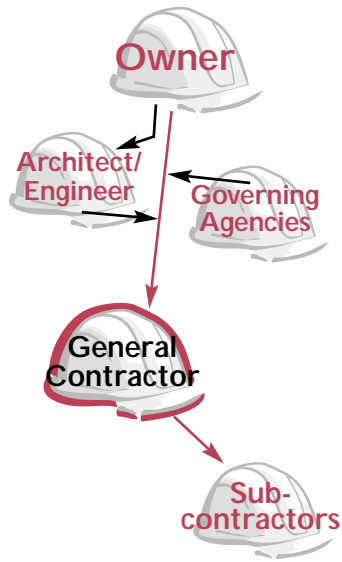


This booklet was prepared by V₃ Construction Group, construction professionals who provide design/build, construction management and general contracting services for a variety of clients and projects. V₃ Construction Group is one of the V₃ Companies, a consulting, construction and real estate organization focused on infrastructure, development, land and natural resource services. V₃'s professionals are committed to providing their clients with value added solutions.

Selecting the proper
DELIVERY SYSTEM
for your construction project

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General Contracting Approach

This delivery system is often referred to as the “Traditional” or “Design-Bid-Build” approach. It typically starts with the hiring of an Architect or Engineer to prepare the project design and obtain approvals. The Owner or A/E then bids out the substantially complete design to qualified General Contractors. The General Contractor retains subcontractors as needed to complete the work. The Owner has one contract for construction.

Typical Services of the General Contractor

- Subcontractor Coordination
- Schedule Management
- Material Procurement
- Construction Safety Management
- Guarantee and Warranty Management

Advantages of the General Contracting Approach

- Allows for Owner to have a single contract for construction and therefore a single point of responsibility and accountability for construction issues.
- Reduces Owner's liability for construction risk. (Gaps in the scope of work between subcontractors, safety, means and methods, etc.)
- Establishes a clearly defined price and schedule for the scope of work set forth in the plans and specifications.
- Can reduce contractor non-performance risk through bonding.

Disadvantages of the General Contracting Approach

- Heavy dependence on a well-defined project scope for the construction pricing to be accurate.
- Errors or misinterpretations of the design will lead to change orders.
- Owner is often faced with resolving change order issues to determine if they are design or construction related.
- The only assurance that the Owner is receiving a competitive price is by comparison to other bids received.
- Owner rarely recognizes savings from construction efficiencies.
- Owner must hire someone to provide quality assurance during construction.

Typical Forms of Compensation: Lump Sum, Cost Plus, GMP

Utilizing a bidding process to determine if a fair market price has been received for a project is not always appropriate. Bidding is often influenced by many variables. These include: the time given to bid, time of year, location, competition, the contractor's other commitments, and assumptions or misunderstandings of the project scope. These factors could positively or negatively influence the contract bid and may preclude the Owner from determining if fair market value has been achieved through the bidding process.

Types of Compensation

LUMP SUM - The Owner receives a fixed price for a defined scope of work. The construction provider combines all management, supervision, general conditions, sub-contractor costs and fees into one fixed price.

Advantages - The Owner can utilize the fixed price along with contingencies and allowances to manage the overall program budget. The fixed price helps to comply with loan and surety requirements and, depending on the delivery system implemented, may offset many construction-related risks.

Disadvantages - Gaps or changes in scope usually lead to change orders or changes to the fixed price. The Owner typically does not recognize savings created by efficiencies or value engineering.



COST PLUS - The Owner compensates the construction provider for actual costs to supervise the project plus a management fee, usually determined to be a percentage of the construction cost.

Advantages - The Owner receives the expertise of the construction provider and only pays for the actual effort expended (hourly fee). The Owner has some assurance that costs are fair because of access to actual construction costs and proposals for work. If efficiencies or changes to the contract decrease the cost of construction, the Owner realizes these savings.

Disadvantages - The Owner assumes a greater risk in controlling the final construction cost because there are no guarantees or limits in place.

GUARANTEED MAXIMUM PRICE (GMP) - The Owner receives a maximum price for a defined scope of work. The construction provider combines all fees, management, supervision, general conditions and subcontractor costs together with contingencies and allowances to establish the maximum price for the project.

Advantages - The maximum price helps to comply with loan and surety requirements and, depending on the delivery system implemented, may offset many construction-related risks. The Owner may recognize or share in savings from the allowances and contingencies.

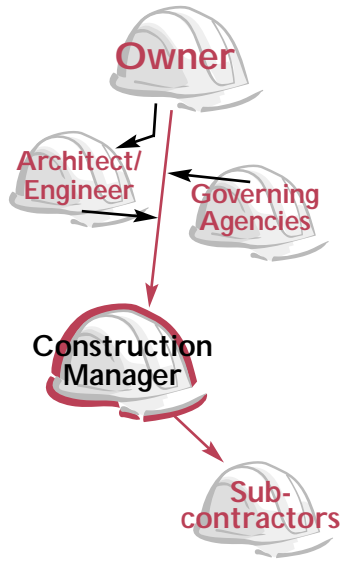
Disadvantages - GMP does not guarantee the maximum the Owner will pay. Gaps or changes in scope usually lead to a change in the maximum price. The Owner may recognize savings from the contingencies and allowances, but rarely receives savings from the fixed-price portions of the contract.

NOT-TO-EXCEED - This can be very similar to GMP but is typically utilized for additional work to an existing contract when the complete scope of the addition is not defined. It is also often used for contracts where compensation is based on effort. The Owner authorizes the start of the work and in order to control cost, establishes a Not-to-Exceed price.

Advantages - The additional work can begin immediately and the Owner receives assurance that the established cost will not be exceeded until further approval is given. For effort-based (hourly) contracts, the Owner retains some control to ensure that more effort than is required is not applied.

Disadvantages - The Not-to-Exceed price may not represent the final cost.

Construction Management (At-Risk)



The At-Risk Construction Management delivery system combines Construction Management with General Contracting. The CM acts as the Owner's Agent during program development, design and pricing. When the final price for the project is developed and accepted, the CM acts as a General Contractor and contracts with subcontractors to complete the work.

Typical Services of At-Risk Construction Manager

Pre-Construction Services

- Program development
- Cost estimating and budget development
- Schedule development
- Constructability and value reviews

Construction Responsibilities

- Project team selection
- Project team coordination
- Liaison with governing agencies
- Contract administration
- Budget and schedule control

Advantages of the At-Risk CM Approach

- Owner receives the benefit of a qualified professional acting as an Agent during the initial phases of the project.
- CM's historical data and constructability reviews of the design allow for the development of an accurate budget early in the project.
- Owner can establish maximum exposure early in the process, through a Guaranteed Maximum Price.
- Owner can limit construction risk by having one contract for construction.
- The Owner enjoys a single point of responsibility and accountability.
- An "open book" or a "cost plus" relationship assures competitive cost.

Disadvantages of the At-Risk CM Approach

- Because of a shift in fiduciary responsibility, the loyalty of the CM shifts from the Owner to the project under a GMP or Lump Sum contract.
- Owner must still mediate and resolve design versus construction conflicts.
- On Lump Sum projects, Owner does not recognize savings from contractor's efficiencies.

Typical Forms of Compensation: Lump Sum, Cost Plus, GMP



Design/Build Approach

With this delivery system, the Owner retains a Design/Build organization to help develop the program and to establish the overall project cost (typically referred to as Part I of the standard AIA agreement). Upon approval of the program and cost by the Owner, the Design/Builder completes the design, obtains approvals and constructs the project (Part II). The Owner's participation in the design and construction process can vary based upon their expertise and time availability.

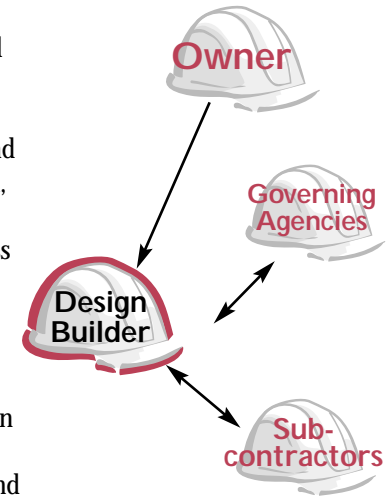
Advantages of Design/Build Approach

- Single point of responsibility for the entire program.
- Allows for establishment of cost guarantees (GMP) early in the development of the project.
- Improves construction speed (industry average of 12%) and overall project delivery speed (industry average of 30%).
- Reduces total project cost (industry average of 13%) and increases likelihood of finishing on time and within budget.
- Owner minimizes design and construction risk and exposure to schedule and cost claims.
- Reduces administrative effort by the Owner.
- Facilitates innovative designs.

Disadvantages of Design/Build Approach

- The Owner must clearly identify the intended scope and quality expectations.
- Selecting a Design/Builder can be cumbersome because the Owner must decide if the selection will be made based on qualifications, cost or a combination of both.
- If the Owner decides to select based on cost, then the prospective Design/Builders will have to invest substantial effort to determine cost. The Owner typically reimburses all of the candidates which is an added expense to the project.

Typical Forms of Compensation: Lump Sum, Cost Plus, GMP



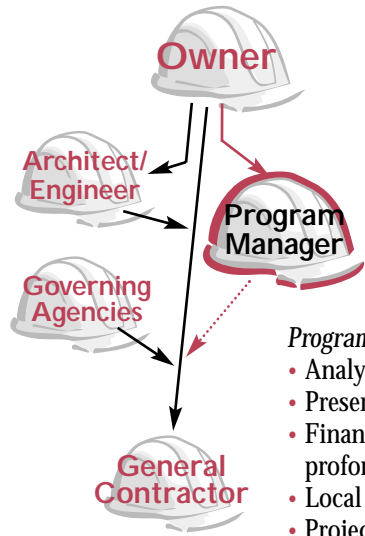
Part I: Programming Services

- Program development (if the Owner has not developed one)
- Preliminary Design
- Establishment of GMP or project budget
- Establishment of project schedule
- Governing agency initial approvals

Part II: Design/Construction Phase

- Final design
- Permit acquisition and approvals
- Open book sub-contractor selection (if applicable)
- Team and agency coordination
- Construction management and administration.
- Final acceptance, approvals and warranties

Program Management Approach



Program Management involves the hiring of an outside expert to assist the Owner in defining and establishing the project program. The Program Manager determines what must be built and when. When the Owner approves the program and authorizes implementation, the Program Manager acts on behalf of the Owner and oversees whichever delivery system model is adopted for the project.

Typical Services of the Program Manager

Program Development:

- Analysis of needs
- Presentation of alternatives
- Financial studies and proforma development
- Local agency approval
- Project team selection and delegation of responsibilities

Program Implementation:

- Design coordination
- Cost and schedule budgeting
- Permitting and contractor selection
- Construction administration
- Quality assurance
- Project close-out
- Owner transition and occupancy

Advantages of the Program Management Approach

- Allows for the Owner to have an outside party define and implement construction programs thereby enabling the Owner to concentrate on their core business.
- An effective Program Manager will not only develop a program to meet the current needs of the Owner, but will also address other variables such as market conditions and exit strategies.
- Tapping into construction expertise early in the process leads to a greater likelihood of achieving Owner's budget and schedule goals.
- Utilizing a Program Manager does not prevent the use of any other project delivery system once the project proceeds to construction. The preferred delivery system can be tailored to meet the project needs and the Owner's risk tolerance.

Disadvantages of the Program Management Approach

- Program manager services may be redundant if the owner clearly understands project objectives and has resources to administer the project.
- A clear contractual relationship between the Program Manager and all other team members must be established early in the program to assure success.

Typical Forms of Compensation:

Program Managers are typically compensated for the cost of providing these services plus some type of incentive that is equal to a percentage of the final construction cost.



Construction Management (Agent) Approach

This delivery system is a form of Owner Representation in which the Owner hires a Construction Manager to act as an Agent for all construction related issues. The CM can be hired before or during design development and can assist with preparing budgets, schedules and constructability reviews. The Owner holds the contracts with the Contractor or Subcontractors. The CM conducts the bidding, contractor selection, contract procurement, project administration and management of the contracts.

Typical Services of the Construction Manager

- Program development (If CM is hired early in the process)
- Cost estimating, budget development and control
- Schedule development and control
- Constructability and value reviews
- Project team selection and coordination
- Liaison with governing agencies
- Contract management, administration and quality assurance

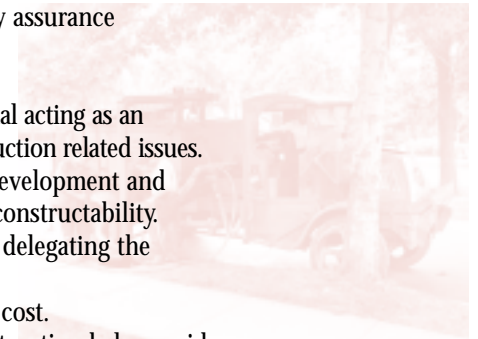
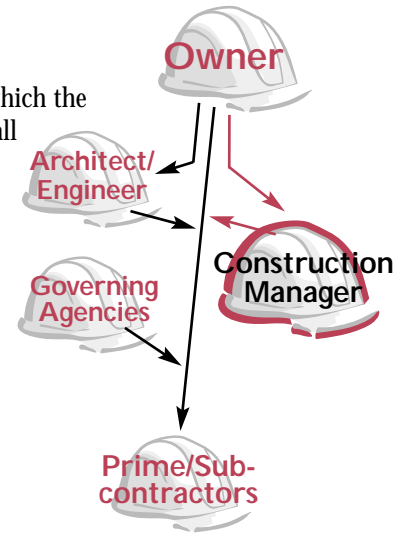
Advantages of the Agency CM Approach

- Owner receives the benefit of a qualified professional acting as an Agent throughout the process to address all construction related issues.
- Construction expertise applied during program development and design phases helps achieve optimum value and constructability.
- Owner retains control of the entire process while delegating the details of management to the Agent.
- Open book pricing approach assures competitive cost.
- Intense management and supervision during construction helps avoid budget overruns, allows for "fast tracking" of the schedule and assures the Owner that the desired value is achieved.

Disadvantages of the Agency CM Approach

- Multiple construction contracts make for greater exposure to some construction risk (gaps in the scope of work between subcontractors and safety).
- Multiple surety bonds can offset non-performance risk, but determining fault can be difficult.
- Owner does not receive price guarantees and must rely on the budget to track financial exposure.
- Owner could potentially be caught in the middle of disputes between the A/E, CM or any of the subcontractors.

Typical Forms of Compensation: Lump Sum, Cost Plus



Along with the decision to proceed with a construction project comes a variety of decisions that need to be made on a wide range of issues. One of the most important decisions is the selection of a contract delivery system which meets your unique needs.

While there are many construction contract alternatives, no single delivery system is appropriate for all situations. The key to selecting the system best suited for your project lies in understanding your needs and how each delivery system addresses those needs.

Construction contracts typically use one of the following approaches:

General Contracting Approach: This approach is sometimes referred to as Design-Bid-Build or the Traditional Approach. Under this method, the Owner bids out completed plans and specifications to qualified General Contractors and enters into one contract with the successful bidder.

Owner Representation: This relatively recent approach involves the Owner hiring a construction entity to act as an Agent and to oversee and manage construction. This is typically done by hiring a Construction Manager or Program Manager.

Design/Build Approach: This method enables the Owner to contract with one entity (often a joint venture between an architect/engineer and a contractor) to design, build and deliver a project. Design/Build projects are sometimes referred to as "Turnkey" projects.

There are many other approaches that are variations or combinations of the three mentioned above. Several of the more prominent include Open Book General Contracting, Build/ Operate/Maintain, Build/Own/Operate, Build/Operate/ Finance, etc. While these are all unique in their financial arrangements and obligations after construction, the services and risks during construction are similar to the three mentioned above and are therefore not addressed in this brochure.

This brochure compares the five most common types of project delivery systems:

- General Contracting**
- Construction Management (Agent)**
- Construction Management (At-Risk)**
- Design/Build**
- Program Management**

Cost Guarantees	GMP/Lump Sum	OPEN or CLOSED	DEPENDS ON CONTRACTUAL ARRANGEMENT	DEPENDS ON CONTRACTUAL ARRANGEMENT	MODERATE	YES	DB	HIGH	YES	DB	MODERATE	HIGH
Opportunity to Review Trade Contract Bids	GMP/Lump Sum	OPEN or CLOSED	MODERATE (through savings clause)	SHARED	MODERATE	YES	CM	MODERATE	YES	CM	MODERATE	MODERATE
Incentive to decrease total project cost	NONE	OPEN	HIGH (to obtain future work)	OWNER	LOW	NO	OWNER	MODERATE	YES	OWNER	HIGH	LOW
Realization of Cost Savings	Only on defined scope	CLOSED	NONE	GC	HIGH	YES	GC	LOW	NO	GC	LOW	HIGH
Typical Overall Project Cost	Schedule Issues											
Time Guarantees	YES											
Responsibility for Schedule Enforcement	GC											
Early Construction Start Potential	LOW											
Fast Tracking Possibility	NO											
Miscellaneous												
Contract Administration Responsibility	GC											
Owner Administrative Involvement	LOW											
Owner Involvement In Monitoring Construction	HIGH											



DELIVERY SYSTEM COMPARISON

Contractual Issues	General Contractor	CM (Agent)	CM (At-Risk)	Design/Builder
Number of Owner Held Contracts	SINGLE	MULTIPLE	SINGLE	SINGLE
Holder of Trade Contracts	GC	OWNER	CM	DB
Primary Risk Exposure	GC	OWNER	CM	DB
Risk Insurance	Through Bonding & Retainage on GC	Through Bonding & Retainage on Trades	Through Bonding & Retainage on CM	Through Bonding & Retainage on DB
Owner's Contractual Authority	Over GC Only	Over Trades	Over CM Only	Over DB Only
Construction Provider's Fiduciary Responsibility	To PROJECT	To OWNER	Initially to the Owner, upon final price switches to PROJECT	Initially to the Owner, upon final price switches to PROJECT
Extent of Owner's exposure for scope gaps between trades	LOW	HIGH	MODERATE	LOW
Responsibility to disclose information relevant to Owner's Interest	NO	YES	Initially Yes, Later No	Initially Yes, Later No
Responsibility for construction means and methods	GC	TRADES	CM	DB
Cost Issues				
Cost Commitment	HARD DOLLAR BID	BUDGETS	GMP/Lump Sum	GMP/Lump Sum



Before selecting a delivery system, you should answer the following three questions:

What is your tolerance for risk?

Some examples that can have a major economic impact on the success of a project include: adequacy of design, completeness of scope, unforeseen or unknown conditions, budgeting, scheduling, construct-ability, safety and coordination are examples of risk that can have a major economic impact on the success of a project. Each delivery system addresses risk in unique ways. Understanding your risk tolerance is an important step in selecting the correct delivery system.

Does your level of expertise match the complexity of the project?

Many individuals have some level of experience with respect to construction. Also, many have resources, either internally through their organization or externally through consultants on whom they can rely. Knowing when the complexity of a project exceeds your capabilities is a critical factor in knowing when and where to turn for help.

What level of involvement will you have in the project?

Construction is a time consuming process. If you do not have adequate time, then you should hire someone to manage the details for you. Often, Owners are capable and would like to be intimately involved, but their current obligations prevent them from doing so. In some cases, Owners may be more interested in receiving the final product and have little or no desire for day-to-day involvement in the construction process. Only you can assess your desire and capacity for active involvement in time-consuming and complex projects.

Even though General Contracting is referred to as the "Traditional Approach," Design/Build is much older. It traces its roots back to the time of the Egyptians and the use of a "Master Builder." The General Contracting approach became prominent in the 1930's.