010, p. 2). Although the “no suit” is great in theory and is a critical premise for team building and trust in IPD, as seen here it becomes a major obstacle because there is not a way to insure all the involved parties under one policy. Theoretically, IPD is an ideal delivery method but full implementation into the industry has yet to take place because of the obstacles that need to be resolved and the fact that other industries have to be relied upon to determine these resolutions.

When implementing a traditional contract someone is liable for errors and omissions and another party can file a claim against the one responsible to cover incurred expenses in additional work, time delays, etc. In IPD contracts that are “no suit” there is no one to file that claim against since all parties have waived liability to one another because of the contract stipulations and the expectations that all are equally responsible. However, any party outside of the contract still has the capability to file a claim against the IPD core group and therefore the team needs coverage for any third party issues that may arise (D. Griggs, personal communication, January 7, 2011). Third party individuals can consist of but are not limited to: sub-consultants, sub-contractors, and anyone who may participate in the design and/or construction of the building that is outside of the IPD contract. Although there are no insurance solutions available in today’s market the next

section will discuss how insurance would need to be underwritten to fully insure a pure IPD project.

4.1 Insurance Solutions

Most of the companies implementing projects with IPD right now are handling insurance in a very traditional way. These companies have liability insurance for other projects that are non-IPD related and are carrying that coverage over to their IPD projects. Since traditional insurance is still carried by these companies they will be protected from any third party issues that may arise. Due to the fact that IPD is typically a “no suit” contract, the members of the core group do not need insurance to protect from each other. The issue that arises from this solution is which party’s insurance will have to take care of a claim filed by a third party. Even though there is “no suit” within the core group, one party would be identified as responsible for issues pertaining to a third party even though the decision or action creating a problem is a result of a core group decision. This is not desirable since it leans away from the IPD process and philosophy as well as negatively impacts financially one party of the core group with implications beyond just this project as claims impact premiums in the future.

An alternate type of insurance is being developed and in some cases being implemented called a project wrap professional policy. This insurance policy is:

A project specific insurance that protects everyone in the core group from third party negligence and creates an environment where there is no motivation for everyone to have their own insurance (R. Moss, personal communication, December 7, 2010).

A majority of the individuals interviewed believe that this will soon be the way that IPD contracts are insured. Although this type of policy is ideal for IPD, insurance companies are very slow to move toward this type of coverage. A “wrap” policy tends to be very specific to every job and there is no standard insurance providing this type of coverage. According to David Griggs, due to the specific nature of these policies most insurance companies will not pursue the development of IPD insurance (personal communication, January 7, 2011). This is because if the insurer were to have a product that is completely tailored to IPD they would be introduced to the issue of adverse selection. Since all IPD projects/contracts are tailored specifically to that project each new project that the insurance company would insure would require a newly tailored insurance product specific to that job (D. Griggs, personal communication, January 7, 2011).

That insurer would then get all IPD jobs whether good or bad (D. Griggs, personal communication, January 7, 2011).

Although no current policies are available specific to the IPD delivery method, IPD projects are being conducted utilizing traditional insurance. Insurance companies for these projects underwrite a new policy for the specific project addressing particular issues through the incorporation of multiple policies (D. Griggs, personal communication, January 7, 2011 & Willis, 2010). The first policy is “a general liability policy to cover claims issued from third parties for personal injury and property damage” (Willis, 2010, p. 4). This coverage protects the IPD core group from those individuals that can make claims against them. The second policy is “builder’s risk covering the loss and damage to the project works under the agreement” (Willis, 2010, p. 4). This means that if during the course of construction someone, in the IPD core group or not, identifies a problem with the design and/or construction that could cause financial loss or delay in schedule this policy would cover “rectification of loss” (D. Griggs, personal communication, January 7, 2011). Rectification of loss insurance is a “form of insurance coverage that enables the insured to request of the underwriter’s agreement to rectify a problem on a project during construction without a formal claim having been made by a third party” (D. Griggs, personal communication, January 7, 2011). The next policy that would be incorporated by the insurance companies is “professional liability to cover the parties’ liability arising from an act, error, or omission in the performance of professional services under the agreement” (Willis, 2010, p. 4). When the compensation is paid out at the point of substantial completion the IPD team tends to go their own ways leaving the owner with any issues that may arise. The owner is still not allowed to file a claim against the team but the problems could have come about due to errors or omissions in design and/or construction. This type of coverage allows the owner to go to the insurer with any losses they have incurred and be covered for expenses incurred in solving the issue(s) (D. Griggs, personal communication, January 7, 2011).

The final area of concern for IPD insurance coverage is to protect the interests of all involved by making sure that all third parties, who are also susceptible to claims, carry adequate insurance of their own (D. Griggs, personal communication, January 7, 2011). This is to help protect the IPD team from negligence on the part of sub-contractors, sub-consultants, etc. The number of different policies required for adequate protection of all those involved show that addressing the risk and “no suit” of IPD contracts can get complicated quickly (D. Griggs, personal communication, January 7, 2011).

The topic of insurance is the largest obstacle for implementation of IPD. The fact that this is an issue that must be resolved by a party that does not have a vested interest in the promotion of IPD makes it even more challenging and slows implementation.

5.0 Obstacle 3 – Integrated Project Delivery Structure for Facilitation

In the traditional project delivery methods, the architect has typically played the role of the project “facilitator”. The architect has been the “middle man” for all interaction between the design team, construction team, and the owner and has been responsible for setting meetings, tracking paperwork, etc. The structure of IPD requires the entire team take on these responsibilities. It is hard to believe that during early implementation of an IPD project that the team would be so well integrated that there would be no issues with coordination creating a need for a facilitator, or “leader” of the core group. In a pure IPD project implementation the core group is the facilitator and there is no one leader.

The idea of individual facilitator versus core group facilitation is a large area of disagreement among the proponents of IPD. This is a significant issue because it deals with the basic setup and structure of how IPD will function. The idea of an IPD facilitator is what some people in industry say “only makes sense” while others argue that in a pure IPD project there is no “leader” only the core group working as a cohesive whole. The next sections will go over each scenario and show how each has been successful for IPD projects in the industry. The opinions discussed in the next sections were received from individuals in the design and construction industry that have been involved in successful IPD projects. These individual’s credentials are stated in Appendix A.

The idea of the IPD facilitator is one that makes a lot of sense in the implementation of a new project delivery system. An IPD facilitator is a person that would know all the ins-and-outs of IPD and help to “navigate the owner, designer, and builder through uncharted waters” (McKew, 2009, January, p.1). This person would be trained in all areas regarding IPD and could help guide the project through the process. The IPD facilitator would take the role of the “leader, captain, and/or chairman of the board for an IPD project” (McKew, 2009, p.1). This is important because in any type of situation there needs to be a person in charge of all aspects of the project so everything can be integrated. According to McKew, there could be a shift from the architect traditionally being in this role to possibly the engineer or contractor (2009). All three entities are in the position to be in the facilitator role (McKew, 2009). The question is: which entity will step up to the plate?

Along with who will become the facilitator, what the facilitator will be responsible for or need to know is a major issue. The following 15 categories were developed by McKew for a Facilitator Program. This program was developed with the intention of teaching individuals all the necessary tools they would need to be a successful IPD facilitator. As of now this program is still in development but these categories are ones in which an individual would need to be proficient in to properly facilitate an IPD project. (2009)

- Contracts
- Communication
- Goal Setting
- Quality Control Process
- Writing Owner's Project Requirements (OPR)
- Writing Basis of Design Documents (BoD)
- Risk Management
- Scheduling (project and occupants)
- Smart/Sustainable Software
- Asset Management
- Document Management
- LEED®
- BIM Design-Construct-Operate-Maintain CAD Documents
- Estimating (hard costs and soft costs)
- Commissioning

These categories are included in the program but are not necessarily required for an individual to facilitate an IPD project. These categories are simply those that would be a part of the program to train the most proficient IPD facilitators.

On the other side of the issue, in a true IPD project there will be no IPD facilitator. The core group will be so integrated and coordinated that there would be no need for a leader. This group of people includes three parties: the owner, designer, and contractor. These three parties make all decisions by consensus and take on the role of IPD facilitator. The necessary knowledge base is extensive and would be difficult for an individual to be proficient in all 15 categories therefore reinforcing the importance of the cumulative knowledge of the core group. According

to Scott Simpson, anything but the core group as facilitator is not a true IPD project. Each of these methods, core group and facilitator, will be discussed in the following subsections.

5.1 Integrated Project Delivery Core Group

The core group is essential to IPD. This group of individuals must trust each other and know that the other members of the team are also working toward the best interest of the project. As soon as there is a lack of trust IPD cannot function. According to Bill Whipple:

In a well-functioning IPD core group each team member will be a leader in a certain area of expertise. The foundation of IPD is trust. Trust is established through relationships, sustaining commitments, and respect for each other's abilities. Shared leadership provides opportunities to take on responsibility and develop these elements of trust. Hence the reason many IPD teams are broken into area of focus groups. No (area of focus) group leader is more important than another and responsibility is shared. I would say that there still needs to be a facilitator, or leader, for each area of project focus (personal communication, January 4, 2011).

In this approach each member of the IPD core group is a leader of their own teams but each one comes back together to represent their area of expertise with equal voice as part of the core group.

Just because there are only three members of the core group does not mean that other individuals cannot come to meetings or introduce ideas. These three individuals, however, are responsible for the final decisions by consensus and are in charge of everything from administration to budget. Some of their other responsibilities include: design, documentation, delivery, etc. This group of individuals is very closely coordinated and is expected to make decisions unanimously. The entire IPD process, design, and construction responsibilities fall to this group. They are responsible for every aspect of the IPD process. Professionals currently participating in IPD projects find that the core group members are usually chosen based on experience and established trust gained through years of collaboration on prior projects. The owner typically selects the members of the core group but in some cases the core group is formed and "pitched" before an owner.

A good example of this configuration is from Kling Stubbins, a company who has had success with IPD core group. This success has given the company the confidence to say that IPD core group without a facilitator can be successful. This is only one approach to the core group set up but has shown to be successful for this company.

According to Scott Simpson at Kling Stubbins, the IPD team is comprised of three layers: the Senior Management Team (SMT), the Project Management Team (PMT), and the Project Implementation Team (PIT). Each of these layers is comprised of certain individuals that have specific responsibilities and goals throughout the design and construction of an IPD project (personal communication, November 23, 2010).

The SMT is not generally involved in the main IPD process, but are one of the most important groups because it is this group's responsibility to set protocol and policies. The PMT is what most everyone in the industry refers to as the core group and functions as such. The SMT is comprised of a representative from each of the teams that are part of the core group. However, these individuals tend to be higher up in their respective companies. This group is also responsible for signing the checks and handling all money matters. One of this group's largest responsibilities is that they have ultimate authority. If there is an issue that cannot be settled within the PMT the SMT is responsible for resolving the issue. The SMT is unique to Kling Stubbins implementation methods but is advantageous because it takes financial concerns, dispute resolution, etc. away from the PMT allowing them to focus on collaboration of design and construction therefore creating the best building possible. The PIT is comprised of those individuals responsible for carrying out the actual construction of the project. Some of the people involved include, but are not limited to, the contractors, suppliers, workmen on site, etc. These individuals are responsible for the construction of the building and to carry out the proposed project design.

These three groups work together to create the IPD team. Although the responsibilities vary greatly from one group to the next, each is accountable for what happens within an individual's group. Likewise, each group then becomes accountable for what the other groups are responsible for accomplishing. This system creates accountability between everyone involved in the project. This reinforces the idea that everyone involved in the IPD team has the same risk and reward. This idea of accountability really helps to focus each individual on the fact that in an IPD project what is best for the project is what is best for the individual.

According to Scott Simpson, having an IPD facilitator is a sign that there is an issue or problem within the PMT (personal communication, November 23, 2010). A good example that was given to help understand pure IPD is that "people don't get married and already have a marriage counselor lined up." People go into marriage with the idea that the two individuals can work together as a cohesive team to work out any issues that may arise and make decisions in the

best interest of the marriage. This is also true of IPD and how it was designed to function. The PMT should work like a marriage in that everyone goes into the project planning to work as a cohesive whole and to make decisions in the best interest of the overall project.

5.2 Integrated Project Delivery Facilitator Role

The idea of an IPD facilitator has been a topic of great discussion for IPD implementation. About half of the experienced professionals in IPD agree that a facilitator and/or leader is much needed to ensure a smooth process and success of any IPD project. Some even think that this person's role should become a profession.

The idea of the facilitator, either one of the core group members or an outside entity, came from the fact that the members of the core group did not all have experience in IPD. This evolved into allowing the team member with experience to become the facilitator to guide the process. John Tocci of Tocci Construction thinks this is “probably a temporary situation when there is not enough knowledge and experience on a team trying to implement IPD” (personal communication, November 24, 2010). The idea of a core group facilitator is not to navigate away from the trust and group feeling of an IPD project but is more to insure that everyday tasks and responsibilities are managed and ensure decisions are made. This facilitator or “leader” is responsible for “day to day implementation: meetings, contingency expenditures,” meeting minutes, centralized data source, etc. (T. Gunn, personal communication, November 23, 2010). This person ensures that the project is running smoothly, on time and on budget. If a facilitator is the director of implementation of IPD it begs the question “Who will step into the role of the IPD facilitator?” The answer to this question was unanimous throughout the industry individuals who were interviewed. Every one of the experienced professionals in IPD that believed it is necessary to have an IPD facilitator also think that the contractor is best equipped for this role. A few of these individuals believe that at different points throughout the process another entity could be the facilitator but in the end the contractor will always take on this role for the majority of the project time. The following quotes provide further insight as to why the industry professionals believe that the contractor is best equipped for taking on this role.

The contractor takes the lead because the contractor is responsible for scheduling and planning of the project and because construction value is the largest component of the project budget. The contractor is in the best position to help guide decisions because they know costs and impacts of costs (T. Gunn, personal communication, November 23, 2010).

Designers tend to facilitate design process and as construction phase starts the facilitator role moves to the contractor (T. Gunn, personal communication, November 23, 2010).

The industry opinions concur that the contractor is best equipped to be in this position. This is due to the fact that the contractor knows the costs of the job best and works with the designers in IPD toward what is in the best interest of the project as a whole. The contractor also tends to have administrative processes already in place that help them to fit into the role of a facilitator very easily.

As mentioned above not only do people believe an IPD facilitator is needed some also believe that it needs to become its own profession. This would be a person within the core group that leads the team and is knowledgeable in all aspects of IPD. This person could also be the owner's representative as mentioned in Chapter 2. This would become a profession just like that of an Architect or Engineer and would be compensated as such. There are some firms that have their own "in-house" facilitator and are working toward it becoming a service they could outsource to others. The reason that this is becoming a profession of sorts is that:

There is a huge void in the marketplace for the well informed/equipped IPD facilitator. The IPD facilitator should be bound to the successful outcomes of project and be subject to same risks and rewards as other members of the core group to ensure their voice is a credible voice in the group (J. Tocci, personal communication, November 24, 2010).

This role would be a full time position that would normally be "created by a subsidiary of the company to be in that role" (J. Tocci, personal communication, November 24, 2010). For example if the contractor were to be the best for the role of facilitator it would be a member of that company that would have the full time facilitator role. This profession would work most like an "owner's representative with a contractor's mentality" (R. Moss, personal communication, December 7, 2010). However if the facilitator is a person outside of the original members of the core group this person would not have a vote in the decisions made by the core group concerning the project but would be a part of the group strictly to administer the IPD process. The purpose of a facilitator is to help guide the project in the right direction. Just because there is an IPD facilitator does not mean that the core group does any less work or is any less important. IPD functions only because of the trust that is within the core group and their ability to work together and come to consensus about what is best for the project. The idea of the facilitator is that there would be some leadership among the group and a more knowledgeable entity on the workings of IPD.

Although some believe the idea of the IPD facilitator is the only way IPD can work, the idea that there should be no leader is also valid. An IPD team with no leader is known as IPD in its pure form and can work with a well-functioning IPD core group. Both sides have had great success on IPD projects and can be argued to be the way that IPD should work. One side is a more traditional “leadership” role while the other is going to use IPD in its pure form. Both sides have valid reasons that each should be utilized and each is appropriate in different situations. The facilitator would be more appropriate for teams that have not necessarily worked together before or established the trust that IPD core group necessitates. The IPD facilitator is also more common on projects where the members of the core group have had little to no IPD experience. On the other hand for projects where the team has worked together previously and made that foundation of trust the idea of the core group may be the best IPD implementation choice.

6.0 Conclusion

IPD is the up-and-coming project delivery method that is designed to solve the issues created by traditional project delivery methods. IPD mostly differs from traditional delivery methods in the team configuration. The “core group” consists of the owner, architect, and contractor. Each member of the core group signs a single contract document binding them together for the duration of the project. In pure IPD this contract includes a “no suit” clause in which all members of the core group waive liability to one another. This helps to foster a “sink-or-swim” environment for all the members. This means that if one member of the core group fails they all fail and if the project is successful all members succeed. This mentality pushes towards decision making processes that are best for the project as a whole rather than the individual.

IPD has significant potential for creating better buildings, faster, for less. Some of the great advantages that IPD has to offer are: innovative and collaborative design, reduced overall budget, reduced change orders, reduced construction timelines, better quality buildings, and better working relationships, to name a few. With the advantages that are possible from utilizing IPD, the building design and construction industry could go from wasteful and “broken” to economic and trusting. There are some companies that are taking on this challenge of being the first to try this progressive delivery method. According to the industry professionals interviewed, those companies utilizing IPD are not just trying it out but are have amazing success with IPD implementation and the advantages it has to offer.

Even with the advantages that IPD offers, there are obstacles as there are with any new delivery method introduced into society. Three of the main obstacles keeping IPD from full implementation are: contracts, insurance, and structure of facilitation. These three obstacles are more concerns than disadvantages and can usually be solved with flexibility and knowledge within the industry. There are currently three contract documents that can be used to circumvent the traditional contracting methods. Those contracts are: AIA C191-2009, ConsensusDOCS 300, and IFOA/IPDA. Each of these documents is unique and slightly different from the other two, but all can be used just as effectively as the other for IPD. The issue of insurance is still an area of concern because the design and construction industry is relying on the insurance industry to create a comprehensive policy that could protect all parties involved in the IPD process. This particular issue of insurance cannot be resolved with flexibility and knowledge. Lastly, the structure of facilitation is the largest area of disagreement among the proponents of IPD. There

are two ways of structuring the facilitation: the core group and the IPD facilitator. The core group is what IPD is based on but because of lack of knowledge about IPD throughout the industry, the IPD facilitator is a good alternative when new to the implementation of IPD. The facilitator is a person that would ensure that every aspect of the IPD process ran smoothly and as intended. Although these are large obstacles, with knowledge and research they can be resolved leading to increased implementation of IPD into the industry.

The tremendous influx that IPD has made within the last few years makes it hard to believe that this will not become the chosen method of project delivery throughout the industry in the near future. Due to the outstanding benefits that IPD has to offer, there should be no reason with the right amount of education that every owner, designer, and contractor would not want to jump on board with this project delivery method.

It is evident there are still issues that need to be resolved before the entire industry starts utilizing the IPD method. Beyond the obstacles addressed in this report there are still many areas of concern that need to be settled before total buy-in of IPD will take place. However, these concerns are worth the time and effort to address because of the outstanding final product that IPD has to offer. Those areas of concern or areas deserving research include:

- The lack of understanding about the risk profile by financing institutions
- Insurance
- Compensation Packages/Structure/Distribution
- Owners preference to price guarantee projects
- IPD Case Studies – Facilitator vs. Core Group
- Facilitator Training/Certification
- Technology and IPD (Building Information Modeling)
- IPD Case Studies – Contracts Utilized/Adapted
- Training Owners, Design Professionals, Contractors, etc. on IPD
- IPD Case Studies – Prove Lowered Price, Shortened Timeline, & Better Building

These areas of research were proposed by the IPD professionals and were areas of question that surfaced in the writing phases of this report. Once all of these areas have been addressed and individuals in the industry have been educated on these issues, IPD can truly be embraced and revolutionize the design and construction industry.

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Appendix A - Biographies

There are a few individuals who deserve to be recognized in this section for their time in providing the information necessary for this report (telephone interviews and email correspondence). They are all professionals that have had a great deal of experience in the field of IPD. All of the individuals are respected for their involvement and contributions to the IPD process. The following are brief biographies providing background information on each of the individuals and establishes them, as a credible source, in IPD:

Bill Whipple is a Senior Associate and medical planner for HGA Architects and Engineers in Sacramento, CA. He is dedicated to the development of solutions that enhance the delivery of healthcare. He has more than 15 years experience in medical master planning, programming, and project management. He adds value to the collaborative design process meeting with leadership to define strategies, operations groups to test processes, and caregivers to improve the patient experience. He seeks to ask the right questions in order to build consensus around the clear project vision. He additionally builds team synergy with designers and clients through exploration of multiple options that lead to a unified design solution. “A truly successful project is the realization of a network of mutual commitments, incentives, and shared goals,” Bill says. “Through collaboration a design can achieve success in operational effectiveness and spatial comfort.” Bill brings past experience from the owner’s perspective overseeing capital spending projects and informing business planning. He is well-versed with contemporary care delivery concepts including integrated care, lean process improvement, electronic medical records, and outsourcing.

David Griggs is the National Director for Professional Liability for Willis Construction Practice in New York, where he specializes in working with the Design and Construction industry in developing effective risk management and risk transfer strategies. He leads the firm’s development of professional liability solutions for its clients and works closely with account and service teams in local offices in the design, negotiation and administration of professional liability programs. Additionally, he works with Willis colleagues to ensure awareness of industry trends and developments for integration into the risk management solutions developed for design professionals, contractors and owners around the US.

John Tocci is the third generation CEO of Tocci Building Companies based in Greater Boston. He has over thirty five years experience working for private and public clients throughout the Northeast and Mid-Atlantic USA. Mr. Tocci is well known as an industry activist throughout the United States. The Construction Institute, University of Hartford, recently recognized him for his exceptional level of professional achievement in service to the design and construction communities

with the 2009-2010 Distinguished Achievement Award. In 2009, ENR named him one of the top 25 News Makers of the year. John formed and chairs AGC of America's BIM Forum. The BIM Forum has over 1500 members and is recognized as the nation's leading multidisciplinary BIM interest group focused on the practical implementation of Building Information Modeling (BIM) and Integrated Project Delivery (IPD). John also chairs the Boston Society of Architects IPD Committee which was formed to help define and enrich the IPD process. He is a member of 3XPT, the trilateral process transformation collaborative of the AIA, the Construction Users Round Table and AGC.

Rodney Moss is the Division Senior Vice President and Chief Legal Officer of Balfour Beatty Construction (f/k/a Centex Construction). His responsibilities include all legal and risk management. He has over 21 years of experience in construction, first as a welder's helper and pipe fitter in the field and then as a project engineer on several design-build power plant projects before attending law school. After law school, Rodney practiced law at Bradley Arant Rose & White in Birmingham in the Construction and Procurement Law group, litigating contract disputes on behalf of large general contractors. He became an equity partner at Bradley Arant in 2001.

Scott Simpson, FAIA, LEED AP is an award-winning architect and Senior Director of Kling Stubbins (formerly The Stubbins Associates), a global design firm. He pioneered an early version of IPD (called HyperTrack) in 1999, converted The Stubbins Associates to 100% BIM in 2003, and was on the Senior Management Team for the Autodesk AEC headquarters project (the first 100% BIM, 100% IPD, LEED Platinum project in the US). Mr. Simpson has published several articles about BIM and IPD and has spoken frequently at national conferences and symposia on the subject, including the Harvard Business School and the Yale School of Architecture.

Tim Gunn, Project Director, has worked at Alberici Constructors since 1991 in the Healthcare and General Building Market. His duties include the management of multiple concurrent projects with responsibility for project safety, client satisfaction, and financial performance. Mr. Gunn recently completed St. Clare Health Center, a new 154-bed replacement hospital (construction value \$151M, project value \$220M) in Fenton, MO for SSM Healthcare using a Lean Construction Integrated Project Delivery Agreement (IPDA). Under Mr. Gunn's leadership, several of his projects have achieved regional acclaim. Mr. Gunn is also a nationally recognized speaker on the topic of Lean construction, having made presentations to organizations such as:

- American Society of Healthcare Engineering
- Construction Users Roundtable
- Lean Construction Institute Annual Congress, and
- National Association of Children's Hospitals and Related Institutions

Appendix B - Republication Releases

2/18/2011

Gmail - Republication Release



Amanda Fish <amandajfish@gmail.com>

Republication Release

Amanda Fish <amandajfish@gmail.com>

Wed, Feb 9, 2011 at 8:13 PM

To: copyright@aia.org

Dear Cassandra Brown,

I am a Graduate student at Kansas State University requesting the republication release of the AIA "C191-2009 Commentary" and figures and tables in the AIA "Integrated Project Delivery: A Guide". This request is for the "C191-2009 Commentary" as a whole to use as an appendix to my report and the following graphics in the "Integrated Project Delivery: A Guide":

- Macleamy Curve pg 21
- Traditional vs. Integrated Design Process pg 22
- Construction Manager at Risk pg 46
- Design Build pg 47
- Design-Bid-Build pg 49

This request is for education purposes of completing a Masters of Science report with the potential for publication.

Sincerely,

--

Amanda J. Fish
Kansas State University
316.204.4924
amandajfish@gmail.com

2/18/2011

Gmail - Republication Release



Amanda Fish <amandajfish@gmail.com>

Republication Release

Copyright <copyright@aia.org>
To: Amanda Fish <amandajfish@gmail.com>

Thu, Feb 10, 2011 at 7:52 AM

Amanda:

Attached is the requested AIA Contract Document to be used in your report. If you would like to include pages from the IPD Guide, please indicate what they are on the attached application.




If I can be of further assistance, please let me know.

Thanks...

From: Amanda Fish [mailto:amandajfish@gmail.com]
Sent: Wednesday, February 09, 2011 9:14 PM
To: Copyright
Subject: Republication Release

[Quoted text hidden]

3 attachments

-  **C191-2009_093009_eSampleAll.pdf**
849K
 -  **C191-2009_Instructions_093009.pdf**
51K
 -  **Educational Use APPLICATION.doc**
27K
-

2/18/2011

Gmail - Replication Release



Amanda Fish <amandajfish@gmail.com>

Replication Release

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To: Amanda Fish <amandajfish@gmail.com>

Thu, Feb 10, 2011 at 3:36 PM

You may use the graphic with the following statement at the bottom of the page where it appears. "**Reproduced with permission of The American Institute of Architects, 1735 New York Avenue, NW, Washington, DC, 20006**".

We would also ask that you forward a copy of your paper for our review.

Thanks...

From: Amanda Fish [mailto:amandajfish@gmail.com]
Sent: Thursday, February 10, 2011 4:23 PM

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[Quoted text hidden]

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Amanda Fish <amandajfish@gmail.com>

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To: Amanda Fish <amandajfish@gmail.com>

Fri, Feb 18, 2011 at 9:38 AM

Amanda:

Permission is granted to submit the AIA Contract Document C191-2009 electronically with your paper in two separate files.

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From: Amanda Fish [mailto:amandajfish@gmail.com]
Sent: Friday, February 18, 2011 10:09 AM

[Quoted text hidden]

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2/18/2011

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Amanda Fish <amandajfish@gmail.com>

Replication Release

Tim Gunn <Tim@alberici.com>
To: Amanda Fish <amandajfish@gmail.com>

Thu, Feb 10, 2011 at 8:39 AM

Dear Amanda,

Permission is hereby granted for the use of the Integrated Project Delivery Agreement / Integrated Form of Agreement in the paper you are writing toward the completion of a Master's of Science degree.

Please include the following in your reference:

- Alberici Group
- SSM Healthcare
- Sutter Health

Sincerely,

Tim

PS. I'd love to see a copy of the completed paper.

Timothy M. Gunn

Project Director

Alberici Constructors

314-733-2271 office

314-581-7750 cell

tim@alberici.com

From: Amanda Fish [mailto:amandajfish@gmail.com]
Sent: Wednesday, February 09, 2011 08:22 PM
To: Tim Gunn
Subject: Replication Release

Dear Tim,

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1/2

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Sincerely,

--

Amanda J. Fish

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Carrie L. Ciliberto, Esq.
Deputy Executive Director