



Choosing the Right Project Delivery Method for Your Construction Project

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As an owner or client embarking on a new construction project, you face critical decisions right from the start. Financing, site location, programming, and selecting your design team are all critical decisions that need to be addressed at project initiation. Looking ahead to the overall success of your project, it becomes essential to determine the best way to deliver it, ensuring both accuracy and efficiency. For someone working on their first construction venture, the project delivery process can seem daunting. Discerning the pros and cons of the various project delivery methods is critical and leads to informed decision making.

Project delivery methods, as they relate to building construction, refer to the varied approaches and strategies that owners, contractors, and other stakeholders can use to plan, design, and construct a building project. The choice of method can potentially have a significant impact on project outcomes, including cost, schedule, quality, and risk management. The ultimate choice should be based on project-specific factors, including the owner's objectives, budget, timeline, and risk tolerance. Each method has its own advantages and disadvantages and choosing the right one can set the foundation for successful construction goals. In certain instances, projects may also benefit from a hybrid or customized delivery method, tailored to unique project requirements. Let's review some of the most common project delivery methods used in construction.

COMMON TYPES OF PROJECT DELIVERY

Design-Bid-Build

Design-Build

Construction Manager at Risk

Construction Manager as Advisor

Integrated Project Delivery

Public-Private Partnerships

Fast-Track Construction

Multiple Prime Contractors

Job Order Contracting

Design-Bid-Build (DBB):

In this traditional method, the owner hires an architect or designer first to create detailed construction plans and specifications. The architect acts in the best interest of the owner throughout the design and construction processes.

Traditional projects without significant budget or schedule constraints are viable options for this type of delivery method.

Once the design is complete, the owner solicits bids from general contractors to construct the project. The contract is then typically awarded to the lowest bidder, or it is negotiated with the lowest responsible bidder.

Pros:

This method provides a clear separation of design and construction responsibilities.

Cons:

This method may result in adversarial relationships and change orders when the contractor does not fully understand design intent.

Design-Build (DB):

In the design-build method, the design-build contractor or firm is responsible for both the design and construction phases of the project.

Projects best suited for this method are ones with schedule pressures, such as retail or commercial projects, or K-12 projects needing to be completed in time for the school year.

Pros:

The owner contracts with the design-build team, which can streamline the process and potentially reduce costs and shorten timelines. Collaboration is encouraged throughout the process.

Cons:

There is no independent third party to safeguard that all the owner's project requirements are met throughout the design and construction.

Some government agencies are not allowed to use this method due to legislative requirements, although many have now revised legislation to allow for this contract method.

Construction Manager at Risk (CMAR):

With the CMAR method, the owner hires a construction manager during the design phase to provide input on cost, constructability, and scheduling.

This method aligns with projects requiring strict budget control during construction, especially large-scale projects – such as with aviation, roadway, and higher education projects.

The construction manager serves as an advisor during design; later transitioning to a general contractor role after the design phase is complete. The construction manager assumes certain project risks, such as cost overruns, in exchange for a Guaranteed Maximum Price (GMP) for the owner. This typically occurs after the design has developed to a certain level (up to 75% design, depending on requirements).

Pros:

If cost is a significant issue for the owner, the early involvement of the CMAR and Guaranteed Maximum Price (GMP) can be of significant benefit.

The owner can directly contract the architect to provide additional support during design and construction.

Cons:

Unforeseen site circumstances or escalation in labor/materials can require the CMAR to make other value engineering decisions, which may or may not best align with the owner's project requirements.

Not all government agencies are allowed to use this method due to legislative restrictions

The CMa often acts on behalf of the owner; or as an extension of or in lieu of professional staff (architects/engineers working for the owner).

Cons:

Since the CMa does not have a contractual relationship with the contractor, issues with compliance to the CMa's direction may arise. There are additional costs associated with hiring a third party.



Construction Manager as Advisor (CMa):

Similar to CMAR, in the CMa method, the construction manager is hired as an advisor during the design phase but does not take on the role of the general contractor.

Owners that don't have professional staff or are taking on a more complicated or larger scale project may find this method works best.

All project types can benefit from CMa expertise. The owner selects a separate general contractor based on the design and then uses the construction manager's expertise to manage the project.

Pros:

The CMa serves as another party working directly in the best interest of the owner, without financial incentive.

Integrated Project Delivery (IPD):

IPD is a collaborative approach involving all key project stakeholders, including the owner, architect, engineers, contractors, and prime subcontractors (mechanical, electrical, plumbing, and structural), working together from the project's inception.

This is a newer method of contracting which has been mostly integrated into healthcare and lab projects. These project types require significant schedule coordination due to specialty equipment lead times and tight schedules and budgets.

The goal is to maximize efficiency and reduce waste in the construction process – in cost overruns, schedule delays, including delays in materials deliveries.

Pros:

Early and consistent collaboration allows for innovative problem solving throughout the duration of the project.

Profits and risks are shared among the stakeholders, which incentivizes cooperation and innovation. This includes the owner, general contractors, architects, engineers, and primary trades (mechanical, electrical, etc.).

Professionals in each discipline work together to address issues pre-emptively, resulting in little to no impact to schedule and budget.

This methodology is often used for healthcare projects due to the complex nature. It anticipates a tight schedule and need for significant cost control.

Specialized equipment lead times are brought into the conversations early in the process and reviewed regularly, allowing for better management of schedules.

Cons:

As a recently introduced contracting method, there may be a lack of familiarity.

Existing partner relationships may be crucial to the success when using this method.

Understanding the total team's expertise and how to best leverage it is where the greatest benefits can be realized.

Public-Private Partnerships (PPPs or P3s):

The PPP method involves private entities partnering with public agencies to develop, finance, design, construct, operate, and maintain public infrastructure, including buildings.

These partnerships can take various forms, such as build-operate-transfer (BOT) or design-build-finance-operate (DBFO). PPPs can include design and construction partners as part of the private entity, or they are procured in a more traditional manner. The owner staff or third party CMA will need to work with the PPP team.

Pros:

This form of agreement can be beneficial to the owner as it provides a source to finance projects. These projects may be larger in scope or outside of the availability of capital funding.

Energy Service Companies (ESCOs) are a common form of PPPs and can finance Energy Efficiency

projects and repaid through future energy savings.

PPPs help shift the financial and operational risks from the public sector to the private sector.

Cons:

Not all government entities have the legislative approval to enter into these types of agreements.

A comprehensive benefit analysis should be completed prior to entering into these agreements to make sure that all parties will be successful. If the project is not a financial success, it de-incentivizes future development and re-investment.

Fast-Track Construction:

This approach encompasses overlapping design and construction phases to expedite the project's completion. It requires close coordination between designers and builders to accommodate changes and unforeseen issues that may arise during construction. Multiple delivery methods listed above can be used within fast-track construction, however, early cooperation and coordination with the architect and contractor is needed. It is advisable to include a CMA during this process unless the owner has this expertise on their own staff.

Pros:

Overlapping phases supports efficiency.

Cons:

Traditional Design-Bid-Build is not appropriate due to the early coordination between architect and contractor.

Multiple Prime Contractors

In a multiple prime project, the owner or CMA selects and contracts directly with separate prime contractors, each responsible for specific trades or portions of the work. For example, one

prime contractor may be used for plumbing, another for electrical work, and yet another for civil infrastructure. These prime contractors are typically specialists in their respective fields. The choice of project delivery method depends on the specific goals, preferences, and requirements of the construction project.

Key characteristics of multiple prime contracting include:

- 1. Specialization:** Each prime contractor specializes in their trade or scope of work, which can lead to higher quality and expertise in their area.
- 2. Direct Contracts:** The owner or project manager has direct contracts with each prime contractor, allowing for more straightforward control over the project's various aspects.
- 3. Coordination:** Effective coordination among the prime contractors is essential to all project components coming together smoothly. One contractor will assign the other contractors and have overall responsibility for schedule and onsite coordination.
- 4. Responsibility:** Each prime contractor is responsible for their own scope of work, including scheduling, budgeting, and quality control.
- 5. Risk Distribution:** Risks associated with each trade or scope of work are often distributed among the prime contractors, reducing the owner's overall risk exposure.

Pros:

Multiple prime contracts can offer specialization and direct control.

Multiple primes have overall larger capacity to be effective.

Cons:

Managing multiple prime contracts can be more complex and challenging than other project delivery methods. When critical communication

and extensive coordination are required, these factors should be taken into account.



Job Order Contracting (JOC)

Job Order Contracting (JOC) is another project delivery method commonly used in construction, especially in the realm of facility maintenance, repair, renovation, and construction work for public agencies and institutions. It is a procurement process that allows for the efficient and expedited execution of a series of small to medium-sized construction projects over an extended period, often through a long-term contract with a qualified contractor.

Job Order Contracting is particularly popular in the public sector, such as government agencies, schools, and healthcare institutions, where there is a continuous need for facility maintenance and repair work.

It offers a cost-effective and efficient way to manage and execute a variety of construction projects without the need for individual competitive bids for each project. **Key aspects of JOC include:**

- 1. Indefinite Delivery, Indefinite Quantity (IDIQ):** JOC typically operates under an IDIQ contract structure. This means the contract specifies a set period (e.g., one to five years) during which the contractor is available to perform a wide range of construction or renovation tasks.

2. Unit Price Book (UPB): A critical component of JOC is the UPB. The UPB contains pre-established unit prices for various construction tasks, materials, and labor. These unit prices are used to calculate the cost of work orders issued during the contract period.

3. Work Orders: Instead of bidding on individual projects, the owner or facility manager issues work orders under the JOC contract as needed. Each work order describes the scope of work, specifications, and any other relevant details for a specific project or task.

4. Streamlined Procurement: JOC is known for its streamlined procurement process. When a project or repair is needed, the owner can quickly issue a work order without the lengthy traditional bidding process.

5. Flexibility: JOC provides flexibility to address a wide range of construction needs. It is well-suited for projects involving maintenance, repair, renovation, and minor construction work.

6. Performance-Based: Contractors are selected for JOC contracts based on their qualifications and experience. The success of the contractor is measured by their ability to complete work orders on time and within budget.

7. Cost Control: The UPB unit prices provide a degree of cost control and transparency. Owners can compare actual costs to the established unit prices to ensure fairness and cost-effectiveness.

8. Long-Term Relationships: JOC contracts often foster long-term relationships between the owner or institution and the contractor, leading to better understanding, cooperation, and efficiency over time.

9. Compliance and Accountability: JOC contracts usually include provisions for quality control, safety compliance, and accountability on the part of the contractor.

Pros:

Advantageous for urgent or small scale projects when an owner has a lengthy traditional procurement process.

Trusted partner relationships are established.

Greater ability to handle a broad range of project requirements.

Cons:

Preparing a comprehensive UPB can be a cumbersome task.

▶ **In summary,** there are several approaches to consider when deciding how to deliver a project. Each owner must evaluate what works best for their unique project, considering factors such as budget, staff expertise, and available contracting options. Every method has measurable advantages and disadvantages, and gaining a deep understanding of those distinctions will not only enhance your proficiency in project delivery but will enable you to successfully complete your project.



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Lourdes Gonzalez is a Senior Vice President and leading sustainability consulting and client relationship expert at Primera Engineers. Her expertise is the result of more than 30 years of experience in the building industry. Her experience includes architectural design, program management, historic preservation, sustainable design, and LEED consulting for varied sectors including higher education, K-12 schools, municipal, industrial, and transportation facilities. Lourdes has played an instrumental role in Primera's growth over the past two decades.