Traditional Tri-Partite Construction

- Must have been designed by a lawyer
- Sets A/E & Contractor against each other as adversaries
- Maximizes likelihood of disputes and litigation
- Minimizes A/E’s scope: no control of construction
- Minimizes A/E’s profits: no profits from construction
Integrated Project Delivery ("IPD")

- More efficient
- Faster
- Better

(Reasons and details to follow)

But what exactly is IPD?
What project structure does it employ?
TEAMING STRUCTURES FOR INTEGRATED PROJECT DELIVERY

• There is no single (or even most common) teaming structure for IPD

• Some teaming structures include the Owner (e.g., AIA Document C195), and some do not (e.g., AIA Document A195).

• The following structures have all been used for IPD:
Single Integrated Company

Owner

Design-Builder
Multiple Integrated Company

Owner

Design-Build

(one or both)

Design Affiliate

Construction Affiliate
Joint Business Venture (With Owner)

Owner

Design-Build LLC (or JV)

Members:
Owner
Architect/Engineer
Contractor

Architect/Engineer

Contractor
Joint Business Venture (Without Owner)

- **Owner**
- **Design-Build LLC (or JV)**
  - Members: Architect/Engineer, Contractor
  - Architect/Engineer
  - Contractor
Developer Prime

Owner

Developer

Architect/Engineer

Contractor
A/E Prime

Owner

Architect/Engineer

Contractor
Integration by Contract Only

- Owner
  - Architect/Engineer
  - Contractor

If a three-party contract
Other Variables in Structuring Integrated Projects

• Engineers and major trade contractors (or even vendors) may be prime participants

• Individual companies may be “subdivided” for insurance and liability purposes

• The degree of ownership participation may vary

• The number of permutations of various project structures is too large to categorize usefully.
The Little-Known Truth
About Project Structure

Project Structure isn’t as important as:

• Attitude
• Behavior
• Incentives

Successful integrated teams always work together in pretty much the same ways – regardless of project structure.
IPD Is Attitude and Behavior, Not Structure

- Structure is important primarily insofar as it creates incentives to cooperate closely.

- The key to integrated behavior: furthering teammates’ interests as if they were your own.

- “Old Dogs” need to learn “New Tricks.”
Benefits to the Owner

**Quality:**

- High quality design and construction because the A/E plays a major role and is responsible directly to the owner.

- Direct contract and communication between owner and A/E regarding issues of quality and design.

- Complete continuity regarding preferences and objectives throughout the design and construction process.

- A win-win process whose economics encourage participation by quality A/E and contractors.
Benefits to the Owner

Ease of Budgeting:

• Early determination of project costs in the design development stage.

• Cost-effective design due to the designer’s access to construction and pricing information during the design phase.

• Delivery of project within budget (lump sum or GMP) with reduced likelihood of cost increases and overruns.
Benefits to the Owner

**Flexibility in Procurement:**

- No need for a cumbersome bidding or RFP process, but typically “open book” for the trades.

- The Owner can begin a project traditionally while maintaining the option to convert to integrated delivery later in the design phase.

**Fast Delivery:**

- Shortened project duration from fast-tracking without loss of cost control.
Benefits to the Owner

_Effer Claims and Disputes:_

- Avoidance of “lowball bidding” where the Contractor wins the project by bidding below actual cost, counting on change orders and claims to make a profit.

- Improved and more efficient administration of construction due to absence of adversity between the A/E and Contractor.

- Low incidence of claims or litigation seeking additional compensation.

- Single point responsibility for the project, with the project team accepting responsibility for functional problems without the Owner having to adjudicate finger-pointing among project participants.
Benefits to the Architect

**Additional Profits:**

- Sharing in project savings.

- More efficient design – less labor during Construction Documents phase.

- Sharing in the construction revenue (profiting from increased efficiency).

- IPD is more efficient: it minimizes waste.
Minimizing Waste

• Per project structuring expert James Young of Lillibridge:

• Almost 50% of the construction process is waste.

• 50% + of design process is waste.

• In IPD minimizing waste adds enormous value/return
Manage Cost Efficiently

Target Value Design

Initial Target Value Design
- Ste / civil
- Structure
- Mechanical
- Electrical
- Plumbing
- Fit-up
- Hosp Systems
- FF&E

TVD Validation
- = x % budget
- = x % budget
- = x % budget
- = x % budget
- = x % budget
- = x % budget
- = x % budget
- = x % budget

Final Pricing
- = x % budget
- = x % budget
- = x % budget
- = x % budget
- = x % budget
- = x % budget
- = x % budget
- = x % budget

Project Team Leadership
- Owner
- Owner’s Representative
- Architect
- CM/GC
The Construction Dollar - Waste and Value
in Typical Construction Projects

Value-added activities

- Value added activities, 53%
- Other non-value-added activities, 20%
- Quality and safety, 12%
- Constructibility, 6%
- Excess material consumption, 4%
- Poor materials management, 5%

Non-value-added activities
Waste and Value…

A wasteful cycle of design, over-budget, propose changes, return to users, un-design, re-design, repeat

IPD team saves time, money, achieves higher quality design documents, better built quality through a conversational process
Contractor’s Design Phase Services in an Integrated Project

• Costing, estimating value engineering
• Assistance in analyzing owner-provided information
• Constructability analysis
• Preliminary scheduling
• Checking design to anticipate problems
• Acquisition of long-lead items
• Procuring subcontractor participation and quotes
• Negotiation with subcontractors/vendors
Architect’s Design Phase Services in an Integrated Project

- System-by-system design, with “looping” feedback from trade contractors
- Informal communications rather than “defensive detailing”
- Greater number of alternative designs
- MEP design only schematic, completed by trade contractors
- Acceptance of greater-than-usual price constraints
- Out-of-sequence provision of design details, bid packages
- Heavier reliance on performance specifications
Construction Phase Services in an Integrated Project

**By the Contractor:**
- Anticipation and avoiding or minimizing the consequences of design problems
- Fast-tracking the construction

**By the Architect/Engineer:**
- Informal provision of supplemental design information
- Cooperative approval of substitutions
- Cooperative trouble-shooting and problem-solving
Benefits to the Architect/Engineer

**Marketing Advantages:**

- Ability to guarantee price and schedule.
- Offering Owner the option of delaying the project structuring decision.
- Cultivating contractors as a source of work.
- Ability to promise maximum efficiency.
Benefits to the Architect/Engineer

Control Over Construction:

- Avoiding unwise design changes.
- Minimizing bad publicity from design problems.
- Increased satisfaction from accepting responsibility for entire project.
Benefits to the Architect/Engineer

Reduced Liability:

• Minimizing claims due to cooperative rather than adversarial administration.

• No claims from obvious design omissions.

• Construction accidents insured by Contractor.
Benefits to the Contractor

• Projects often developed by A/E and presented to Contractor “on a silver platter.”

• Negotiated pricing rather than competitive bidding.

• Enhanced relationships with Subcontractors/Suppliers.

• Reduced likelihood of claims/litigation.

• Increased profits from reduced overhead (see next slide).
Increased Profits for Contractor

- Little or no marketing overhead for the project.
- Cost analysis virtually certain to result in winning the project or being compensated.
- Minimal contingency for bidding errors/oversights.
- No contingency for adversarial administration.
A/E-Led Design-Build as Integrated Project Delivery

- **Owner**
- **A/E**
- **Contractor**

Flow:
- **Marketing & Sales Leadership Control**
- **Teammate Assistance**
Create the A/E’s Design-Build Company

A/E

Professional Design Firm

Non-Professional Design-Build Company

Owner

A/E’s Design-Build Company

A/E

Consultant

G.C.

Sub

Sub
“Sequential” Design-Build: Structure of the Relationship (Private Sector)

- **Owner**
  - A/E
  - A/E's Design-Build Company
  - G.C.
- **Design Contract**
- **Construction Contract**
  - Design-Build Proposal

Roles:
- **Consultant**
- **Sub**
The “Teaming” Agreement

Step 1

A/E’s Design-Build Company

Teaming Agreement
- Preconstruction services
- Agreement to subcontract
- “Purchase Order” form for a specific project

General Contractor
(100% Subcontractor)
Considerations in Selecting General Contractor Teammates

**Mandatory Qualities**
- Financial Security
- Professional Approach

**Issues of Judgment**
- Size
- Geography
- Industry Niche
A/E’s Contract

Step 2

Owner

A/E

Consultant

Consultant

Standard Architecture or Engineering Contract
E.g., AIA B101 form
Guarantee form is exhibit

Standard Consulting Agreement
• Assumption: trade contractors to finalize design of engineered systems
The Design-Build Proposal: “Price/Schedule Guarantee”

Step 3

- A/E’s Design-Build Company’s guarantee contingent on building project
- A/E’s Design-Build Company supplants A/E during construction phase
- Legal safeguards included re budget and estimating
- Construction Contract eventually supersedes Proposal
“Construction Agreements”

Step 4

Construction Contract
A/E’s functions during construction phase provided by A/E’s Design-Build Company

Subcontract for Particular Project
- “Purchase Order” from Teaming Agreement
- Attaches construction contract and subcontracts 100% of it
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