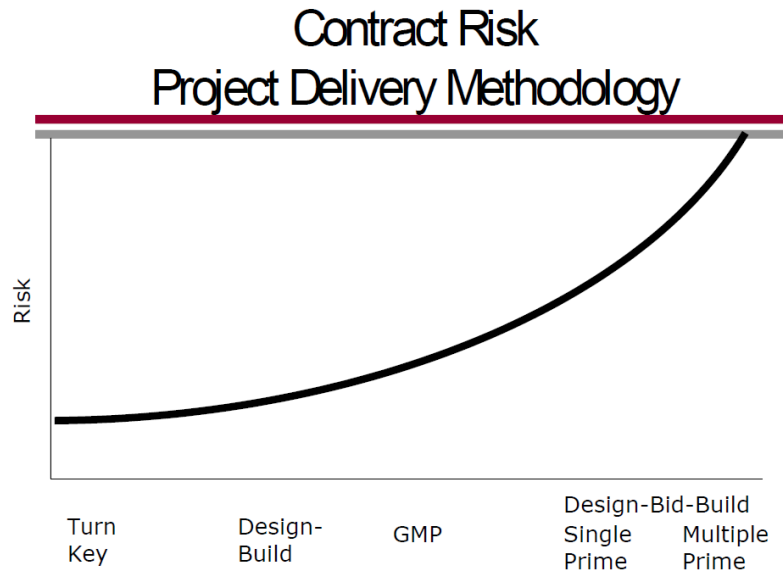


RISK AWARENESS:

Project Delivery Approaches Have Different Risks

By Raquel Shohet

A project delivery method is a system used by an agency or owner for organizing and financing the design, construction, operations, and maintenance services for a structure or facility. The project delivery method chosen by an owner is implemented by entering into legal agreements with one or more entities or parties. Current popular project delivery options include Design-Bid-Build (DBB), Agency Construction Management, Construction Manager at Risk (CMAR), Design-Build and IDP. But, who bears the risks for cost/delays for the above contract delivery approaches? The following chart describes the relative contracting of cost growth risk to owner for some of the current popular project delivery approaches.



The most common traditional form of project delivery is the Design-Bid-Build (DBB) process, including three prime players and three project phases. This traditional delivery method requires three independent contracts; is a linear sequence of work; and is common with owners with requirements to select low bid.

Integrated Project Delivery (IPD) is a project delivery approach to improve project outcomes through a collaborate approach of aligning the incentives and goals of the project team through shared risk and reward, early involvement of all parties, and a multiparty agreement. IPD ideally reduces waste and optimizes efficiency through all phases of design, fabrication and construction. It integrates people, systems, business structures and practices into a process that collaboratively harnesses the talents and insights of all participants of aligning the incentives and goals of the project. IPD principles can be applied to a variety of contractual arrangements and IPD teams will usually include members well beyond the basic triad of owner, architect, and contractor. At a minimum, though, an Integrated Project includes tight collaboration between the owner, the architect, and the general contractor ultimately responsible for construction of the project, from early design through project handover.

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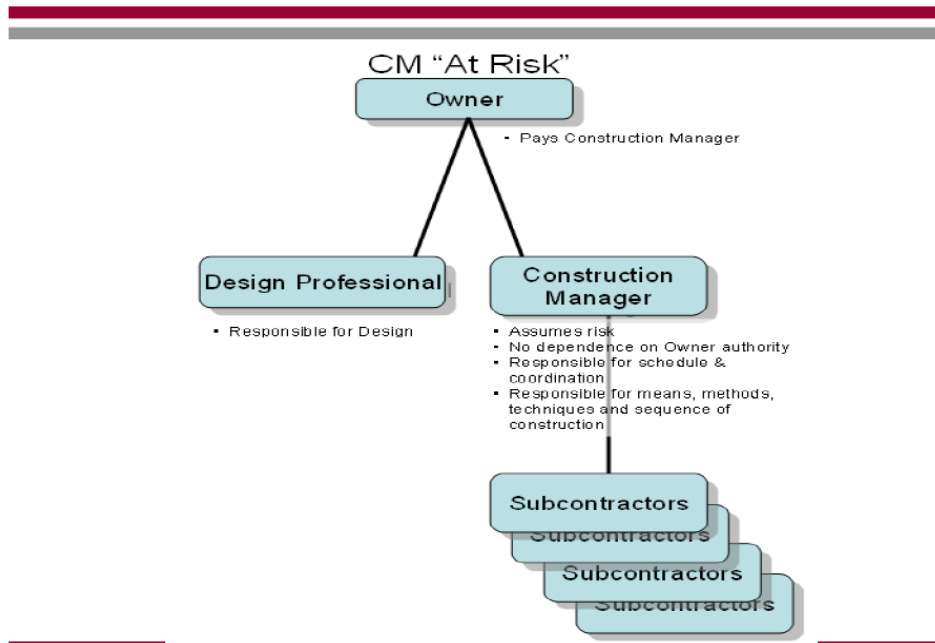
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The most common current form of IPD is Design-Build process, where the owner contracts with a single entity representing both design and construction services. Regarding Design-Build, contractors more commonly head the team, creating a single point of contact for the owner. Although this method is not legal in all states, it has been quite successful in minimizing owner's risk, construction delays and change orders.

Construction Managers (CM) are typically used for public and private projects that are more complex, or by owners who don't have the time or in-house expertise to oversee the project. There are four players; the Owner, CM, Architect and Contractor. The CM is added to the team to oversee the project. There are typically three roles the CM may play including; an advisor, an agent or as constructor (also known as Construction Manager at Risk (CMAR)). As an agent, CM is given some authority to act on behalf of the Owner. As CMAR, acts as both the project coordinator and the general contractor. Most notably, this method includes an early cost estimate and the CM assumes all liability as the Contractor.

Risk Allocation - CM At Risk



With respect to risk allocation on a DBB project, risk allocation for design ultimately falls under owner responsibility, with the design professional contribution to the extent its contract and/or insurance provides. Considering construction cost overruns and delays, risk allocation becomes more complex. Typically contracts will allocate the risks, for example Construction completion and quality is the responsibility of the contractor and its sub-contractors.

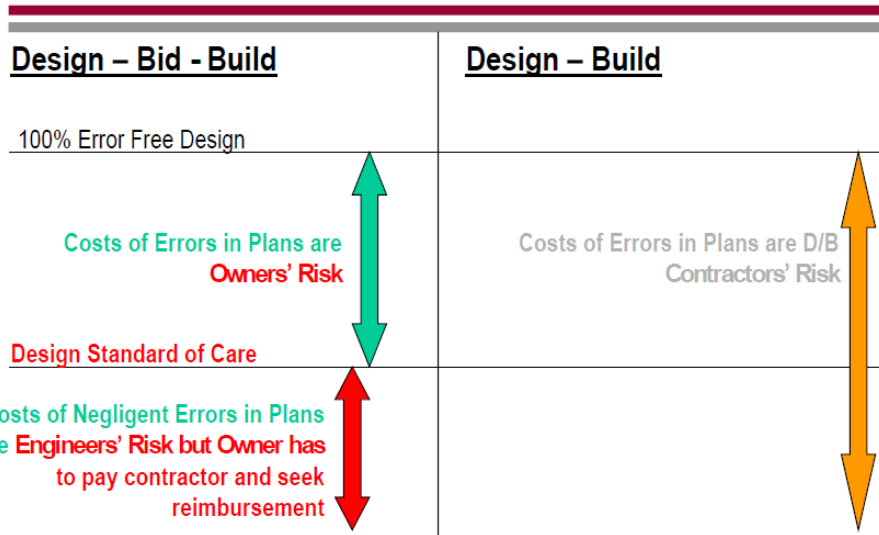
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Design risk for DB project falls with the Design-Build Contractor, unless it is related directly to the owner's specifications. Construction cost overruns and delays are typically held by DB until it can prove owner is responsible as contract provides. Construction completion and quality is the responsibility of the design-build contractor.

Design Error Risk Responsibility



Risk allocation of Construction Manager at Risk (CMAR) for design ultimately falls under owner responsibility, with the design professional contribution to the extent its contract and/or insurance provides. Construction cost overruns and delays are typically held by Construction Manager (CM) until it can prove owner is responsible as contract provides. Construction completion and quality is the responsibility of the contractor and its sub-contractors.

Following are supplemental risk charts for further reference. The individual facts and particular contracts will govern for each project.

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Resource and Project Risks

Type of Risk	Owner's Risk	Contractor's Risk
Adequacy of Project Funding	Yes	Not usually
Adequacy of Labor Force	Not typical	Yes
Permits and Licenses	Costs; often	mostly
Site Access	Maybe	Maybe

Performance Related Risks

Type of Risk	Owner's Risk	Contractor's Risk
Adequate Plans and Specifications	Yes	Not usually
Cost under-estimation	sometimes	Yes
Equipment, materials, space, etc	If owner supplied	Yes
Means and methods	If specified	Yes
Delays in presenting changes	Yes	Yes
Delays in addressing disputes	sometimes	sometimes
Labor productivity and subcontractor work	Yes, if caused	Yes, if self caused
Subsurface conditions	Yes	maybe
Delays in performance	Yes, if caused	Yes, if caused
Worker and site safety	Possible	Yes

Outside Influence Risks

Type of Risk	Owner's Risk	Contractor's Risk
Government Acts	Yes	Possible
Weather	Depends on contract	
Acts of God	Depends on contract	
Union activities		Typically yes
Cost escalation	Depends on contract	

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