IPD: Lessons from the Trenches
AGC of America Project Delivery Committee
IPD Working Group
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Learning Objectives

• Define Integrated Project Delivery (IPD)
• Recognize the advantages and disadvantages of IPD
• Identify IPD best practices
• Explain how the project and stakeholders benefit on IPD projects

Overview

• Welcome and Webinar Instructions
• Brief Introduction to Integrated Project Delivery
• Case Study: Alberici Constructors
• Case Study: Tocci Building Companies
• Moderated Discussion
• Wrap Up

Introduction

John Tocci, Sr., CEO, Tocci Building Companies
Integrated Project Delivery

38% of carbon emissions in the US are from buildings, not cars
USGBC 2007 website

30% of projects do not make schedule or budget
CMAA Industry Report 2007

92% of project owners said that architects drawings are typically not sufficient for construction
CMAA Owners Survey 2005
37% of materials used in the construction industry become waste. Movement for Innovation Industry Reports and Economist Magazine 2002

The Industry is Broken

What is Integrated Project Delivery?

“Oh yeah, we’ve been doing that for 10 years now”

What is Integrated Project Delivery?

- A project delivery approach that integrates people, systems, business structure and practices into a process that collaboratively harnesses the talents and insights of all participants to reduce waste and optimize the whole through all phases of design, fabrication, and construction.
- A specific contractual arrangement.

Why IPD?

Design Bid Build
CM at Risk with Preconstruction

BIM-Enabled Delivery

Integrated Project Delivery

"Repulsive" Project Delivery

"Attractive" Project Delivery

Transforming Risk Management

Avoid and Transfer → Accept and Manage
Repulsive (Traditional) Project Delivery

Attractive (IPD) Project Delivery

We all fight about the project
We all work for the project

IPD Contract Principles

1) early substantive involvement of key participants
2) joint sharing of risk and reward through a profit/incentive pool
3) joint project management
4) Zero litigation

Typical Performance Goals

- Delivering the Owner’s Program
- Design Quality
- Schedule
- Budget
- Sustainability
- Lean delivery
- Long term value

List of IPD projects in the USA

- SSM Cardinal Glennon Children’s Medical Center
- SSM St. Clare Health Center, St. Louis
- Multiple Sutter Health projects
- Autodesk Waltham
- Autodesk One Market
- Northbay Healthcare
- BJC Healthcare
**IPD Contract Types | the scale of transformation**

- Traditional GMP Agreements
- AIA B Family Transitional IPD Agreements
- ConsensusDOCS 300 Tri Party Agreement
- Custom Authored Agreements
- AIA "C" Family SPE Agreement

**Consensus Documents and Others**

- ConsensusDOCS
  - ConsensusDOCS 300 Tri-Party Agreement for Collaborative Project Delivery
  - ConsensusDOCS J01 BIM Addendum
- Privately Authored Docs
  - Sutter Health Templates by Will Lichtig
  - Autodesk and other private contracts by Howard Ashcraft, Pat O'Connor and others
  - Surgically modified two-headed dogs

**AIA Contract Documents**

**Transitional Agreements**
- A195 – Standard Form of Agreement Between Owner and Contractor for IPD
- B195 – Standard Form of Agreement Between Owner and Architect for IPD
- A295 – General Conditions of the Contract for IPD

**Single Purpose Entity**
- C195 - Standard Form of Single Purpose Entity Agreement for IPD
- C196 - Standard Form of Agreement Between SPE and Owner for IPD
- C197 - Standard Form of Agreement Between SPE and Non-owner Member for IPD

**IPD Benefits for Owners**

- Designers and contractors together “own” your program and vision
- Continuous design validation and optimization
- Zero non-discretionary change orders
- Faster
- Lower final cost
- Owner advocates everywhere
- More building for the dollar

**IPD Benefits for Architects**

- True Alignment with your Builder
- Joint ‘ownership’ of your Design
- Design quality is the builders (financial) goal
- Eliminates out of pocket losses
- 85% liability risk reduction
- Significant upside fee potential
- More building for the money
- IPD magic

**IPD Benefits for Contractors**

- Eliminates conflict
- Participation in the creative process
- Higher quality subcontractors
- Smarter, leaner, safer and faster
- Builds relationships and repeat clients
- Lowers risk
- Unemployment of your attorneys

Because…

actually getting the building you wanted…
at the price you were promised…
on the day you were promised it.

Alberici Case Study
Jim Frey, Sr. Vice President

Cardinal Glennon Case Study

Project
- $46M 117,000 SF expansion on a congested urban campus with ongoing operations
- 60 Bed neo-natal intensive care unit (NICU)
- 10 new surgical suites
- 10 bay pediatric acute care unit (PACU)
- Radiology
- Clinical Lab
- Central Sterile
Traditional Contracts don’t anticipate this:

Why the Collaborative/Lean Approach

- Frustrated with conventional delivery
- Owner wanted to save money
- The Team thought we could do better
- Sought permission to “try some things out”
- Contacted the Lean Construction Institute
- Got a copy of Sutter Health Contract
- Team started to learn what we didn’t know
- Decided to go for it
- Negotiated Collaborative Agreement

Key Elements

- Core Group
- Production Control System
- Financial/Incentive Agreement
- Model Behaviors
  - Collaborate intensely
  - Optimize the whole
  - Improve continuously
  - Innovate
  - Build Trust

Core Group Function

- Core Group = Owner, Designers and CM
- Provide day-to-day leadership and govern the project
- Define project criteria
- Establish communication protocol
- Manage budget and design process
- Implement production control (Last Planner System)
- Select team
- Resolve problems
- Optimize the whole

Last Planner System

- Use LPS as Production Control System
- Changes how the work is planned and who plans it
- Driven by Tradespeople
- Changes the dialogue
- Changes the commitments
- Measures the Office and Field
- Lowers the “noise level” by focusing on real priorities

Incentive Program

Elimination of waste creates bonus pool

- Incentive is to generate savings on a project level
- Aligns the interests of all stakeholders
- Thrives on cooperation
- Rewards collaboration
Select Subcontractors

- Team selection is critically important
- Criteria for selecting Contractors and Designers
  - Willingness to embrace innovation
  - Use Open Book approach
  - Select early enough to participate in design
  - Selected on value, not necessarily low price
  - Provide confidence-inspiring expertise
  - Willing to collaborate
- Interviewed contractors including field personnel (The List)

What makes your work unproductive?

- The answers we received (The List)
  - No clean up
  - Changes
  - Not being able to finish what is started
  - Changing priorities
  - Too often people walk out of meetings and do their own thing
  - Selection by price = less quality people and less commitment

What makes your work unproductive? (continued)

- No consequence for failure to meet commitments
- Sequence, wall studs too early
- Redoing and undoing work
- Moving material
- Uncoordinated design drawings
- Compressed time and spiking manpower
- Real issues not addressed in coordination meetings
- Lack of schedule commitment
- ‘Show’ work, show pipe
- Jumping around
- Late drawing approvals
- Other trades in the way
- Not having answers to questions
- Conflicting motivations
- Waiting

Recognized Counter-Incentives

- GMP contracts and management styles drive counterproductive behavior
- GMP contracts drive territorial behavior
- Parties are often afraid to make decisions
- Cooperation can reduce profit, due to the way conventional contracts are written
- Every man for himself - no incentive for trades to work collaboratively in the execution of the project

Surprises

- This is hard to do
- It’s easy to slip into conventional ways
- How significant it was to eliminate the GMP
- Reduction in strife
- Cross discipline understanding of work
- How quickly the field embraced the concept
- How little the Core Group fought/talked about money
- The reduction of the CM effort

Lessons Learned - Big Room
Lessons Learned - BIM

Think it through and build it right the first time
3D model
Field installation

Lessons Learned - Prefabrication

Lessons Learned - Prefabrication

Lessons Learned - Mock Ups

Improvements X 70 rooms
Think it through and build it right the first time

What Happened?

- Planning and scheduling improved
- Coordination and communication improved
- Team functioned as a unit
- Trust level increased
- Project was actually fun
- The Core Group worked

The Results

- Only 63 RFIs
- 2.1% savings from original construction budget
- Owner re-invested its portion of savings in added scope
- No change orders that added cost
- No disputes or claims
- Project completed 45 days ahead of schedule even with additional scope of work
- High morale - a preferred site
- High quality
- 8 minor first aid cases and no Lost Time Injuries
Tocci Case Study
John Tocci, Sr., Chief Enabling Officer
It's not about you… it's about us
Integration from the start
Prior Experience, important but…
Common 'theology'
The One-Company feel

"Attractive" Technology

Technical Objectives
Shared Revit Model = Shared Revit Files
NavisWorks Manage BIM Management Direct From Model Fabrication LEED/Sustainability Analysis Quantities Extracted Schedule "Infused"

The Four Main Reasons
No changes? Validate
Millwork Re-Design: Collaboration and competition.

Millwork Fabrication Models.

Millwork Fabrication Process.
Attractive Construction

Building it twice
Managing the design intent

Visualizing our commitments

Designer and Builder

Working together again

Yeah? So what's the difference?

"I've had good jobs where we've experienced this kind of cooperation and teamwork like this before… what's so special about IPD?"

"Is this just another fad like Partnering and TQM and …"

Back to the Future
Questions?

Summary

“IPD Related” Events - AGC Convention

• Thursday, March 5, 2009 8:30 AM – 10:00 AM
  Construction Law Track: BIM, Integrated Project Delivery & Design
  Liability - Cashing in on Collaboration

• Thursday, March 5, 2009 2:00 PM – 3:30 PM
  Construction Law Track: An Overview and Comparison of the
  ConsensusDOCS 300 Tri-Party Agreement and the 301 BIM
  Addendum and the AIA document on Integrated Project Delivery
  Speakers: Rick Lowe, Duane Morris LLP and Patrick O’Connor, Duane Morris LLP

• Thursday, March 5, 2009 3:30 PM – 5:00 PM
  Building Contractors Division Session: Lessons Learned from a Fully
  Integrated Project That is Utilizing a Six Party Agreement
  Speakers: Jeff Freese, Tarlton Corp. and Clay Goser, BJC Healthcare

Other AGC “IPD Related” Events

• AGC BIMForum Meetings (www.bimforum.org)
  • May 28-29, 2009 – Dallas
  • October 8-9, 2009 – Philadelphia

• ConsensusDOCS (www.consensusdocs.org)

• AGC of Massachusetts – The Wave of the Future: IPD and BIM

More Questions?
On behalf of the AGC Project Delivery Committee, thank you for your time!

This concludes The American Institute of Architects Continuing Education Systems Program.