Construction Management/Design-Build

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I.  Overview – Project Delivery Systems............................................................. 2

   Methods of Risk Allocation................................................................................ 2
   I. A.  What Is A “Project Delivery System?”.................................................. 4
                 I.A.1.a.  Traditional Approach.......................................................... 5
                           I.A.1.a.1.  Multi-Prime Contracts with the Owner...................... 12
                           I.A.1.a.2.  Fast-Track Construction......................................... 15
          I.A.1.b.  Evolution of Construction Management.................................... 18
          I.A.1.c.  What is Construction Management?.......................................... 18
          I.A.1.d.  Traditional Construction Management Approaches................... 20
          I.A.1.e.  Evolution of Design-Build ....................................................... 24
          I.A.1.f.  Program Management & Project Management.......................... 27
          I.A.2.  Construction Management As Agent............................................. 29
          I.A.3.  Construction Management At Risk.............................................. 32
          I.A.4.  Design-Build ................................................................................. 34
          I.A.5.  Partnering....................................................................................... 35
          I.A.6.  Integrated Process Team (IPT)...................................................... 38
          I.A.7.  Alliance Contracting...................................................................... 42
          I.A.8.  Understanding Risk Allocation of Project Delivery Systems............ 46
                 I.A.8.a.  Identifying, Understanding & Managing Risks.................... 46
                 I.A.8.b.  Categories of Issues and Areas of Risk............................... 48
                 I.A.8.c.  Risk Allocation in Selected Project Delivery Approaches....... 51
                           I.A.8.c.1.  Traditional Approach.................................................. 51
                           I.A.8.c.2.  Design-Build ............................................................... 52
                           I.A.8.c.3.  Construction Management As Agent........................... 53
                           I.A.8.c.4.  Construction Management At Risk............................. 53
   I. B.  Factors To Consider In Selecting A Project Delivery System................. 54
   I. C.  CM and Design-Build Licensing Issues............................................... 56
          I.C.1.  Construction Management............................................................. 57
VI.D.6. Inspection, Acceptance and Warranties .................................................167
VI. E. Experience and Trends..............................................................................168
VI.E.1. Eventually Construction Contract Changes Will Occur.......................168
VI.E.1.a. Requests for Information .....................................................................170
VI.E.1.b. Change Orders .....................................................................................171
VI.E.2. Other Issues, Changes & Remedies..........................................................177
VI.E.2.a. Differing Site Conditions & Providing Site Information ......................177
VI.E.2.b. Contract Termination Without Cause ..................................................183
VI. F. Belt and Suspender Provisions of the Standard Forms.........................187
VI.F.1. Express Contractual Indemnity...............................................................187
VI.F.1.a. Types of Indemnity Clauses .................................................................187
VI.F.1.b. Application of Provision In Specific Cases ............................................188
VI.F.1.c. “General” or Type II Provisions ..........................................................189
VI.F.1.d. How Standard DB Form Contracts Address Indemnity.......................190
VI.F.2. Limitations of Liability ............................................................................193
VI.F.2.a. Waivers of Consequential Damages ...................................................195
VI. G. Dispute Resolution ....................................................................................200

NOTES ................................................................................................... 207
Construction Management/Design Build
SECTION I.

Overview – Project Delivery Systems

Methods of Risk Allocation
I. Overview – Project Delivery Systems
Methods of Risk Allocation

Purpose of this Program

This program is designed to provide attendees with a general overview of the various forms of project delivery approaches with a special focus on the fundamentals of the construction management and design-build Project Delivery Systems.

During the conceptual design stage of a project, Owners often look to the Design Professional (Engineer, Architect, Consultant) to provide advice regarding which Project Delivery System would be the most appropriate for their project. The Design Professional and the Owner need to be aware of the principles, benefits and disadvantages, accepted and best practices, and inherent risks, for each project delivery approach to be able to effectively recommend and select an appropriate approach, as well as to effectively develop and implement the Project Delivery System. The Project Owner’s tolerance for cost and/or schedule risk, and the Owner’s requirements toward a level of involvement in the detailed design selection process and level of project oversight during design and construction, are key elements in selecting the appropriate Project Delivery System.

This program will benefit Owners, Design Professionals, Construction Managers, as well as Contractors, Lawyers and Subcontractors. The program will discuss a variety of Project Delivery System concepts, their inherent risks, and their benefits and disadvantages. This program covers a significant quantity of material and issues, much more than can be discussed during this one day seminar program. We have attempted to provide an abundance of written material and references to additional sources, with the hope that the attendees will investigate various issues in greater depth at their convenience.
Acknowledgements

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I. A. What Is A “Project Delivery System?”

The Project Management Institute (PMI) has defined a project as "A temporary attempt undertaken to create a product or service." (page 67, "A Guide to the Project Management Body of Knowledge", 1996, Project Management Institute Standards.)

The generic term “Project Delivery System” relates to the particular contractual arrangements for the approach implemented and utilized to accomplish the goals of a given project including: organization; risk allocation; assignment of responsibilities; pricing and payment obligations. For any given project there is likely to be more than one Project Delivery approach that would be appropriate, and there may be one approach that is best suited, depending on the Owner’s requirements and capabilities.

We must note that the Construction Management Association of America (CMAA) does not consider “Construction Manager As Agent” as a Project Delivery System, but as a “distinct set of services that are applicable to any project delivery system.”

I.A.1. What Are The More Common Project Delivery Systems?

As we explore various Project Delivery System approaches, it is important to understand that the responsibilities and risks performed during the Phases of a project differ amongst the various parties depending upon the approach implemented.

Construction projects typically include five Phases:

<table>
<thead>
<tr>
<th>Phase</th>
<th>Key Activities</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Planning or Conceptual Design Phase</td>
</tr>
<tr>
<td>2</td>
<td>Engineering &amp; Design Phase</td>
</tr>
<tr>
<td>3</td>
<td>Procurement/Bid Phase</td>
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<tr>
<td>4</td>
<td>Execution Phase (Construction &amp; Commissioning)</td>
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<tr>
<td>5</td>
<td>Operations &amp; Maintenance Phase</td>
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1 http://CMAAnet.org/best
This program will briefly describe the evolution of various Project Delivery Systems and will focus on the following approaches:

- Construction Management As Agent
- Construction Management At Risk
- Design-Build

In addition, we will also briefly introduce three other alternate formats for project delivery. These approaches are considered “collaborative” and uniquely different from the Traditional Approach used in the US. These collaborative approaches are:

- Partnering
- Integrated Process Teams (IPT)
- Alliance Contracting

References for further study of these three approaches are provided and we encourage participants to investigate the referenced materials.

I.A.1.a. Traditional Approach

The contractual organization of the Traditional Approach is represented in Figure 1, Project Delivery Approach Examples – Traditional Approach. The traditional delivery approach is generally known as “design-bid-build” (D-B-B).

There are two primary contracts:

- Owner – Design Professional (i.e., architecture, planning or engineering firm)
- Owner-General Contractor.

The Design Professional and General Contractor are not in a contract with each other (do not have contractual “privity”) however they have certain obligations and benefits running to each other through their respective contracts with the Owner. In some States, the courts recognize the mutual benefits and obligations under their respective contracts with the Owner, and allow the General Contractor to bring legal action against the Design Professional directly, even in the absence of a written agreement between the two parties.
Some Owners have large in-house engineering organizations that enable them to perform all of the engineering and design, as well as major equipment procurement, with their own forces. They are often capable of performing their own construction oversight as well.
Project Delivery Approach Examples – Traditional Approach

Stages of the Traditional or “Design-Bid-Build” Approach

Phase 1: Planning or Conceptual Design Phase
Phase 2: Engineering & Design Phase
Phase 3: Procurement/Bid Phase
Phase 4: Execution Phase (Construction & Commissioning)
Phase 5: Operations & Maintenance Phase

Degree of Involvement
- Owner
- Design Professional
- Contractor

The Traditional Approach - Organization

Owner

Design Professional

General Contractor

Subcontractor

Supplier

Figure 1
On certain larger projects, Owners might supplement their in-house engineering forces with an outside Design Professional to perform a discrete scope of work. In these cases, the task of construction oversight is often contracted to an outside Design Professional working under the supervision of the Owner’s internal engineering personnel.

In Phase 1, the Owner chooses a Design Professional to create a conceptual study, which is prepared in conjunction with the project Owner’s operations, planning and financial staff. During the Phase 1 planning stage the Design Professional assists the Owner in determining the feasibility of the project and the basic performance parameters. The deliverables typically include the project description, preliminary general arrangement drawings, and performance requirements.

Prior to engaging a Design Professional in Phase 1, some Owners perform their own conceptual and feasibility studies to determine if the project should be pursued. If such studies were not performed earlier by the Owner, feasibility studies and the economic decision-making process may be a part of the Phase 1 scope for the Design Professional.

During Phase 2, the Owner has the Design Professional prepare the design documents. In the Traditional Approach (and under ideal circumstances) the design documents are typically prepared to the 100% complete level such that a Contractor can estimate, with reasonable precision, the quantity of material, equipment and labor required to complete the facility. The Design Phase on larger or complex projects may be further broken down into a preliminary design period (typically up to 30% design completion) and the detailed design development period (30% to 100%).

Also during Phase 2, the Design Professional generally prepares the construction bid documents, which includes the Owner - General Contractor agreement, general conditions, general requirements and other documents. It is important that the Owner’s legal counsel be part of the contract drafting team, and to assist with the decision-making process leading up to Phase 3. Once the contract terms are established, the opportunity to transfer risks is minimized.
During Phase 2, the Owner has the opportunity to select the details of the design features. The Owner’s participation may be extensive, or minimal, but the Owner has the ability to become as involved in the design process, and its many details, as it desires.

In Phase 3, after the plans and specifications are completed and accepted by the Owner, the Design Professional assists the Owner in advertising and obtaining offers for construction of the facility. The Owner issues the bid documents. Various methods of bidding approaches are available, primarily either negotiated bids with pre-qualified Contractors, or lowest responsive and responsible bid. Various pricing approaches are also available, including fixed price, guaranteed maximum price, cost-reimbursable, unit price, and others, or combinations of these approaches. The Design Professional must also counsel the Owner on the appropriate price mechanism, based on the Owner’s needs and tolerance for risk.

Interested General Contractors evaluate the bid documents, prepare and submit bids. A General Contractor may select one or more Subcontractors to perform some of the work under the General Contractor’s oversight and coordination. This is also one means for the General Contractor to shift risk to other parties.

Where the contract documents and specifications are prepared as 100% detailed designs, the specified pricing mechanism is typically fixed price. Using the low bid approach, the Owner receives the final bids on a fixed date. Generally, the lowest fixed price responsive and responsible bid is the successful bid, concluding in a signed contract and a notice to proceed to Phase 4 with that General Contractor.

After the General Contractor is selected and awarded the construction contract, the actual construction commences. During Phase 4 construction, the Design Professional is typically retained by the Owner to provide oversight services: to monitor the General Contractor’s quality and performance; to provide engineering assistance; review shop drawings; respond to Contractor request for information (RFI’s); measure work in place for Contractor payment application review; provide design interpretation when required, etc.
The focus of the Design Professional’s services during construction is primarily to observe the progress and quality of the Contractor’s work and to generally determine, on behalf of the Owner, if the work was preceding in accordance with the contract documents. In this type of delivery approach, the Design Professional is generally a passive participant, observing and reporting on the Contractor’s performance and providing advice to the Owner, enabling the Owner to make informed decisions.

The Owner has little involvement in the construction process and typically requires the Design Professional to perform the Owner’s obligation on its behalf. Some Owners will have their own in-house staff participate in certain aspects of the contract administration, or review/approval of architectural or finish samples, etc. The Owner’s primary obligation during Phase 4 is to pay the General Contractor for work in place and to provide the site free of conditions which may restrict performance. However it is important for Owners to be properly informed of progress and issues by the Design Professional so that the Owner can make prompt informed decisions about matters brought to it by the Contractor.

Startup or commissioning services, if required, may be performed by the General Contractor, the Owner, or the Design Professional on behalf of the Owner.

Phase 4 typically ends at project final completion. Depending on the contract definition, substantial completion may be considered the end of Phase 4, instead of final completion. Each contract is different and depends on the Owner’s needs and use for the facility.

Phase 5 begins after final project completion when the facility is fully accepted by the Owner, and the General Contractor’s construction obligations have been fulfilled. The General Contractor typically has warranty obligations for the first year following completion.

This Traditional Approach generally offers the Owner reasonable security of pricing and presents an orderly approach to the project. However, it is a linear approach whereby one Phase is completed prior to the next Phase beginning and requires a lengthy investment of time and money before the Owner obtains its facility for revenue purposes. The Owner
bears the financial risk until the construction contract is awarded. Although the Design Professional prepares a budget estimate as part of Phase 2, not until the construction contract is awarded does the Owner know the anticipated cost of the project.

Advantages of the Design- Bid-Build approach:

- Owner obtains reasonable security of pricing when the winning bid is accepted.
- Presents orderly approach to the sequence of design and construction work.
- Due to the high degree of design completion (in theory) changes in the work should be minimal and limited to unanticipated issues.
- Allows Owner significant opportunity for involvement in the selection of design details.

Disadvantages of the Design-Bid-Build approach:

- The linear approach requires more time for overall project cycle from conception to final completion.
- Owner bears the financial risk without knowing the overall price throughout the entire design and bid Phase. The Owner may find out the project is not viable financially until after the design process is completed and bids are received. Bids may be received which exceed the Design Professional estimate that could threaten project viability.
- Owner still retains some financial risk due to changes during construction.
- Design Professionals may not have sufficient construction experience to provide appropriate constructability reviews to reduce cost of construction or eliminate problems that are not recognized until construction begins. The risk of these unanticipated cost increases are borne by the Owner.
- The Contractor controls all work within the construction notice to proceed date through the final completion date. The Owner has little control or influence over the schedule unless contract requirements indicate the Owner’s involvement, or unless the Owner wishes to pay the Contractor for the right to control schedule as a change to the contract.
All parties are focused on their rights and obligations under the contract, which creates an inherently adversarial situation:

- Contractor has the incentive to maximize its profit by proceeding with the least cost, compliant processes, materials and equipment; with no interference from the Owner or Architect;
- Owner wants to obtain the best for the least cost, and wants to make sure it has sufficient oversight for confidence the end result, as well as cost and schedule, suit it’s expectations;
- Architect wants to achieve its fee and minimize exposure to design errors and omissions, or interference claims from the Contractor.

The Design-Bid-Build approach is in very common use today, in both public and private contracting. Other variations of the Traditional Approach involve the use of multiple prime contractors working directly for the Owner.

I.A.1.a.1. Multi-Prime Contracts with the Owner

Instead of hiring one General Contractor, the Owner may hire several specialty Trade Contractors and a General Contractor. For example, the Owner may hire a civil/structural contractor, a mechanical contractor, an electrical contractor, and a General Contractor. The General Contractor typically performs all work not within the Trade Contractor specific scopes of work.

Thus, the Owner and Design Professional prepare separate bid packages for each and undergo several Phase 3 bid processes to hire the several contractors. The Owner is then in privity with each Contractor, as well as the Design Professional. The Contractors are not in privity with each other. However, the individual contract agreements between the Owner and the Contractors may stipulate reciprocal obligations between and amongst the Contractors, which are typically enforceable.

When the Owner uses multiple prime contractors, the Owner is obligated to schedule and coordinate the work of the Contractors so as to avoid interferences between the various companies performing the work, unless the Owner transfers that risk and responsibility by contract to one of the Contractors, typically the General Contractor. The Owner may
also engage the Design Professional, or a Construction Manager, to perform its coordination obligations.

Using multi-prime contract arrangement, the Owner again bears the risk of not knowing what the projected price of the project will be until the last multi-prime contract is let.

Most of the Advantages and Disadvantages of the Design-Bid-Build approach are applicable to the Multi-Prime approach, except as follows:

**Advantages of the Multiple-Prime Contracts approach:**

- Owner can use the Fast Track approach (see the next section)
- Owner has more control over the construction schedule, as it schedules the release of the design packages and construction of those packages.
- Owner can obtain savings by having trade contractors with expertise in those areas provide bids. There may be more bidders using smaller trade packages.
- Portions of the cost of the work are known sooner, as bids are received for those packages.

**Disadvantages of the Multiple-Prime Contracts approach:**

- The overall cost of the work is not known until the last bid package is issued and bids received.
- The number of contractors working for the Owner directly increases, which increases the risk of construction coordination problems as well as increasing the effort required by the Owner or its construction site representative. The Owner’s construction administration costs increase accordingly.
Project Delivery Approach Examples –Traditional Approach

The Traditional Approach – Multiple Prime Contractors

Figure 2
I.A.1.a.2. Fast-Track Construction

As the time value of money became a significant business driver. Owners came under pressure to place revenue generating assets into service earlier in order to establish the revenue stream and to reduce the costs of construction financing. The concept of Phased engineering and construction, better known as “fast track,” became more common usage.

In this approach, the Owner and its engineering and construction resources (whether in-house or outside firms), work together to define elements of the project that can be designed early, thus enabling the construction to proceed while the balance of the design is being completed. Figure 2, Project Delivery Approach Examples – Fast Track, or Phased Construction Approach, provides a conceptual example of the fast track or Phased approach.

On technically complex projects, fast track is challenging but achievable as long as the parties work well together. A major risk of cost increases on any project occurs during the actual Construction Phase, making the management and coordination of the Construction Phase particularly important. It is generally less expensive to accelerate certain engineering or design activities, or to accelerate a vendor’s shop schedule to meet construction need dates, than it is to accelerate a construction schedule by overtime or shift work to meet a fixed completion date. Not only are the direct costs of premium rate (overtime) construction labor and equipment greater, but the inefficiencies caused by compressed construction schedules typically increase costs as well.

The Design Professional designs the project in separate packages which are each individually bid, in sequence, by separate Contractors. The Owner awards contracts for the packages which were completed, then continues the design, bid, and award process as other design packages are released. The same Contractor may be awarded multiple packages, all the packages, or only one, depending on its capability, the pricing mechanism selected, and the selection criteria for award.

Phased construction uses overlapping design and construction in sequential order. In theory, each sequential package is complete with a full set of detailed 100% plans and specifications. Projects can be packaged by areas, functions, systems or structures.
Phased construction typically involves multiple contractors working directly for the Owner.

The ability of the Owner to coordinate and schedule the design package preparation and release with the package bidding and to coordinate this with the ongoing construction activities is critical. Due to the coordination complications of multiple prime contractors (and often numerous Design Professionals) and the fact that the Owner is responsible for those tasks, the Owner either has to hire additional in-house staff or expand the staff of its Design Professional or Construction Manager providing design and construction oversight.
Example – Fast Track or Phased Construction Approach

Planning | Civil & Structural Design | Tender & Award | Civil & Structural Construction | Architectural Finishes

- Bulk Mechanical Design | Tender & Award | Bulk Mechanical Construction | Start-Up and/or Commissioning

- Bulk Electrical Design | Tender & Award | Bulk Electrical Construction

- Electrical & Instrumentation Design | Tender & Award | Electrical & Instrumentation Construction

Figure 3
I.A.1.b. Evolution of Construction Management

Over the years, various other project delivery approaches have been developed. Each afforded the Owner the opportunity to address elements that were critical to its business needs.

As projects became larger and/or more complex, Owners recognized the increasing level of experience, effort, and organization it would need to employ for the purpose of performing its obligations, particularly during Phase 4 Construction. Owners would have to hire in-house construction oversight staff or engage firms to perform those obligations. The need for professional construction management services became evident.

I.A.1.c. What is Construction Management?

The CMAA (Construction Management Association of America) defines Construction Management as:

…process of professional management applied to a construction program from concept to completion for purposes of controlling time, cost, and quality.

The AGC (American General Contractors of America) have defined Construction Management as:

…one effective method of satisfying an Owner's building needs. It treats the project planning, design and Construction Phases as integrated tasks within a construction system. These tasks are assigned to a construction team consisting of the Owner, the construction manager and the architect-engineer. Members of the Construction Team ideally work together form project inception to project completion, with the common objective of best serving the Owner's interests. Interactions between construction cost, quality and completion schedule are carefully examined by the team so that a project of maximum value to the Owner is realized in the most economic time frame.
The AIA (American Institute of Architects) defines Construction Management as:
…special management services provided to an Owner by an architect or other person or entity possessing requisite training and experience during the Design Phase and/or Construction Phase of a project. Such management services may include advice on the time and cost consequences of design, construction decisions, scheduling, cost control, coordination of contract negotiation and awards, timely purchasing of critical material and long lead time items, and coordination of construction activities.

The ASCE (American Society of Civil Engineers) defines Construction Management as:
…one effective method of satisfying an Owner's construction needs. It treats the project planning, design, and Construction Phases as integrated tasks. Tasks are assigned to a project management team consisting of the Owner, the construction manager (CM), and the design organization. A prime construction contractor or funding agency, or both, may also be a member of the team. The team works together from the beginning of design to project completion, with the common objective of best serving the Owner's interests. Contractual relationships between members of the team are intended to minimize adversary relationships and contribute to greater responsiveness within the management group. Interactions between construction cost, environmental impact, quality, and completion schedule are carefully examined by the team so that a project of maximum value to the Owner is realized in the most economic time frame.

The NSPE and PEC (National Society for Professional Engineers and Professional Engineers in Construction) define Construction Management as:
…that group of management activities related to a construction program, performed from the conceptual to the operational Phases of a project by an outside firm or the Owner's staff that provides the services to best meet the economic interests of all entities through the control and management of time, cost, and quality.
I.A.1.d. **Traditional Construction Management Approaches**

On larger, more complicated projects, Owners often utilize a professional outside firm to perform Construction Management (CM) services, representing the Owner in overseeing the activities of the Contractor(s) performing the construction on site. Depending on the circumstances and the Owner’s ability to assume risk, the outside Construction Manager might be assigned as “Agent for” the Owner with clearly defined areas of authority for committing the Owner financially, authorizing payments, proactively negotiating and approving changes, and resolving disputes. In some cases, the Construction Manager might be asked to manage the project “at risk,” meaning that at some point in the project it would be required to agree to a not-to-exceed price for the work, thus again providing a level of financial protection for the Owner. The CM At Risk essentially becomes a General Contractor after providing any advisory services during the Design Phase.

The major difference between a Design Professional providing professional services during construction and the Construction Management firm are:

- The Design Professional’s services during construction, in a Traditional Approach, begin when construction activities commence.
- A Construction Manager typically begins providing services sometime during the Construction Phase, but also often provides constructability reviews\(^2\) and assists the Design Professional in developing a feasible design schedule and project budget during the Design Phase.
- The Design Professional’s services are effectively passive observations during construction.
- The Construction Manager’s services are proactive.
- The Design Professional does not provide construction advice to the Contractor.

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\(^2\) Constructability reviews are the process by which experienced construction field personnel work with the Design Professional, during the design process, to provide input and make recommendations to the Design Professional regarding configurations, layouts, and other design details to facilitate a final facility design that is easier to construct, thus reducing overall construction cost, and often scheduled with fewer spatial conflicts, and that can be constructed more efficiently.
• The Construction Manager actively coordinates the efforts of the project’s participants, including the Design Professional.

Because the Owner is seeking a timely project completion at a reasonable price it is usually the Construction Manager who takes a leadership role early in the design stage to ensure that engineering, design and procurement are scheduled and completed by dates that enable construction to proceed at an orderly pace.

Figure 3, Project Delivery Approach – Construction Management, presents conceptual organizational arrangements of a Construction Manager as an Agent of the Owner, and a Construction Manager “at risk.” Of course, the responsibilities of the Construction Manager are dependent on the Owner-CM contract terms, but these two arrangements are the most common in practice.

The obligations of the CM are dependent on the Owner - CM contract terms and the factual circumstances of the particular project. Key variations in CM responsibilities depend on:

• Whether the CM is an agent or independent contractor (at risk).
• The Phase the CM is hired.
• The express scope of services to be provided.
• The relationship of the CM to the other parties.
• The authority granted to the CM.
• The contracting risks assigned to the CM in its contract.
• Fee structure or compensation of the CM.

In the CM as Agent method, the Construction Manager’s primary functions are to:

• Keep the Owner advised and informed as to progress and cost
• Manage the change process
• Disclose any information relevant to the Owner’s interests
• Make proactive recommendations to the Owner for action to maintain progress and achieve the schedule and budget
• Act in the best interests of the Owner
The Construction Manager as an Agent does not perform any construction. The Construction Manager at Risk differs from the Construction Manager as Agent primarily in that the Construction Manager at Risk has complete responsibility for supervision, coordination and administration of the project including performing the work, similar to the way a General Contractor would. The Construction Manager at Risk is an independent contractor of the Owner and not its Agent, but still functions to proactively manage the constructor work, which it is responsible for performing.
Project Delivery Approach Examples – Construction Management

CM as Agent of Owner

- Owner
  - All trade contracts are directly with Owner
  - Approves and enforces schedule
  - Pays Contractor(s)
  - Has authority over trade contractors

- Design Professional
  - Responsible for Design

- Construction Manager
  - Acts as an Agent of the Owner
  - Subject to control by Owner
  - Renders special skills as contracted
  - Loyalty
  - Disclose information relevant to Owner’s interest
  - Recommends Owner action(s) as deemed appropriate

- General Contractor
  - Responsible for means, methods, techniques and sequence of construction
  - May be several trade contractors rather than one General Contractor
  - Responsible for Safety

CM “At Risk”

- Owner
  - Pays Construction Manager

- Design Professional
  - Responsible for Design

- Construction Manager
  - Assumes risk
  - No dependence on Owner authority
  - Responsible for schedule & coordination
  - Responsible for means, methods, techniques and sequence of construction

- Subcontractors
  - Subcontractors
  - Subcontractors
  - Subcontractors

Figure 4
I.A.1.e. Evolution of Design-Build

Sometimes, large engineering and construction firms, with the capability of performing all the engineering, design, procurement and construction themselves, are engaged to execute the total scope of the project. In other cases, teams are formed consisting of an engineering firm and a construction firm joining together (joint venturing) to deliver a “seamless” organization that is responsible to the Owner for the project’s total execution.

The use of a single entity to execute projects in this manner has become more commonly known as “fast track design-build.” In the “fast track design-build” approach, the engineering and design, procurement and construction processes are overlapped to produce a shorter overall schedule. Figure 4, Project Delivery Approach Examples – Design/Build, presents a conceptual example of a design-build organizational arrangement.

These third party entities typically coordinate and manage a series of “trade” contractors who bid for discrete packages of work, with each of the trade contractors performing work in its specialty area. It is frequently possible to obtain fixed prices for these work packages. Some scope is relatively easy to define, and lump sum prices can be obtained.

On projects involving more complex commercial or industrial processes, subject to design development and fine tuning, true lump sum pricing may be difficult to obtain. In these areas, it is common to obtain fixed prices, based on target quantities, with pre-established adjustment provisions for quantity variations. This gives the Owner some additional price protection in that the major construction is being executed, in a sequenced manner, by contractors who are providing some form of fixed price for areas of work within their expertise.

In some cases, Owners continue to play a strong role and facilitate hybrid arrangements consisting of an engineering organization (in-house, outside or some combination thereof) and a third party to execute the project in a Phased approach under the overall management of the Owner.
Project Delivery Approach Examples – Design - Build

- Owner contracts with a single entity
- Traditional or Fast Track approach

- May be single firm
- Can be Joint Venture
- Contractor with Design Professional as Sub
- Usually guarantees certain performance capabilities will be achieved
- Responsible for schedule and coordination

Figure 5
Many North American public utilities used their own resources to engineer, procure and construct (i.e. “deliver”) their power plant projects. Outside engineers and contractors were often engaged for certain tasks, but utilities traditionally maintain overall Project Management control and made all project decisions. This approach was quite common in the 1950’s, 60’s and 70’s.

In the 1980’s, as privately owned “Independent Power Producers” (IPP’s) began constructing power generating facilities in the United States, another variation of project delivery emerged that gave the Owner the most market competitive approach to putting in place a major revenue generating capital asset, the power plant. In this approach, the Owner specified a fast track schedule to put the unit in service as early as possible while requiring a prime Contractor to guarantee a fixed lump sum price and schedule for the project. Often, additional performance parameters had to be met as well. This approach has many descriptions, but is probably most commonly known as “Lump Sum Turnkey” (LSTK).

LSTK is a variation of the Design-Build fast track approach in that the Prime Contractor agrees to provide the total plant scope, as specified by the Owner, for a lump sum price established before design is complete, and in accordance with a fast track schedule.

Design-Build is best suited for a project where the design and performance requirements are well defined and the type of detailed design and construction to be performed is widely offered by the industry. In those situations, the cost offered by the Design-Build Contractor will be competitive as the Contractor will have a history of performance upon which to determine its price without including a large contingency. It is also beneficial when the Owner needs to have an early commitment to an overall price for the project. Owners with special operations and maintenance requirements or other special needs may find another approach more suitable, particularly an approach which offers the Owner greater control over defining detailed design features.

**Advantages of the Design-Build approach:**
• Owner looks to one entity for the entire project performance.
• The Owner can obtain an early commitment to an overall project price.
• Owner’s contract administration and site representative risks and costs are reduced, since the Design-Build Contractor is responsible for all coordination efforts.

Disadvantages of the Design-Build approach:

• Owner must develop and issue an early definition of the important design and performance requirements that it must have in the project.
• Once the contract is issued, Owner relinquishes control of the detailed design selection and the construction process.
• Since the price offered by Design-Build Contractors are typically predicated on conceptual designs or performance specifications, the awarded price is likely to be higher than in a Design-Bid-Build process as the Design-Build Contractor needs to include some contingency for design development risks and other unforeseen construction risks (unless the project is a commonly performed project with cost/schedule history).

Design-Build Contractor is given the incentive to use the least-cost approach to maximize its profit, which could be contrary to the Owner’s interest.

I.A.1.f. Program Management & Project Management

The Project Management Institute (PMI) defines Project Management as:

The application of knowledge, skills, tools and techniques to project activities in order to meet or exceed stakeholder needs and expectations from a project.3

CMAA also defines Project Management as:

The use of integrated systems and procedures by a team of professionals during project design and construction. As applied to a construction project, Project Management can be used synonymous with Construction Management.

CMAA views Construction Management and Project Management as the same set of services: applying professional skills and expertise, and applying project management principles to the design and construction process.

However, some professionals make a distinction between Project Management and Construction Management services. The following is an outline of one Project Management approach, as opposed to a CM As Agent:

The Owner engages the Project Manager as an agent of the Owner with obligations to:

- Perform feasibility, conceptual and economic studies.
- Engage a Design Professional to prepare the design document (often the Project Management entity).
- Manage the Design Professional and provide oversight.
- Establish an overall project budget and schedule.
- Engage a Construction Manager As Agent (may also be the Project Management entity).
- Engage Trade Contractors, as Agent for the Owner, as the design packages are completed for each trade.
- Manage the Construction Manager and Trade Contractors, as the Owners Agent, to accomplish the project within the project schedule and budget.

The Project Manager is typically paid a fee. The Project Manager’s services are similar in concept to the CM As Agent, except that the CM As Agent usually does not actively manage the Design Professional as if it were the Owner. The CM As Agent typically monitors the Design Professional’s activities and advises the Owner, for the Owner to direct the Design Professional.

On large multi-project programs, where several construction projects are undertaken, a Program Manager may be engaged for the overall program. This approach is called “Program Management.” The true Program Manager may perform the design services and CM As Agent services with its own staff, or those
services may be performed by other firms while the Program Manager provides overall coordination for the Owner.

CMAA defines Program Management as:

Services provided to an owner who has more than one construction project, for the purposes of providing standardized technical and management expertise on all projects.

Program Management has been popular with public Owners responsible for projects in several locations, such as: highway authorities; colleges and universities; and school districts. For public agencies, Program Management allows the agency to hire one entity, in whom it has confidence, for all of the professional services it may need during the siting & conceptual design, permitting, design and Construction Phases.

For additional information on the principles and practices of Project Management, we refer you to the vast resources available at the Project Management Institute:

   Project Management Institute: Four Campus Boulevard, Newton Square
   PA 19073  (610) 356-4600, http://www.pmi.org

I.A.2. Construction Management As Agent

The CM As Agent is in a relationship of trust and confidence as an agent of the Owner. The CM covenants with the Owner to furnish his best skills and judgment for obtaining a quality controlled project on time and within budget. The CM agrees to provide the leadership for integrating all of the project participants into a team for purposes of providing efficient business administration and management of the project.

An "agent" is in a fiduciary relationship with the Owner, which obligates the CM to a high duty of care and loyalty on the part of the CM to the Owner.

CMAA provides the following definitions:
Agency CM: A form of Construction Management performed in a defined relationship between the CM and owner. The agency form of Construction Management establishes a specific role of the CM acting in a fiduciary capacity on behalf of the owner.

Agency: A legal relationship by which one party is empowered and obligated to act on behalf of another party.

Fiduciary: An individual or organization having duty, created by contract, to act primarily for the owner’s benefit in respect to the trust and confidence involved in the duty and the scrupulous good faith and candor which it requires.

Agency CM, also known as Professional CM or Pure CM, the CM is in a fiduciary relationship with the Owner, obligated to:

- Keep the Owner advised and informed.
- Disclose information relevant to the Owner’s interest.
- Make recommendations for Owner actions.
- Often, responsible for scheduling and overall coordination of the project.
- Proactively assess construction progress and the Contractors performance toward achieving timely completion within the budget.

All contracts for construction are held by the Owner. The construction trade contracts may be competitively bid or negotiated.

The CM As Agent does not typically have the authority to enforce the trade contracts. The CM Agent is not responsible for the means, methods, techniques, construction sequence or safety: those obligations belong to the Trade Contractors. The Owner usually retains the rights and obligations to enforce performance, the schedule, terminate the contractor for a material breach of contract, and to pay trade contractors directly. However, the Owner looks to the CM Agent to provide it with its professional advice about the issues so the Owner can make a timely informed decision.

One of the primary advantages of CM As Agent is utilizing the CM's construction expertise during the Pre-Construction Phases, to advise on design constructability, scheduling, cost and budget control, contract and bid document preparation, and other
issues. The CM's basic function is to provide the Owner and Design Professional with construction, cost and management expertise. The CM may also perform some of the traditional roles the Design Professional would perform within the Phase 3 bid process and Phase 4 construction contract administration. The Construction Manager undertakes the substantial task of coordinating closely with the Design Professional to ensure that the design packages are properly scoped and made available in time to support the fast track schedule. The Construction Manager also ensures that the Design Professional specifies and procures the major engineered equipment so that timely delivery to the jobsite and assignment to the installation contractor is achieved without disruption or additional cost.

The benefits to be achieved from a CM depend on the contributions of the individuals in the CM team and also upon when the Owner brings the CM into the project. The quality of the services provided by the CM is dependent on the individual skills, experience and training of the CM's staff. There are 4 common points in which a CM is hired to enter into the project:

- Early, prior to selection of the Design Professional.
- After Design Professional is hired, and during conceptual design.
- Just prior to or after final design completion, but prior to construction bidding.

The professional CM needs to bring a variety of expertise to the project including: design; construction means, methods and techniques; cost estimating and budgetary controls; scheduling, communication skills; organizational skills; quality assurance; and dedication to the Owner.

This full range of experience and skills has been called “a quiver of arrows.” The Owner decides which set of services it desires from the CM in the contract document.

Pure CM, as Owners agent, guarantees neither cost nor timely completion, and does not assume any risk in these areas. The CM As Agent does not have a financial interest in providing labor or materials. The CM's objective is to keep the cost of the project down by using its professional skills in a proactive manner.
The fee structure for a Pure CM is similar to the Design Professional for construction services: Lump sum for a fixed period; cost plus, etc. The CM’s profit is not at risk, and therefore the CM does not have an inherent conflict of interest and can diligently and faithfully further the Owners objectives.

A CM that has a contract with the Owner in which the CM holds the risk for profit (see CM At Risk, below) has a conflict with the CM obligation as a fiduciary with the Owner.

The CM As Agent delivery system is most beneficial in Phased or fast track construction projects. The actual construction contracts may be issued by the Owner or by the CM, as the Owner’s Agent.

I.A.3. Construction Management At Risk

The CM At Risk begins its services for the Owner as a CM Agent, but converts its role from a CM Agent into a CM At Risk, typically by exercising a “Guaranteed Maximum Price (GMP) option.”

The CM At Risk, or GMP CM, is not a true CM: the GMP CM has contracted to hold the profit risk and therefore is in conflict with the CM As Agent obligation as a fiduciary to the Owner. When the CM agrees to a GMP it becomes an Independent GC, despite retaining the “CM” title: the practice within the industry is for the CM to maintain a distinction by calling it a “GMP CM,” an “Independent CM” or a “CM At Risk.” However, in effect the CM At Risk is a General Contractor once it accepts the construction performance and cost risk.

Recall the CMAA definitions of “Agent” and “Fiduciary.” A fiduciary must act primarily for the Owner’s interest. The CM At Risk has as its purpose the goal of making as large a profit as possible from the project. This creates a conflict: whose interest comes first when the CM At Risk is faced with daily cost-time-quality trade-off decisions? During construction the CM At Risk will make choices of material and equipment, as well as means and methods. The CM At Risk is entitled to provide
features that are compliant with the specifications and industry practice. Many of the CM At Risk choices are expected to be the least cost compliant features. However if the Owner, or its Agent, were making the decision, other factors such as life cycle cost may be determinative. The CM At Risk would be in conflict between its interest and the Owner’s interest.

Under the CM At Risk model, at the beginning of the Design Phase the CM acts as an agent of the Owner, performing the same services as a CM Agent. However, when the designs are sufficiently completed (50-80%) the CM prepares an estimated project cost and typically submits a GMP proposal. If the parties agree on a GMP, the CM assumes the risk for delivering the project on time and within budget, in the same manner as would a General Contractor. The agency role is, in practice, replaced for a GMP General Contractor role. The CM At Risk holds all the trade contracts and is responsible for coordination, scheduling, etc. The CM At Risk has the rights and obligations to enforce the trade contracts, or it can perform portions of the work with its own forces. The CM At Risk is responsible for the construction means, methods and techniques, and construction sequence and safety.

Another variation of the Independent GMP CM is the Negotiated GMP CM. The “GMP option” is not used and the CM’s role during design may be minimal. The CM At Risk and Owner commit to reaching a GMP for all construction work. In this variation, the CM At Risk is hired during the Design Phase, usually prior to or after preliminary design is completed and accepted by the Owner. The CM At Risk reviews the plans and specifications and prepares a cost estimate and an integrated project schedule (including design completion and construction).

The cost estimate usually requires that the design is approximately at least 50% complete and specifications are at least 80% complete. After negotiations, the parties agree on a construction price. Some of the remaining design work may include performance specifications, as opposed to detailed specifications, which requires the CM to perform the remaining development. Using this approach the CM At Risk takes on the considerable risk of unforeseeable design development or added work. Disputes often
arise as to the degree of design development, or detailed design work, the CM At Risk has undertaken.

In preparing its bid price, a CM AT Risk invites subcontractors and suppliers to assist, and solicits bids. This allows the CM At Risk to confirm its own independent estimate of the cost of the work and to shift some of the performance risk to the Subcontractors.

I.A.4. Design-Build

Design build refers to a Project Delivery System which a single entity provides the Owner with all services necessary to design and erect the facility. The entity provides the Owner with a single point of responsibility for the work.

The Owner contracts with a single firm to plan, design, construct, and start up the project. The firm may be a joint venture of a Design Professional and a General Contractor, or a General Contractor that hires a Design Professional to prepare the designs. Common pricing mechanisms are cost-plus, lump sum, or guaranteed maximum price (GMP).

Owners like this approach because it gives the Owner a single point for responsibility instead of having the Design Professional and General Contractor point fingers at each other when disputes arise. It also minimizes the Owners risks and obligations for scheduling and coordinating the work. It also allows the Owner to know the cost of the project early, before the design is fully developed. It also (in theory, but not in practice) reduces the Owners risks for claims and cost increases on the project (particularly if it is a GMP or Fixed Price contract).

Often, the Owner provides a performance specification to which the design build team can then prepare the final designs. The design build team is entitled to prepare a final design that meets the performance requirements but has wide latitude, consistent with good industry practice, to select materials and equipment and to define the completed design details. As a result, the Owner has little input into the final design details, unless
it is willing to compensate the design build team for changes in the work. This can be perceived as a potential loss of Owner control over quality and technical matters.

The design build team undertakes a substantial risk but if the project is managed well, it can also result in substantial profit. Since the Design Professional and General Contractor are part of the same team, the construction expertise should enable the final designs to be more efficient in terms of installation costs. Fast tracking and Phased construction are common. In design build, all suppliers and specialty contractors are hired directly by the design build team. The design build team can select the method of subcontracting: unit price, fixed price, etc. The design build team often competitively bids the subcontracts to obtain the lowest overall price for the construction, leaving a greater margin of money left over for the design build team to use as contingency (if needed) or additional profit.

There are many good sources of information for the further study of Design-Build Approach, including:


I.A.5. Partnering

The US Army Corps of Engineers defines Partnering as:

Partnering may be defined as “the development and sustainment of a relationship that promotes achievement of mutually beneficial goals.” The relationship is based on trust, dedication to common goals, and an understanding of each other’s individual need, expectations and values. Expected benefits include improved efficiency and cost effectiveness, increased opportunity for innovation and the
continuous improvement of delivered products and services. Partnering is a voluntary relationship which builds upon the good relationship which exists among the professional participants involved in any engineering or design activity. Partnering is further described in Appendix B, which includes a sample design quality partnering agreement.

APPENDIX B
PARTNERING

1. The Partnering concept seeks a cooperative environment, not a confrontational one. A win/win outcome for all parties is the ultimate goal. Experience has demonstrated that when win/lose strategies are employed by one or more parties to gain advantage, a lose/lose reality results (i.e., quality degradation and/or unreasonable cost and time growth for the Corps and its customers, and unprofitable ventures for private sector A-E firms and construction contractors). Partnering agreements accomplished by Engineering Divisions must be consistent with, and part of, the total project partnering plans of PMP [Project Management Plan].

2. The “partnering model” seeks to identify and communicate the needs, expectations and strengths of all parties (participants). The partnering model recognizes that a synergistic approach to accomplishing the required activity will enhance the opportunity to produce a quality service or product on schedule and within budget, to the mutual satisfaction of all participants. In the cooperative environment of the partnering model, creative solutions to problems can be developed.

3. To be successful, however, partnering must first be a voluntary effort. Second, all participants must be willing to embrace the concept. Third, successful partnering must be focused on the communication of needs, strengths and expectations of each party at appropriately specified milestones during the performance of the required activity. Therefore, a “partnering process” must be mutually developed and followed. Fourth, goals must be established so that the degree of success of the partnering effort can be measured throughout the performance period.

4. A sample “Design Quality Partnering Agreement” is provided for information. This agreement provides a framework for all parties to obtain a quality service on schedule and within budget. It also provides the basis for the development of the follow-up partnering process document.
Partnering agreements are not contractually binding. These agreements do not affect any aspect of the contracts between the Army Corps of Engineers and A-E firms.

Department of Army ER1110-1-12, 1JUNE1993

The basic concept of partnering is simple, and was not intended to create a change in the legal structures or the risks of participants in construction organizations. Partnering is a management philosophy or tool. Major aspects are:

- Improved communication methods
- Escalation of unresolved disputes quickly from project staff to senior management
- Encouraging lateral thinking to overcome problems that arise during construction, without reverting to the contract as a matter of 1st resort
- Use equitable principles over the contract term

The process requires a partnering workshop prior to commencing work. The Contractor and Owner meet for a few days, with a Facilitator. Various issues are discussed, including:

- Goals of Owner and contractor
- Risks which may arise during course of contract
- Dispute resolution without diminishing personal relationships

The intent is to produce a cooperative team, comprised of the Contractor and Owner staff, who together are capable of achieving a better outcome than if the parties were operating on their own under their contract terms.

The elements of partnering that have been found to be difficult is the approach to use equitable principles for resolving disputes instead of relying on the contract terms that are in existence.

Some of the risks and difficulties that have been experienced include:

- Claims that practices presented at the partnering workshop modified the contract terms
• Strict legal/contract rights were not enforceable because Owner didn’t enforce them during an earlier dispute (Owner is estopped)
• Misrepresentations were being made at partnering workshops
• Management acceptance of the process may not be consistently applied throughout the project

An excellent source for further study of Partnering is:
• www.abanet.org/forums/construction/publications

I.A.6. Integrated Process Team (IPT)

In 1996, the US Department of Defense (DoD) implemented sweeping changes in its process and practices for defense acquisitions. The DoD implemented a disciplined management approach, part of which is institutionalizing Integrated Product and Process Development (IPPD) and the Integrated Process Teams (IPT). The DoD utilizes a systems engineering approach to its acquisition strategy, which can be very effective for large complex multi-year projects, whether it is a product or a facility.

The US Department of Energy (DoE) has also applied IPPD and IPT principles on some of its large complex construction projects.

IPPD is a systems engineering management technique that simultaneously integrates all essential activities using multidisciplinary teams to optimize design, production/construction, and supportability processes. IPPD facilitates achieving cost and performance objectives from conception through production and field support, using IPTs.

The IPT process itself is not a Project Delivery System, but it is a collaborative approach that can be utilized within many project delivery approaches.
Benefit of Integrated Product and Process Development (IPPD) Approach

Source: DoD Guide to Integrated Process Development

Figure 6
Construction Management/Design-Build
Lorman Seminar 2005
Figure 6 illustrates the DoD benefits experienced with the collaborative IPPD approach. Without IPPD past experience shows that the largest number of design changes was after the Design Phase and during the production/construction Phase. Of course, the cost of making design changes in the production/construction Phases was much higher than making the same changes earlier in the Design Phase. The overall impact to DoD procurement and capital facilities projects were delays and cost overruns. By having all interested entities become part of the decision-making process during the Design Phase, the overall design was improved and less susceptible to design changes later. In addition, because each entity was part of the design decision-making process, each entity also had joint ownership and responsibility for the choices it made in the Design Phase. IPPD has been shown to have reduced the number of design changes needed in the production/construction Phase of large complex DoD projects.

Purpose of IPTs

IPTs are designed to assist the Owner’s Project Manager by engaging all interested entities early, and continuously, and by identifying and resolving issues early. The mission of the IPT staff is to ensure the project’s success.

The purpose of IPTs is to facilitate decision making recommendations based on timely input from the entire team; acting in a spirit of teamwork with participants empowered and authorized, maximally, to make commitments for its parent organizations. IPTs are composed of representatives from all appropriate functional disciplines working together to build successful program and enabling decision makers to make the right decisions at the right time.

IPTs operate under the following broad principles:

1. Open discussion, no secrets
2. Qualified, empowered team members
3. Consistent, success oriented proactive participation
4. Continuous up the line communication
5. Reasoned disagreement
6. Raise issues and resolve early
IPTs for a construction project should include representatives from all the following:

- Design Professionals & Consultants
- Owner’s Operations & Maintenance Staff
- Construction Manager
- Major Equipment Suppliers
- Other Interested & Relevant Stakeholders

For each project there is typically an Overarching IPT (OIPT) and at least one Working IPT (WIPT). WIPTs focus on a particular topic, such as the mechanical designs or electrical designs. An Integrating IPT (IIPT) coordinates WIPT efforts and reports to the OIPT, as well as covers all topics not assigned by a WIPT.

The IIPT is typically led by the Owner’s Project Manager and supports the development of strategies for acquisition (including project delivery approach), cost, alternatives, logistics, cost-performance trades, etc. The IIPT assists the Owner’s PM in developing the WIPT structure, which is proposed to the OIPT. There are three basic tenants to WIPT:

1. Owner’s PM is in charge
2. IPTs are advisory to the Owner
3. Direct communication among all levels is expected for building trust and for exchanging information

Leaders of WIPTs are designees of the Owner’s Project Manager. WIPTs have the following roles and responsibilities:

1. Assist Owner’s PM in developing strategies and program planning
2. Establish IPT plan of action and milestones
3. Propose tailored document and milestone requirements
4. Review, provide early input to documents
5. Coordinate WIPT activities with the OIPT
6. Resolve or elevate unresolved issues early
7. Assume responsibility to obtain principal concurrence
The OIPT is formed at the beginning when a new project is initiated. The OIPT provides assistance, oversight and review of the program throughout its life cycle. The OIPT will consider the recommendations and proposals of the IIPT, determine the extent of WIPT support needed, WIPT participants, appropriate milestones, and the minimum information needed for program initiation review. It shall meet as necessary over the life of the program.

The goal of the overall structure is to resolve as many issues and concerns at the lowest level possible, and to expeditiously escalate issues needing higher level resolution, thereby bringing only the highest level issues to the Owner’s PM for action.

For additional information concerning the DoD IPT approaches:


I.A.7. Alliance Contracting

The Alliance Contracting concept is simple: create one entity to manage the project, using a select group of the best available people from the participating entities, all charged with the responsibility for successful completion, with the participating entities sharing equitably in the risks and rewards. It is a project delivery method that aligns the interests of the owner and contractor to build the project collaboratively.
Alliance contracting is a viable alternative to the more traditional contracting arrangements which are perceived by many as adversarial. The Alliance team collaborates with the Owner from inception. The Alliance develops a reasonably accurate estimate of the target cost and completion date, as well as the overall project schedule, quality level, etc. The collaborative process, much like the IPT processes previously discussed, eliminates the constant tension of interests typically found in the traditional design-bid-build construction.

The process encourages the project participants, and their parent entities, to accept the project risks and together develop a strategy for addressing risks as they arise, so the Alliance and the participant entities achieve a “win-win” solution and better financial results.

Project alliance is a business relationship built on the following principles:

- Primary emphasis on the business outcome from all parties (win-win)
- Clear understanding of the individual and collective responsibilities and accountabilities
- Equitable balance of risk and reward for all parties
- Encourage openness and co-operation between the parties
- Encourage developing and applying innovative approaches and achieve continuous improvement
- Access to and contribution by the expertise and skills of the parties

On many overseas projects, particularly in Australia, Alliance Contracting, or “co-operative contracting,” is becoming fashionable. Australia has had several $5M to $500M (Aust) Alliance projects. Its early use has been traced back to the early 1990’s with British Petroleum Company Plc on projects involving the North Sea oil and gas platforms.

A key characteristic of the participating companies that are selected is not cost, as in a traditional design-bid-build approach, but its experience in collaborative processes, its technical qualifications, and attitudes with respect to resolving issues without the need for assessing blame.
One key incentive in the more traditional project delivery models is to avoid liability, by asserting blame on another party in order to not incur added costs, or to obtain compensation from others. This incentive is removed in Alliance Contracting. Finding blame when potential cost or schedule issues arise is contrary to the fundamental concept of Alliance Contracting which promotes a “no blame” project culture and adopts financial incentives to achieve designated project goals, based on pre-established project target costs which all parties agree upon.

The incentive for the participating parent entities, including the trade contractor(s), is to maximize its profit, which is at risk only when the project is at risk. All parties share in losses as well as in savings.

Some of the principal features of Alliance Contracting are:

- Performance obligations are collective, and all parties agree to share all risks and rewards.
- Payments are structured so each participating entity is paid 100% of their project overheads, a fixed fee to cover overhead and profit, and equitably share the overall profit or loss (based on total actual project cost compared to the budget).
- A Project Alliance Board monitors and controls the project, and makes strategic project decisions. The Board includes senior representatives from all participating entities. This is an oversight, policy-making and decision-making entity, responsible for the overall project execution within budget, schedule, and quality. Each Board representative gets own vote in decision-making and all Board decisions must be unanimous (thus the Design Professional representative and Contractor representative together cannot overrule the Owner representative.) The Board meets monthly.
- An Alliance Project Manager is selected by the Project Alliance Board and is empowered by, and reports to, the Board to lead a Project Management Team (or Project Alliance Team) to implement the Alliance Project.
• A Project Alliance Team implements daily management functions, with the best persons from any of the participating parent entities delegated for a particular task and function.

The Alliance Agreement typically includes an Alliance Charter which establishes the fundamental principals and obligations to be followed in the Alliance relationship and project. Some of the terms of the Alliance Agreement typically include:

• A “no dispute or litigation” clause with recourse to courts prohibited.
• General conditions establishing commercial arrangement between all participants with mutually established bonus and penalty stipulations, and which is typically shorter than the traditional EPC contract agreement.
• An open book contracting approach is used, with overhead allowances and profit margins for each participating parent entity approved in advance.
• Intensive relationship management processes to encourage innovation, to support parties having difficulty during implementation, and to encourage a rewarding project outcome.
• The Owner can terminate the Alliance or the relationship with a participant, for convenience, but not for default. A contractor does not have the right to terminate its participation.
• Dispute resolution provisions that quickly recognize conflict and prevents escalation, and which resolves issues as they arise. A neutral third party is available to manage the resolution process in real time.
• Establishing an integrated development and implementation team, using the best available resources of each of the participants to fill each position. The Alliance team is distinct from the parent organizations, located in its own office with its own identity, etc.

In order for a Project Alliance to work, there must be a real commitment by the highest level of each participating parent entity, as well as by the individuals assigned to the Alliance Project Team. All participants need to recognize they are part of one team, and
not individual profit centers, as the financial outcome of its parent’s success is dependent on the overall project success. Each participant, parent entities and individuals, most foster a single project, single team culture.

Selection of the participating staff in terms of technical skills, as well as character, is very important. All parties involved must conduct themselves with the appropriate respect for others and place the interest of the project before the interest of the individual parent entity. All must agree on the overarching obligation to act in good faith towards each other.

There must also be a clearly identifiable mechanism for developing an equitable risk and reward arrangement so the incentive/disincentive structure for the parent entities is attractive.

- A more detailed description of Alliance Contracting is available for downloading. “Introduction to Project Alliancing (on engineering & construction projects),” April 2003 Update, Jim Ross, Project Control International Pty. Ltd., Brisbane, Australia. This document can be found at: www.pci.d2g.com and click on Papers & Publications.

I.A.8. Understanding Risk Allocation of Project Delivery Systems

I.A.8.a. Identifying, Understanding & Managing Risks

In order to match the Project Delivery approach that is suitable for the project and the Owner, you need to understand the Owner requirements, discussed in the next chapter, and understand the risks as allocated between the parties in the various Project Delivery approaches.

Sections II and III of this course discuss the risks and responsibilities of the Owner and Contractor under the AIA, AGC, and CMAA standard forms of contracts for CM as Agent and CM at Risk, respectively. Section IV describes the risks and responsibilities of the Owner and Contractor for the Design-Build approach, using the AIA, AGC, CMAA, and DBIA standard forms of contract. The intent of these sections is to present
the contract risks and responsibilities of the prime project participants, and to highlight key differences in those risks and responsibilities among those form documents.

Various studies and articles have been prepared over the last 20 years which list inherent engineering and construction risks and discuss how to manage those risks. While the identification and analysis of risks is a large area of study, and beyond the scope of this seminar program, it is a vital characteristic in the selection of the appropriate Project Delivery approach. We encourage the participants to continue the study of risk to enhance their understanding of Project Delivery Systems. In order to assist the reader, for this seminar, we provide some comments on this issue below.

Every construction project has inherent risks. Every inherent risk has associated unavoidable pending cost. As each project is unique in location, physical features, etc., the inherent risks are also different. Couple the inherent risks of any particular project with the uniqueness of the Project Delivery approach that is applied, along with the various corporations and individuals assigned to the project, and the result is a complex collection of potential risks, which is impractical to completely foresee, model and analyze. However, a systematic review of the foreseeable risks should be performed in order to develop an approach to manage those risks which may have large potential cost or time impacts.

Construction project risk identification is based upon the known losses and failures that occur with known frequency in the industry. While there are numerous methodologies for risk avoidance, a simple technique is the preparation of a risk matrix, listing all known project risks, the probability of their occurrence, the minimum and maximum outcomes, the expected values of those outcomes (frequency x severity), the availability and cost of insurance for the risk duration, reasonable mitigation steps, and the party most likely to be able to prevent, absorb or insure the adverse result, if it occurs.

Once the key risks are identified, a plan should be developed to address the risk. In general, risks should belong to the parties who are best able to evaluate, control, bear the cost, and benefit from assuming the risk.
There are four alternatives to managing risks:

- **Avoidance**: This is a proactive mechanism, typically employed during project execution when a potential risk appears to be forming.

- **Transfer**: This is typically a proactive mechanism, typically affected by developing contract language which shifts the risk to another party, including an insurer.

- **Retain/Assume**: This can be reactive or proactive. During contract development, one party may assume the risk by accepting the contract terms which assigns the risk to it. During contract execution, when a risk comes to fruition, a party may decide to accept and keep the risk, and its resultant cost or delay, instead of attempting to mitigate the risk.

- **Mitigate**: This is a reactive mechanism, in response to a risk actually coming to fruition and impacting the cost or schedule.

After an overall and in-depth evaluation of the project, and the Owner temperament for risk tolerance, a risk management plan can be developed and implemented. Part of the plan should be discussed with the Owner’s legal representative to assist in contract drafting for transferring some of risks to other parties, where appropriate. Another possible element of the plan is a dispute resolution mechanism built into the contract documents. A third possible element is to establish the appropriate internal procedures for managing some of the risks.

I.A.8.b. **Categories of Issues and Areas of Risk**

The following are the major categories of risk issues that should be considered in an analysis of any project.

In general the term “risk” relates to the issue of uncertainty. One appropriate definition, which is a common perception within the construction industry, is:
Risk: exposure to possible economic loss or gain arising from involvement in the construction process.  

Risk can also be considered the potential for being liable for damages. Such risks arise from the undertaking upon which a party obligates itself to perform. In general the obligations and duties of an entity can arise by:

- Contract express terms and implied duties
- Statutes, regulations, ordinances
- Special relationship between the parties recognized by law
- The character and actions of a party

An early US Army Corps of Engineers document, CERL-TR-P-101 (1979), lists 17 key areas of risks in construction projects, each of which have many subparts. This list of key areas is still appropriate today as a starting point to analysis project risks from the perspective of any participant in the construction process.

A. Management Related Risks
B. Owner Related Risks
C. Design Related Risks
D. Contractor Related Risks
E. Innovation/Standardization/Obsolescence
F. Specifications/Contract Terms
G. Changes
H. Delays
I. Outside Controls
J. General Economic Factors
K. Site Conditions

The issue of CM as Agent liability for safety presents a significant area of risk. This issue is complex, depends on the jurisdiction of the project, and even within some jurisdiction the outcomes are fact sensitive. In recent years, Design Professionals and Construction Managers as Agents have been found liable for construction site safety accidents as well as OSHA violations. For example:

- A CM as Agent was ruled subject to OSHA Construction standards and therefore required to maintain safe working conditions at the site, even though it was not the general contractor responsible for safety (Secy. v. Kulka Construction Management Corp, OSHC Docket No. 88-1167)
- A Design Professional may owe a duty when the professional has actual knowledge, as result of site observations, of a dangerous condition to jobsite workers, even in the absence of a contractual obligation for safety. (Carvahlo v. Toll Brothers & Developers, 278 N.J. Super. 451, 1995)
- While CM’s do not perform construction work, they have considerable authority and influence over the performance of work and safety measures implemented by contractors, thus are deemed to be engaged in construction work under OSHA Construction rules. (Bechtel Power Corp., 548 F.2d. 248 (8th Cir. 1977))
- In CH2M Hill Central, Inc. (192 F.3d 711(7th Cir. 1999)) the Court held that professionals are not exempt from OSHA Construction standards, but to be subject to the OSHA standards the professional firm must have exercised “substantial supervision over actual construction.”

The issue of CM safety liability is beyond the subject of this course, but we urge the reader to investigate the issue carefully and fully. There are various materials and
I.A.8.c. Risk Allocation in Selected Project Delivery Approaches

A comprehensive analysis and comparison of the risks to each party in a construction project is appropriate when the specific contract documents and project specific details are known. However, making some assumptions and using the typical models and concepts of the Traditional Approach, CM as Agent, CM at Risk, and Design-Build arrangements, we have prepared a simple comparison of the risk profile for cost and schedule overruns, design risk, and quality risk.

I.A.8.c.1. Traditional Approach
The Design Professional and its insurer hold the primary risk for design issues. Even with insurance coverage, the Owner is at risk for the ultimate cost as insurers are reluctant to pay until errors and omissions are substantially proven. The Owner carries the cost until it can be reimbursed (and likely for only a portion of the losses.) Also, Design Professional entities typically do not have significant balance sheets to absorb losses outside the policy coverage limits.

A number of factors influence the risk profile for cost overruns, including the contract terms and the pricing mechanism (lump sum, unit price, GMP, etc.) Traditional contracts indicate the Owner will be responsible for force majeure events, and Owner caused delays. Contractor caused delays, or where risks lie with the Contractor under the contract terms, will be the contractor’s responsibility. If the cause of the cost and schedule overruns can be determined and proven, the party causing the problem is responsible for the costs and can be made to pay for the damages.

Often when problems arise, the risk of cost overruns and delays will be carried by the Owner until the responsible party can be determined and proven. Frequently, the Design Professional and Contractor deny responsibility and blame the other party as being responsible. Recovery of the added costs incurred by the Owner to complete the work, particularly if disruption and/or acceleration costs are incurred, may be time consuming and the Owner may be left with some, or all, of the added costs.

The risk of construction completion and quality lies with the Contractor who is responsible for constructing in accordance with the contract documents and failure to do so will result in a breach of contract. The Contractor typically shifts some of this risk to its subcontractors. Likewise, failure to comply with competent trade practices could also result in a breach for non-performance.

If performance bonds are not available and the Contractor defaults, the Owner is at risk. Contractors’ defective work must be corrected and if it is not corrected, the costs for remediation will be incurred by the Owner until it can be compensated.

I.A.8.c.2. Design-Build
Since the Design-Build Contractor is responsible for both design and construction, the Owner only looks to the Design-Build Contractor for cost and schedule impacts, as well as completion and quality issues. The Design-Build Contractor holds most of the risks, unless the Owner has acted to cause the issue at risk. The design-build contract arrangement avoids having the Owner become the risk holder for any Design Professional vs. Contractor blame issues. However, the Owner may be responsible for the design risk related to its performance specifications or conceptual design (if authored by the Owner).

I.A.8.c.3. Construction Management As Agent

In the Construction Management as Agent approach, the Owner engages a Contractor, a Design Professional and the Construction Manager. The Construction Manager, as the agent for the Owner, performs the Owner’s obligations for implementing the work, while the Owner retains overall responsibility and the duties. The Construction Manager typically is only at risk for performing its obligations in a professional manner in accordance with the industry standard of care. Thus, the responsibility for cost and schedule risk, construction completion and quality, and for design risk is similar to the Traditional Approach risk profile.

However, in the Construction Management as Agent approach, the skills and techniques of the Construction Management team are directly focused on proactively managing the inherent construction and contract risks, thereby affording the Owner with an improved likelihood that such risks either will not develop, or if they do develop, the Construction Management team will be able to mitigate the issues to the extent possible. Accordingly, the potential for risks held by the Owner are diminished.

I.A.8.c.4. Construction Management At Risk

In the Construction Management at Risk approach, like the Construction Management as Agent, the Owner engages the individual entities to perform design and CM services. However, the Owner does not hire a General Contractor, but engages the CM to perform the construction services after the CM has had the opportunity to assist the Design Professional to establish the design and project budget and schedule. In this manner, the
Owner is receiving a lump sum or guaranteed maximum price from the Construction Manager at Risk for performing the work, which is based on detailed knowledge of the work requirements.

The Construction Manager at Risk has the risk for construction completion and quality, as well as cost and schedule risk in a manner similar to that of the traditional General Contractor. The Design Professional has the design risk, however portions of the final design may be “design-build” or by “performance specification” leaving the details to the Construction Manager at Risk to perform. This presents a design risk to the CM, as well as the Owner, as disputes often arise over these elements of the work.

Even though, the Construction Manager at Risk has the primary risk for cost and schedule overruns, experience proves that the Owner may incur additional costs arising from changes or design problems. However, on a conceptual basis, having the CM At Risk involved in the design process and being familiar with the project for an extended period of time before it offers the GMP improves the Owner’s risk profile for cost and schedule overruns.

I. B. Factors To Consider In Selecting A Project Delivery System

The most important factors to consider in selecting a Project Delivery Approach are:

- Understand the objectives and needs of the Owner and the Project
- Understand the tolerance for risk of the Owner
- Understand the various approaches, their risk profiles, their benefits and disadvantages
- Discuss all of the above with the Client

Several basic questions must be asked by the project team early in the process. During the early planning stages, the essential Project goals and objectives must be identified and prioritized. The following is a short list of issues and concerns to address with the Owner in order to assist them in determining the appropriate Project Delivery System:
• Does the Owner require adherence to schedule, required for revenue generation?
• Does the Owner require adherence to construction quality?
• Does the Owner require specific input to design details, equipment selection, etc so the end product exactly matches expectations?
• Is the physical project a close copy of completed projects by the Owner such that risks are minimized due to having experienced contractors, subcontractors, and Owner staff available?
• Is the project a new and unique undertaking to the Owner?
• Is the project a physically complex structure, or complex in coordinating trade disciplines?
• Does the Owner have cash flow, annual funding limitations, or other budget restrictions? How firm is the budget ceiling, including contingency?
• Does the Owner have sufficient skilled staff for design and construction administration and oversight?
• What is the anticipated Owner participation?
• Does the Owner require control and involvement during design/construction to satisfy parent organizations or stakeholders?
• Does the Owner have other internal (to Owner organization) requirements where certain project delivery methods provide advantages or disadvantages?
• Does the Owner have concerns and lessons learned from past experiences which are influencing their decision on project approach and delivery methods?
• Is the Owner organization committed to, or capable of, making key decisions timely during the design and construction process?
• Does the Owner have need for a single point of experienced leadership over the entire process?
• Is the Owner Subject to laws/regulations/grantee requirements which selects or limits the available approaches?
• Is the project complex and/or require close coordination between the design and construction staff?
• Does the Owner know, at the beginning of the process, exactly what it wants and can identify the salient design and performance features that are important to it?
• Time for delivery and commencement of revenue service
• Need for phasing operation and construction of existing or adjacent facility operations
• Local and regional politics
• Labor sources and issues
• Are dramatic design and architectural elements required?
• Innovative or proven technology being used?
• One of a kind facility or common constructed designs?
• What are the Owner staff skill sets and experience compared to its desired involvement?
• What is the level of quality and tolerances desired or required, as compared to industry practices?
• Identify any funding limitations or cash flow constraints
• What are the Owner’s insurance requirements, coverage availability and other insurance issues?
• Bonding availability?

The nature of the risks compared to the Owner’s objectives should drive the organizational structure employed by the Owner for any given project.

We often hear Owner clients complain that it relied upon the project delivery approach recommended by one of the participants, typically the Design Professional, but did not understand there were many variations. It is still a common misperception that a Construction Manager, whether At Risk or As Agent, is supposed to act on the Owner’s behalf and with the Owner’s interests foremost. A very important lesson learned is to discuss all the available and appropriate approaches with the Owner.

I. C. **CM and Design-Build**

**Licensing Issues**
I.C.1. **Construction Management**

In most states, Construction Management As Agent services are considered professional services, while Construction Management At Risk services are considered construction work similar to that of a General Contractor. Thus an entity looking to perform CM work should review the applicable state statutes and regulations for professional and trade licensing.

Firms bidding as CM At Risk, with or without performing CM Agency services earlier, should investigate the laws and regulations regarding Contractor license requirements. If necessary, these should be discussed with your legal representatives.

The California Professional Engineers Act (Business and Professions Code, Chapter 7, Professional Engineers) provides the following requirements:

<table>
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<tr>
<th>6701. Professional engineer defined</th>
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<tr>
<td>“Professional engineer,” within the meaning and intent of this act, refers to a person engaged in the professional practice of rendering service or creative work requiring education, training and experience in engineering sciences and the application of special knowledge of the mathematical, physical and engineering sciences in such a professional or creative work as consultation, investigation, evaluation, planning, or design of public or private utilities, structures, machines, processes, circuits, buildings, equipment or projects, <strong>and supervision of construction for the purpose of securing compliance with specifications and design for any such work.</strong> <em>(emphasis added)</em></td>
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<tr>
<th>6703.1 Supervision of construction defined</th>
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<tbody>
<tr>
<td>“Supervision of the construction of engineering structures,” means the periodic observation of materials and completed work to determine general compliance with plans, specifications, and design and planning concepts. However, “supervision of construction of engineering structures” does not include responsibility for the superintendence of construction processes, site conditions,</td>
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</table>
operations, equipment, personnel, or the maintenance of a safe place to work or any safety in, on or about this site.

For the purposes of this subdivision, “periodic observation” means visits by an engineer, or his or her agent, to the site of a work of improvement.

Under the California Engineer’s Act, supervision of construction of engineering structures is the practice of professional engineering. The Professional Engineers Act further identifies the type of engineer that “may” provide professional construction supervision services:

6702. Civil engineer defined
“Civil engineer” as used in this chapter means a professional engineer in the branch of civil engineering and refers to one who practices or offers to practice civil engineering in any of its Phases.

6734. Practice of civil engineering
Any person practices civil engineering when he professes to be a civil engineer or is in responsible charge of civil engineering work.

6731. Civil engineering defined
Civil engineering embraces the following studies or activities in connection with fixed works for irrigation, drainage, waterpower, water supply, flood control, inland waterways, harbors, municipal improvements, railroads, highways, tunnels, airports and airways, purification of water, sewerage, refuse disposal, foundations, grading, framed and homogeneous structures, buildings, or bridges:

(a) The economics of, the use and design of, materials of construction and the determination of their physical qualities.

(b) The supervision of the construction of engineering structures.

(c) The investigation of the laws, phenomena and forces of nature.

(d) Appraisals or valuations.
(e) The preparation or submission of designs, plans and specifications and engineering reports.

(f) Coordination of the work of professional, technical, or special consultants.

(g) Creation, preparation, or modification of electronic or computerized data in the performance of the activities described in subdivisions (a) through (f).

Civil engineering also includes city and regional planning insofar as any of the above features are concerned therein. *(emphasis added)*

**6731.3 Construction project management services**

A registered civil engineer may also practice or offer to practice, either in a public or private capacity, construction project management services, including, but not limited to, construction project design review and evaluation, construction mobilization and supervision, bid evaluation, project scheduling, cost-benefit analysis, claims review and negotiation, and general management and administration of a construction project. *(emphasis added)*

**6731.4 Responsibility for construction management services**

If a registered civil engineer provides construction management services pursuant to Section 6731.3, Section 6703.1 shall not limit the responsibility of the engineer for the service actually provided.

The Engineer’s Act indicates that for “fixed works,” the practice of Construction Management Services, either in a public or private capacity, is part of the practice of “Civil Engineering.” The services identified in §6731.3 are some of the services typically performed by a CM As Agent. The Act is not clear on whether other professional engineering disciplines are excluded from being in responsible charge for providing CM As Agent services for projects not involving fixed works: it says a Civil Engineer “may also” practice Construction Management. The California Government Code, discussed later, indicates licensed General Contractors are able to perform Construction Management.
As for the architect providing CM As Agent services, the California Business & Professions Code, Chapter 3, Architecture provides:

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<td>(a) The practice of architecture within the meaning and intent of this chapter is defined as offering or performing, or being in responsible control of, professional services which require the skills of an architect in the planning of sites, and the design, in whole or in part, of buildings, or groups of buildings and structures.</td>
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<td>(b) Architects' professional services may include any or all of the following:</td>
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<td>(1) Investigation, evaluation, consultation, and advice.</td>
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<tr>
<td>(2) Planning, schematic and preliminary studies, designs, working drawings, and specifications.</td>
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<tr>
<td>(3) Coordination of the work of technical and special consultants.</td>
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<tr>
<td>(4) Compliance with generally applicable codes and regulations, and assistance in the governmental review process.</td>
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<tr>
<td>(5) <strong>Technical assistance in the preparation of bid documents and agreements between clients and contractors.</strong></td>
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<td>(6) <strong>Contract administration.</strong></td>
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<td>(7) <strong>Construction observation.</strong></td>
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<td>(c) As a condition for licensure, architects shall demonstrate a basic level of competence in the professional services listed in subdivision (b) in examinations administered under this chapter. <em>(emphasis added)</em></td>
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Thus, Architects may perform the enumerated CM As Agent services during the Construction Phase.

On California public projects, additional laws apply to the selection and qualifications of the Construction Manager.
Chapter 10 of the California Government Code, Contracts with Private Architects, Engineering, Land Surveying, and Construction Project Management Firms

4525. For purposes of this chapter, the following terms have the following meaning:

(a) "Firm" means any individual, firm, partnership, corporation, association, or other legal entity permitted by law to practice the profession of architecture, landscape architecture, engineering, environmental services, land surveying, or construction project management.

(e) "Construction project management" means those services provided by a licensed architect, registered engineer, or licensed general contractor which meet the requirements of Section 4529.5 for management and supervision of work performed on state construction projects. (emphasis added)

4526. Notwithstanding any other provision of law, selection by a state or local agency head for professional services of private architectural, landscape architectural, engineering, environmental, land surveying, or construction project management firms shall be on the basis of demonstrated competence and on the professional qualifications necessary for the satisfactory performance of the services required. In order to implement this method of selection, state agency heads contracting for private architectural, landscape architectural, professional engineering, environmental, land surveying, and construction project management services shall adopt by regulation, and local agency heads contracting for private architectural, landscape architectural, professional engineering, environmental, land surveying, and construction project management services may adopt by ordinance, procedures that assure that these services are engaged on the basis of demonstrated competence and qualifications for the types of services to be performed and at fair and reasonable prices to the public agencies. (emphasis added)
4529. This chapter shall not apply where the state or local agency head determines that the services needed are more of a technical nature and involve little professional judgment and that requiring bids would be in the public interest.

4529.5. Any individual or firm proposing to provide construction project management services pursuant to this chapter shall provide evidence that the individual or firm and its personnel carrying out onsite responsibilities have expertise and experience in construction project design review and evaluation, construction mobilization and supervision, bid evaluation, project scheduling, cost-benefit analysis, claims review and negotiation, and general management and administration of a construction project. (emphasis added)

Thus for public projects, the State allows licensed experienced and qualified architects, engineers and general contractors to perform CM services. The next section of this manual discusses the requirements of the licensed general contractor in the Design-Build approach.

I.C.2. Design-Build Contractor

Under California laws only those entities holding a valid contractor’s license can perform construction and this would apply to the Design-Build Contractor.

California Business and Professions Code, Chapter 9, Contractors, presents the licensing laws for contractors.

7026. "Contractor," for the purposes of this chapter, is synonymous with "builder" and, within the meaning of this chapter, a contractor is any person who undertakes to or offers to undertake to, or purports to have the capacity to undertake to, or submits a bid to, or does himself or herself or by or through others, construct, alter, repair, add to, subtract from, improve, move, wreck or demolish any building, highway, road, parking facility, railroad, excavation or other structure, project, development or improvement, or to do any part thereof, including the erection of
scaffolding or other structures or works in connection therewith, or the cleaning of grounds or structures in connection therewith, or the preparation and removal of roadway construction zones, lane closures, flagging, or traffic diversions, or the installation, repair, maintenance, or calibration of monitoring equipment for underground storage tanks, and whether or not the performance of work herein described involves the addition to, or fabrication into, any structure, project, development or improvement herein described of any material or article of merchandise. "Contractor" includes subcontractor and specialty contractor. "Roadway" includes, but is not limited to, public or city streets, highways, or any public conveyance. (emphasis added)

7026.1. The term "contractor" includes:
(b) Any person, consultant to an owner-builder, firm, association, organization, partnership, business trust, corporation, or company, who or which undertakes, offers to undertake, purports to have the capacity to undertake, or submits a bid, to construct any building or home improvement project, or part thereof. (emphasis added)

7055. For the purpose of classification, the contracting business includes any or all of the following branches:
(a) General engineering contracting.
(b) General building contracting.
(c) Specialty contracting.

7056. A general engineering contractor is a contractor whose principal contracting business is in connection with fixed works requiring specialized engineering knowledge and skill, including the following divisions or subjects: irrigation, drainage, water power, water supply, flood control, inland waterways, harbors, docks and wharves, shipyards and ports, dams and hydroelectric projects, levees, river control and reclamation works, railways, highways, streets and roads, tunnels, airports and airways, sewers and sewage disposal plants and systems, waste reduction plants, bridges, overpasses, underpasses and other similar works, pipelines and other systems for the transmission of petroleum and other liquid or gaseous substances, parks, playgrounds and other recreational works, refineries, chemical plants and similar industrial plants requiring specialized engineering knowledge and skill, powerhouses, power plants and other utility plants and installations, mines and metallurgical plants, land leveling and earthmoving projects, excavating, grading, trenching, paving and surfacing work and cement and concrete works in connection with the above mentioned fixed works. (emphasis added)

7057.
(a) Except as provided in this section, a general building contractor is a contractor whose principal contracting business is in connection with any
structure built, being built, or to be built, for the support, shelter, and enclosure of persons, animals, chattels, or movable property of any kind, requiring in its construction the use of at least two unrelated building trades or crafts, or to do or superintend the whole or any part thereof… (emphasis added)

(b) A general building contractor may take a prime contract or a subcontract for a framing or carpentry project. However, a general building contractor shall not take a prime contract for any project involving trades other than framing or carpentry unless the prime contract requires at least two unrelated building trades or crafts other than framing or carpentry, or unless the general building contractor holds the appropriate license classification or subcontracts with an appropriately licensed contractor to perform the work. A general building contractor shall not take a subcontract involving trades other than framing or carpentry, unless the subcontract requires at least two unrelated trades or crafts other than framing or carpentry, or unless the general building contractor holds the appropriate license classification. The general building contractor may not count framing or carpentry in calculating the two unrelated trades necessary in order for the general building contractor to be able to take a prime contract or subcontract for a project involving other trades….

7051. This chapter does not apply to a licensed architect or a registered civil or professional engineer acting solely in his or her professional capacity or to a licensed structural pest control operator acting within the scope of his or her license or a licensee operating within the scope of the Geologist and Geophysicist Act.

Section V of this seminar will discuss the internal organizational requirements and arrangements of the Design-Builder.

Thus the California Design-Builder must be a licensed contractor who internally hires design professionals or subcontracts design services to licensed design professionals.

I.D. Ethical Responsibilities

I.D.1. Construction Management Association of America (CMAA) – Code of Ethics

The CMAA has taken a leadership role in regard to critical issues impacting the CM industry, including the setting of ethical standards of practice for the Professional
Construction Manager. The Board of Directors of CMAA have adopted the following Code of Professional Ethics of the CM and recommend that it be accepted and supported by the CM industry.

As a professional engaged in the business of providing construction management services, and as a member of the CM profession, the Construction Manager (CM) agrees to conduct himself in his business in accordance with the following:

1. **Client Service.** The CM will serve his clients with honesty, integrity, competence, and objectivity, establishing a relationship of trust and confidence and furnishing his best skills and judgment consistent with the interests of his client.

2. **Representation of Qualifications.** The CM will only accept assignments for which he is qualified by education, training, professional experience and technical competence, and will assign staff to projects in accordance with their qualifications and commensurate with the services to be provided.

3. **Standards of Practice.** The CM will furnish services in a manner consistent with the established and accepted standards of the profession and with the laws and regulations which govern its practice.

4. **Fair Competition.** The CM will build his professional reputation on the basis of his direct experience and service provided, and will compete fairly and respectfully with his professional colleagues.

5. **Conflicts of Interest.** The CM will seek to avoid any and all conflicts of interest and will immediately acknowledge any influences and offer to withdraw from any assignment when any actual conflict exists which may impair his objectivity or integrity in the service of his clients.

6. **Fair Compensation.** The CM will negotiate fairly and openly with his clients in establishing a basis for compensation, and will charge fees and
expenses that are reasonable and commensurate with the services to be provided and the responsibilities and risks to be assumed.

7. **Release of Information.** The CM will release public statements that are truthful and objective, and will keep information and records confidential when appropriate and protect the proprietary interests of his client and professional colleagues.

8. **Public Welfare.** The CM will not participate in any racial, sexual or political discrimination related to any assignment he may undertake. The CM will avoid any conduct that would be considered unethical or will interfere or conflict with any laws, statutes or regulations, and will uphold the safety, health and welfare of the public in the performance of his professional duties.

I.D.2. **Professional Development**

The CMAA encourages CM’s to continue to develop his professional knowledge and competency and to contribute to the advancement of CM practice as a profession.
SECTION II

Construction Management As An Agent
II. Construction Management As Agent

This section of discusses the obligations and risks of the Construction Manager As Agent by reviewing and comparing the standard form agreements for the Owner and Construction Manager.

II. A. Acting in the Owners’ Interest

Agency implies that the Construction Manager (CM) is acting on behalf of the Owner and has been empowered to act for the Owner within the delegated or apparent authority that the Owner conveys to it.

As discussed in Section I, as an Agent of the Owner, the CM has an obligation to place the Owner’s interest foremost, and to act to further the Owner’s interests.

In order for the Owner to make appropriate and timely decisions the CM As Agent must offer the Owner advice and provide the Owner with sufficient, relevant, facts upon which to base its decisions.

The Owner is relying upon the professional expertise and experience of its CM As Agent to act decisively on the Owner’s behalf to minimize risks of delays, cost overruns, or quality problems. Proactively applying the requisite tools, skills and experience of a seasoned Construction Management professional, is the Owner’s expectation.

II. B. CM (Agent) Services & Obligations – Standard Form Agreements

This presentation explores three industry standard sample contracts for CM (Agent) Services and Obligations. These are Construction Management Association of America (CMAA), Associated General Contractors (AGC), and American Institute of Architects (AIA) format documents.

Comments have been included in the referenced articles that identify perceived risk areas that may lead to construction claims and/or disputes. Each of the standard documents contains provisions that address authoring organization’s concerns and the perspective of that authoring organization.
The reader is cautioned that although these reviewed document guides are published as authoritative, reflecting the authoring organization’s view of Construction Management services.

The reasonable and prudent Owner is well advised to use these documents as discussion checklists for development of an overall Project game plan and Owner-participant contracts, where each participant’s duties, responsibilities and interfaces are clearly defined and coordinated to produce the desired positive outcome.

II.B.1. CMAA Owner – CM As Agent Agreement


The document is a guide to Construction Manager as Agent which offers assistance to the Owner in the management of the construction effort. It is written from the perspective of a Professional Construction Manager that is providing only CM for fee services to the Owner. There is limited involvement of the CM with the Design Professional, and the services offered to the Owner are in the role of advisor to the Owner and coordinator between the parties, rather than as a take-charge manager.

The Articles and provisions addressed in the document:

Article 1 Relationship of the Parties

Article 2 Project Definition

Article 3 Basic Services required of the CM, by Phase
Pre-design, Design, Procurement, Construction, and Post Construction in the following areas:
Project Management
Time Management
Cost Management
Management Information System (MIS)

Article 4 Additional Services
Article 5  Duration of the Construction Manager’s Services

Article 6  Changes in the Construction Manager’s Basic Services and Compensation

Article 7  Owner’s Responsibilities

Article 8  Compensation for CM Services and Payment
  Cost Plus Fixed fee
  Lump Sum
  Fixed Billable Rates

Article 9  Insurance and Mutual Indemnity, including Construction Manager’s Liability Insurance, Owner’s Insurance, Notices and Recovery, Waiver of Subrogation, and Indemnity

Article 10  Termination and Suspension

Article 11  Dispute Resolution for unresolved matters first to mediation, then, if settlement is not reached, arbitration, subject to a dollar limit.

Article 12  Additional Provisions

This document presents the services that the Construction Manager shall perform for the Owner as a limited reviewer of the design and procurement process and administrator of the construction process. Specific requirements of the parties and resolution provisions are generally not addressed.


Analysis of the CMAA Format:
The Construction Manager (CM) is defined as the Owner’s reviewer who advises the Owner and Design Professional. The CM duties are to:

- Provide Pre-design, Design, Procurement, Construction and Post Construction in the management of the Project, Time, Cost and Information.
- Provide review comments on Design Documents to the Owner and Design Professional.
- Be a conduit for communication between the Owner, Contractor and Design Professional.
- Update the Master Schedule and review Contractor’s Construction Schedule for compliance.

The Construction Manager’s role as presented by CMAA can best be characterized as an Owner’s consultant. All real decisions are implicitly the Owner’s, and the CM is a construction advisor without direct managerial control.

**Owner Advantages:**
The Owner gains help in performing the administrative tasks of construction management.

The CM can provide expert advice to the Owner so that it can make informed decisions on project issues.

**Owner Disadvantages:**
The Owner must still manage the entire Project, manage the Architect/Engineer, make most Construction Management Decisions, and carry all of the Project risks.

**Designer’s Advantages:**
The CM prepares the Master Schedule, reviews Construction Documents, notifies the Design Professional of Contractor identified differing site conditions, refers document interpretation questions, and expedites processing of Shop Drawings and Submittals.

**Designer’s Disadvantages:**
The Architect/Engineer’s influence on field activities is limited to review. The CM evaluates and may advise as to the completeness of the Architect/Engineer’s work.

**Contractor’s Advantages:**
The CM is a reviewer of Contractor information requests and reviews the Construction Documents for constructability and completeness. The CM reviews and incorporates the Contractor’s schedules into the Project Schedule.

**Contractor’s Disadvantages:**
The CM cannot act on behalf of the Owner unless authorized to do so.

### II.B.2. AGC Owner – CM As Agent Agreement

**AGC Document 510 Standard Form of Construction Management Agreement**

AGC Document 510 Standard Form of Construction Management Agreement Between Owner and Construction Manager (Where the Construction Manager is the Owner’s Agent and the Owner enters into all Trade Contractor Agreements), 1997 Edition.

The AGC510 document is a guide to Construction Manager as Agent which offers assistance to the Owner in the management of the construction effort. It is written from the perspective of a General Contractor that is providing only CM for fee services to the Owner, principally as a coordinator of Trade Contractor activities. There is limited involvement of the CM with the Design Professional, and the service the CM offers to the Owner is of construction advisor rather than take-charge manager.

**The Articles and provisions addressed in the document:**

- **Article 1** Identifies the parties to the Agreement
- **Article 2** Describes the relationship of the parties, definitions and references.
- **Article 3** Describes the Construction Manager’s Services during the preconstruction and Construction Phases, including project schedule, budgets, and administration.
<table>
<thead>
<tr>
<th>Article</th>
<th>Description</th>
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<tbody>
<tr>
<td>4</td>
<td>Describes the Owner’s responsibilities to provide information and services, designate its representative and the Architect/Engineer for the Project.</td>
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<tr>
<td>5</td>
<td>Defines the relationships between the Owner, Construction Manager and the Trade Contractors, and sets forth contract flow-downs to the Trade Contractors.</td>
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<tr>
<td>6</td>
<td>Describes the Construction Manager’s Warranty.</td>
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<tr>
<td>7</td>
<td>Details the Construction Manager’s compensation including initial payment, Pre-Construction Phase services, Construction Phase services, and adjustments.</td>
</tr>
<tr>
<td>8</td>
<td>Define reimbursable cost items.</td>
</tr>
<tr>
<td>9</td>
<td>Provide provisions for payments to the Construction Manager.</td>
</tr>
<tr>
<td>10</td>
<td>The parties respective indemnification and insurance obligations.</td>
</tr>
<tr>
<td>11</td>
<td>Both parties may terminate for cause. The Owner can terminate for cause or suspend for convenience.</td>
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<tr>
<td>12</td>
<td>Describes dispute resolution among the parties, including discussions, mediation and arbitration. Also provides for consolidation of arbitrations, and recovery of costs by the prevailing party for arbitration and litigation.</td>
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<tr>
<td>13</td>
<td>Contains Miscellaneous Provisions including a mutual waiver of consequential damages.</td>
</tr>
</tbody>
</table>

Related documents from AGC are AGC 520 which is the Standard Form of Standard Form of Agreement between Owner and Trade Contractor (Where the Construction Manager is the Owner’s Agent), and AGC 530 which is the Standard Form of Agreement
between Owner and Architect/Engineer (where a Construction Manager Acting as Agent Has Been Retained by the Owner).

**Analysis of the AGC Format:**
The CM is defined as the Owner’s agent, who consults with the Owner and Architect/Engineer. The CM duties are to:

- Prepare and update schedules,
- Prepare budgets
- Provide review comments on Construction Documents to the Owner
- Recommend a schedule of long lead procurements
- Procure Trade Contractors
- Review and process Trade Contractor pay applications
- Review and process Change Orders
- Check compliance with Trade Contractor Agreements
- Expedite processing and approval of shop drawings and samples
- Advise Owner of Substantial and Final Completion

The Construction Manager’s role as defined by AGC, is best characterized as an Owner’s consultant. All major decisions are made by the Owner, and the CM is a construction advisor without managerial control.

**Owner’s Advantages:**
The Owner gains help in performing the administrative tasks of construction management.

The CM can provide expert advice to the Owner so that wise construction decisions can be made.

**Owner’s Disadvantages:**
The Owner must still manage the entire Project, manage the Architect/Engineer, make most Construction Management Decisions, and carry all of the Project risks.

**Designer’s Advantages:**
The CM prepares the Project Schedule and budget, reviews Construction Documents, assesses long lead procurements, refers document interpretation questions, and expedites processing of Shop Drawings and Submittals.

**Designer’s Disadvantages:**
The Architect/Engineer’s influence on field activities is limited to review. The CM evaluates the completeness of the Architect/Engineer’s work and may expedite it. The Architect/Engineer may have to revise the Construction Documents (e.g. design) to match the budget.

**Contractor’s Advantages:**
The CM coordinates the Trade Contractors and reviews the Construction Documents for constructability and completeness. The CM incorporates the Trade Contractor schedules into the Project Schedule. The CM expedites processing of Shop Drawings and Submittals. The CM determines Substantial and Final Completion.

**Contractor’s Disadvantages:**
The CM can require additional inspections and/or testing. Clarifications must go through the CM, adding a layer to the Contractor-Architect/Engineer communication process.

II.B.3. **AIA Owner – CM As Agent Agreement**

**AIA Document A201/CMa, General Conditions of the Contract for Construction (Where the Construction Manager is NOT a Contractor), 1992 Construction Manager-Advisor Edition.**

This specification lists more duties for the other parties (Owner and Contractor), and establishes the Architects’ role as the lead for Project organization. There is little emphasis on what the Architect’s design duties are, or how those duties support the project.

The document is a guide to Construction Manager as Agent which establishes the role of the Architect as the Project leader, with the Construction Manager in a supporting role, for the Project. It is written from the perspective of Design Professional that is providing
CM-for-Fee services to the Owner, in addition to being totally in charge of all design aspects.

There is limited mention of involvement of the CM with the Design Professional, since they are assumed to be the same entity; the services offered to the Owner are in the context of enforcing the Architect’s control over the Project and Contractor(s), and limiting Architect liability rather than functioning as an independent manager on the Project.

Related documents from AIA are A101/CMa, which is the Owner-Contractor Agreement Form-Stipulated Sum-Construction Manager-Advisor Edition; and either B141 which is the Standard Form of Agreement Between Owner and Architect with Standard Form of Architect’s Service, or B151, which is the Abbreviated Standard Form of Agreement Between Owner and Architect.

**Analysis of the AIA Format:**
The Construction Manager (CM) is defined as the Architect’s design implementer in the field who manages the Owner and Contractor interactions. The CM duties are to:

- **Implement the Architect’s** design and design intent in the field.
- **Provide the Owner** with enforcement power over the Contractor in field implementation.
- **Make the Contractor** responsible for design errors, field measurements, field conditions, taxes and permits.
- **Make the Contractor** wait for approvals and be responsible for those Shop Drawings and Samples approvals.
- **Make the Contractor** responsible for royalties and fees.
- **Make the Contractor** responsible for Construction Schedule revisions.
- **Ensure the Architect** has review and approval authority over payments, field work, shop drawings and submittals.
- **Ensure that the Architect’s** intent is complied with.
- **Enforce the Architect’s** role as the claims decision maker.
• Enforce that all parties must agree for a Change Order to be issued.
• Ensure that the Architect alone can make “minor” changes.
• Ensure that the Architect makes time extension determinations.
• Ensure that Final Completion and Payment is when the Architect finds the Work acceptable.

The Construction Manager’s role as defined by AIA is best characterized as the Architect’s field representative. All real decisions are made by the Architect, and the CM is a non-independent design enforcer/implementer.

**Owner Advantages:**
The Owner gains help in performing the administrative tasks of construction management.

The CM can provide design continuity in the field.

**Owner Disadvantages:**
The Owner may still have to manage the entire Project, manage the Architect, be referee between the Architect and the Contractor, manage an increased potential for adversarial claims, and carry all of the Project risks.

**Designer’s Advantages:**
The CM is the Architect’s field agent, enforcing the Architect’s expressed and implied intent. Contractor is responsible for unreported errors and omissions, field measurements and conditions, shop drawings, submittals, taxes, royalties. The Architect can review and can work. The Architect is the deciding authority in disputes. The Architect may order minor changes in the work. Payment Certification is based on Substantial Completion.

**Designer’s Disadvantages:**
The Architect has no significant disadvantages.

**Contractor’s Advantages:**
The Contractor has no significant advantages.
**Contractor’s Disadvantages:**
The CM is the Architect’s field agent, enforcing the Architect’s expressed and implied intent. Contractor is responsible for unreported errors and omissions, field measurements and conditions, shop drawings, submittals, taxes, royalties. The Contractor must make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The Architect and CM both review and can reject work. The Architect is the deciding authority in any disputes prior to Arbitration. The Architect may order minor changes in the work.

The CM may impose Contract Sum adjustments for changes.

The Owner or his agent can stop work and charge the Contractor for defect correction. The Architect and CM review and approve payments. The Claim submittal process has limits on filings and actions.

**The Articles and provisions addressed in the document:**

<table>
<thead>
<tr>
<th>Article 1</th>
<th>General Provisions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Basic Definitions</td>
</tr>
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<td></td>
<td>Execution, Correlation and Intent</td>
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<td>Ownership and Use of Architect’s Drawings, Specifications and Other Documents.</td>
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<td>Capitalization</td>
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<td>Interpretation</td>
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<thead>
<tr>
<th>Article 2</th>
<th>Owner</th>
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<tr>
<td></td>
<td>Definition</td>
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<td></td>
<td>Information and Services Required of the Owner</td>
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<td>Owner’s Right to Stop the Work</td>
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<tr>
<th>Article 3</th>
<th>Contractor</th>
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<tbody>
<tr>
<td></td>
<td>Definition</td>
</tr>
<tr>
<td></td>
<td>Review of Contract Documents and Field Conditions by Contractor</td>
</tr>
</tbody>
</table>
Supervision by Contractor
Labor and Materials
Warranty
Taxes
Permits, fees and Notices
Allowances
Superintendent
Contractor’s Construction Schedule
Documents and Samples at the Site
Use of Site
Cutting and Patching
Cleaning Up
Access to Work
Royalties and Patents
Indemnification

Article 4 Administration of the Contract
Architect
Construction Manager
Administration of the Contract
Communications Facilitating Contract Administration
Claims and Disputes
Resolution of Claims or Disputes
Arbitration

Article 5 Subcontractors
Definitions
Award of Subcontracts and Other Contracts for Portions of the Work
Subcontractual Relations
Contingent Assignment of Subcontracts
Article 6  Construction by Owner or by Other Contractors

  Owner’s Right to Perform Construction with own Forces and to Award Other Contracts

  Mutual Responsibility

  Owner’s Right to Cleanup

Article 7  Changes in the Work

  Changes

  Change Orders

  Construction Change Directives

  Minor Changes in the Work

Article 8  Time

  Definitions

  Progress and Completion

  Delays and Extensions of Time

Article 9  Payments and Completion

  Contract Sum

  Schedule of Values

  Application for Payment

  Certificates for Payment

  Decisions to Withhold Certification

  Progress Payments

  Failure of Payment

  Substantial Completion

  Partial Occupancy or Use

  Final Completion and Final Payment

Article 10 Protection of Persons and Property

  Safety Precautions and Programs

  Safety of Persons and Property

  Emergencies
Article 11  Insurance and Bonds
  Contractor’s Liability Insurance
  Owner’s Liability Insurance
  Property Insurance
  Performance Bond and Payment Bond

Article 12  Uncovering and Correction of Work
  Uncovering of Work
  Correction of Work
  Acceptance of Nonconforming Work

Article 13  Miscellaneous Provisions
  Governing Law
  Successors and Assigns
  Written Notice
  Rights and Remedies
  Tests and Inspections
  Interest
  Commencement of Statutory Limitation Period

Article 14  Termination or Suspension of the Contract
  Termination by the Contractor
  Termination by the Owner for Cause
  Suspension by the Owner for Convenience

II.B.4.  Comparison of Standard Form Agreements
Table 1 – Parts A&B (on the following pages) presents in summary form some of the major Owner risk categories in fee based CM, and describes how the guide documents address each of those risks.
## II.B.4. Comparison of Standard Form Agreements

### Table 1 - Part A

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<thead>
<tr>
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<tbody>
<tr>
<td>Article 2.4.1 Two consecutive 7-Day Notice of Defects from Owner to Contractor</td>
<td>Article 3.2 Review Measure Verify Report Promptly (Contractor’s Responsibility)</td>
<td>Article 3.12 No work until approved</td>
<td>Article 4.6.3 Joint Review and Mutual Agreement</td>
<td>Article 4.6.19 Architect is Review &amp; Approval Authority “consistent with the intent of and reasonably inferable”</td>
<td>Article 4.7.2 Submit to Architect 30-45 Day Review Article 4.7.3 Claim within 21 days of event</td>
<td>Article 4.8 10 Days to Preliminary response by Architect. 10 Days for Contractor to respond. Undefined “Evidence Period.” Architect Notice of Final Decision in 7 days.</td>
<td>Article 4.9 45 Days after claim filed. Request Arbitration within 30 days of Architect’s decision.</td>
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<tbody>
<tr>
<td>Article 3.5.1.10 Change condition flagged by Contractor is passed on to the Design Professional</td>
<td>Article 3.3.15 Review of Design Documents for Owner and Contractor</td>
<td>Article 3.5.1.5 CM assesses Contractor’s request for information and submittal impacts on the project</td>
<td>Article 3.5.2.1 Master Schedule adjustments for benefit of the project. Article 3.5.2.2 CM Reviews Contractors Schedule for Master Schedule</td>
<td>Article 3.5.1.13 CM will render written opinions to the Owner within a reasonable time</td>
<td>(Not Addressed)</td>
<td>Article 11.1 Owner and CM agree to mediate prior to arbitration Article 11.2 Arbitration used to resolve issues not settled in mediation</td>
<td>Article 11.3 Statute of Limitations Article 11.6 Arbitration is final</td>
<td></td>
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</table>
### II.B.4. Comparison of Standard Form Agreements

#### Table 1 - Part A

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<thead>
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<tbody>
<tr>
<td>Article 3.2.5</td>
<td>Article 3.1.5</td>
<td>Article 3.2.6</td>
<td>Article 3.1.3</td>
<td>(Not Addressed)</td>
<td>Article 3.2.2.4</td>
<td>Article 11.3</td>
<td>Article 12.4</td>
<td></td>
</tr>
<tr>
<td>CM to determine if work is being performed in accordance with Trade Contractor Agreements. If authorized by Owner, the CM may require additional inspection or testing of the work.</td>
<td>CM to review Construction Documents to identify potential constructability problems. CM to report to the Owner and A/E any errors or omissions in the Construction Documents. Article 3.2.5</td>
<td>CM, in collaboration with the A/E, shall establish and implement procedures for expediting the processing and approval of shop drawings and samples.</td>
<td>CM prepares Preliminary Schedule for A/E review and Owner approval. Article 3.2.3</td>
<td>CM updates the Project Schedule with Trade Contractor activities. Article 3.1.7</td>
<td>CM recommends a long lead item procurement schedule.</td>
<td>Article 12.1</td>
<td>Arbitration award is final.</td>
<td></td>
</tr>
</tbody>
</table>
### II.B.4. Comparison of Standard Form Agreements

**Table 1 - Part B**

<table>
<thead>
<tr>
<th>AIA Document A201/CMa (1992)</th>
<th>Changes in the Work</th>
<th>Extensions of Time</th>
<th>Payment Certification</th>
<th>Failure to Pay</th>
<th>Substantial Completion</th>
<th>Final Completion / Payment Termination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Article 7.1.2 Change Order requires all parties to agree.</td>
<td>Article 8.3.1 Architect determines</td>
<td>Article 9.4.3 Conformance upon Substantial Completion</td>
<td>Article 9.7.1 14 Day limit on issue of Payment Certificate</td>
<td>Article 9.8.1 When owner can occupy or utilize the Work for its intended use</td>
<td>Article 9.10.1 Contractor Notice to CM; CM forwards to Architect who inspects. When Architect &quot;finds Work acceptable,&quot; Issue final Certificate of Payment</td>
<td>Article 14.1 30 or 60 Days Stoppage of Work</td>
</tr>
<tr>
<td>Article 7.3.1 Change Directive CM / Owner &amp; Architect</td>
<td></td>
<td>Article 9.5.1 CM or Architect may decide not to certify</td>
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<td>Article 7.3.8 CM determines adjustment</td>
<td></td>
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<tr>
<td>Article 7.4.1 Architect directs &quot;minor&quot; changes</td>
<td></td>
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</tbody>
</table>

| Article 7.16 Owner to designate representative to approve | (Not Addressed) | Article 7.17 CM recommends payments on the basis of Contractor’s application for payment | (Not Addressed) | (Not Addressed) | (Not Addressed) | Article 10 Provisions concern only the Contract between the Owner and CM |
### II.B.4. Comparison of Standard Form Agreements

**Table 1 - Part B**

<table>
<thead>
<tr>
<th>Changes in the Work</th>
<th>Extensions of Time</th>
<th>Payment Certification</th>
<th>Failure to Pay</th>
<th>Substantial Completion</th>
<th>Final Completion / Payment</th>
<th>Termination</th>
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<tbody>
<tr>
<td>AGC</td>
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<tr>
<td>Article 3.1.4</td>
<td>Article 3.2.4.3</td>
<td>Article 9.3</td>
<td>Article 3.2.7.1</td>
<td>Article 3.2.7.3</td>
<td>Article 11.1.1</td>
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</tr>
<tr>
<td>Owner to cause</td>
<td>CM develops a</td>
<td>For Failure of</td>
<td>CM to advise</td>
<td>CM advised</td>
<td>With 7 days written notice</td>
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<tr>
<td>A/E to revise</td>
<td>procedure for</td>
<td>Owner to pay the</td>
<td>Owner of Date</td>
<td>Owner of Final</td>
<td>CM may terminate</td>
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</tr>
<tr>
<td>Construction</td>
<td>review and</td>
<td>CM, within 5 days</td>
<td>of Substantial</td>
<td>Completion of the</td>
<td>this agreement if</td>
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<td>Documents to</td>
<td>processing of</td>
<td>of the due date,</td>
<td>Completion</td>
<td>Work</td>
<td>work stopped for</td>
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<td>reflect the</td>
<td>monthly applications</td>
<td>CM may stop work</td>
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<td>30/60 days</td>
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<tr>
<td>Construction</td>
<td>; reviews and</td>
<td>after 7 days written</td>
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<td>Budget</td>
<td>evaluates and</td>
<td>notice to Owner.</td>
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<td>AGC</td>
<td>makes recommendations</td>
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<tr>
<td>Article 3.2.4.5</td>
<td>on Trade Contractor</td>
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<td>CM prepares a</td>
<td>Change Requests</td>
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<td>Change Order</td>
<td>and prepares /</td>
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<td>procedure,</td>
<td>negotiates Change</td>
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<td>reviews, evaluates</td>
<td>Orders</td>
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<td>recommendations on</td>
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<td>Trade Contractor</td>
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<td>Change Requests</td>
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</table>


- Article 3.1.4: Owner to cause A/E to revise Construction Documents to reflect the Construction Budget.
- Article 3.2.4.5: CM prepares a Change Order procedure, reviews, evaluates and makes recommendations on Trade Contractor Change Requests and prepares / negotiates Change Orders.

- Article 3.2.4.3: CM develops a procedure for review and processing of monthly applications; reviews and recommends Trade Contractor payments.

- Article 9.3: For Failure of Owner to pay the CM, within 5 days of the due date, CM may stop work after 7 days written notice to Owner.

- Article 3.2.7.1: CM to advise Owner of Date of Substantial Completion.

- Article 3.2.7.3: CM advised Owner of Final Completion of the Work.

- Article 11.1.1: With 7 days written notice CM may terminate this agreement if work stopped for 30/60 days.
These major risk areas discussed by the three CM-Agent documents and their respective provisions are as follows:

**Correction of Defects**

**CMAA:** The CM functions as a communication vehicle between the Contractor and the Design Professional when the Contractor encounters a changed condition.

**AGC:** The CM verifies Trade Contractor compliance with the contract requirements.

**AIA:** The CM only states the Owner’s rights to provide notice to the Contractor for correction of defects.

**Review of Documents and Conditions**

**CMAA:** The CM is a reviewer of design documents for the Owner and Contractor.

**AGC:** The CM is a reviewer of design documents for the Owner and Contractor.

**AIA:** The Contractor is required to review, measure and verify documents and conditions and report them to the CM and Architect.

**Document and Sample Submission**

**CMAA:** The CM evaluates Contractor requests for information and submittals for project impact.

**AGC:** The CM establishes procedures for expediting the processing and approval of shop drawings and samples.

**AIA:** Samples and Submittals must be approved before Work is permitted.

**Schedule Revisions**

**CMAA:** The CM develops the Master Schedule and checks Contractor’s schedules for compliance with Master Schedule Completion Dates.

**AGC:** The CM prepares the preliminary schedule, updates the schedule with Trade Contractor activities and recommends long-lead procurement schedules.
AIA: The Contractor makes schedule adjustments subject to “joint review and mutual agreement.”

**Review and Approval**

CMAA: The CM provides written opinions to the Owner.

AGC: (Review and Approval is not addressed)

AIA: The Architect is the review and approval authority.

**Claims**

CMAA: (Claims are not addressed)

AGC: CM assists the Owner and A/E in the review, evaluation and documentation of claims.

AIA: Claims need to be submitted by the Contractor within 21 days of the event and the Architect will have 30-45 days to review the claim.

**Response to Claims**

CMAA: Concerns only claims between the CM and the Owner and agreement to mediation prior to arbitration. Arbitration is the final settlement of claims.

AGC: Settlement to first be attempted by discussion, then mediation (concluded within 60 days), then arbitration.

AIA: The Architect has ten days after claim filed for a preliminary response, the Contractor has the following ten days to respond. There is then an undefined “evidence period”, following which the Architect issues a final and binding decision (subject to arbitration).

**Appeal Limits**

CMAA: Demand for arbitration needs to be within statutory limits and arbitration is final.

AGC: The arbitration award is final.
AIA: Arbitration can commence 45 days after a claim is filed is the Architect does not render a decision, and may be requested up to 30 days following the Architect’s decision.

**Changes in the Work**

CMAA: The Owner designates a representative to approve Change Orders.

AGC: The Owner will cause the A/E to revise the Construction Documents to reflect the Construction Budget.

The CM evaluates and negotiates Contractor Change Order Requests.

AIA: A Change Order requires all parties to agree. A Change Directive (to the Contractor) is prepared by the CM and approved by the CM, Architect and Owner.

The CM may determine the contract time adjustment. The Architect directs “minor” changes.

**Extensions of Time**

CMAA: (Extensions of Time are not addressed)

AGC: (Extensions of Time are not addressed)


**Payment Certification**

CMAA: The Owner makes payments to the Contractor based upon the CM’s recommendation.

AGC: The CM develops a procedure for review, processing, and recommending payments to Contractors.

AIA: Payment Certifications are tied to Substantial Completion. Either the CM or the Architect may decide to not certify payment.
Failure to Pay
CMAA: (Failure to Pay is not addressed)

AGC: If Owner refuses to pay the CM for five days, the CM may stop work after seven days written notice to Owner.

AIA: There is a 14 day limit on the CM and Architect issuing a Payment Certification, and a seven day limit on payment after certification.

Substantial Completion
CMAA: (Substantial Completion is not addressed)

AGC: The CM will advise the Owner of the date of Substantial Completion.

AIA: Substantial Completion is defined as when the owner can occupy or use the Work for its intended purpose.

Final Completion/Payment
CMAA: (Final Completion/Payment is not addressed).

AGC: The CM will advise the Owner of the date of Final Completion.

AIA: The Contractor provides notice to the CM, who then forwards the notice to the Architect, who inspects. When the Architect “finds the Work acceptable”, it issues the final certificate of payment.

Termination
CMAA: The provisions only concern the Contract between the Owner and the CM.

AGC: The provisions only concern the Contract between the Owner and the CM. With seven days written notice, the CM may terminate the agreement if the work is stopped for 30/60 days.

AIA: CM may terminate the agreement if the work is stopped for 30/60 days.
II. C. **Experience and Trends in CM As Agent Practice**

The needs of project Owners for CM Agency services is increasing as the complexity of projects increases and Owners’ in-house project management capabilities decrease. Construction Managers who work for Owners under an Agency contract are able to provide consulting services during the design, procurement and Construction Phases of the project. Planning for the Construction Phase early in the project pays important dividends in assuring that mistakes, missteps and oversights are minimized.

Traditionally, Owners would hire an Architect (Designer), and a Contractor to plan and build needed facilities. With in-house engineering and construction capabilities, Owner’s could often manage construction projects themselves and any supplemental needs could be met by tasking the Architect or the Constructor with the additional duties.

Today, risk is the enemy, and Owners are recognizing that professional Construction Managers can help identify and mitigate risk in planning and executing construction projects. Since construction projects require risk management, whether it’s done in-house or with hired expertise, the incremental cost of hired expertise can be more than offset by the cost efficiencies of better planned and coordinated construction.

Although professional construction managers that work on an agency or fee basis have a fiduciary duty to the employing Owner, they can bring objectivity to the construction management process that could be missing by using in-house staff alone. Having a broad range of experience with a variety of Owners and Contractors enables the Construction Manager to employ proven methods and systems and accurately assess and report project status without having a potentially conflicting agenda.

II. D. **Construction Manager (CM) As Agent - Safety Responsibilities**

The General Conditions of the Contract Documents describe the requirements for the protection of persons and property. Pursuant to CMAA Document A-3 (General Conditions of the Construction Contract between Owner and Contractor, Article 5.1.1) that “Before beginning the Work, the Contractor shall prepare and submit to the CM the
Contractor’s safety program that provides for the implementation of all of the Contractor’s safety responsibilities in connection with the Work at the site and the coordination of that program and its associated procedures and precautions with the safety programs, precautions and procedures for each of the other contractors performing the Work at the site. The Contractor shall be solely responsible for initiating, maintaining, monitoring and supervising all safety programs, precautions and procedures in connection with the Work and for coordinating its programs, precautions and procedures with those other contractors performing the work at the site. The Contractor shall take all necessary protection to prevent damage, injury and loss to:

- All employees on the Project; employees of all subcontractors, and other persons and organizations who may be affected thereby; (5.1.1.1)

- Employees of all subcontractors and other persons and organizations who may be affected thereby. (5.1.1.2)
SECTION III

Construction Management At Risk
III. Construction Management At Risk

This section discusses the obligations and risks of the Construction Manager At Risk by reviewing and comparing the standard form agreements for the Owner and Construction Manager.

III. A. General Process and Practice

Construction Manager (CM) At Risk is a type of project delivery method where the CM is also the Constructor. The CM will have a direct contractual relationship with the Owner, but will have only an administrative relationship with the Architect/Engineer since the Owner, in consultation with the CM, contracts separately with one or more Design Professionals to provide architectural and engineering services for the Project. Most CM at Risk contracts require that the CM and Design Professional attempt to maintain a good and cooperative working relationship but the Design Professional is solely responsible for the project design, not the CM.

Early in the project’s life-cycle and during either the Design Phase or the Bidding Phase, the CM typically provides recommendations on:

- Constructability
- Actions designed to minimize the adverse effects of labor or material shortages
- Schedule requirements for procurement and delivery, installation, and project completion.

The CM may also provide recommendations relative to construction costs, including estimates of alternative designs or materials, preliminary budgets and other project economics.

Compensation for CM At Risk services and payments are generally one of three types:

- Guaranteed maximum price (GMP)
- Cost plus fixed fee (CPFF)
- Lump sum (LS).
The GMP is usually derived during the Design Phase of the Project when the drawings and specifications are sufficiently complete to allow the CM At Risk to propose a GMP for the work to the Owner. The GMP is the sum of the estimated cost of the work and the Construction Manager’s fee. The Contract describes what is included in the cost of the work, what the fee structure shall be and how payments will be made. The CM will be required to provide a detailed written submittal of the basis for the GMP. The Owner may choose to accept, reject or negotiate the GMP with the CM. Adjustments either to increase or decrease the GMP may be made to the work through mutual acceptance using the change process.

Typical GMP contracts stipulate that the Design Professional may order minor changes in the project consistent with the intent of the drawings and specifications and will not involve an adjustment in the GMP. The GMP contract will also stipulate that in the event the cost of the project exceeds the GMP and any adjustments, the CM must continue to perform at no additional cost to the Owner until the project is complete. Therefore, the CM shall be responsible for paying all costs, even if such amounts are in aggregate in excess of the GMP.

In the cost plus fixed fee (CPFF) type of contract, the Owner will compensate the CM on the basis of the CM’s cost plus a fixed fee for performing the CM’s basic services. Cost of the work during the pre-construction Phase will generally only involve the CM’s labor and burdens and benefits, and other associated directly related expenses. During the Construction Phase, cost of the work will generally expand to include all labor and burdens and benefits, subcontract costs, costs of materials and equipment incorporated into the project, costs of temporary facilities, and miscellaneous and other costs agreed to in the Contract. Costs not to be reimbursed are listed in the Contract.

In the lump sum (LS) type of contract arrangement the Owner compensates the CM for the basic services on the basis of a lump sum and the payment terms will be defined in the Contract. The terms of payment could be in monthly installments, percentage of work completed, or another method defined in the Contract. The CM may be entitled to
an adjustment in the LS compensation price when changes occur in the scope of the project or when delays are experienced beyond the control of the CM.

During the Construction Phase, the CM will either self-perform the work, sub-contract the work to various specialty firms or will do a combination of both. The Contract will require the CM to contract directly with such subcontractors as may be necessary for construction or supply of various elements of the project.

In the following three sub-sections, we will discuss in more detail some of the various standard form CM At Risk contracts that are available. In Section III.B.4 we will compare and contrast these contracts and how they apportion the risk. These contracts address:

- The responsibilities of each party
- What is to be compensated
- How payments are to be made
- Scope and duration of services
- Insurance requirements
- Terminations and suspension, how disputes are to be resolved, and other miscellaneous provisions and other conditions.

As always, standard form contract documents can be used as a basis for preparing specific project agreements, but should be tailored for the specific project with the advice of legal counsel.

III. B. **CM At Risk Services & Obligations – Standard Form Agreements**

III.B.1. **CMAA Owner – CM At Risk Agreement**

The Construction Management Association of America, Inc. (CMAA) publishes a document entitled Standard Form of Agreement Between Owner and Construction Manager (CMAA Document CMAR-1, 2004 Edition). The purpose of this document is to provide a guideline for services and obligations for the Owner and the Construction Manager (CM) in a CM At Risk project situation. CMAR-1 is intended to be used in
connection with CMAA Documents CMAR-2 (Standard Form of Contract Between Construction Manager and Contractor), CMAR-3 (General Conditions of the Construction Contract), and CMAR-4 (Standard Form of Contract Between Owner and Design Professional).

Twelve specific Articles are addressed in the CMAR-1 document. These Articles address issues ranging from the relationship of the parties to special guaranteed maximum price provisions. These Articles include:

1. Relationship of the Parties
2. Project Definition
3. Construction Manager’s Basic Services
4. Duration of the Construction Manager’s Services
5. Changes in the CM’s Basic Services and Additional Compensation
6. Owner’s Responsibilities
7. Compensation for CM Services and Payment
8. Insurance and Mutual Indemnity
9. Termination and Suspension
10. Dispute Resolution

This document provides that the Owner will contract directly with the CM, for CM At Risk services, and that the Owner will contract separately with one or more Design Professionals to provide architectural and engineering design for the project. The document also requires the CM to contract directly with such Contractors as may be necessary for construction or supply of the project. Nothing in this Agreement is construed to mean that the CM At Risk is responsible for the design of the project or that the CM At Risk assumes any of the contractual or customary duties of the Design Professional or any other persons or parties not specified by the Agreement.

**Detailed Description of Specific Articles**
In Article 3, the CM’s basic services are described in conjunction with five Phases of the Work. These Phases are identified as:

- Pre-Design Phase
- Design Phase
- Procurement Phase
- Construction Phase
- Post Construction Phase

The article does not require that CM’s basic services be performed in any particular sequence however.

Article 5 allows for changes in the CM’s basic services and additional compensation and extended duration.

Article 7, *Compensation for CM Services and Payment*, states the Owner may request the CM to propose a GMP for the project. Article 7 also provides the Owner the option to compensate the CM on the basis of the CM’s CPFF, or compensate the CM for basic services on the basis of a LS price and paid in monthly installments.

Article 12 addresses the special GMP provisions. Various articles (primarily Article 7), provide for adjustments to the GMP. In Article 12.1.6, in the event that the cost of the project exceeds the GMP plus changes, the CM will continue to perform at no additional cost to the Owner until the project, is completed. The CM is responsible for paying all costs, that may be necessary to complete the project, even if such amounts exceed the GMP.

III.B.2. AGC Owner – CM At Risk Agreement

There are two documents that are published by the Associated General Contractor of America (AGC) for the Construction Manager (CM) At Risk process. These are:

AGC Document 565 (1991) is the *Standard Form of Agreement Between Owner and Construction Manager Where the Construction Manager is also the Constructor*. 
This document provides the Owner with a GMP. This document is intended for use on construction projects where a CM At Risk, in addition to acting as an advisor to the Owner during the design period, assumes financial responsibility for the construction of the project. The CM At Risk provides the Owner with a GMP proposal, which the Owner may accept, reject or choose to negotiate. Upon the Owner’s acceptance of the GMP, and by execution of Amendment No. 1, the CM At Risk becomes contractually bound to provide the actual labor and materials for the project. The CM’s services under this document are divided into two Phases; the Pre-Construction Phase and the Construction Phase, portions of which may proceed concurrently.

AGC Document 566 (1994) is the Standard Form of Agreement Between Owner and Construction Manager Where the Construction Manager is also the Constructor and Where the Basis of Payment is the Cost of the Work Plus a fee and There is No Guarantee of Cost. This document is intended to be used on construction projects where a CM At Risk, in addition to acting as an advisor to the Owner during the design period, assumes responsibility for the construction of the project. While it is derived from AIA Document 121/CMc-AGC Document 565, it has been modified to reflect the absence of a GMP. Do not use this document if a GMP is to be provided. The estimated date of substantial completion may be established as the Contract Time as provided in Clause 2.2.4.5. Once a control estimate has been established, the CM is obligated to provide the Owner with timely information as to the anticipated cost of the work at agreed-upon intervals.

Common Provisions of AGC 565 and 566

Eleven Articles are presented in the Standard Forms of Agreement (AGC 565 and AGC 566). These Articles include:

2. Construction Manager’s Responsibilities
3. Owner’s Responsibilities
4. Compensation and Payments for Preconstruction Phase Services
5. Compensation for Construction Phase Services
6. Cost of the Work for Construction Phase
7. Construction Phase
8. Insurance and Bonds
10. Termination or Suspension
11. Other Conditions and Services

Furthermore, in AGC 565 there is an attachment, Amendment No. 1 to the Agreement, that establishes a GMP and contract time for the work to be done.

“The AGC advises that the parties should consult with legal counsel as to the applicability of any statutes or regulations which may apply to the use of these agreements in the jurisdiction where the Project is located.”

III.B.3. AIA Owner – CM At Risk Agreement

There are two documents that are published by the American Institute of Architects (AIA) for the Construction Manager At Risk:

- **AIA Document A121 CMc (2003) - Standard Form of Agreement Between Owner and Construction Manager Where the Construction Manager is also the Constructor**  This document provides the Owner with a Guaranteed Maximum Price (GMP).

- **AIA Document A131 CMc (2003) – Standard Form of Agreement Between Owner and Construction Manager Where the Construction Manager is also the Constructor and Where the Basis of Payment is the Cost of the Work Plus a fee and There is No Guarantee of Cost**

These documents have been developed through the joint efforts of The America Institute of Architects and the Associated General Contractors of America. During the drafting process, the authors considered comments they received from parties, representing diverse viewpoints and interests, that may be affected by use of this document on their
projects. The AIA and the AGC have attempted to reach a reasonable balance of all interests within the construction community.

The AGC and the AIA pairs of documents (AGC 565/AIA 121, and AGC 566/AIA 131) are, nearly, identical.

As with the AGC documents, the form’s authors advise that “parties consult with counsel as to the applicability of any statutes or regulations which may apply to the use of these agreements in the jurisdiction where the Project is located.”
III.B.4. Comparison of Standard Form Agreements

*CM as Constructor:

Note: Solid lines indicate contractual relationships.

Dashed line indicates administrative relationship.

* Source: A121/CMc · AGC 565 ·

**KEY ISSUES FOR COMPARISON**

**Contractual Responsibilities**

CMAR-1 – There is a direct contractual relationship between Owner and CM At Risk, and there is a contract clause (1.3) stipulating that the Owner will require the CM At Risk to contract directly with such Contractors as may be necessary for construction or supply of the Project.

AGC 565/566 – There are direct contractual relationships between Owner and CM, and the CM At Risk and the Subcontractors.
AIA 121/131 – There are direct contractual relationships between Owner and CM At Risk, and the CM At Risk and the Subcontractors.

**Phased Services**
CMAR-1 – Provides for the CM At Risk’s basic services that include the pre-Design Phase (3.2), Design Phase (3.3), procurement Phase (3.4), Construction Phase (3.5), and the post Construction Phase (3.6).

AGC 565/566 – Provide for the services of the CM At Risk to be performed in two Phases, the preconstruction and Construction Phases.

AIA 121/131 – Provide for the services of the CM At Risk to be performed in two Phases, the preconstruction and Construction Phases.

**Construction Management Plan**
CMAR-1 – Provides that the CM At Risk prepare a Construction Management Plan for the project and recommend revisions to the plan throughout the duration of the project, as may be appropriate. Also, the CM At Risk will then develop various alternatives for the sequencing and management of the project and will recommend them to the Owner.

AGC 565/566 – Does not specifically address a Construction Management Plan.

AIA 121/131 – Does not specifically address a Construction Management Plan.

**Preliminary Evaluation**
CMAR-1 – Does not specifically provide for a preliminary evaluation of the program or of the budget. It does, however, provide that the CM, while preparing the Construction Management Plan during the Pre-Design Phase (see project Phases above), shall consider the Owner’s schedule, budget and design requirements for the Project.

AGC 565/566 – The CM shall provide a preliminary evaluation of the Owner’s program and Project budget requirements.

AIA 121/131 – The CM shall provide a preliminary evaluation of the Owner’s program and Project budget requirements.
**Preliminary Project Schedule**

CMAR-1 – During the pre-Design Phase the CM At Risk will prepare a master schedule for the project in accordance with the Construction Management Plan and submit it for the Owner’s acceptance (3.2.2.1). After the owner accepts the master schedule, the CM At Risk will prepare a milestone schedule to be used for assessing progress during the Design Phase (3.2.2.2).

AGC 565/566 – When the project requirements have been sufficiently identified, the CM At Risk will prepare and update a preliminary project schedule for the Architect’s review and the Owner’s approval.

AIA 121/131 – When the project requirements have been sufficiently identified, the CM At Risk will prepare and update a preliminary project schedule for the Architect’s review and the Owner’s approval.

**Cost Estimates (Preliminary and Budgetary)**

CMAR-1 – During pre-design and based on the Construction Management Plan and a construction market survey, the CM At Risk is to prepare a project and construction budget based on separate divisions of the work required for the project, identifying contingencies for design and construction. CM At Risk will submit the project and construction budget to the Owner for acceptance and will revise it as directed by the Owner.

During the Design Phase the CM At Risk will make recommendations to the Owner concerning the design changes that may result in revisions to the project and construction budget and divisions of the work required for the project.

During the procurement Phase the CM At Risk will prepare an estimate of costs for all addenda and submit the estimates to the Owner for approval. After approval by the Owner, the addenda will be transmitted to bidders. The GMP and the CM’s compensation will be adjusted as provided for in the agreement.

During the Construction Phase, and once a GMP has been established, the CM will review the contents of a request for changes to the construction contract time or price.
submitted by a Contractor, assemble information concerning the request and attempt to
determine the cause of the request. In instances where the CM’s analysis reveals that the
request is valid, the CM will prepare a detailed report to the Owner for approval. The
CM will prepare the necessary change order documents for signing by the Contractor and
the Owner.

**AGC 565/566 (AIA 121/131)** – Once the Owner has sufficiently identified the project
requirements and the Architect has prepared other basic design criteria, the CM will
prepare, for review by the Architect and for approval by the Owner, a preliminary cost
estimate using area, volume or similar conceptual techniques. At a later date, and when
schematic design documents have been prepared by the Architect and approved by the
Owner, the CM At Risk will prepare a more detailed estimate with supporting data.
Furthermore, when design development documents have been prepared by the Architect
and approved by the Owner, the CM At Risk will prepare a detailed estimate with
supporting data. The CM At Risk will provide periodic estimate updates for each
estimate level.

**AIA 121/131** – The wording in these documents is identical to AGC documents
discussed in this section.

**Contract Pricing (Guaranteed Maximum Price-GMP, and control estimates)**
CMAR-1, during the pre-Design Phase and based on the Construction Management Plan
and a construction market survey, the CM At Risk will prepare a project and construction
budget based on separate divisions of the work required for the project and identifying
contingencies for the design and the construction. The CM At Risk will submit the
project and construction budget to the Owner for acceptance, revising it as directed by the
Owner. The CM At Risk will analyze and report to the Owner the cost of the various
design and construction alternatives, advising the Owner of its assumptions in preparing
its analysis. The analysis will include a variance analysis between budget and
preliminary estimate, and recommendations for any adjustments to the budget. As a part
of the cost analysis, the CM At Risk will consider costs relating to efficiency, usable life,
maintenance, energy, and operation.
As part of the Design Phase, and following the completion of each Design Phase milestone, the CM At Risk will prepare an estimate of the construction cost for the design drawings and specifications furnished by the Design Professional. Each estimate must be accompanied by a report to the Owner and Design Professional identifying variances from the project and construction budget as well as CM’s assumptions in preparing the estimate. The CM At Risk must coordinate the activities of the Owner and Design Professional when changes to the design are required to remain within the project and construction budget. The CM At Risk will make recommendations to the Owner concerning the design changes that may result in revisions to the project and construction budget and divisions of the work required for the project. The CM At Risk will provide value engineering (VE) recommendations to the Owner and Design Professional for major construction components, including cost evaluations of alternative materials and systems (3.3.3).

Article 7 states that during the Design Phase, but not later than 60 days prior to the date that the work is advertised for bids, the Owner may request the CM At Risk to propose a GMP for the project (7.1.1). The GMP is to be submitted to the Owner not more than 30 days after receipt by the CM of the Owner’s request for the GMP. The Owner shall accept such GMP within 15 days of the date of the receipt unless such time is mutually agreed to be extended. In the event the Owner does not accept the CM’s proposed GMP or elects not to go forward with the project, the CM shall be reimbursed in accordance with the requirements for termination as defined in the Section (7.1.1.2). The GMP is the total cost of the project. The GMP includes the cost of labor, equipment, supplies, materials, services and allowances to complete the project. The Owner may change the scope of the project and the GMP shall then be adjusted as provided in Paragraph 7.1.3 (7.1.1.9).

During the Procurement Phase, the CM At Risk must prepare an estimate of costs for all addenda; if the Owner approves the estimate, the addenda will be transmitted to bidders and the GMP and the CM’s compensation will be adjusted as provided for in the agreement.
During the Construction Phase, the CM At Risk will establish and implement a change order control system.

During the Post Construction Phase, the CM At Risk must continue to provide change order related services as required.

**AGC 565, AIA 121** – When the drawings and specifications are sufficiently complete, the CM At Risk will propose a GMP, which will be the sum of the estimated cost of the work and the CM’s fee. As the drawings and specifications may not be finished at the time the GMP proposal is prepared, the CM At Risk will provide in the GMP for further development of the Drawings and Specifications by the Architect. Such further development does not include such things as changes in scope, systems, kinds and quality of materials, finishes or equipment, which would be incorporated by Change Order. The estimated cost of the work shall include the CM’s contingency, a sum established by the CM for the CM’s exclusive use to cover costs arising as a result of the unfinished Drawings and Specifications and other costs which are properly reimbursable as cost of the work but not the basis for a change order.

**AGC 566, AIA 131** – In accordance with the established preliminary project schedule, the CM submits to the Owner a control estimate using current information to update the most recent preliminary estimate. The control estimate will be the sum of the then-estimated cost of the work and the CM’s fee, and is the estimate against which actual costs are to be measured.

As the drawings and specifications may not be finished at the time the control estimate is prepared, the CM At Risk will provide in the control estimate for further development of the drawings and specifications by the Architect. Such further development does not include such things as changes in scope, systems, kinds and quality of materials, finishes or equipment.

The CM At Risk will meet with the Owner and Architect to review the control estimate. In the event that the Owner or Architect discovers any inconsistencies or inaccuracies in the information presented, they must promptly notify the CM, who will make appropriate
adjustments to the control estimate. When the control estimate is acceptable, the Owner will approve it in writing and authorize the Architect to revise the drawings and specifications to reflect the agreed-upon assumptions and clarifications. The CM must promptly notify the Architect and the Owner if revised drawings and specifications are inconsistent with the agreed-upon assumptions and clarifications.

**Adjustments to the GMP (CMAA) and Changes in the work (AGC/AIA)**

**CMAR-1** – The GMP may be determined based upon incomplete design documents and in those instances in which the drawings and specifications are not complete at the time the GMP is established, the CM At Risk will exercise reasonable care and judgment to determine the intent of the design and shall calculate the GMP on the basis of the quality of construction, materials, and finishes that can be reasonably inferred from the design documents or other specified sources (7.1.3). The Design Professional will have the authority to order minor changes in the project consistent with the intent of the drawings and specifications and not involving an adjustment in the GMP or change of the construction completion date (7.1.3.4). For services rendered up to and including the Design Phase and in the event the Owner does not request the CM to establish a GMP or does not accept the CM’s GMP, the CM At Risk will receive compensation for its services in accordance with Paragraph 7.3 (Cost Plus Fixed fee) or Paragraph 7.4 (Lump Sum), as applicable (7.2).

**AGC 565/AIA 121** - Adjustments to the GMP on account of changes in the work subsequent to the execution of Amendment No. 1 (which establishes the GMP) may be determined by any of the methods listed in Subparagraph 7.3.3 of AIA Document A201.

**AGC 566/AIA 131** - The Owner may order changes in the work within the general scope of the contract consisting of additions, deletions or other revisions. The Architect may make minor changes in the work as provided in Paragraph 7.4 of AIA Document A201. Increased costs for the items set forth in Article 6 (Cost of the Work Construction Phase) which result from changes in the work must become part of the cost of the work, and the CM’s fee will be adjusted if provided for in the agreement.

**Construction Phase-Administration**
CMAR-1 – During the Procurement Phase, the CM At Risk will develop lists of possible bidders and pre-qualifying bidders. The CM At Risk will conduct bid openings and evaluate the bids to determine the lowest responsive and responsible bidder. The CM At Risk will make recommendations to the Owner concerning the acceptance or rejection of bids and at the direction of the Owner, will prepare, execute, and deliver the contract documents between the CM and the contractors. The CM At Risk will also issue the notices to proceed. The CM At Risk will prepare an estimate of costs for all addenda and submit the estimates to the Owner for approval. After approval by the Owner, the addenda will be transmitted to bidders; the GMP and the CM’s compensation will be adjusted as provided for in this agreement. Upon receipt of bids, the CM At Risk will evaluate the bids, including alternate prices and unit prices.

During the Construction Phase, the CM At Risk will review the contents of a request for change to the construction contract time or price submitted by a Contractor, assemble information concerning the request and attempt to determine the cause of the requests. If the CM’s analysis reveals that the request is valid, the CM At Risk must prepare a detailed report for the Owner’s approval. The CM At Risk must prepare the necessary change order documents for signing by the Contractor and Owner. All proposed Owner-initiated change orders will first be described by the Owner to the CM and then forwarded in a request for proposal to the Contractor, with technical drawings and specifications prepared by the Design Professional. In response to the request for a proposal, the Contractor must submit to the CM, information concerning any costs and time adjustments necessary to perform the proposed change order work. The CM At Risk will review the Contractor’s proposal, discuss the proposed change order with the Contractor and attempt to determine the Contractor’s basis for the cost and time to perform the work and any effect on the GMP. The CM At Risk will present its findings to the Owner and, following Owner acceptance, prepare the change order documents for signature by the CM and the Owner. Upon execution of the change order documents, the CM At Risk will prepare change order documents for signature by the Contractor.

The CM At Risk will review the contents of all Contractor-requested changes to the contract time or price, and attempt to determine the effect, if any, on the GMP. The CM
At Risk must provide the Design Professional with a copy of each change request, and the CM At Risk will, in its evaluations of the Contractor’s request, consider the Design Professional’s comments regarding the proposed changes. The CM At Risk will then present its findings to the Owner regarding the proposed changes and at the Owner’s direction, prepare the change order documents for signature by the CM and the Owner. Upon execution of the change order documents between the CM and Owner, the CM At Risk will prepare change order documents for signature by the affected Contractor. The CM At Risk will make recommendations to the Owner concerning construction changes that may result in revisions to the project and construction budget or GMP.

**AGC 565/AIA 121** - The CM At Risk will obtain bids from Subcontractors and from suppliers of materials or equipment fabricated to a special design for the work from the list previously reviewed and, after analyzing such bids, deliver such bids to the Owner and Architect. The Owner must then determine which bids it will accept. The Owner may designate specific persons or entities from whom the CM At Risk will obtain bids; however, if the GMP has been established, the Owner may not prohibit the CM from obtaining bids from other qualified bidders. The Owner cannot require the CM At Risk to contract with anyone to whom the CM has reasonable objection.

If the GMP has been established and a specific bidder among those delivered by the CM At Risk to the Owner and Architect is (1) recommended to the Owner by the CM At Risk; (2) qualified to perform that portion of the work; and (3) has submitted a bid which conforms to the requirements of the Contract Documents without reservations or exceptions, but the Owner requires that another bid be accepted, the CM may require a change in the work be issued. This change would adjust the Contract Time and GMP to reflect the difference between the bid of the person or entity recommended to the Owner by the CM and the amount of the subcontract or other agreement actually signed with the person or entity designated by the Owner.

**AGC 566/AIA 131** - The CM will obtain and analyze bids from Subcontractors and from suppliers of materials or equipment, and deliver the bids to the Owner and Architect. The Owner shall then determine, which bids it will accept. The Owner may designate specific
persons or entities from whom the CM shall obtain bids; however, if the GMP has been established, the Owner may not prohibit the CM from obtaining bids from other qualified bidders, and the CM does not have to contract with anyone to whom it has a reasonable objection.
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<th>Pricing Structure</th>
<th>Project Phases</th>
<th>Contractual Relationships</th>
<th>Cost Estimates</th>
<th>Changes in the work</th>
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<tbody>
<tr>
<td><strong>CMAA CMAR-1</strong></td>
<td>Allows for Guaranteed Maximum Price (GMP), Lump Sum, or Cost Plus Fixed fee.</td>
<td>Pre-Design. Design. Procurement. Construction. Post-Construction.</td>
<td>Owner contracts separately with A/E and with Construction Manager (CM)</td>
<td>Various requirements during each Phase of the work</td>
<td>Allowable. CM submits written request (proposal) for approval by Owner.</td>
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<tr>
<td><strong>AGC 565/ AIA 121</strong></td>
<td>GMP</td>
<td>Pre-Construction. Construction.</td>
<td>Owner contracts separately with A/E and with Construction Manager (CM)</td>
<td>Conceptual Estimate required during early Design Phase GMP when design documents sufficiently complete</td>
<td>Allowable. CM submits written request (proposal) for approval by Owner.</td>
</tr>
<tr>
<td><strong>AGC 566/ AIA 131</strong></td>
<td>Cost of the work plus a fee (No GMP)</td>
<td>Pre-Construction. Construction.</td>
<td>Owner contracts separately with A/E and with Construction Manager (CM)</td>
<td>Conceptual Estimate required during early Design Phase Control Estimate required when design documents sufficiently complete</td>
<td>Allowable. CM submits written request (proposal) for approval by Owner.</td>
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<td><strong>Claims &amp; Disputes</strong></td>
<td><strong>Dispute Resolution</strong></td>
<td><strong>Termination Prior to GMP</strong></td>
<td><strong>Termination After GMP</strong></td>
<td><strong>Suspension</strong></td>
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<tr>
<td>CMAA CMAR-1</td>
<td>Allowable. (See 10.1.1)</td>
<td>Arbitration</td>
<td>By Owner for Convenience after 7 days written notice to the CM. Amounts payable to CM vary.</td>
<td>By Owner for Convenience after 7 days written notice to the CM. Amounts payable to CM vary.</td>
<td>Allowable by Owner for convenience. Allows for CM to be compensated (See 9.2)</td>
</tr>
<tr>
<td>AGC 565/ AIA 121</td>
<td>Allowable. (See Article 9)</td>
<td>Mediation initially, if unsettled then proceed to Arbitration</td>
<td>By Owner without cause. By CM with reasons as described in 14.1.1 of AIA A201</td>
<td>Allowable as provided for in Article 14 of AIA A201. Amounts payable to CM vary.</td>
<td>Allowable by Owner. Allows for CM to be compensated (See 10.3)</td>
</tr>
<tr>
<td>AGC 566/ AIA 131</td>
<td>Allowable. (See Article 9)</td>
<td>Mediation initially, if unsettled then proceed to Arbitration</td>
<td>By Owner without cause prior to approval of control estimate. By CM with reasons as described in 14.1.1 of AIA A201</td>
<td>Allowable as provided for in 14.1.1 and 14.2.1 of AIA A201. Amounts payable to CM vary.</td>
<td>Allowable by Owner. Allows for CM to be compensated (See 10.4)</td>
</tr>
</tbody>
</table>
Copies of all of the above referenced documents are available for a nominal cost from the respective authoring organizations and can be ordered on-line.

Respective Websites:
  www.cmaanet.org (CMAA)
  www.agc.org (AGC)
  www.aia.org (AIA)

III. C. Experience and Trends in CM At Risk Practice

Construction Management at Risk (CM At Risk) is a method of construction contracting that reflects the industry trend of project owners placing greater reliance on others to successfully deliver their projects. Many owners used to have in-house design and construction management staffs that were utilized to plan, manage and deliver projects.

The service needs of project Owners for CM At Risk services is increasing as the complexity of projects increases and Owner’s in-house project management capabilities decrease. Construction Contractors who work for Owners under a CM At Risk contract are able to provide contractor’s advisory services during the design, procurement and construction phases of the project. Planning for the construction phase early in the project pays important dividends in assuring that mistakes, missteps and oversights are minimized.

With the advent of leaner economic times and the inefficiencies of maintaining staff during times when projects are not being actively developed, owners have out-sourced the necessary project functions and reduced in-house staff.

Under traditional methods, Owners would hire an Architect (Designer), and a Contractor to plan and build needed facilities. With in-house engineering and construction capabilities, Owner’s could often manage construction projects themselves and any supplemental needs could be met by tasking the Architect or the Constructor with the additional duties.
Today, risk is the enemy, and Owners are recognizing that having a team motivated with the Owner’s best interests can help identify and mitigate risk in planning and executing construction projects. Since construction projects require management of the process, whether it’s done in-house or with hired expertise, the incremental cost of hired expertise can be more than offset by the cost efficiencies of better planned and coordinated construction.

Another aspect of the current marketplace is the occurrence of construction claims, cost overruns, schedule slips, sub standard construction quality and a very competitive design and construction contracting market. All these factors have placed overall owner and investor satisfaction at risk and have tended to push those decision makers in the project delivery system towards methods perceived as delivering the desired owner satisfaction.

CM At Risk has gained a following in the construction industry and with owners as a method to reduce risk, increase cost and schedule predictability, deliver functionality, and stay within restrictive budgets and schedules.

Established contractors likewise prefer CM At Risk contracting since it avoids much of the competitive bidding risk, the costs of developing unsuccessful hard bids, selection is based on experience and qualifications, profit margins are generally better than those in the hard bid arena; and the emphasis is on client satisfaction, which leads to repeat business.

The third “partner” in the CM At Risk delivery method, the Architect, generally is also pleased with the methodology, since the often adversarial relationship between the Architect and Contractor is greatly improved. Selection of the Architect and CM At Risk Contractor is based on demonstrated teamwork in that contracting setting, and often on projects where the Architect and CM At Risk Contractor have successfully worked together before.
Although CM At Risk Contractors that work on a fee percentage of total construction cost basis have a fiduciary duty to the employing Owner, they can bring a goal oriented objectivity to the construction management process that could be missing by using in-house staff alone. Having a broad range of experience with a variety of Owners, Architects and Subcontractors enables the CM At Risk Contractor to employ proven methods and systems and accurately assess and report project status without having a potentially conflicting agenda.

Under CM At Risk, all the parties are focused on Owner satisfaction, and with that common goal and motivator, real teamwork can be achieved.

III. D. Construction Manager (CM) At Risk – Safety Responsibilities

The General Conditions portion of the Contract documents describes the requirements for the protection of persons and property. Pursuant to CMAR-3 (General Conditions of the Construction Contract Between CM and Contractor) and before beginning its Work, the Contractor must notify the CM at-risk in writing that the Contractor has prepared the Contractor’s safety program that implements all of the Contractor’s responsibilities under the Contract.

Furthermore, the Contractor must comply with all applicable laws and regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss and will erect and maintain all necessary safeguards for such safety and protection.

In emergencies affecting the safety or protection of persons or the work or property at the site or adjacent thereto, the Contractor, without special instruction or authorization from the CM at-risk, is obligated to act to prevent threatened damage, injury or loss. The Contractor must give the CM at-risk prompt written notice if the Contractor believes that any significant changes in the work or variations from the Contract Documents have been caused.
The Contractor must designate a responsible representative at the site whose duty will be the prevention of accidents.

Note that the above safety responsibilities are only a general overview of the requirements that may be employed on a project. Some Owner’s have detailed and stringent safety responsibilities that must be adhered to by all Project participants. A separate section may be included that addresses hazardous materials and their handling and disposal if there is any hint that these materials may be encountered at the project work site.
SECTION IV
The Basics of Design-Build
IV. The Basics of Design-Build

IV. A. What is Design-Build?
Design-Build (D/B) is a project delivery method wherein a project Owner contracts with one entity to provide both design and construction services. This contrasts with the more traditional Design-Bid-Build system in which the Owner contracts with a Design Professional to provide a design and then contracts with a construction contractor to build the project in accordance with that design.

There are two significant features of D/B contracting that contrast it to the other project delivery methods. The first is the relative simplicity of the Owner having a single point of contact for both the design and construction of the project.

The second feature is a result of that single point of contact – that is that the risk for design errors shifts from the Owner to the Contractor.

The Spearin Doctrine
The Spearin Doctrine states that the Owner is responsible for the accuracy and adequacy of the plans and specifications. The basis for the doctrine was the court case United States vs Spearin. Spearin had contracted with the Navy to build a new dry dock at the Brooklyn Navy Yard. Included in Spearin’s scope was the relocation of an existing six foot diameter sewer line. After that line was relocated it broke, due to the presence of a dam in an existing downstream sewer line. The dry dock flooded, and Spearin sought to recover costs of repairs. The court ruled in Spearin’s favor, stating “[I]f the Contractor is bound to build according to plans and specifications prepared by the Owner, the Contractor will not be responsible for the consequences of defects in the plans and specifications.”

When an Owner uses the Design-Bid-Build methodology to delivery its project, it assumes the risk for any defects in its plans. When the Owner uses the Design/Build method to delivery its project, it shifts the risk for design errors to the Contractor. The prudent Contractor will include the potential cost of that risk in its bid; the Owner should not expect to get something for nothing. The Owner will, however, know at the time of
signing the contract that it has already paid for potential errors in the contract price. As the D.B Contractor is better able (by close coordination) to manage the risk of those errors, this is a mutually beneficial arrangement.

IV. B. When Design-Build Should Be Considered
Several factors are relevant in evaluating the case for using the D/B methodology. These are discussed below.

**Schedule**
Design-build project delivery can save time in completing the project. One reason for this is the closer coordination between the designer and the contractor; they are part of the same entity. For example, D/B contractor can have its designer/architect focus first on utility relocation and foundation design to allow the construction contractor to begin work while the rest of the design is completed.

Another potential time-savings is in the administration of the change order process for correction of changes. In section IV.A., we noted that shifting the risk to the party best able to control it is one of the advantages of D/B. Controlling the risk of that change/correction process includes the ability to accomplish it more quickly – time is money.

**Budget**
Cost savings can also be realized in shifting more cost control responsibility to Contractor. The construction contractor may have experience with materials and methods that meet the Owner’s requirements that the designer did not consider, and if cost savings result from its input to the design, those savings should be passed on to the Owner.

Value Engineering proposals for which the Owner may get only partial financial credit under design-bid-build project delivery will be included in the bid price and the entire savings passed on to the owner.

In canvassing Owner representatives on some major projects, not all name cost-savings as a major outcome of the methodology. Public works projects usually do not have the
“time is money” motivation to complete. For example, the sooner a school, library or transit system goes into service, the sooner it requires an operational subsidy.

Type of project
This may be the most important consideration in choosing D/B over design-bid-build. A good candidate project for D/B is one where the performance and form of the finished project is readily described in a scope document. On the other hand, a project in which the Owner has many specific and esoteric requirements would be a weaker candidate for this method. Extreme examples of each will help illustrate this point.

A hypothetical example that would be a good candidate is a sewage treatment plant. In this case, a municipality finds itself in violation of EPA requirements for the effluent from its existing sewage treatment plant. The EPA sues and wins a judgment in court, the effect of which is that the community must treat its effluent to legal levels by some date eighteen months hence. Every day beyond that deadline that the effluent is out of compliance will cost the municipality $20,000 per day.

Twenty-thousand dollars a day, every day, is a lot of money. What the Owner wants is to build a new facility in time to avoid those fines. It can probably write a single page performance specification that adequately describes what it wants, and just as importantly, when it wants it. A D/B Contractor with experience in the design and construction of similar plants is most likely to meet the needs of the Owner – a plant that removes the offending components from the plant’s effluent stream in as short a time as possible.

An example of a project that is not suitable for the D/B system would be a research hospital. For a project like this, the end-user is going to have specific and esoteric needs that would be difficult to outline in a written scoping document. A facility such as this would be best designed by a Design Professional, with direct and frequent communication with its client. Even then, one could expect change requests after construction had started.
IV. C. **The Design-Build Procurement Process**

The D-B procurement process is similar to the design-bid-build (D-B-B) process in that the Owner hires a Contractor to build a project. The major difference is the stage of development the design is at when the Owner provides it to potential bidders. The following steps of the D-B project procurement process could be part of any procurement, and are not the only method of proceeding, but they provide a general guideline and overview of a typical process.

1. **Strategic Facility Planning** - The Owner analyzes its current and future facility requirements to determine the appropriate facility development plan for the planned use.

2. **Program Definition** - The Owner establishes the project requirements in terms of facility size and performance, criteria, finish requirements, quality standards, applicable codes, regulatory standards, population/capacities, equipment requirements, etc. These requirements are defined and articulated either by in-house professional staff or by an outside consultant.

3. **Request for Qualifications (RFQ)** - Professional, financial and experiential requirements for Proposors and the general project parameters are articulated in an RFQ, either by in-house staff or by an outside consultant.

4. **Qualifications Statement** - The Owner advertises the project and receives and reviews qualification statements in response to the RFQ. Generally the three, and no more than five, most qualified firms are short-listed.

5. **Request for Proposals (RFP)** – The Owner solicits design and cost proposals from the short-listed design-build teams in a RFP. Among the items found in a typical RFP are project design criteria, site information, contract requirements, selection procedure and proposal (submittal) requirements.

6. **Pre-Proposal Conference** - Some owners hold this optional meeting early in the proposal preparation period to allow Proposors to ask questions and request clarifications.

7. **Proposal Submission and Evaluation** - Once received, the Owner evaluates proposals on the basis of quality of design, price and other predetermined factors
(best value). The Owner may request that the Proposors make in-person presentations to the Owner’s selection panel.

8. Contract Award - The selected Proposor enters into contract(s) with the Owner, which incorporates both the Owner’s requirements and the Design-Builder’s proposal.

9. Documents/Construction - Upon completion of the design documents for all elements (or for specific phases) of the project, construction commences. The contract may provide for fast-track methods, allowing construction to proceed after logical phases of design and permitting are completed, but prior to completion of the entire body of construction documents.

Step 7 above, Proposal Evaluation and Selection, is the best chance the Owner will get to ensure that it gets the project it wants, and to get the best value for its money.

Best value considers both qualitative factors (i.e., design solution, management and schedule) and price. In the selection/evaluation process, both qualitative factors and price are considered on a formula basis.

The Owner should appoint a selection panel to perform the qualitative rankings. Generally, this is the same committee and/or panel that the Owner used to determine the most qualified Proposors. There are several methods the panel can use to evaluate the proposals. Six of these are discussed below. Each has been successfully used and each has its merits, though no single process is appropriate for all situations.

1. Weighted Criteria - The RFP requires submission of a qualitative proposal and firm price. The Owner establishes a point rating for qualitative factors and for price. (For example, qualitative factors may weigh 60 points, and price 40 points.) The Owner receives the qualitative proposals and the price proposal simultaneously. The price proposal is contained in a separate envelope. The Owner may then hear oral presentations from each Proposor. The Owner assigns points on a scoring matrix for each Proposor’s response for each of the evaluation factors.

   After the Owner evaluates the qualitative criteria, it reviews the price proposal envelopes. Maximum price points are assigned to the lowest dollar bid, and
all others are scaled inversely proportional to that amount. High total points then determine the award.

2. Adjusted Low Bid. A variant of the weighted criteria process is the adjusted low bid. The process follows the same steps through receipt of qualitative proposals. Following the oral presentations, qualitative aspects are scored and totaled on a scale of 0 to 100 scale expressed as a decimal (e.g., a score of 85 is written 0.85). After calculating the scores, the Owner opens each bidder’s price envelope. Price is then divided by score (expressed as a decimal) to yield an “adjusted bid”.

3. Equivalent Design/Low-Bid. This evaluation procedure parallels the two previous processes up to receipt of qualitative proposals. The Owner critiques the technical proposals, and gives each Proposor a deadline to respond with specified design changes and corresponding price amendment (either add or deduct) in order to make all proposals technically equivalent (referred to as “technical leveling”). Revised designs are evaluated by the Owner, which then opens the price envelopes, both base and amendments. Award can be made with heavy or sole emphasis on price because the proposal critique should have resulted in equivalent designs.

4. Fixed Price/Best Design. Contract price is established by the Owner and is stated in the RFP. The Proposers then submit only qualitative or technical proposals, as all price offers are identical. Following oral presentations (optional), the Owner uses its evaluation criteria to score the proposals. Award goes to the firm offering the highest scoring proposal for the stipulated price.

5. Meets Criteria/Low Bid - This method of evaluation most closely resembles the traditional bid process. Typically, the RFP provides specific requirements, but fall short of final construction documents. The Owner solicits proposals from qualified firms, and evaluates those proposals to ensure that they meet the base criteria. The Owner then awards the contract to the low bidder. The selected firm’s role is to complete construction documents in a reasonable manner rather than to develop a unique design for the project.
The weakness of this process is that it eliminates two of the most advantageous features of design-build: multiple design solutions and the creativity/innovation of competing design-build teams. It is best suited for procurement of utilitarian facilities (e.g.: storage sheds, pre-engineered buildings, etc.).

6. Emergency Award - As the name implies, when public safety or welfare is threatened, a public Owner may authorize negotiations with the best-qualified design-build firm available at the time, using references and/or previous Owner experience with the firm as justification for the selection.

As stated at the beginning of this section, the above-described steps are generic and optional – an Owner can decide to use or not use any or all of them. But they do provide an overview of a process that project Owners have successfully used in the past.

IV. D. Design-Build Considerations on Public projects
Public sector Owners have been using D/B in one form or another for more than thirty years. Early results were mixed, and some court decisions at the time served to restrict its application. This is changing, but the rules are far from clear or consistent. Some specifics about applicability and legality are discussed later.

IV. E. Design-Build Advantages and Disadvantages
There are real advantages possible for all parties in a D/B contract, especially if all the parties understand the mechanics of the process as it applies to their project. No two projects are identical – each will have some unique aspect or combination of aspects that make the advantages of D/B more or less attractive.

Possible Time Savings
The D/B method eliminates some of the time lost in the design-bid-build process but combining the selection of a designer and a contractor into one step. Further, the contractor can start construction before the entire design is completed. For instance, the D/B Contractor can start excavation as soon as the foundation and utility relocation
design is complete. The Design Professional can continue design work for the rest of the project during excavation.

**Possible Cost Savings**
Proponents of D/B point to the value engineering-type savings possible when the A/E works directly with the construction contractor. Construction contractors have more direct and real experience with the cost of purchasing and installing materials. They can share that experience directly with the Design Professional during the Design Phase of the project, and, where that experience translates to lower costs, those savings can be passed on to the Owner.

**One Point of Contact – “One Stop Shopping”**
Where the potential cost and time savings will vary from project to project, the single entity that is the D/B Contractor is common to any D/B contract. The advantages of this feature are also relative – having only one entity to deal with could eliminate some of the oversight benefits an Owner would otherwise get from contracting separately with a Design Professional for the project design.

**Fewer Change Orders**
An Owner can expect fewer change orders on a D/B project, and this is a definite and major advantage of the system. That is not to say that there will be no change orders. If an Owner decides it wants a design change during the project, and that change is not covered by the defined scope of the project, that is an extra. However, the Owner is no longer liable for any errors the Design Professional makes.

**Reduced Risk to the Owner**
The shifting of the liability for design quality from the Owner to the D/B contractor is one of the salient features of the D/B project delivery system.

Under the design-bid-build contract delivery system, the Owner, having contracted separately for the design of its project, warrants that the design is workable and error free to the construction contractor it hires. This is called the Spearin Doctrine, which was discussed in Section IV.A.
This warranty against design errors in the plans is the Spearin Doctrine-related risk that the Owner shifts to the D/B Contractor. The advantage to the Owner is that it now knows from the outset what the cost of that risk is. As the D/B Contractor is in a better position than the Owner to manage and minimize that risk, this is a significant advantage of D/B contracting.

**Possible Disadvantages to using the D/B Method**

**Loss of Control of Project Design**
Implicit in the D/B project delivery system is the shift in responsibility for the design from the Owner to the Contractor. With that shift in responsibility comes some shift in control. The Owner should evaluate the degree to which this loss of control will affect the success of the project. If the Owner has specific needs or requirements, it should satisfy itself that it can clearly articulate them in defining the scope of work, or accept the risk that it will have to pay extra to get what it wants via the change order process.

Change orders issued to revise scope are not inherently less likely or less expensive in the D/B project delivery method.

**Less Project Oversight/Control of Quality**
One of the advantages of the D/B concept is the cooperation between the Design Professional and the construction contractor. This can also be a disadvantage, as the architect is no longer the Owner’s independent consultant; it is now working with and for the contractor. For Owners that do not have their own design-proficient staff, the loss of the architect’s input and judgment may expose them to quality control problems.

Items upon which the Design Professional could advise the Owner include the quality of the construction Contractor’s performance, Contractor change and value engineering proposals, quality of construction materials, and review of contractor progress payment applications. The need for some of this review should be obviated by the use of the D/B system. That is, the responsibility for change orders related to the design has shifted to the D/B team. But other items, such as quality and type of material, are the purview of the D/B team. If the Owner has special concerns in this area, it should consider these in making its decision on use of D/B project delivery.
Regarding the review of project payment applications, courts have recognized the difference between D/B and design-bid-build vis-à-vis the Design Professional’s responsibility. Here is a section of a decision on that subject:

“The job of an architect [in design-bid-build] is to ensure that his plans are followed precisely, irrespective of the additional cost to the contractor. In many respects, the architect is seen as antagonist to the contractor, as the contractor is seeking the maximum profit, while the architect is seeking the best financial product possible. Individuals working in the setting of a “design-build firm” experience a constant conflict of interests not normally present in the setting of an independent architect.”

This decision highlights the different kind of relationship that the Owner can expect with the Design Professional. The Design Professional is still there developing plans and specifications, but in a different capacity. The AIA B901 form – Standard Form of Agreements between Design/Builder and Contractor – includes the provision that the Design Professional will provide services “as set forth in AIA document A201, General Conditions of the Contract for Construction.” As those services are more than the D/B contractor is likely to want to provide, this is further indication of the ingrained traditions of the Design Professional regarding its role in the construction process.

The Owner considering design-build project delivery ignores this issue at its peril. If the Owner is one that is used to having the Design Professional act as its agent, it should make plans to have another entity take that responsibility.

**Suitability of Design-Build Team**

When a public owner is planning a construction project using the design-bid-build methodology, it contracts with a design team separately from contracting with a construction contractor. While public agencies are bound by state law to hire the lowest responsive, responsible bidder for construction work, they have more flexibility in selecting designers for their projects. In other words, public owners can more into account in the selection process than which candidate offered the lowest price. This may not always be the case. The Brooks act requires a two-part evaluation; first of technical
qualifications and then the evaluation of the cost proposal of the team with the best technical proposal.

Choosing a design-build contractor can be more like the process of awarding a construction contractor – lowest responsive, responsible bid wins. In this case, the public Owner loses the latitude it had in selecting a design firm. True, it has shifted the risk for adequacy of the design to the D-B contractor, but that is little solace to an Owner if the finished project is structurally sound but operationally deficient.
SECTION V

The Basics of Design-Build (Continued)
V. The Basics of Design-Build (Continued)

V. A. Management of Design

V.A.1. Design-Build With Owner Supplied Design Criteria

The most challenging aspect of using D/B project delivery for the Owner is to develop design criteria that are detailed and comprehensive enough to define the product the Owner wants, but is not so restrictive that it would preclude the D/B Contractor from developing and implementing creative and cost saving design ideas. To this end the design criteria should be defined in terms of performance to the greatest extent the Owner can manage.

A special case of design criteria development is process definition, e.g. for chemical and refinery plants. Process definition usually comes from the Owner – the Owner has a process it prefers, and hires a D/B Contractor to implement that process in a plant. The Owner provides process flow diagrams (PFD) and Piping and Instrumentation Diagrams (P&ID) to the D/B Contractor, which then designs and builds the plant. In this case, the D/B Contractor does not provide process guarantees. An exception would be an R&D project, where the D/B Contractor works with the Owner at a stage prior to development of the process. In this case, the D/B Contractor would be at least partly responsible for effectiveness of the process.

Another method available to Owners for specifying D/B contracts is bridging. Under bridging, the Owner develops documents that provide a “bridge” between performance-based criteria and detailed design. Owners can use this technique to provide design detail for a portion of a project for which it has requirements it cannot articulate in a performance-based specification. The portion of the product which has less detailed requirements can be specified on the basis of more general performance-based requirements.

V.A.2. Restrictions By Law or Regulation
In recent years, there have been fewer and fewer legislative restrictions against the use of D/B project delivery in the public sector. The Federal Government now uses D/B regularly. Restrictions at the local level vary by state. It is difficult to make a general statement about the State of California, but a Public Owner that wants to use it can find a method available to it. Private Owners can, of course, use whatever delivery system they like.

For D/B Contractors, regulations exist that govern the structure of the D/B team. A Design Professional cannot act as a General Contractor (GC) without either having a license, or having a licensed General Contractor as part of its team. Similarly, a Contractor cannot act as a Design Professional without a license and so must have a licensed Design Professional as a part of its team.

V. B. **Design-Build Structures**

Design-Build / Design Professional As Prime

A Design-Build organization with the Design Professional as Prime is created when an Owner contracts with the Design Professional to provide all of the design and construction services required to deliver the project. The Design Professional thus becomes responsible to the Owner for the means and methods, including ensuring that the project is built in accordance with the Design Professional’s design.

Having the Design Professional as Prime provides the following advantages:

The Design Professional is experienced in meeting the Owner’s need to balance quality and cost

Design can begin even if the Owner has not decided to use Design-Build as its project delivery method

The Design Professional’s client is the Owner, just as in Design-Bid-Build

With the Design Professional as Prime, the Contractor is insulated from Owner claims for defects in the builder’s work – the Contractor is only obligated to the Design Professional for these issues, and that is the major difference between a Design Professional led D/B organization and traditional Design-Bid-Build project delivery.
Having the Design Professional as Prime shifts more risk from the Contractor to the Design Professional. These risks include Subcontractor defaults, work quality defects, liens, changes, claims safety problems and payment disputes. The Design Professional may try to shift these risks, especially the liability for Subcontractor performance, to the Contractor. In previous sections we noted that risk is best shifted to the party best able to manage it; it is also prudent to shift risk to the party best able to afford it.

A possible disadvantage to Design Professional led team is the possibility of problems with state professional licensing laws. The State of California contracting code permits partnerships between Architects and Non-Architects, but requires the Architect’s name to appear on plans, drawings, etc., and bars the designation of a non-Architect as an Architect. Other states may vary, and a D/B team should be aware of differing requirements when operating in other states.

V.B.1. Design-Build / Contractor(s) As Prime

In this contracting arrangement, more common than the Design Professional led arrangement, the Contractor contracts with the Owner to design and build the project, and the Contractor then contracts with a Design Professional to provide the design.

One important reason that Contractors often lead D/B teams is that Owners have confidence that they have the necessary skills and experience to manage the D/B process. These skills include managing and coordinating the design and construction activities, managing the budget, scheduling the work, and procuring the multiple trade packages, equipment and materials that will be incorporated into the project.

A second reason that Contractors lead D/B teams is that they are more likely than Design Professionals to have the financial resources to assume the risks associated with a construction project. Contractors manage payrolls and cash flow on construction projects. Adding the Design Professional to the list of Subcontractors the Contractor must manage (and pay) is no more than an incremental change in the Contractor’s obligations.

The Design-Build Institute of America (DBIA) notes that not every Contractor is suited to lead a D/B team. Those Contractors coming form the low-bid market may not be prepared to assume the added risks associated with D/B contracting. As described in
Section IV, the D/B Contractor is responsible for design errors, and thus requires the Contractor to develop a cooperative relationship with the Design Professional; a Contractor that cannot or will not do this will have problems succeeding in the D/B environment.

V.B.2. **Design-Build / Design Professional & Contractor(s) As Joint Venture**

Under the Joint Venture (JV) D/B structure, the Design Professional and Contractor pool their resources to deliver the project. The parties agree to share project losses / profits and management details. The JV can subcontract the design to the Design Professional and the construction to the Contractor, or the JV can self-perform these functions with personnel from the JV partners.

A benefit of the JV partnership is that it affords the Owner direct access to both the Design Professional and the Contractor. This access to both parties will assuage the Owner’s concerns about losing control of the project due to lack of access to the Design Professional. Another benefit is the risk-sharing between the partners that will give each the incentive to work together to deliver a successful, profitable project.

A disadvantage of the JV arrangement to the participating partners is the added liability each takes on – both partners are jointly and severally liable for the actions of the other, committed during the joint venture. To quote the DBIA Teaming Agreement Guide “…if one of the venturer’s actions damages the Owner or another party, and that venturer cannot satisfy its share of the liability, the other venturer is responsible for satisfying that liability in full, regardless of whether that venturer was responsible for the particular loss.” The parties should each learn the financial resources of the other before developing the JV agreement.

V. C. **Experience and Trends**

D/B is increasing in popularity, not only in terms of number of projects using it, but also in the types. In Section IV we gave you a laboratory as an example of the type of project
for which D/B is not appropriate – recently however, UC Irvine as used D/B to deliver just such a project.

If there is a lesson about D/B to be learned, it is for Owners to include in their specifications all the features they need, and for Contractors to be sure to deliver those features.

Another lesson is that for the process to be successful, a spirit of cooperation between the Owner and the D/B Contractor is essential. This spirit of cooperation should include frequent and open communication among the participants with the coal of meeting each others’ needs and wants.
SECTION VI

The Design-Build Practice
VI. The Design-Build Practice

VI. A. Critical Concepts in the Owner-Design/Builder Contract Relationship

VI.A.1. Introduction to Design Build

Universally, construction project owners, whether in the public, or private sectors seek timely and cost-effective construction. While there are a variety of views on how best to achieve schedule, budget, and quality, recently there is a focus upon the method of construction project delivery.

There are various construction project delivery methods, the most traditional of which is Design/Bid/Build (“DBB”). For generations this was the predominately accepted means by which construction projects were developed and delivered.

Classically the DBB construction project is organized as its name implies. First the owner retains an architect, or other design professional to ‘Design’ the project. Second the owner solicits prices from contractors for the construction of the project based upon a review of the design prepared by the owner’s design professional – the ‘Bidding’ process. Ultimately, the owner selects the contractor, often based upon the lowest price and enters into a contract with the contractor to ‘Construct’ the project in accordance with the design. Often the architect is the owner’s representative during the construction process. Also, the contractor enters into sub-contracts for the performance of specific scopes of the design, i.e., electrical, mechanical, civil, etc.

This traditional organization has been modernly revised - the owner may substitute a construction manager in for the architect’s supervisory role during the construction project, and/or use multi prime constructors as opposed to a single general contractor with subcontractors.

Today there is also a focus on the owner having one primary contractual relationship with an entity that is responsible both for the design and building of the construction project. This project delivery method is called Design/Build (“DB”).
There are some obvious, as well as not so obvious, differences between a traditional DBB project and the DB delivery. In the traditional DBB project the design professional is typically the exclusive owner’s agent for design development. That design development process is typically a multi-party arrangement with the architect of record, as the overall coordinator and head of various other specialty design disciplines, i.e. civil, electrical, mechanical, etc., acting as sub-consultants to the architect. Thus, the Owner deals with two entities – the Design Team on the one hand for design development, and the General Contractor on the other for construction of the project.

The emergence of different project delivery methodologies, including the DB system, morphed the design team to either one of partner with the General Contractor, or a “subcontractor” to the General Contractor. The reverse may be equally as true, where the Designer, either architect or engineer, might have a prime contract with the Owner for both design and construction of the project, and hold a “subcontract” with a General Contractor for the actual performance of the work. In either scheme the Designer is still be responsible for the ‘D’esign of the project, and the General Contractor responsible for the ‘B’uilding of the project. Thus, the Owner deals with a single entity for the project.

The shift in project delivery methodologies is often attributed to Owners’ desire for a single-point of responsibility for both design and construction. The DB project delivery method seeks to address that need by creating a direct contract relationship between the General Contractor and the Designer to jointly develop the design and construct the project. Thus, the majority view is that the integration of the design and construction aspects of the project inures to the Owner’s benefit as the Owner is in direct contract with only one entity – the DB Contractor – for all aspects of the project from initial concept development thru construction completion and occupancy.

On the other hand DBB, which is typically viewed as a conservative and prudent approach to design and construction, now is under attack as one a project delivery method that is inefficient and costly. Additionally, there is a view that it promulgates an adversarial environment among all the major entities involved in the process, i.e. designers, contractors, sub-contractors, suppliers and owners.
There perception that the DBB approach is fundamentally flawed flows from several issues.

1. An assumption that the exclusive holder of all cutting edge design/construction technologies/methodologies, including knowledge of the most cost effective construction techniques is vested in the design team, i.e., architects and engineers.

2. The dichotomy that no plans and specifications prepared based upon the Owners’ design concept are complete and accurate; when Owners’ expectations are the exact opposite; and the reason that the construction contract includes a changes provision.

3. Unresolved change orders, or construction claims, are generated as a result of a contractor’s low bid mentality and the economic fallacy that the contractor can make up losses, and/or profit through an aggressive change order, and/or claims process either during the project or after substantial completion.

4. The DBB project delivery methodology artificially extends the overall project duration from design concept development through beneficial occupancy.

5. That the economic realities of the 21st century mandate an approach to the design and construction of the modern construction project that promotes efficiency, team building, partnering and limiting claims.

Of course even in the DB delivery system, which attempts to streamline the design and construction process, there are pitfalls. Thus, the DB approach, like the other innovations of the past 25 years in regard to construction project management, may not be the panacea to increase efficiency and the effectiveness of the design and construction process, and/or limit disputes and litigation.⁵

⁵ Fortunately there are relatively few DB cases, which tends to at least anecdotally confirm that this project delivery method reduces claims and litigation. Of course there may be any number of claims that are resolved prior to the initiation of any formal disputes process, including administrative, arbitration, or other forms of alternative dispute resolution, and/or litigation, which would not result in any reported
A major concern relates to a definition of the scope of the DB Contractor’s obligation for performance.

A recent case highlighted the significance of the potential liability for the DB Contractor in regard to its relationship with the Owner’s third party Architectural Design Consultant (“the Owner’s Design Consultant”) who established the preliminary design parameters against which the DB Contractor’s performance obligations were measured.

In the case of **Glacier Tennis Club at the Summit, LLC, vs. Treweek Construction Company, Inc.** (2004) 320 Mont. 351, 87P.3d 431, the Montana Supreme Court held that the Owner’s Design Consultant owed no duty of care to the DB Contractor for the DB Contractor’s own design errors.

A tennis club in Montana decided to build an indoor tennis facility using the DB project delivery method. The Owner’s Design Consultant prepared the conceptual and schematic designs, the basis of the performance parameters for the DB Contractors’ preparation of the final design and ultimately construction of the project. The Owner’s Design Consultant also assisted the owner in evaluating the bid proposals, as well as obtaining permits for the project. The Owner’s Design Consultant did not prepare the final design for the project. That was the responsibility of the DB Contractor. During construction the Owner’s Design Consultant performed the administrative functions, such as attending meetings and reviewing the DB Contractor’s various submittals and progress payment requests.

Upon completion of the project the Owner discovered defects, including bulging of the tennis courts and water infiltration into the buildings. Although the DB Contractor attempted to repair the defects, those repair attempts were unsuccessful.

After review of the construction in place, as well as the final design prepared by the DB Contractor, it was determined that the defects were caused by poor sub-surface drainage design, as well as defective workmanship for the construction of the drainage.

case authority against which owners, designers, and contractors interested in this type of project delivery methodology.
Subsequently the Owners sued the DB Contractor for breach of contract and negligence. The DB Contractor filed cross-complaints against the Owner’s Design Consultant, as well as one of its sub-contractors. The trial court entered a summary judgment in favor of the Owner’s Design Consultant; and ultimately the jury awarded the Owner $85,000 for repair costs.

The Montana Supreme Court ruled that summary judgment in favor of the Owner’s Design Consultant was proper, holding that the Owner’s Design Consultant did not owe a duty of care to the DB Contractor. The Montana Supreme Court discounted the DB Contractor’s argument that duty of care arose during the Owner’s Design Consultant’s review of the DB Contractor’s plans and specifications, and while reviewing the DB Contractor’s payment applications. Additionally, the DB Contractor asserted the Owner’s Design Consultant was actively involved in the project which made it reasonable for the DB Contractor to assume that the Owner’s Design Consultant would identify and notify the contractor of any errors in the design prepared by the DB Contractor.

While there was no assertion by the DB Contractor that the original design parameters prepared were defective, the Court concluded that performance of administrative duties failed to create the nexus necessary to establish a prima facae case that the Owner’s Design Consultant was liable to the DB Contractor, as it was not a member of a foreseeable class of persons who would rely upon the administrative activities performed by Owner’s Design Consultant during the course of the project. While the Court recognized that the Owner’s Design Consultant reviewed the DB Contractor’s design, such work was solely for the benefit of the Owner, not the DB Contractor, and there was no evidence that the Owner’s Design Consultant communicated any professional information to the DB Contractor upon which it would rely.

It is evident that the Montana Supreme Court narrowly construed the facts in this case as it related to the responsibilities the Owner’s Design Consultant and of the DB Contractor – leaving unresolved the liability of the Owner’s Design Consultant who may become aware of defects in the DB Contractor’s design of the project. Even so, given the unique factual setting in a DB project delivery, where the DB Contractor has its own “Design
Team” any design related information provided by the Owner’s Design Consultant in a pre-proposal stage would not justify an appropriate claim against that consultant, absent an additional showing by the DB Contractor properly establishing that the design information provided by the Owner’s Design Consultant was defective. Accordingly, it would seem that a DB Contractor needs to establish that the initial information in the conceptual design stages was the route cause of any defective design prepared during the subsequent development of the design and construction documents upon which the project is ultimately constructed. Additionally, this case establishes that absent some proof that the Owner’s Design Consultant was involved during the project construction in directing the performance of the work, the DB Contractor are exclusively liable for the defective work.

Some commentators have also suggested that there may be an overriding public policy justifying insulation of the Owner’s Design Consultant so long as the conceptual design was not itself defective - Owner is better off having a third party Design Consultant participate both in the conceptual design phases of the project, as well as during the subsequent design development, and project construction, as an additional resource in order to minimize design issues and to ensure that the project is constructed in accordance with the Owner’s original design parameters. Thus, the Owner’s Design Consultant should be free to review the DB Contractor’s design and construction process without the risk of ultimately being the responsible party for the sufficiency of the design in the construction. Such a view is akin to a design professional’s limited liability in regard to its review of typical project submittals, i.e. shop drawings, etc. Accordingly, it is ultimately prudent that the DB Contract clearly allocates the risk for the final design and construction performance to the DB Contractor, and not the Owner or the Owner’s Design Consultant in order to establish clear lines of responsibility and authority for the finally constructed project.

When analyzing each of the different types of construction project delivery methods defining the relationships and risks involved for each participant with respect to the other is fundamentally defined by the contracts entered into by the participants. As the proceeding discussion illustrates with any type of construction project delivery system, among the most important and fundamental of stages is contract formation. It is during
this phase of the project that the Owner and the Contractor, among the other parties, allocate risks for cost, schedule and quality of the constructed project. Typically, sophisticated, as well as unsophisticated parties, turn to the volumes of standard construction contract forms. Universally, the use of such standard forms should be undertaken with great caution since no one “standard” contract form comprehensively allocates the risks for each unique project. Accordingly, we have sought to highlight some of the most widely regarded and recognized Owner - DB Contractor standard contract forms as they specifically relate to the DB construction project delivery method.6

VI.A.2. An Overview of the Standard Design/Build Contract Forms

The four (4) DB standard contract forms are those prepared by various professional associations that are most often recognized as leaders in the construction industry. Those organizations are: (1) the American Institute of Architects ("the AIA"); (2) the Associated General Contractors of America ("the AGC"); (3) the Design/Build Institute of America ("the DBIA"); and, (4) a joint committee of the National Society of Professional Engineers, American Consulting Engineers Council, and American Society of Civil Engineers ("the EJCDC"). Each have developed an approach to contracting that in some instances is consistent, and in others is different. Each will be addressed here, highlighting some of the key DB issues encountered in the construction contracting phase.7

The AIA Standard Forms

6 This paper is not intended to be an exhaustive review of each of the standard contract forms related to DB, but focuses on some of the typical issues that are of importance on every project. As with any review of standard contracts, an experienced construction attorney should be consulted during the contract formation phase.

7 It should be noted that we are not advocating one standard form over another, but simply reporting on the framework of each of the typical forms that may be considered during the contracting phase. Also for the purposes of this discussion, we have not exhaustively addressed the EJCDC documents separately, but have highlighted some of the significant issues within discussions of the other standard forms.
The AIA recommends a two-part agreement\(^8\) published in 1996 (AIA Doc. No. A191) entitled, the “Standard Form of Agreement between Owner and Design/Builder.” The process seeks to allocate risk from original project concept thru design development and working drawings to prosecution and completion of the project. The AIA’s Design/Build forms essentially compliment the other AIA standard contracts, including the Standard Form of General Conditions to the Contract (AIA Doc. No. A201), and are organized in the same general format as all AIA family of documents.

Part 1 is subdivided into ten articles. This Part is intended to develop the framework for the project’s initial program requirements to the development of the DB Contractor’s written proposal for project execution of design development and construction.

Once the DB Contractor’s proposal is accepted, Part 2 is executed for the performance of the balance of the design effort, including the development of construction documents and the construction of the project.

**The AGC Standard Forms**

The AGC updated and revised its DB documents in 1999. The prior edition was published in 1993.

The Preliminary Design/Build Agreement Between Owner and Design/Builder (AGC Doc. No. 400) governs the relationship between the Owner and the DB Contractor at the earliest stage of the D/B process - the Owner’s program development.\(^9\) During this initial relationship the DB Contractor assists in the analysis and evaluation of the Owner’s program and project performance parameters, called the DB Contractor’s “Preliminary Evaluation of the Project’s Feasibility for the Owner’s Acceptance.” That process includes the preparation and submittal of both a preliminary schedule and estimate for the

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\(^8\) Interestingly, this two part approach is typical of all the standard form contract approaches whether advocated by either the AIA, AGC, DBIA, and/or EJCDC.

\(^9\) AGC Doc. No. 400 contains seven articles, including a general agreement, definition of the various team members responsibilities, a discussion of the ownership of design, as well as a preliminary definition of the time of performance and cost for this phase of the DB program development. This is an attempt to outline the preliminary responsibilities and performance parameters for the Owner/DB Contractor relationship at this initial phase of the project.
overall project based upon the Owner’s program and expectations for the completed project.

If the Owner elects to proceed with the project beyond the services defined under AGC Doc. No. 400, the parties may enter into an additional agreement covering the completion of design and construction. This process is completely volunteer, as the Owner may elect to use a different DB Contractor for the actual implementation of the final design and construction. Accordingly, the initial work on the Owner’s program, may be used as a resource by the follow-on DB Contractor. It is an open question as to whether that creates some level of potential exposure to the initial DB Contractor, and potentially would require the negotiation of additional language to supplement AGC Doc. No. 400, in order to address this potential area of risk between the Owner and the initial DB Contractor.

If the Owner elects to use the initial DB Contractor for the final design development and construction, the AGC offers two additional and separate standard form agreements for the continued contract relationship depending on the compensation structure elected to be used for this phase of the relationship: (1) AGC Doc. No. 410 for a project to be completed on a Cost-Plus, Guaranteed Maximum Price (“GMP”) basis, and; (2) AGC Doc. No. 415 for a project to be completed on a Lump-Sum, or Fixed Price, basis.

The DBIA Standard Forms

The initial DBIA scheme, much like the AIA and AGC frameworks, provides for the DB Contractor to review the Owner’s program. The concept in the DBIA framework is to allow the DB Contractor a platform from which it may suggest “innovative approaches” to the program and project development to address one of the criticisms of the DBB process – the DBB structure vests all the most cost effective and technologically advanced design and construction methods with the Owner’s Design Team. The DBIA approach provides an avenue for the DB Contractor to offer changes to the Owner’s original program that may better serve the Owner’s expectations for the final project.\(^\text{10}\)

The DB Contractor’s scope in the DBIA scheme includes providing a written evaluation of the Owner's project program and performance criteria, including commentary on the Schematic Design. Also it provides for the DB Contractor to issue a proposal to complete the project, including schedule and price.

As with the AGC framework, the DBIA documents include agreements for finalizing the design and constructing the project - 1) DBIA Doc. No. 525 for Lump-Sum/Fixed Price contracts, and; (2) DBIA Doc. No. 530 for a Cost-Plus contract (including an option for the establishment of a GMP).

The AIA, AGC and DBIA standard form contracts each address the major areas of focus for establishing the Owner/DB relationship in similar approaches. Some of those areas and approaches are discussed in the subsequent section of this page.\(^\text{11}\)

VI. B. **The AIA Design-Build Documents**

VI.B.1. **Commencing the D/B Relationship – AIA Scheme**

The AIA framework assumes that the Owner defined a program for the project including,

\(^{10}\) See Loulakis & Greenberg, The New DBIA Design/Build Standard Form Contracts, CONSTRUCTION BRIEFINGS No. 98-13 (Dec. 1998).

\(^{11}\) Many of the ideas and discussions are drawn from various publications and articles researched and referenced herein. Much of this general discussion is more thoroughly addressed in the Design/Build Desk Book, Second Edition, John R. Heisse, II, Editor, a publication of the Forum on the Construction Industry of the American Bar Association.
the “Owner’s objectives, schedule, constraints and criteria.” While this assumption may ultimately prove to be incorrect, the AIA scheme does envision a different approach.12

Even in the situation absent the retention of a third party Owner’s Design Consultant, typically the Owner has developed a program defining initial design concept, project parameters, and the Owner’s expectations of project duration and cost. In fact what has become the norm is for Owners to have an extensive program developed that is used as the basis of a Request for Proposal (“RFP”) from various DB Contractors for evaluation and ultimate award of the DB project.

There is no minimum standard for either the preparation of, or the particular format for, the Owner’s program. These may be developed either as sketchy narratives of the Owner’s requirements, or more developed, sophisticated preliminary drawings and specifications. The level of completeness of the Owner’s program depends on several factors, including the level of sophistication of the Owner, the level of planning effort undertaken, and even statutory requirements for initiating the design/build process. As a practical matter an Owner’s initial program can range between “5 percent complete” to “55 percent complete” for the DB process to commence.13

Irrespective, a carefully prepared Owner’s program will clearly define the scope of the work for the Project. They should at a minimum establish the Owner’s contract performance expectations, and allocate responsibility between the DB Contractor and the Owner. This will include not only defining the scope of design and construction constraints with respect to issues such as building footprint, floor plans, elevations, structural systems, building systems (plumbing, electrical, HVAC), process requirements, structural systems, building systems (plumbing, electrical, HVAC), process requirements,

12 It should be noted that AIA A191 also provides a mechanism for the Owner who has not prepared a comprehensive program for the project before engaging the DB Contractor. Accordingly, the AIA scheme provides for the DB Contractor to provide as an additional service, the establishment of a “more extensive programmatic criteria” for use by the Owner. These additional services include: (1) defining the program requirements of the Project; (2) reviewing the program requirements with the Owner; (3) documenting the applicable requirements; (4) analyzing of the functional and organizational relationships, requirements, and objectives for the Project, and; (5) setting forth a written program of requirements for the Owner’s approval, which summarizes the Owner’s objectives, schedule, constraints and criteria.

life safety issues, and performance parameters and guarantees, but establish budgetary and timing constraints for Project delivery.

There are several advantages to the preparation of a more comprehensive, verses a less comprehensive, Owner’s program. One advantage that appears obvious favors the Owner’s development of an initial Owner’s program that these are typically relied upon by the potential DB Contractors in the initial RFP process. Also, these initial programmatic requirements typically provide the basis for initial DB Contractor proposals for Schematic design, pricing, and schedule, as well as the suggestion of any innovative design/construction approaches to the Project. Sufficient definition is necessary to facilitate a fair, competitive proposal process, and to provide for a completed project that will meet the Owner’s expectations.

On the other hand there is an alternative view to the preparation of the Owner’s initial program, as well as the level of completeness. Some hold the view that the more extensive the initial definition of the Owner’s initial program, the more effort, in both time and money, is vested by the Owner in the pre-RFP process. The suggestion is that this initial level of effort in no different than what any construction project owner expends in a typical DBB project deliver method. Others suggest that the more defined the Owner’s initial program, the less freedom the DB Contractor has to suggest technical and practical innovations for the Project. Accordingly, this limits using the potential DB Contractor as a necessary resource in development of the design aspects for the Project.14

Carefully considering the advantages and disadvantages allows the parties to address difficult decisions and trade-offs as early in the design/build process as possible. Every Owner must weigh these competing considerations very carefully, as well as consider which of the standard forms provide the most, or less flexibility.

Notwithstanding these various positions, the DB Contractor in the AIA scheme, once retained, is to provide and address reasonably specific issues, including: (1) “a preliminary evaluation of the Owner’s program and the project budget requirements;” (2) a review of “alternative approaches to design and construction,” as well as the provide

14 Id.
the following:

“... submit to the Owner a Proposal, including the completed Preliminary Design Documents, a statement of the proposed contract sum, and a proposed schedule for completion of the Project. Preliminary Design Documents shall consist of preliminary design drawings, outline specifications or other documents sufficient to establish the size, quality and character of the entire Project, its architectural, structural, mechanical and electrical systems, and the materials and such other elements of the Project as may be appropriate. Deviations from the Owner’s program shall be disclosed in the Proposal....”

Other additional services during the Part 1 phase of the AIA DB scheme, include the preparation and analysis of financial feasibility studies, the development of planning surveys and site evaluations, provision of analyses future expansion of existing (or new) facilities and ownership and operating costs, and developing interior design and FF&E procurements.

VI.B.2. How Much Will It Cost?

As discussed previously, Part 1 of the AIA A191 form indicates that the total contract compensation will be included in “a statement of the proposed contract sum.” As is typical with the other AIA family of documents, the DB AIA standard forms leaves the determination of contract price and the method of compensation to the parties to freely negotiate. Although Part 2 of the AIA A191 document apparently assumes a Lump-Sum/Fixed Price contract as the basis of payment, the parties may decide to utilize any other type of compensation structure as long as care is taken in fully developing the specific requirements for same. For example, the parties may choose to use Lump-Sum line items for certain scopes of work that are more fully developed in the program phases, and contingency, or Cost-Plus with a GMP for others. Of course great caution is recommended if one chooses to mix different compensation methods, and there should be an additional focus on what methods will be used to quantify the basis of payment.

VI.B.3. Establishing The Standard of Care

As there is an element of Design in the DB delivery method, the DB Contractor is
representing itself to the Project Owner that it is an entity that has both the professional capacity to perform not only the actual construction of the project, but also the necessary design work. A General Contractor performing a DB Project as a prime to the Owner, assumes the additional responsibility of performing the design services in accordance with the applicable standard of care. Accordingly, the DB Contractor is potentially at risk for both contractual liability and professional negligence. Of course the standards of review and legal analysis are different, and often difficult to distinctly segregate from one other, and can be the focus of an entirely separate treatise on both the distinction, defenses and means in which the DB Contractor may insulate one’s self.

In regard to professional negligence, the law imposes a standard of care upon those providing professional services in the absence of an express contractual duty. Of course in the typically DB contract relationship there is a potential commingling of the contractual and professional duties of care. But, the generally accepted standard of professional liability is that a professional is of average ability within the profession, and that the professional (1) possesses the requisite degree of learning, skill, and experience ordinarily possessed by similarly situated professionals in the area; (2) uses reasonable and ordinary care and diligence in the exercise of this skill to accomplish the purposes for which the professional is employed; and (3) uses best judgment.\(^{15}\)

Note that the AIA A191 standard form document fails to address the standard of care expressly. Accordingly, it is recommended that the parties address this issue at the time of entering into negotiations, as the expectations of the standard of care may differ from the generally accepted Black Letter Law noted above.

Also note, and as will be addressed in subsequent sections of this paper the AGC, and DBIA, as well as the EJCDC standard form documents, each address the standard of care as a express condition of the DB contract arrangement.

VI.B.4. Owner’s Responsibilities

Each of the standard form contracts outline literally a “laundry list” of Owner

\(^{15}\) Risk Allocation from the Designer’s Perspective, 443 PLI/REAL 67, 95 (1999).
Responsibilities. Generally, the AIA, AGC, DBIA, and even the EJCDC standard DB contract forms obligate the Owner to the same responsibilities, but only differ in the manner in which the Owner fulfills the requirements.

While virtually every standard contract, including all the standard DB forms require the Owner to provide a written program that defines the Owner’s expectations schedule, and performance requirements for the DB Contractor, the AIA A191 contract obligates the Owner to establish and update a project budget. Of the DB standard forms the AIA A191 is the only one that requires the Owner to establish and update an overall budget for the Project. While the AIA does not provide for a specific formula for the dissemination of this “overall project budget” to the DB Contractor, the Owner may be obligated to disclose this information in the pre-proposal stages of the process.16

Again while all the standard DB contracts permit the Owner to designate a project representative, the AIA A 191 requires the Owner to designate a representative that is authorized to act on the Owner’s behalf. The representative must render decisions in a timely manner pertaining to documents submitted by the DB Contractor. The Owner obtain independent review of the documents by a separate architect, engineer, contractor, or cost estimator. As noted previously such an additional contract relationship does not insulate the DB Contractor, nor fully limits the potential for dispute among the parties.17

Consistent with the other standard form contracts, AIA A191 provides that the DB Contractor is entitled to rely on the accuracy and completeness of the information provided to it by the owner. Specifically, the DB Contractor may rely on the services, information, surveys, and reports provided. Additionally, this would include the

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16 Some states that provide by statute for a DB project delivery objection of individual agencies controlled by a discrete public contract structure are required by statute to publish this type of information as part of its overall evaluation process in justifying the use of the DB project delivery method over the DBB approach. For example, by statute certain School Districts are required to complete vet the DB project program including budget issues before it can be permitted to opt for the DB project approach.

17 As noted previously there is room for caution given the holding in the case of *Glacier Tennis Club at the Summit, LLC, vs. Trewick Construction Company, Inc.* (2004) 320 Mont. 351, 87P.3d 431, where the Montana Supreme Court held that the Owner’s Design Consultant owed no duty of care to the DB Contractor for DB Contractor’s own design errors.
information provided by the Owner in the form of its original program including all performance parameters. The risks of this requirement are more appropriately addressed in later sections of this paper as these issues are related to the concept of changes that may occur on the project.

Part 2 of the AIA A191 standard form generally mirrors Part 1 of the AIA A191 and is also consistent with the requirements of the AIA 201 Standard General Conditions of the Owner/Contractor form. Consistent with that document one specific responsibility is worth of noted. AIA A191, Part 2, requires the Owner to give the DB Contractor prompt written notice if it observes or becomes aware of a fault or defect in the work or nonconformity with the DB Contractor’s proposal or the construction documents.18

VI.B.5. Ownership of the Design & Copyright

As in all contract relationships involving the design, the designer is responsible for the creation of the design documents, including the plans, specifications, etc., necessary for the project. Uniquely in the DB project delivery method, it is the DB Contractor that is responsible for the design documents. Accordingly, for the DB Contractor, like all design professionals, the retention of the design work is often an emotional, as well as legal concern related to risk management. Thus, the contract documents need to adequately provide for the ownership and proper use of the design.

Why is it necessary that the Owner and the DB Contractor recognize the limitations and parameters against which control of the design for the project is governed?

Architectural and engineering plans, drawings and models have been subject to copyright protection at least in part since 1909. The 1909 Copyright Act protected “drawings… of a scientific or technical character” and the Copyright Act of 1976 protected “pictorial,

18Again it is worth of note that the holding in the case of Glacier Tennis Club at the Summit, LLC, vs. Treweek Construction Company, Inc. (2004) 320 Mont. 351, 87P.3d 431, would be counter to this provision. Remember the Montana Supreme Court did not find that the Owner’s Design Consultant, its agent for the project, was liable to the DB Contractor as it had no duty to it. This holding raises the concern about the enforceability of typical exculpatory language such as that contained in AIA A191, Part 2, Section 2.9, and should be considered when negotiating such contract requirements.
graphic and sculptural works.” In addition, the 1976 Act extended copyright protection to unpublished works including any writing. Under the 1976 Act, a work became eligible for copyright protection at the time it was fixed in tangible form even though the work may not be published or may not have a copyright notice or be registered.

Nevertheless, before 1990, most architectural and engineering buildings were not protected by copyright. Thus design professionals, while having an enforceable copyright that they could use to prevent people from photocopying their drawings, were effectively unable to prevent others from building new buildings that were based on those drawings.

This difficult situation was corrected with the passage of the Architectural Works Copyright Protection Act (AWCPA). The Act defines “architectural work” as “the design of a building as embodied in any tangible medium of expression, including a building, architectural plans, or drawings.”¹⁹ Building is broadly defined to include more than structures that may be inhabited.²⁰

Note that since the statute uses the term “building,” it does not cover most works of landscape architecture such as golf courses, gardens, parks, retaining walls, etc. Nor does it cover most engineering projects such as dams, bridges, highways.

The Act confers full protection on works of architecture. Buildings constructed on or after December 1, 1990 will no longer be subject to the separability limitation. And any features, including external and interior architecture, which reflect the architect’s creativity will be covered by the amendments. Of course there will be subject matter limitations under Section 102(b), prohibiting copyright protection for functional features


²⁰ “The design of a building as embodied in any tangible medium of expression, including a building, architectural plans, or drawings. The work includes the overall form as well as the arrangement and composition of spaces and elements in the design, but does not include individual standard features.” [17 U.S.C. § 102(a)(8)].
of the building, including individual standard features, such as common windows, doors, and other staple building components.

Determining the scope of protection for an architectural work will involve a two step process. First, one must examine the work to determine if there are original design elements, including the overall shape and interior architecture. Second, if such design elements are present, one must then determine whether the elements are functionally required. If these elements are not functionally required, the work will be protected without applying physical or conceptual separability tests. Otherwise, architectural works will be subject to the standard of originality as for all works of authorship, as developed by the case law. Determinations of originality are generally made ad hoc by the courts. It will take some time before they create a body of law providing significant guidance on what constitutes originality for architectural works.21

The act does contain limitations on the rights of the copyright holder that differ from those of more traditional protected interests such as paintings or books. Photographs or drawings of protected buildings are not prohibited. Owners of a copyrighted building may not be prevented by the holder of the copyright from altering or demolishing the building.

A question may arise as to who actually is the holder of the copyright, particularly in the unique DB Relationship where the design is prepared by a professional who is acting either as a prime, or subcontractor. The answer may turn on a determination of whether the designer was an employee or an independent contractor to the DB venture.

Under the Federal Copyright Act, a “work made for hire” is defined as follows:22

(1) a work prepared by an employee within the scope of his or her employment; or

(2) a work specifically ordered or commissioned for use as a contribution to a collective work, …as a supplementary work… if the parties expressly agree in a written instrument signed by them that the work shall be

considered a work made for hire. For purposes of the foregoing sentence, a ‘supplementary work’ is a work prepared for publications as a secondary adjunct to a work by another author for the purpose of introducing, concluding, illustrating, explaining, revising, commenting upon, or assisting in the use of the other work, such as forewords, afterwards, pictorial illustrations, maps, charts, tables, editorial notes, musical arrangements, answer material for test, bibliographies, appendixes, and indexes, and an ‘instructional text’ is a literary, pictorial, or graphic work prepared for publication and with the purpose of use in systematic instructional activities.”

Thus designs prepared by employees as part of their employment duties belong to the company. Where the design is a work made for hire, the employer or other person for whom the work was prepared is deemed to be the author and absent a contrary written agreement is the holder of the copyright.

Accordingly, in the DB situation whether or not the DB Contractor possesses the copyright to the design, or the separate design entity that is part of the DB venture, becomes a function of the application of either the express contract terms of general rules. The general rule is that the creator of work owns the copyright to that work.

Applying this general approach to the DB concept, clearly the DB Contractor is the owner of the copyright. Thus, the exclusive rights to (a) reproduce, distribute, display or publish the design, and (b) prepare derivative works or authorize others to do so are vested in the DB Contractor at the time of creation of the work.

Where there is no contractual language addressing ownership of the design documents, some courts have found an implied non-exclusive license on the part of the project Owner to use the design over the objection of the original Architect. In this situation the courts may consider a variety of questions in order to determine whether an implied license was granted by the design professional to the Owner. Among those inquiries are:23

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• whether the parties were engaged in a short-term discrete transaction as opposed to an ongoing relationship;

• whether the creator utilized written contracts providing that copyrighted materials could only be used with the creator’s future involvement or express permission; and

• whether the creator’s conduct during the creation or delivery of the copyrighted material indicated that use of the material without the creator’s involvement or consent was permissible

Obviously, the Owner and the DB Contractor should designate in the contract exactly who is to retain ownership of the design and should further specify, at a minimum, all limitations or conditions that they agree will apply to said “ownership.”

The AIA, AGC, DBIA, and the EJCDC standard form contracts expressly address issues related to the ownership of the design, but there are differences. Thus, focus on the distinction between how the different standard forms address these issues is necessary for either Owner, or the other members of the DB venture.

The AIA standard forms, A191 (Part 1), Section 3.1, states:

Drawings, specifications, and other documents and electronic data furnished by the Design/Builder are instruments of service. The Design/Builder’s Architect and other providers of the professional services shall retain all common law, statutory and other reserved rights, including copyright in those instruments of service furnished by them.

Despite this the Owner retains the limited right to hold informational or reference copies of the design in connection with the Project described in the relevant DB arrangement, but not for use “on other projects, for additions to this Project or for completion of this Project by others” (A191 (Part 1) § 3.2).

This limited right vested in with the Owner may be expanded in the event that three (3) discrete events occur.
First, in the event that the Owner and the DB Contractor do not enter into Part 2 of the AIA DB scheme, with written permission for the DB Contractor, the Owner may use the design.

Second, if the Owner wishes to use the design on another project, or for addition or future completion of the relevant project, the Owner after entering into a written contract establishing the material terms of the future use, including a definition of the compensation to be paid to the DB Contractor for such use of the design.

Third, in the event of the DB Contractor’s proper termination for default of the relevant contract, the Owner may be granted a license to the design. However, the license granted is conditional.

If the Design/Builder defaults in the Design/Builder’s obligations to the Owner, the Architect shall grant a license to the Owner to use the drawings, specifications, and other documents and electronic data furnished by the Architect to the Design/Builder for the completion of the Project, *conditioned upon the Owner’s execution of an agreement to cure the Design/Builder’s default in payment to the Architect for services previously performed and to indemnify the Architect with regard to claims arising from such reuse without the Architect’s professional involvement* (Emphasis Added)

Accordingly, although the DB Contractor retains ownership of the design in the AIA scheme, the contract provides for various means to grant limited licensing to the Owner under certain specific situations.

VI.B.6. Inspection, Acceptance and Warranties

AIA’s treatment of inspection, acceptance, and warranties is generally the same as the manner in which the AIA A201 forms address these issues. Essentially the DB Contractor is responsible for: (1) the proper execution and completion of the work; (2) the means and methods of construction; (3) keeping the owner informed of progress; (4) for correcting any work that does not conform to contract requirements; and, correcting at its own cost the correction of any defective or nonconforming work that is discovered before or after substantial completion.
Article 9 provides for the standard terms of the warranty, outlining: (1) a corrective period of one year; (2) Owner’s right to stop work, if corrective work is not timely pursued, and; (3) the Owner’s right to correct defects if the DB Contractor refuses.

VI. C. The Associated General Contractor’s Design-Build Contracts

VI.C.1. Commencing the D/B Relationship – AGC Scheme

Previously various general issues were addressed from the perspective of the AIA Standard Documents for DB Project Delivery. While the AGC scheme is similar general to the AIA framework its perspective is primarily formed from the General Contractor’s view of risk for the constructed project. Accordingly, the standard provisions of the AGC may be more likely to address risk to the benefit of the General Contractor, and less of that of the Owner. Accordingly, care must be given to how one analyzes the treatment of risk when using the AGC documents as the basis of one’s contract relationship. That is not to say that there are significant differences, or one approach is better than the other as the AGC frame make similar assumptions when compared to say the AIA scheme.

For example, fundamentally both assume that the Owner invested significant effort in the development of an overall program for the Project, including establishing budgets and duration, and other Project specific requirements, i.e., equipment, specialized systems and site requirements. As in the AIA scheme the AGC forms establish a discrete set of requirements for the DB Contractor that include a review of the Owner’s programs and the development of an analysis of the feasibility of the project. Also the DB Contractor may propose alternative architectural, civil, structural, mechanical, electrical and systems. That process promotes the concept that the DB Contractor may have superior industry knowledge regarding methods for achieving the Owner’s requirements for time, cost, technology, and quality of the constructed Project.

Similar to the AIA A191, the AGC standard forms optionally allow the Owner to engage the DB Contractor before a complete program is prepared. The AGC framework addresses this as an “Additional Service.” As with the other standard form contracts, the AGC documents also provides a laundry list of additional services that may be approved.
by the Owner for the DB Contractor to price and provide.

This initial phase of the AGC DB scheme concludes with the DB Contractor providing preliminary schedule and estimate for the Project. Also the DB Contractor provides the Schematic Design “illustrating the Project’s basic elements.”

VI.C.2. How Much Will It Cost?

In the AGC DB scheme, if the Owner decides to proceed with the Project beyond the provision of the preliminary DB services to be provided by the DB Contractor in phase one, then the Owner and DB Contractor may enter into a second arrangement governing the completion of design and construction, and establishing the contract compensation methodology, i.e., lump sum or cost of the work, as well as the contract price, perhaps including a GMP. There are no hard and fast rules for which of these two general compensation methods may be used, or which of the two is more advantageous than the other. It primarily depends the sophistication of the parties, the recognition of the risks involved in either approach, and the willingness to establish the proper mechanisms to manage those risks.

Unlike the AIA forms where the parties are left to negotiate the terms of the DB Contractor’s compensation in a more open process, the AGC scheme elects to provide a template for constructing pricing model for the Project and compensating the DB Contractor. Two approaches are suggested, although parties are free to develop their own approach, or freely use a hybrid approach, i.e. lump sum line items with unit cost line items, etc.

The AGC Standard Form #415 provides for the typical Lump Sum/Fixed Fee type contract compensation method. This method allows for the DB Contractor to establish a Lump Sum amount for the design and construction based on the Owner’s program and the Schematic Design. The risk of changes in to either is borne by the DB Contractor. Any adjustments to the Lump Sum Contract Price, are addressed through the Change Order process.

The AGC Standard Form #410 provides for the establishment of a DB Contractor compensation based upon the Cost of the Work, plus a GMP. Typically “allowance”
items are established for specific line items so that the Owner has some understanding of the overall estimate for the Project. The AGC framework requires that the GMP be established based upon the drawings and specifications available at the time the GMP is established. Also the GMP is to identify the allowance items, assumptions, clarifications, exclusions, schedule, unit or square foot pricing basis, and any DB Contractor contingency items. The GMP is established “at such time as the Owner and DB Contractor jointly agree”

The risk for entering into a Cost of the Work, plus a GMP is shifted to the Owner – why? The Owner is liable for the reasonable Cost of the Work, which is not capped. Even the GMP can be adjusted for changes that may occur, because the GMP is only based upon what was reasonably contemplated in the plans, specifications, and other bases of the GMP, established at the time agreed upon by the Owner and the DB Contractor. Also there is risk for the Cost of Work performed before a GMP is established. While this approach gives the parties maximum flexibility, it also may promote the risks that the DB Delivery Method sought to avoid – Changes and Claims.

Typically, the GMP is established before the design is completed, but in the event that the design is incomplete, the AGC scheme provides that:

If the Design/Build Documents are not complete at the time the GMP Proposal is submitted to the Owner, the Design/Builder shall provide in the GMP for further development of the Design/Build Documents consistent with the Owner’s program. Such further development does not include changes in scope, systems, kinds and quality of materials, finishes or equipment, all of which if required, shall be incorporated by Change Order.

After the GMP proposal is submitted, the parties may opt to either enter into the written contract form, or if the GMP is not accepted, the Owner may: (1) suggest modifications to the GMP that, if accepted, form the basis for a binding agreement; or (2) direct the DB Contractor to proceed on a Cost-Plus basis with no-GMP; or (3) terminate the agreement for convenience.

As is typical in other standard forms the contemplate the Cost of the Work, plus a GMP
type compensation approach, the AGC documents fail to address the sharing cost savings below the established GMP. Thus, if an Owner wishes to manage its risk for cost by using some type of shared cost savings for value engineering scopes of work that reduce the GMP, that language must be negotiated separately. There are several models for that approach. Among the best is the typical shared costs savings language used by most Agencies of the Federal Government.

VI.C.3. Establishing The Standard of Care

The AGC standard forms address the standard of care issue in three (3) distinct manners. First, the AGC framework requires that the DB Contractor “exercise reasonable skill and judgment in the performance of its services.” This language is not inconsistent with the common law - implicit in every contract is the duty to perform the terms of the contract with care, skill, and reasonable experience.

Second, the AGC scheme defines the standard of care for design services consistent with the common law approach – typically what is called the Reasonable Care Standard - perform with “the care and skill ordinarily used by members of the architectural and engineering professions practicing under similar conditions at the same time and locality.”

Third the AGC framework addresses the applicable standard of care between the Owner and the DB Contractor. Uniquely, the AGC standard documents state that the parties “proceed with the Project on the basis of trust, good faith and fair dealing and shall take all actions reasonably necessary to perform this Agreement in an economical and timely manner.” Such provisions are akin to establishing a “partnering” relationship. Typically such terms are implied in every contract, and freely recognized by the courts. It is interesting that the AGC seeks to set it out as separate contractual provision articulating the good faith and fair dealing concept.

24 Note that the AGC definition of the Reasonable Care Standard seemingly extends it to include a time element. No specific case authority includes this “time element.” Thus, it is imperative to evaluate the potential for increased risk with a seemingly expanded standard of care against both insurance requirements and the case authority of the specific jurisdiction in which the DB venture is being considered.
VI.C.4. Owner’s Responsibilities

The AGC Standard Form #400 mirrors the AIA A191 (Part 1) framework requiring the Owner to provide all relevant information for the Project, but expands the Owners’ responsibility for the review of information submitted by the DB Contractor. For example, the AIA A191 form is silent on the scope of the Owner’s review, while the AGC 400 standard form requires the Owner to “review and approve schedules, estimates, Schematic Design Documents and other documents provided under the agreement.”

The AGC 400 standard document also requires the Owner to issue a specific written Notice to Proceed with the different phases of the DB venture. As noted previously, if the Owner elects to proceed, then the parties must enter into an additional agreement for completion of the design and the construction of the Project – either AGC Standard Form #410 or #415. However, if the Owner does not issue the Notice to Proceed, the Owner/DB Contractor relationship is extinguished, except for some indemnity obligations and the payment for work performed under the current arrangement. As a practical matter offering the Owner this option may have some appeal. It would allow the Owner to re-evaluate its overall program for the Project. It may invite the Owner to utilize the DB Contractor as a separate consultant or Project Management Professional to assist in the retention of a General Contractor. Also is may provide a basis for an additional round of competition through an additional Request for Proposal process, or competitive bidding.

The AGC Standard Forms #410 and #415, as was noted in the previous discussion of the AIA A191 (Part 2) standard documents contain an extensive menu of responsibilities for the Owner. The Owner is to provide full information in a timely manner, including a definition of the Owner’s program, the physical characteristics of the site, surveys, site investigations, legal descriptions, evaluations of known existing conditions based upon either subsurface or environmental studies. Also the AGC standard forms require the Owner to provide reasonable evidence that “sufficient funds are available and committed for the entire cost of the project,” and, perhaps uniquely, a reasonable allowance for changes. The AGC adds emphasis that this information is material for the continuation of the contract relationship. It mandates that the DB Contractor may suspend operations...
after seven days of a written notice, if the Owner fails to provide reasonable evidence of funding. This is a difference between the AGC and AIA approaches, and perhaps best illustrates significantly different approaches to the balancing of the risk, as this provision is not mutual – it only allows the DB Contractor to suspend operations for financial issues.

There are other differences between the AGC scheme and the AIA A191 (Part 2) approach. In the AGC scheme the Owner is only responsible for “inspection and testing services during construction.” With respect to the site, the Owner is responsible for providing all necessary approvals, the site plan review, rezoning, easements and assessments, fees and charges required for construction, use, occupancy or renovation of permanent structures.

Also the AGC approach differs slightly from AIA A191 (Part 2) scheme with regard to the Owner’s responsibilities during construction. In particular, the AGC shifts the burden for several issues to the Owner, which is significantly different than the AIA A191 (Part 2) treatment of similar issues. For example, in the AGC approach the Owner is required to: (1) review and approve the Project schedule; and, (2) give written notice once it becomes aware of any “error, omission or failure to meet the requirements of the contract documents or any fault or defect in the work.” Also the AGC allows the Owner some what more flexibility in construction project administration as it provides for an option for the Owner to communicate with the DB Contractor’s subcontractors. Not surprisingly, the AGC approach also may bind the Owner for directives given by its “representative” as it establishes a level of authority in that representative to bind the Owner in all matters requiring the owner’s approval, authorization, or written notice. Also uniquely, the AGC Standard Forms require the Owner to notify the DB Contractor in writing prior to changing its representative, which suggests that the DB Contractor has some authority to approve, or disapprove of who is the Owner’s authorized representative.

VI.C.5. Ownership of The Design & Copyright

Unlike the other standard forms the AGC vests ownership of the design including, establishing exclusive of copyrights, in the Owner at the time payment is made to the DB
Contractor as required. Although the Owner receives ownership of the design under the AGC, it is not granted the unlimited right to use, reproduce, or make derivative works from the design for other projects without the written authorization of the DB Contractor. If the Owner uses the design on other projects without written consent, the Owner proceeds at its own risk, and must defend, indemnify, and hold harmless the DB Contractor from and against any and all claims, damages, and losses arising from the unauthorized use of the design.

In the event of termination, the Owner, after payment to the DB Contractor, has the “right to use, reproduce and make derivative works…” from the design. Moreover the AGC scheme grants the Owner rights in the design for the completion, renovation, and remodeling of the relevant Project, and provides a mechanism for the Owner to use the design on other projects. Clearly, this is distinguished in the other standard form documents with regard to ownership of documents, and potentially creates a situation where the risk for design is a continuing one for the DB Contractor with a separate design professional in the DB relationship, absent some limitation of liability for the granting of the license.

VI.C.6. **Inspection, Acceptance and Warranties**

Both AGC Standard Forms #410 & #415 contain warranty provisions that are identical to the AIA A191, except the AGC approach is more specific regarding warranties received from vendors and suppliers. In both AGC Standard Forms #410 & #415 the warranties for equipment purchased by the Owner, the manufacturer’s warranty applies. The DB Contractor disclaims all other warranties, including those that are either typically expressed or implied in every commercial context, such as the warranties for merchantability and fitness for a particular purpose. These warranties and exclusions need to be analyzed consistent with the statute and case authority for the jurisdiction in which the DB venture is being considered.

VI. D. **Design-Build Institute of America Program**

VI.D.1. **Commencing the D/B Relationship – DBIA Scheme**
Similar to AIA and AGC frameworks, the relationship between the Owner and the DB Contractor begins with the Owner’s development of the “Project criteria.” The criteria may include conceptual and schematic design documents, specific performance and other technical requirements. As with the AIA and AGC schemes, if the Owner’s program criteria are not developed, the DB Contractor may assist in their development as an additional service.\(^{25}\) If the Owner’s program criteria are developed, the DB Contractor is obliged to “review and prepare a written evaluation,” including the making of specific recommendations of either different or innovative approaches to the design and construction. After this phase, and again similar to the AIA and AGC process, the DBIA scheme contemplates that the DB Contractor will prepare the Schematic design, including drawings, diagrams and specifications based upon the Owner’s programmatic desires in order to definitively establish the requirements of the Project.

Once complete the DB Contractor develops its proposal for design development and construction document preparation. Unlike the AGC approach, where there is an express requirement that the Project design and construction be completed by the same DB Contractor who provided the preliminary services in Phase I, the DBIA framework offers substantial flexibility. In the DBIA approach, the Owner may utilize the Schematic design and obtain additional proposals from other DB Contractors.

VI.D.2. How Much Will It Cost?

The DBIA framework is similar to that of the AGC - at the conclusion of the DB Contractor’s preliminary services, a DB Contractor proposal is delivered to the Owner for evaluation of contract price for the design and construction of the Project. The contract price may be either in the form of a Lump Sum/ Fixed Price, or the Cost of the Work plus a Fee with an option for a GMP.

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\(^{25}\) Uniquely, the EJCDC approach does not contemplate the involvement of the DB Contractor in the initial program development either as a basic service, or as an optional additional service. Under the EJCDC scheme the Owner expressly defines the scope in the RFP process issued by the Owner. The RFP process is not a contract document, but does include the conceptual documents, which are often considered contract documents. The majority view is that the RFP, including the conceptual documents, should be integrated into the Owner/DB Contractor contract document.
Similar considerations must be given to the establishment of the GMP as previously discussed. Notably, unlike the AGC approach the DBIA standard forms contemplate potential savings within the terms of its standard forms. DBIA Standard Form #530, Section 6.5.3 provides for the savings to be paid either on a straight shared percentage, or on the basis of a shared percentage. If reimbursable costs are incurred after the savings have been distributed, the Owner must refund as much of its share of the savings as is needed to cover those costs.

VI.D.3. Establishing The Standard of Care

The DBIA standard form documents address the standard of care in a similar manner as the AGC and is consistent with the common law standard - a duty of care to perform professional design services with care, skill, and reasonable experience is implicit in every contract.

VI.D.4. Owner’s Responsibilities

Like the AIA and AGC standard contracts, the DBIA contract approach and outlines a “laundry list” of Owner responsibilities.

The DBIA Standard Form #520 requires the Owner to provide the same site information required by the AIA and AGC contracts, but also requires that the Owner provide “as-built and record drawings of any existing structures.” This substantially expands the Owner’s requirement for due diligence in the initial program development phase. Thus, if the parties are considering using the DBIA standard forms, the required level of effort in the preparation of the Owner’s initial program is a critical factor.

DBIA Standard Form # 535 also addresses the following additional issues: (1) securing and executing all necessary agreements with adjacent land or property owners; (2) obtaining permits, approvals, and licenses; (3) incurring government charges, and inspection fees;26 (4) addressing the work performed on the Project by separate contractors under the Owner’s control; and, (5) requiring that the separate contractors

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26 These Owner responsibilities are required to be separately listed in an exhibit attached to the final Owner/DB Contractor contract form as these relate to modifications to the budget for the Project.
cooperate with and coordinate their activities with the DB Contractor.

VI.D.5. Ownership of the Design & Copyright

The DBIA standard forms provide that the retention of all ownership and property interests in the design remains with the DB Contractor. This approach is much like the one employed by the AIA scheme, as well as the EJCDC standard approach.

If the Owner and the DB Contractor enter into a contract for the design and construction of the Project, the Owner is granted a limited license to use the design in connection with the Owner’s continuing occupancy of the Project. This limited license, however, is conditioned on the Owner’s indemnification of the DB Contractor and its sub-consultants, and the understanding that the use of the design is at the Owner’s “sole risk and without liability or legal exposure” to the DB Contractor or its subcontractors.

On the other hand, if the Owner and the DB Contractor do not enter into a contract for the Project, upon payment by the Owner, the DB Contractor grants the Owner a limited license to use the design to complete the Project at the Owner’s risk without further liability or exposure to the DB Contractor. This limited license, however, is also conditioned on the Owner’s agreement to defend, indemnify, and hold harmless the DB Contractor from “any and all claims, damages, liabilities, losses and expenses, including attorneys’ fees, arising out of or resulting from the use of the Work Product....”

If the Owner or DB Contractor terminate the contract during the construction of the Project, then, upon proper payment by the Owner, the DB Contractor must grant the Owner a limited license to use the design to not only complete and subsequently occupy the Project. This limited license is conditioned upon the Owner’s payment for the license, which is part of the negotiations of contract price. Also the Owner separately agrees that its use of the design is without risk to the DB Contractor and the Owner agrees to indemnify the DB Contractor for the use of the design.

As with the other standard forms, in the event of a DB Contractor default, and subsequent termination, the DB Contractor is required to grant the Owner a limited license to use the design. This limited license is also conditioned upon the Owner’s indemnification of the DB Contractor, and the recognition that the risk and liability for the use of the design
rests solely with the Owner.

VI.D.6. Inspection, Acceptance and Warranties

The DBIA Standard Form requirements related to inspection, acceptance, and warranties are straightforward. Candidly there is no distinction between the DBIA’s terms, and those of either the AIA or AGC. It is for this reason that a review of the EJCDC’s approach to the issues of inspection, acceptance, and warranties is warranted.

Essentially, the EJCDC’s form contract documents is far more comprehensive than those of the AIA, AGC, or DBIA Standard Forms. While the AIA, AGC and DBIA contract forms do address many of the same issues, the EJCDC approach shifts significant burden to the DB Contractor, specifically with respect to the supervision of construction, compliance with the contract documents, and notice to the Owner on the issues of quality and progress.

Interestingly, the EJCDC approach envisions that the Owner retains the right to stop construction if: (1) the work is defective; (2) the DB Contractor is not supplying sufficient labor, proper materials, or equipment, or; (3) the final work does not conform to contract requirements.

In regard to testing and inspection during the Project there is an inherent contradiction. The EJCDC provides that the DB Contractor is charged with “full responsibility” for all inspections, tests, or approvals, including those required by the applicable law and building code of the locale for the Project. This means responsibility for arranging and paying for the requisite the testing and inspection processes. On the other hand the DB Contractor is obliged to obtain the Owner’s “written concurrence” before covering any work that is required to be inspected, tested, and approved, and if work is covered contrary to the Owner’s written request, it must be uncovered for the Owner’s observation at the DB Contractor’s expense. If, at any time, the Owner “considers it necessary or advisable” to uncover work for inspection or testing, then it shall be uncovered. If the work is found to be defective, then all costs associated with “uncovering, exposure, observation, inspection and testing and of satisfactory replacement or rework” shall be borne by the DB Contractor. If the work is not
defective, the DB Contractor is to be reimbursed such costs together with a time extension. Thus, while the EJCDC documents seemingly shift the risk for inspection and acceptance exclusively to the DB Contractor, the Owner still retains the typical rights that ever construction project owner retains no matter which standard form agreement is employed.

As with the other standard forms, the DB Contractor warrants that its work conforms to the contract requirements and is not defective. While the DB Contractor’s obligation to provide completed work in accordance with the Contract Documents is absolute, and the EJCDC seemingly expands those obligations. The EJCDC provides that the DB Contractor is not relieved of this absolute obligation because of Owner observations; issuance of payment; declaration of substantial completion; use or occupancy; review and approval of submittals; inspections, tests, or approval by others; any acceptance by owner; or correction of any defective work by Owner.

Generally, work found to be defective within one year of substantial completion must be corrected or replaced, or the Owner has the option to forego the ordering of the correction of the work by the DB Contractor. Of course these specific provisions are to be interpreted consistent with the case authority in the jurisdiction of the Project.

VI. E. Experience and Trends

VI.E.1. Eventually Construction Contract Changes Will Occur

In today’s construction arena with a continued focus on the definition of the project scope, methods of delivery and cost and time constraints, there is a tremendous amount of emphasis on how owners and their representatives, whether they be architects, engineers, or construction managers, administer the construction contract and change orders. The significance of the role of these owners’ representatives in the change process is not reduced in the DB project delivery system. Frankly, it is recognized that construction contract changes are inevitable. This concept makes the construction contract unique.
Fundamentally, in every construction contract the Owner retains the express right to order changes to the construction process, design, contract duration, and/or cost that are within the original scope of work. Irrespective of the project delivery method employed, every construction contract recognizes that making provision for modification to its terms is necessary. Universally, the standard forms address the eventuality that construction contract changes will occur.

The manner in which changes are handled in the contract documents ultimately impacts how the project owner and his representatives view the success of a project. Thus, understanding how these issues can be best addressed is necessary, no matter what the project delivery system is.

Why so much emphasis on the change process?

First there is the reality that no set of plans and specifications are perfect. Since changes are inevitable, it is necessary to provide for a contract mechanism that adequately addresses the risk for changes. In the DB delivery method changes are often a creature of changes to or interpretations of the performance parameters set out in the Owner’s original program, and which formed the basis of the DB relationship.

Second, the case authority may not provide the same basis of either limitation or protection originally envisioned, or assumed to be provided for by the contract. Typically, the exculpatory contract language, or other risk limiting or shifting provisions that the parties spent so much time negotiating, in fact do not provide the protection that is often assumed they would provide. For example, terms that seemingly provide a basis for a limitation for the risk of cost increases due to change orders, i.e., “guaranteed maximum price,” and “costs not to exceed,” simply are not applied as one would assume. Despite express limitations, the law universally recognizes that a contractor is entitled to be reimbursed for the “reasonable costs of labor, material, equipment, and services provided” for work on the project. The measure of the reasonable value of services provided by the contractor are the express provisions of the change and disputes clauses in the contract, as well as the requirements of the plans and specifications upon which bid “estimates” and costs of the work tabulations were established.

Thus, it is essential to have a focus on how the construction contract will be administered
and the establishment of the basic framework for that effort during that contract.

VI.E.1.a. Requests for Information

Requests for information or clarification are typically the written mechanism utilized by contractors to initiate the change process. Thus, it is paramount that significant focus be maintained on these requests and ultimately what the impact of failing to address a significant issue may have on the contract time and cost of completion.

For example in a case involving a contractor who brought an action against a structural steel subcontractor for damages arising from delayed performance of the subcontract, the appellate court upheld the District Court’s interpretation of provisions of the AIA A201 Standard Form Contract that indicate the architect’s role was more than just in an advisory capacity in addressing questions of means and methods and the requirements of the contract. The court noted that the architect could, at its discretion, reject means and methods as inconsistent with the contract documents. Additionally, the appellate court stated that the architect’s discretionary authority was unbounded, and absent a showing of bad faith, fraud, or palpable mistake equivalent to bad faith, the architect’s decision had to be accepted as final and valid. *Morse/Diesel, Inc. v. Trinity Industries, Inc.* (2d Cir. 1995) 67 F.3d 435.

Universally, the case authority recognizes the design professional’s authority to review and interpret the design requirements, but cautions that such evaluations be made on a good faith basis. This interpretation is no different in the DB context. While the design professional in the DB Venture is given wide latitude in interpreting the Owner’s initial program requirements in order to develop the plans and specifications for the Project, ultimately the work in the field will be viewed for compliance with the Owner’s program. Essentially, it is the difference between what the Owner anticipates, and what they perceive was provided. Moreover, given the fact that the DB system envisions that the Contractor and Designer are viewed from the Owner’s perspective as one entity, little shelter is found in attempting to hide behind limitations and exculpatory language. Thus, the parties must be focused on how best to equitably adjust the contract for different interpretations and ultimately differences in the delivered project that may have been driven by issues that arose during the course of construction.
VI.E.1.b. **Change Orders**

Essentially the standard form construction contract is the agreement between the two contracting parties of how risk or changes will be defined throughout the course of construction. While a rudimentary understanding of basic contract principals yields an overly simplified definition that a contract is simply an agreement between two parties for adequate consideration, the construction contract is a unique type of contracting format because by virtue of the changes provisions of a construction contract the original definition of risk allocation may be altered during the course of the project. Thus, it is imperative for the parties to foresee and define the issues and procedures, respectively, for addressing changes during the project.

While most standard provisions provide the owner and its representative with the ability, and actually the right, to amend the contract requirements within the scope of the original contract, a well drafted changes provision provides for certain elements that will assist not only the owner and its representative in evaluating the changes, but the contractor and the subcontractors in allocating risk for those changes.

For example, a well-drafted changes provision will have a “continuation of the work provision” and a clear and complete definition of payment for labor, material, equipment, small tools, overhead and profit.

Likewise, a well-drafted changes provision will provide that written notice be given by the contractor to the owner in the event of a potential change situation occurring. Recognize that the notice provision is of critical importance for a variety of reasons. First, timely notice allows the owner to review the situation before changes are made and determine the best method of resolution. Additionally timely resolution permits the owner to evaluate its own risk for the change; essentially allowing the owner to decide whether the change is worthwhile implementing given the budget and time constraints provided for by the project. A significant issue often arises regarding timely notification by the contractor. It should be recognized that if an owner had actual knowledge of the situation, or imputed knowledge, that is to say the owner should have known, then the requirement for the timely written notice is fulfilled. Essentially courts will view the timely written notice requirement in a broad context, and not as a complete defense to a
contractor’s claim for additional costs.

Why? Because courts abhor the forfeiture of contracts, and hold steadfastly to the equitable view that contractors are entitled to be reimbursed for the reasonable value of the services provided on the project. Hence, owners and their representatives should not be emboldened by a strategy of a contractor’s lack of written notice, but should address all issues to which they have either actual or imputed knowledge immediately in order to manage the allegation of risk resulting from the implementation of changes on the project.

How Do the Standard Forms Handle the Construction Contract Changes Process? The standard forms that have been discussed in previous pages of this material handle the “change process” in unique manners. Universally, they seek to provide the owner with an opportunity to make changes, and attempt to expressly limit the owner’s exposure to the change process by requiring notification by the contractor when changes are recognized, or anticipated to impact the duration and/or the cost of the Project. Moreover, each attempts to establish a method to measure the time and cost impact to the Project, and establish a process through which the contract is modified.

There are two types of changes – Owner Directed & Constructive. An Owner Directed Change emanates from an Owner’s desire to make an adjustment in the scope of work. These are generally understood to be a change by all parties, while there may be significant disagreement regarding the cost of those changes. Owner Directed Changes are typically easy to recognize, as there is generally some agreed upon change in the scope of the work described by the contract documents.

A Constructive Change on the other hand are typically more difficult to identify. Very simply, a Constructive Change is brought about by the action or lack of action of the Owner or its representative. Many times it is the result of a defective or poorly worded specification that causes the owner or owner’s representative to respond with a directive to proceed in one form or another, but fails to address the threshold issue of whether a change occurred – simply, was there a difference between what the specification “reasonably” required, and what the contractor was directed to do. Suffice it to say Constructive Changes are oftentimes very subtle and initiate significant disputes.
regarding the requirements of the plans and specifications, or interpretations of the requirements of industry standards.

There are a myriad of examples of constructive changes that have been recognized in the case authority, both Federally and in various States. Perhaps the most significant from a DB perspective relate to the reasonable interpretations of the Owner’s initial program requirements, and how those were translated into the design for the Project. Typically, these disputes arise over the provision of means and methods for achieving the Owner’s performance requirements and the performance guarantees anticipated in the DB delivered Project.

For example in the case of *Tombigbee Constructors v. United States* (Ct.Cl. 1970) 420 F.2d 1037, the Owner’s initial program required that the soil be compacted to 95 percent. The contractor was able to achieve that requirement on the first phase of the Project, but only after expending additional funds to address soil conditions that it claimed were different than expressed by the Owner’s soils investigation that was provided during the RFP phase of the venture. Before commencing with phase two of the Project, and at the contractor’s request, the Owner issued a change order to allow the contractor to use cement in the top 6 inches of subgrade in order to achieve the 95 percent compaction requirement with reasonable effort.

The contractor ultimately sued for the increased costs of reaching the specification for the first half of the Project. The Court held that the contractor had proven this specification to be a practical impossibility and still complied with the performance schedule of the contract.

The concept of impossibility is closely related to the establishment of performance guarantees, as well as the concept of performance parameters defined by the contract documents.

A performance guarantee is a guarantee that the Project will be performed as required by the parameters established as part of the Owner’s initial program. In the DBB delivery system the design prepared by the Owner’s design professional in based upon the Owner’s program requirements. That design becomes the basis of the contractor’s bid estimate for construction. The contractor undertakes the construction assuming that if he
builds the project in accordance with the Owner’s design, the Project will function as envisioned by the Owner. If the work complies with contract requirements, but does not meet the Owner’s objectives, the contractor is not the entity at fault. The contractor did not warrant or guarantee the design, only the constructed work. This concept in known as the Spearin Doctrine. The seminal case, *United States v. Spearin*, 248 U.S. 132 (1918), provides that the warranty emanates from the Owner and runs to the contractor, not the reverse.

Interestingly, in the DB delivery system, which establishes specific performance guarantees for the completed Project, the Spearin Doctrine is reversed.

The DB Contractor is tasked with not only construction, but developing the design that conforms to the Owner’s initial program. Since the DB Contractor enjoys the flexibility to select the means and methods required to achieve the Owner’s requirements, the Owner does not bear the risk for the DB Contractor’s inability to achieve the Owner’s initial program requirements. *McClosky & Co.*, GSBCA No. 32367, 71-2 BCA 9151 (1971). Essentially, the DB Contractor’s ability to determine the means and methods that will achieve the necessary requirements of the Owner’s initial program carries with it responsibility for warranting that the constructed project will function as intended by the Owner. *J.L. Simmons Co. v. United States*, 412 F.2d 1360, 1362 (Ct.Cl. 1969).

Performance guarantees are clearly enforceable and are a reasonable means of defining the expectations of the parties. They have been successfully used in a variety of settings. Surprisingly, the standard forms say little about the concept of performance guarantees.

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27 The U.S. Supreme Court held that where a contractor is bound to follow certain plans and specifications of the owner, the contractor is not liable for errors or defects in the plans and specifications that were reflected in the final project. In essence, the owner generally warrants the accuracy and adequacy of the plans and specifications provided to the contractor. This holding is known as the Spearin Doctrine.

28 See e.g., *Fort Howard Paper Co. v. Standard Havens, Inc.*, 901 F.2d 1373 (7th Cir. 1990) (performance of pollution control device intended to remove fly ash from flue gases before emission into the atmosphere); and *Arkansas Rice Growers Cooperative Assn. v. Alchemy Industries, Inc.*, 797 F.2d 565 (8th Cir. 1986) (performance of a pollution-free rice hull combustion plant that converted the rice hull fuel into steam and marketable ash).
guarantees. Thus, both the Owner and the DB Contractor need to address this issue within the context of the authority in the jurisdiction of the Project, and recognize that typically this will be the basis of either changes or dispute.

How do the DB Standard Forms address the issue of changes?

**The AIA Standard Forms**

The Standard AIA Form A191 contemplates that changes in the work may be accomplished in one of three ways: (1) a Change Order, (2) a Construction Change Directive, or (2) an order for a minor change in the work (A191 (Part 2) § 8.1.1). This is the typical AIA model for administering the change process, so there is little difference between this approach and the one taken by other AIA standard forms irrespective of the project delivery method.

A Change Order is a written agreement between the owner and the design/builder respecting a change in the work and the monetary and time adjustment that is appropriate for that change (A191 (Part 2) § 8.2.1). A Construction Change Directive is a written order issued by the owner directing a change in the work prior to any agreement respecting price or schedule adjustment (A191 (Part 2) § 8.3). A minor change in the work is a change consistent with the intent of the Contract Documents that does not alter price or schedule (A191 (Part 2) § 8.4.1). Minor changes can be implemented by the design/builder as long as notice is provided to the owner (A191 (Part 2) § 8.4.1).

In terms of pricing the changes, applicable unit prices, if any, are to be used to quantify the value of the Change Order unless doing so would “cause substantial inequity” (A191 (Part 2) § 8.1.4). Otherwise, the Change Order amount will be determined by whatever method the parties mutually deem acceptable.

The pricing mechanics for a Construction Change Directive are much more defined. The price adjustment is to be determined on the basis of reasonable expenditures (including design services) and savings. The design/builder must keep an “itemized accounting” of

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29 A191 (Part 2), Section 1.1.2, defined “work” to include the construction and services provided by the design/builder to fulfill the design/builder’s obligations.” As such, the design/builder is entitled to a Change Order for a change in the scope of its design services.
contractually authorized costs on top of which it may add a mark-up for overhead and profit (A191 (Part 2) § 8.3.2). “Pending final determination of cost to the owner, amounts not in dispute may be included in applications for Payment” (A191 (Part 2) § 8.3.3). Stated otherwise, the design/builder is required to perform the work even if there is a dispute as to the amount to be paid. This provision effectively requires the design/builder to become the financier of the cost of the Construction Change Directive.

**The AGC & DBIA Standard Forms**

The approaches taken by the AGC and DBIA to the change process are essentially the same as the AIA approach except as related to dispute work, and the determination of the cost impact of the proposed change.

Essentially, Section 9.5.3 of AGC 410 provides for a shared obligation to reimburse the DB Contractor (“...the Design/Builder shall perform the disputed work [once ordered by the Owner] and the Owner shall pay the Design/Builder fifty percent (50%) of its estimated cost to perform the work...”).

While the contract is unclear as to which parties’ “estimated cost” is the basis of the fifty percent (50%) payment, it recognizes and expressly obligates a partial payment, while allowing both parties to reserve their respective rights to later address the issue of whether the disputed work was within the original scope of work for the Project. Additionally, the Owner’s payment to the DB Contractor for the dispute work neither constitutes a waiver of the Owner’s right to later contest its right to reimbursement, nor acts as an accord and satisfaction for the dispute work. Essentially, the contract provides for a reservation of rights for both the Owner and DB Contractor related to the disputed work, while allowing the Project work to continue.

Such an approach may have its critics, but at least there is a recognition that disputed changes can remain open for future resolution via the disputes procedures outlined in the contract documents. Thus, providing for a mechanism for the Owner and the DB Contractor to share the risk for disputed changes.

In regard to defining the cost of the change, as noted previously all the standard forms fail to adequately address a straight-forward method for the establishment of the cost and
time impacts due to the construction contract change process.

The EJCDC Standard Documents

The EJCDC documents take more of an Owner “friendly” approach, attempting to shift the risk for changes to the DB Contractor.

The DB Contractor is required to proceed with the change work regardless of whether or not there is an agreement regarding cost and/or time. While Article 10 sets out a specific procedure for establishing a price for the changed work, if the parties do not agree, the change work is performed, at the DB Contractor’s own cost. Of course the DB Contractor may submit a claim within thirty (30) days, timely notice of the claim, as well as submittal of the claim, are required in order to provide for entitlement. Again this type of approach to the change process tends to promote claims, not effectively manage the process, and is not the preferred method for addressing changes during the project.

VI.E.2. Other Issues, Changes & Remedies

VI.E.2.a. Differing Site Conditions & Providing Site Information

A Differing Site Conditions provision or what has become known as the concealed conditions provision is a tool for allocating the substantial risk for the discovery of “conditions” that reasonably could not have been anticipated from the available data because they were either latent, or there was not ample time in the preconstruction phase to discover them.

In the DBB contract delivery method the purpose of including such a clause is to induce Contractors to submit their bid estimates based upon the “conditions” that they could reasonably anticipate from the available data on the contract documents without including substantial contingencies to cover unanticipated conditions. This approach provides a dual benefit to the Owner and Contractor. The Owner is given the benefit of a

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EJCDC 1910-40, Article 10, has a comprehensive pricing structure for the development of Change Order proposals, which may be an alternative template for use in virtually any contract in the construction market. Of course it is cautioned before “lifting” standard contract language from one contract and inserting into another care must be taken in coordinating such, often times, drastic changes in contract obligations.
reasonably level playing field on the myriad of assumptions that Contractors could make regarding concealed conditions. The Contractor is assured that if conditions that could not have been reasonably anticipated are not covered, an adjustment in contract price and time would be issued in the form of a change order. The Owner is likewise allowed to evaluate his risk for the lack of a proper preconstruction investigation by ultimately establishing a succinct and clear methodology for pricing the discovery of concealed conditions. Thus, the contract documents are balancing the risk for concealed conditions. These general concepts are also applicable when DB project delivery is contemplated.

There are two types of concealed conditions that are typically recognized by the courts. The first type, Type I, is characterized as either a subsurface or a latent physical condition at the project that materially differs from those indicated in the contract documents. This category is not solely limited to subsurface change conditions but includes conditions that may be either at the surface or above the surface that are “latent” in the sense that they are concealed, hidden or dormant.

The classic example of a Type I concealed condition is the presence of rock or boulders in an excavation area where none are shown or indicated on the plans, or the existence of such rock at materially different elevations had been indicated in the data available to bidders. Other examples include: (1) the presence of subsurface water where none had been indicated by the contract documents; (2) encountering loose, soft material at a location where the boring data indicated the existence of sound soils or rock; (3) physical differences in the behavior of characteristics and workability of soils encountered as constructed the type of soils indicated by the borings, even though the soils encountered could be utilized with additional effort for the intended contract purpose; (4) the failure of designated borrow pits or quarry sites to produce the required materials entirely to insufficient quantities without excessive waste or unusable materials beyond that reasonably anticipated from the pre-bid data; (5) the existence of a sub-floor, or asbestos or other materials not shown on the drawings which had to be removed under contract to renovate a building; (6) the encountering of ground water at a higher elevation or in quantities in excess of those indicated or reasonably anticipated from the data available to the bidders; (7) a substantial increase in the quantity of work necessary than indicated in
the contract; (8) the location of gas lines in the lines of occupied houses where none were shown on the contract documents; and, (9) the existence of numerous steel joists that had to be removed and/or relocated for the contractor to perform his work and were not disclosed on the original drawings and where the contractor was prevented from making an adequate pre-bid site investigation due to security concerns.

Proof of the existence of a Type I change condition depends in large part on the comparison of the conditions encountered as related to those which could have been reasonably anticipated from the contract documents. If the contract contains no indications with respect to subsurface or concealed conditions, this change condition could not be encountered because the actual conditions encountered could not be described as differing from those indicated on the plans.

Under the Type I condition the burden is shifted to the Contractor, who must demonstrate that he reasonably relied upon what was represented on the contract documents during the time of bid and that this reliance resulted in his bid estimate. Additionally, the Contractor is tasked with showing that the Type I extra work in fact did increase his costs.

The second type of concealed or change condition, Type II, is described as a situation when the Contractor encounters an “unknown physical, latent condition” at the site of such an unusual nature that it materially differs from those ordinarily encountered and generally recognized as inherent in the work of the character provided for in this contract, and one that neither the Owner, nor its representatives, including the architect and/or design professionals could have envisioned. The Type II change or concealed condition is not predicated on the existence of some difference between the conditions represented on the contract documents and those encountered in the field. Again the burden is shifted to the Contractor to establish that a Type II condition exists. The Contractor is required to show that the condition that was encountered was unknown, unusual and differed materially from that which ordinarily would have been encountered in this type of work. Customary elements in establishing a Type II change condition are based on addressing the reasonable bidding assumptions employed for the type of work, reasonable site inspection, study of the contract documents, customs of the trade, the common
knowledge in the industry, the manufacturers instructions and recommendations and traditional assumptions involved in the bidding of the particular work. Essentially the Type II does not have to be a condition that is a complete freak encounter, i.e., the discovery of permafrost in Hawaii, but can be one that could not have been reasonably anticipated based on the contract documents by either the Owner, its representative or the Contractor, such as the discovery of an subsurface river that creates an artesian condition during excavation.

Examples of such condition are: (1) the unexpected and highly corrosive nature of groundwater at a site, which resulted in damage to the contractor’s dewatering equipment; (2) excessive hydrostatic pressure encountered in a pipeline; (3) the discovery of jet fuel in groundwater and in flooded manholes from an unknown blockage in an airport drainage system; (4) the presence of environmentally hazardous materials either in groundwater, soils, or sealed cavities of the building; and, (5) the presence of an unanticipated PCBs at a superfund site.

Despite the conventional wisdom that an Owner can disclaim responsibility for differing site or concealed conditions, universally courts have held that an Owner has breached its contract with the Contractor when the actual site conditions differ significantly from those represented on the plans and specifications. The key to this line of cases is the Contractor’s necessary reliance on the factual assertions presented by the Owner in the contract documents. For example, a public Owner solicited bids for underwater repairs to concrete piers on a bridge. The bid package called for replacement of the deteriorated concrete with aggregate concrete. The work was to be accomplished by placing a cofferdam of interlocking sheet piling around each pier and removing the water then pumping a quantity of concrete to make the repairs. The Owner provided a unit price bid line item based on an estimated quantity of cubic yards of concrete necessary to complete the repairs. Also the Owner provided a substantial amount of information regarding the actual site conditions and asserted that the bidder was not relieved of his obligation to independently verify all data prior to submitting a bid.

Unfortunately the conditions were different. The riverbed was so soft, much softer than represented by the contract documents and the soils data provided by the Owner, that the
Contractor encouraged huge cost overruns in attempting to drive the sheet piles and create the cofferdams envisioned for establishing the environment to do the concrete repairs.

Ultimately the Contractor prevailed. The court held that strong exculpatory language in the contract documents could not be balanced against the Owner’s positive representations of the site conditions and that the Contractor could not reasonably verify whether the Owner’s representations were accurate or not. Moreover the court emphasized that the Owner’s investigation had been assembled after four years of periodic underwater inspection and that the Contractor’s could not be expected to verify any of this data in the short bidding period provided.

Thus, given these situations, a well-thought-out concealed condition or differing site conditions provision can assist in allocating the risk of these change conditions when encountered.

In addressing the use of standard contract language to allocate the risk for Differing Site Conditions and obligations for providing site information, the standard DB Contract Forms each take a similar approach with some slight variations.

There are essentially three different types of information about a project site. First, information that can be ascertained by going to the site and looking. Physical obstructions, access impediments, and existing structures or vegetation are present and available for any site visitor to see. Second, information that is available in documents (notably public records) but cannot be ascertained by looking at a piece of ground (referred to below as “documentary information”). Rights-of-way, easements, encroachments, and zoning restrictions are examples of the type of information that fits in this category. Third, there is a body of information that cannot be found in a public record or by looking at the site. Ascertainning this type of information generally requires invasive procedures. Subsurface conditions, the presence of pollutants or contaminants, and underground obstructions each fall into this category. Which of the contracting parties is responsible for acquiring the various types of information?
**The AIA Standard Forms**

AIA A191 requires the Owner to furnish “surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a written legal description of the site.”

Significantly, if agreed upon in Part I of the AIA scheme, or, if deemed reasonably necessary by the DB Contractor, the Owner shall furnish all necessary services to define the subsurface conditions. Those investigations include the retention of geotechnical engineers to perform certain evaluations of the existing conditions, and on any hazardous materials encountered. Furthermore, the Owner is required to disclose, to the extent known, “the results and reports of prior tests, inspections or investigations conducted for the Project involving: structural or mechanical systems; chemical, air and water pollution; hazardous materials; or other environmental and subsurface conditions...[and all]...information known...regarding the presence of pollutants at the Project’s site.”

With regard to concealed conditions the AIA scheme shifts the responsibility to the Owner. Also it allows for the issuance of a change order to address conditions that were not anticipated or disclosed in a similar manner as the general approach described previously related to the DBB delivery method.

**The AGC Standard Forms**

The AGC takes an approach akin to the AIA. Although not as exhaustive as the AIA A191, both the lump-sum and cost-plus versions of AGC’s DB Standard Agreements require the Owner to provide the DB Contractor with all documentary information related to known site conditions.

The AGC documents do not require either party to hire a geotechnical consultant, but it appears the risk of cost associated with unknown conditions is placed on the Owner in the form of the differing site conditions approach described previously. Similar to AIA’s approach, the DB Contractor bears the risk of observable conditions or obvious site conditions.

**The DBIA Standard Forms**

The DBIA standard forms are generally in accord with the approach taken by both the
AIA and AGC. As with the AIA approach, the DBIA affirmatively requires the Owner to provide geotechnical studies, as well as site surveys, easement, and zoning information, as-built drawings, and environmental studies and reports.

Uniquely the DBIA framework requires the Owner not only provide information but also that it take affirmative action with respect to the site. For example, the DBIA scheme requires that Owner to secure all necessary agreements with adjacent land or property owners that are necessary to enable the DB Contractor to proceed.

As with the other standard forms the DBIA approach addresses the issue of differing site conditions in the same general manner previously described, also providing for the issuance of a change order for additional costs incurred due to encountered materially different concealed conditions, or latent physical differences in the site condition.

VI.E.2.b. **Contract Termination Without Cause**

Irrespective of the project delivery method, an Owner needs a contractual mechanism to terminate the contract without cause, in the event there was a change in circumstances affecting the need for the project, or the viability, or feasibility thereof. Classically, the standard contract forms address this issue by including what is termed as a Termination for Convenience clause. Essentially, an Owner is permitted to terminate the contract without cause at any time. Absent such considerations, the Owner may be considered in material breach of the contract. That may expose the Owner to certain risks financially. The Termination for Convenience concept allows the Owner to allocate that risk by defining the mechanism for such a termination, including specifying the limits on the financial loss.

Each of the various DB standard forms addresses the issue of terminating the contract without cause.

The AIA DB contract framework addressed the Termination for Convenience concept in both Part 1 and Part 2 of the AIA A191 standard documents.

AIA A191 Part 1, indicates that the Owner may terminate the contract without cause “upon at least seven (7) days’ written notice,” and discretely defines the limits of the
compensation to which the DB Contractor is entitled. Those damages include the reasonable cost of services and materials provided prior to, but unpaid as of the termination, reasonable overhead and profit, as well as “Termination Expenses.” Unfortunately, the AIA does not define the term “Termination Expense.” Thus, the scheme is left open for the Owner and the DB Contractor to establish those expenses.

Under AIA A191 Part 2 of the standard forms the AIA scheme restricts the Owner’s options for Termination for Convenience. The abandonment of the Project is the only basis for a Termination for Convenience under this standard form. Accordingly, it is recommended that the Owner consider modifying this provision in order to make it consistent with the case authority in the jurisdiction of the Project, or structure the provision to mirror those utilized in Federal Government contracting for which there is ample case authority interpreting such provisions.

**The AGC Standard Documents**

The AGC Standard Form #400 fails to address the issue of Termination for Convenience, which may have significant impact on the prosecution of the typical Phase I services to be provided. It is recommended that the Owner consider modifying this document to provide for such a mechanism.

Both the AGC Standard Forms #410 & #415 provide for a Termination for Convenience under clauses entitled, “Termination by Owner without Cause.” The Owner’s responsibilities are defined differently depending when such a termination occurs. For example, the Owner is required to reimburse the DB Contractor “…for all Work executed and for all proven loss, cost or expense in connection with the Work, plus all demobilization costs.” If the termination occurs prior to the start of construction, the DB Contractor is reimbursed for the design phase services provided pursuant to the Phase I agreement. In the event that the Termination for Convenience occurs after construction commences, the DB Contractor is reimbursed for the reasonable costs for labor, materials and equipment supplied pursuant to the compensation allowed in the contract, or schedule of values.

Under either approach the Owner is required to provide “fair compensation” for equipment. Unfortunately, there are limited definitions of this term, as well as the terms
“proven loss,” and “demobilization costs.” Also it should be noted that the Owner assumes liability for all the DB Contractor obligations, commitments and unsettled claims. Those would include subcontractor agreements, outstanding payments, claims, etc. No clear definition of the limits of such obligations is noted in the contract form other than a general statement that the Owner is responsible for the obligations “…previously undertaken or incurred in good faith in connection with the Work or as a result of the termination of this Agreement.”

One final note that leads one to conclude that the AGC form contracts fail to adequately address the Termination for Convenience concept, and require significant revisions. Both AGC standard forms mandate that the DB Contractor will be paid a “premium” in the event of Termination for Convenience. Until the issuance of the 1999 version of the AGC DB Standard Form Contracts the AGC took the approach that in the event of a Termination for Convenience, the DB Contractor was entitled to earn its fee negotiated under the original terms of the contract. The 1993 version indicated that in the event of a Termination for Convenience the DB Contractor was to earn 25% of its fee if construction had not yet commenced before the termination. If construction had commenced, the DB Contractor was entitled to earn 100% of its fee, irrespective of what the percentage complete was of the Project. These percentages were subsequently eliminated from the 1999 versions, but may lend meaning on the interpretation of the term “premium” was to be, and how it was to be calculated. What is interesting is that the AGC forms do not address anticipated “profits,” which some have argued are different than “fee.” Those under the latest AGC versions of the DB Standard Contract Forms there is an open question regarding some of the limitations on recoverable incurred costs in the event of a Termination for Convenience. Accordingly, it is recommended that this term be carefully reviewed in order to more clearly define the risks associated with a Termination for Convenience under the AGC approach.

**The DBIA Standard Forms**

Both DBIA Standard Form contracts provide the Owner with the right to terminate the contract without cause upon ten days’ written notice. In the event of such termination, the Owner is required to reimburse the DB Contractor for (1) all work executed and for
“proven loss,” cost, or expense in connection with the work; (2) reasonable costs attributable to the termination, including demobilization expenses and settlement of subcontractor terminations; (3) overhead and profit on the aforementioned costs, which may either be expressed as a percentage or on the basis of a “fair and reasonable” standard; and (4) a termination fee to be determined by the parties. Again the DBIA uses the undefined term “proven loss” for which there is no reliable definition, or explanation of how it differs from incurred costs.

Apparently the “termination fee” is intended to be a percentage of the contract price and is dependent upon whether the agreement is terminated before or after construction commences. Again there is no express definition, and highlights some substantial risk for the Owner. On the other hand, some commentators have suggested that the “termination fee” offers the DB Contractor protection from an early termination and an inability to obtain meaningful compensation for its efforts. This position seems unfounded, as irrespective of the timing of the termination, if the Owner wishes to proceed with the Project using the design of the DB Contractor, the Owner is still obligated to pay a fee for the license to use the design. Thus, there is no risk to the DB Contractor for an “early termination.”

Again, it is recommended that these provisions be viewed very carefully, and modified to represent a clearer definition of the risks of and limitations for a Termination for Convenience.

**The EJCDC Standard Forms**

It is worth discussing that the concept of Termination for Convenience is best addressed in the EJCDC contracting framework.

The EJCDC DB approach again requires explicit written notice, and outlines the Owner’s financial exposure in the most clearest terms. Under the EJCGC scheme the Owner is obligated to reimburse the DB Contractor for the following costs: (1) completed and accepted work (plus overhead and profit mark-ups); (2) pre-termination expenses incurred performing uncompleted work (plus overhead and profit mark-ups); (3) subcontractor termination settlements; and, (4) “reasonable expenses directly attributable to termination.”
Uniquely, the EJCDC limits the DB Contractor’s recovery to the costs incurred as itemized in the contract, and specifically excludes the recovery of “loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.” Thus, it appears that EJCDC scheme treats the Termination for Convenience concept with the most even-handed approach.

VI. F. Belt and Suspender Provisions of the Standard Forms

VI.F.1. Express Contractual Indemnity

Express indemnity provisions of contractors define one party’s obligation to cover losses or damages sustained by another. The rationale underlying the concept of indemnity is that the party having caused the harm, or having fault for the harm caused, or having the better ability to insure against the risk of loss because of the foreseeable harm, is the party that is obligated to cover the damages for such harm. Indemnity clauses are both enforceable and an integral part of the risk distribution framework, but in California there are various views on how they are crafted, and construed.

Indemnity is defined in California as a “contract by which one engages to save another from a legal consequence of the conduct of one of the parties, or of some other person.” (Civil Code § 2772.)

VI.F.1.a. Types of Indemnity Clauses

All contractual indemnity agreements have been described as falling in one of three classifications.

The first type (or specific type) is that which provides that the indemnitor is to indemnify the indemnitee for, among other things, the negligence of the indemnitee. Under this type of provision, the indemnitee is indemnified whether his liability has arisen as a result of his negligence alone, or whether his liability has arisen as a result of his co-negligence with the indemnitor. MacDonald & Kruse v. San Jose Steel Co. (1972) 29 Cal.App.3d 413, 419.

This sort of agreement, providing for indemnification against an indemnitee’s own negligence, “must be clear and explicit and is strictly construed against the indemnitee.”
Rossmoor Sanitation v. Pylon, Inc. (1975) 13 Cal. 3d 622, 628; Goldman v. Ecco-Hoenix Elec. Corp. (1964) 62 Cal.2d 40, 44. This type of agreement is easily identified because it specifically addresses the negligence of the party to be indemnified. Normally, the agreement provides the indemnitor is to indemnify the indemnitee for all occurrences “except for claims arising from the sole negligence or willful misconduct” of the indemnitee. C.I. Engineers & Constructors, Inc. v. Johnson & Turner Painting Co. (1983) 140 Cal.App. 3d 1011.

The second type of indemnity agreement is that which provides that the indemnitee is to be indemnified for “any acts whatsoever” “however same may be caused,” ‘claims which might arise in connection with the agreed work,” or “caused by or happening in connection with the equipment or the condition, maintenance, possession, operation or use thereof.” MacDonald, supra, 29 Cal. App. 3d at 419. This type of indemnity agreement is known as a “general” indemnity provision because it is silent as to the negligence and/or the willful misconduct of the indemnitee. Indemnites under this type of provision may not benefit from the agreement if it is deemed they are actively negligent. Rossmoor Sanitation, supra, 13 Cal.3d at 629.

The third type of indemnity agreement is that which provides that the indemnitor is to indemnify the indemnitee for the indemnitee’s liabilities caused only by the indemnitor, but which does not provide that the indemnitor is to indemnify the indemnitee for the indemnitee’s liabilities that were caused by other than the indemnitor. “Under this type of provision, any negligence on the part of the indemnitee, either active or passive, will bar indemnification against the indemnitor irrespective of whether the indemnitor may also have been a cause of the indemnitee’s liability.” MacDonald, supra, 29 Cal.App.3d at 420; see also Goldman, supra, 62 Cal.2d at 44, 49; and E.L. White, Inc. v. City of Huntington Beach (1978) 21 Cal.3d 497, 507.

VI.F.1.b. Application of Provision In Specific Cases

Under the current law, the foregoing classifications are instructive rather than controlling. In Rossmoor, the court stated: “[W]e hold that ...the question whether an indemnity agreement covers a given case turns primarily on contractual interpretation, and it is the intent of the parties as expressed in the agreement that should control....” This requires
an inquiry into the circumstances of the damage or injury and the language of the contract; of necessity, each case will turn on its own facts.\textsuperscript{31}

However, the foregoing analysis, under which indemnity agreements fall within one of three categories is an accepted principle. \textit{See, White, supra}, 21 Cal.3d at 507; \textit{Ralph M. Parsons Co., supra}, 172 Cal.App.3d at 288; and \textit{Rodriquez v. McDonnell-Douglas Corp.} (1978) 87 Cal.App.3d 626, 674.

In \textit{Rodriquez}, there were two indemnity clauses at issue, identical, to each other, except for the word “negligence” inserted into one of the clauses. The indemnity clauses provided that the indemnitor was to indemnify the indemnitee for liabilities “resulting from any and all negligent acts or omissions” of the indemnitior. The court analyzed the indemnity clauses in light of \textit{MacDonald & Kruse} and found them similar to \textit{MacDonald & Kruse’s} third classification. \textit{Rodriquez, supra}, 87 Cal.App.3d at 674-675. The court then held \textit{MacDonald & Kruse’s} classifications uncontrolling, and under the facts of that case the parties intended that the indemnitor indemnify the indemnitee for the indemnitee’s passive negligence. \textit{Id}. The \textit{Rodriquez} court merely followed the general principle set forth in \textit{Rossmoor}.

In \textit{Ralph M. Parsons}, the court explained that Rossmoor constituted a return to principles previously enunciated by the Supreme Court and: “\textit{...represented a repudiation of decision-making on the basis of fixed and immutable classifications. However, the courting Rossmoor did not reject or disapprove the contractual interpretation or other reasoning underlying the MacDonald & Kruse classifications, and that interpretation and reasoning remained viable.”} 172 Cal.App.3d at 228.

VI.F.1.c. “General” or Type II Provisions

The failure to address an indemnitee’s negligence makes the clause a “general” indemnity clause. \textit{See, Rossmoor}, 13 Cal.3d at 628, providing: “\textit{If an indemnity clause does not

address itself to the issue of the indemnitee’s negligence, it is referred to as a ‘general’ indemnity clause. All such clause may be construed to provide indemnity for loss resulting in part from an indemnitee’s passive negligence, they will not be interpreted to provide indemnity, if the indemnitee has been actively negligent.”

In *Widson*, the court addressed an agreement which obligated the indemnitor to indemnify the indemnitee against: “…any and all loss, damage, expense and penalty arising from any claim or action on account of an injury to person (including death) or property of any character whatsoever, occasioned by the operation and handling or transportation of the equipment during the rental period, and while the equipment is in the possession or under the custody and control of lessee.”

The *Widson* court held that this provision was of the “general” type, because it does not specifically address the effects of the indemnitee’s own negligence. [See 153 Cal.App.3d at 58-59.]

**VI.F.1.d. How do the Standard DB Form Contracts Address Indemnity?**

Interestingly the indemnity protections of the standard forms are not fully comprehensive, and should be amended.

Additionally it should be noted that even the AIA A201 Standard Form of Contract that is typically used in conjunction with all other AIA Standard Forms, and is recognized as the basic form of General Conditions to most standard form contracts provides some indemnification protection for the owner, the architect and the architect’s consultants and agents by the contractor [sub-article 3.18, “Indemnification.”] This language was retained in the AIA A201-1997 Standard Form Contract between the Owner and the Contractor and is often important defense for design professionals against contractor claims. It should be noted that the current indemnification language in the AIA A201-1997 Standard Contract Document between the owner and a contractor is limited to those expenses or claims not covered by project management protective liability insurance purchased by the contractor pursuant to sub-article 11.3. Of course this has drawn the attention of the contractor’s associations, and the courts. Thus, a note of caution is necessary. Because the legal effect of enforcement of an indemnity provision is to
transfer the entire loss to the indemnitor, essentially exculpating the indemnitee for partial fault, the law strictly construes such provisions.

For example in a recent California case, *Heppler v. J.M. Peters Co.*, the court suggested that it was avoiding a mechanical application of the rule of *MacDonald & Kruse* regarding the Type I, II, and III provisions discussed above. (1999) 73 Cal. App. 4th 1265. Essentially, *Heppler* stands for the proposition that the original intent of the parties in regard to addressing the indemnitee’s passive or active negligence that is determinative of enforceability relying more upon the reasoning of *Rossmoor Sanitation*.

Following this reasoning in *Centex Golden Construction Co. v. Dale Tile Co.*, (2000) 78 Cal. App. 4th 992, a California court enforced an indemnity provision against a subcontractor despite no evidence of the subcontractor’s negligence. The court reasoned that the plain meaning of the contract – “All work covered by the Agreement…shall be at the risk of the subcontractor exclusively. Subcontractor shall…indemnify and hold contractor harmless form and against…any claim, liability, loss or damage…regardless of whether such act is active or passive…,” - and the fact that the provision did not violate public policy. Essentially, the court reasoned that the subcontractor openly bound itself to the risk of indemnifying the contractor in this manner at the time of contract formation. This case exemplifies the necessity of addressing the potential risk of exposure at the outset of the contract formation process, and not attempt to void liability later in the litigation process.

*The AIA Standard Forms*

AIA A191 (Part 2) Section 11.5.1, obliges the DB Contractor to indemnify and hold the Owner harmless from claims for bodily injury or property damage (other than the work itself) that arise out of or result from the DB Contractor’s performance of the work to the extent the underlying claim was caused by the DB Contractor’s negligence. This provision does not require that the DB Contractor defend the Owner, although the losses against which the Owner is to be indemnified include “attorneys’ fees,” which typically is becoming viewed by most insurance carriers as an “uncovered obligation.” Under these circumstances, the DB Contractor may be better off financially by defending the Owner.
rather than permitting the Owner to retain its own counsel only to pick up the tab later. The AIA document does not contain a provision similar to Section 11.5.1, under which the Owner indemnifies the DB Contractor from any losses caused by the Owner’s negligence.

**The AGC Standard Forms**

The indemnity provisions contained in both AGC 410 and AGC 415 are quite similar to those in A191. Under AGC 410, Section 11.1.1, the DB Contractor is obligated to indemnify, hold harmless, and (unlike A191) defend the Owner against claims for property damage (other than the work itself) and personal injury to the extent caused by the negligence of the DB Contractor or those for whom the DB Contractor is responsible (see also AGC 415, § 10.1.1). Unlike A191, the AGC documents contain a mirror image indemnity obligation running from the Owner to the DB Contractor. Specifically, under AGC 410, Section 11.1.2, the Owner is obligated to defend, indemnify, and hold harmless the DB Contractor from claims of bodily injury or property damage to the extent such claims are due to the Owner’s negligence (see also AGC 415, § 10.1.2).

One final form of contractual indemnity exists under the AGC documents. If an Owner claims that the project has tax-exempt status, the owner must defend and indemnify the DB Contractor “from all liability, penalty, interest, fine, tax assessment, attorneys fees or other expense” that may result if the project is determined not to be tax exempt (AGC 415, § 3.7).

**The DBIA Standard Forms**

Unquestionably, the DBIA provisions addressing indemnity are far more extensive than those of AIA, AGC, or EJCDC.

Pursuant to DBIA 535, Section 7.4, the Owner and the DB Contractor exchange agreements to indemnify the other. Under Section 7.4.1, the DB Contractor undertakes a general commitment to defend and indemnify the Owner from claims of bodily injury or property damage (other than to the work itself) to the extent such claims arise from the negligent acts or omissions of the DB Contractor or those for whom it is responsible. In exchange, the Owner must defend and indemnify the DB Contractor from claims for
bodily injury or property damage (other than to the work itself) to the extent such claims arise from the negligent acts of the Owner’s separate contractors (rather than the Owner itself). As one commentator has observed “[a]ny direct owner negligence on a design/build project is more likely to be passive (e.g., failure to review, observe, or supervise) and, as a result, any indemnity covering the owner’s negligence would likely serve to nullify the ‘defense’ obligation under the design/builder’s indemnity.”

VI.F.2. Limitations of Liability

Limitations of liability provisions tend to limit the liability of an architect and/or engineer by establishing a designated sum as the limitation of liability for conduct occurring on the project. The courts have enforced such provisions under specific circumstances, but essentially have found such clauses enforceable if the Owner and design professional negotiated on a level playing field, and entered into the contract voluntarily.

Moreover, courts are recognizing that design professionals are frequently required to design unique and technologically innovative projects, and it would be unrealistic to require the design professional to assume all the risks for such innovation unique designs when the Owner is the primary beneficiary of such risk. Essentially the limitation of liability provision is an attempt to share the risk, or at least cap the exposure to the design professional for future claims when it is difficult or impossible to contractually allocate or quantify all the project risks.

In California limitations of liability provisions are enforceable. [Markborough vs. Superior Court 227 (1991) Cal.App.3d 705.] In Markborough the court found that the limitation of liability provision was mutually negotiated and thus the owner and the design professional entered into the contract with an open mind and in light of attempting to establish a reasonable cap that would allocate risks according to the amount of fee incurred by the design professional.

In determining that a limitation for liability cause is enforceable, Markborough emphasized that the contracting parties were sophisticated entities dealing in an arms

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32 Loulakis & Greenberg, supra note 15, p. 51.
length transaction, that the actual exposure for the design professional was limited to a percentage of the original fee earned and the limitation of liability provision did not remove an incentive for the design professional to meet the standard of care required.

In another case, **Valhal Corp. vs. Sullivan Associates, Inc.**, 44 Fed.3d 195 (3d Cir.1995) the Third Circuit Court of Appeals held that a limitation of liability clause in a design contract was enforceable where the limitation did not immunize the design professional from its own negligence, or remove the incentive to perform with due care.

In the **Valhal Corp.** matter an architectural firm performed a feasibility study related to the construction of a high rise building. The fee for the services provided was $7,000. The contract between the architect and the owner included the limitation of liability provision that capped the entire aggregate liability of the design professional at $50,000 or the original fee for the services provided.

The architect allegedly incorrectly reported that the proposed project was not prohibited by any height restrictions. Subsequently the Owner sued the architect for $2 million alleging negligence and breach of contract. The court found based on limitation of liability provision that the design professionals damages were contractually limited to $50,000 pursuant to the limitation of liability provision.

The circuit court explained that the limitation of liability provision served to cap a party’s liability but did not completely avoid liability for that party in the way that a hold harmless or indemnification provision might. Accordingly the clause was not disfavored, particularly where the contract language was negotiated by sophisticated business entities dealing at arms length, and the amount of limitation was considerable in light of the amount of fees earned for the services provided by the design professional. Lastly, the design professional was immunized from the consequences of his negligence but nearly capped his potential exposure of such negligence.

Interestingly despite the weight of authority in support of limitation for liability provisions the AIA Standard Form Agreement fails to address this concept. Both the AGC and DBIA Standard Agreements include only a mutual waiver of consequential damages. Only the EJCDC Standard Form Agreements include such standard limitation of liability language, but even the EJCDC provides a very broad approach that needs to
be specifically addressed based upon the case authority in the jurisdiction of the Project. Perhaps the rational for excluding such risk limiting provisions is so that the respective design consultant and Owners can draft language which is acceptable and openly negotiate in an arms length transaction in order to properly allocate this risk. If that is the case, then the parties are well advised to carefully address this issue.

As noted the AGC and DBIA Standard forms recognized the lack of limitation of liability language, but include language that precludes recovery of consequential damages. DBIA Section 10.5 provides for the following:

10.5.1 NOTWITHSTANDING ANYTHING HEREIN TO THE CONTRARY (EXCEPT AS SET FORTH IN SECTION 10.5.2 BELOW), NEITHER DESIGN/BUILDER NOR OWNER SHALL BE LIABLE TO THE OTHER FOR ANY CONSEQUENTIAL LOSSES OR DAMAGES, WHETHER ARISING IN CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE, INCLUDING BUT NOT LIMITED TO LOSSES OF USE, PROFITS, BUSINESS, REPUTATION OR FINANCING.

Classically, this is not the type of Limitation of Liability provision that was addressed in Markborough vs. Superior Court 227 (1991) Cal.App.3d 705. Waivers of Consequential Damages are addressed below in order to provide a more thorough review. Note that the waiver discussed below is related to the AIA-1997 Standard Forms, but is equally applicable to the waiver quoted in both the AGC and DBIA Standard forms.

VI.F.2.a. Waivers of Consequential Damages


The Architect and Owner waive consequential damages for claims, disputes or other matters in question arising out of or relating to this Agreement. This mutual waiver is applicable, without limitation, to all consequential damages due to either party’s...
termination in accordance with Article 8.

Likewise the standard form agreement between the owner and the contractor (AIA document A201 -1997), sub-article 4.3.1 “claims for Consequential Damages” states:

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes:

Damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, and reputation, and for loss of management or employee productivity or of the services of such persons; and

Damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either parties termination in accordance with Article XIV. Nothing contained in this subparagraph 4.3.10 shall be deemed to preclude an award of liquidated direct damages, when applicable, in accordance with the requirements of the Contract Documents.”

Given the explicit language of the contract it would appear that the intent of the parties at the time of contracting was to mutually waive their rights to any and all consequential damages. Moreover, it appears that the intent of this waiver was that it would be in conjunction with other provisions of the standard form, i.e., termination, indemnity, claims. The real issue is whether the courts will interpret this language strictly or in light of these other provisions. Unfortunately, there is yet a reported case on the viability of this provision, but some basic principles may lead weight to its enforceability.

It is a long standing rule that contracts should be read in a manner that renders them reasonable and capable of being put into effect. *Heppler v. J.M. Peters Co., supra*, 73 Cal.App.4th 1265 at 1278, citing California Civil Code section 1643. Moreover it is well settled that when interpreting the provisions of a contract, the whole of the contract is to be read together, “so as to give effect to every part, if reasonably practical, each clause helping to interpret the other.” The *Ratcliff Architects v. Vanir Construction Management Co.* (2001) 88 Cal.App.4th 595, 601, citing California Civil Code section
1641. It is also well settled that courts will interpret contractual language in a manner which gives force and effect to every provision, and not in the manner which renders certain clauses “nugatory, inoperative or meaningless.” *City of Atascadero v. Merrill Lynch Pierce Fenner & Smith, Inc*, (1998) 68 Cal.App.4th 445, 473.

Historically, when the AIA added the mutual consequential damage waiver language into the standard AIA owner/architect agreement, it recognized that it was a drastic change to prior AIA contracts and attempted to craft a clear language into the mutual benefit of both parties. Essentially, the AIA recognized that the typical consequential damages, those losses that do not flow directly from either an act or a failure to act, but only from the consequence of the act, i.e., claims for bodily injury, property damage, the lost economic value (lost rent, loss of use, lost income, lost profits, lost business, lost goodwill), and lost productivity, needed to be addressed to limit the potential risks for terminating or suspending the contract due to either a material breach or some other event.

Commentaries clearly agree that the new AIA language falls squarely into a category of contract provisions that are finely tuned, clear and unambiguous regarding the waiver of consequential damages. In fact, the language indicates that not only are specifically enumerated consequential damages waived, but all consequential damages are waived. Thus, it is clear that the AIA language is an unambiguous statement of the finding that all consequential damages are mutually waived by the parties. *Hadley v. Baxendale*, *Consequential Damages & Modern Contract Law: The AIA’s New “Mutual Waiver of Consequential Damages,”* Howard Goldberg, July 23, 1997, The ABA Forum on the Construction Industry and the American Institute of Architects joint presentation of AIA Contract Documents: Generation Next.

While there is no specific case law interpreting the new AIA language, and not withstanding the express contract waiver language of the contract, there is authority for the proposition that this mutual waiver is at least analogous to other agreements to limit the liability of design professional for design defects as provided for in California Civil Code section 2782.5. As discussed previously, California case law, as well as other jurisdictions have given full effect to such limitation of liability provisions between
Owners and design professionals as long as they are not unconscionable, contrary to public policy, and if negotiated openly.

Thus, where the owner/architect and/or the owner/contractor engage in substantial contract negotiations, and subsequently entered into a contract that included all of there concerns, it would seem that the courts will enforce such a voluntary waiver of consequential damages under the theory that no one party was in a better position over the other when discussing and agreeing upon the terms of the contract prior to execution. Moreover, the waiver was mutual. Thus, on its face this language can be viewed as neither explicitly exculpatory, nor favoring one party over the other, and thus, enforceable.

VI.F.1. Insurance

Insurance generally deals with unexpected events, or occurrences, for which losses are paid by the insurer on behalf of the insured. The insurance industry is heavily regulated, as policies are reviewed and coverage is controlled by both statute and judicial decision. Many treatises have been written about the benefits of insurance in attempting to cover the risk of either a first party claim, i.e., property insurance, or builders risk insurance, and third party claims, i.e., comprehensive commercial general liability insurance or casualty insurance. In fact the AIA has expressed insurance requirements in the A-201 1997 Standard Form Agreement between the owner and the contractor in Article XI, but not in its Standard DB Forms.

Given the broad nature of specific risks and the availability of many types of insurance vehicles it is most advantageous for the design professional to obtain the advice of an insurance underwriter or counselor who understands the market, the needs of the client and can effectively counsel regarding the potential risks involved with the various project delivery options available.

As insurance is the primary tool for managing design and construction risks, it seems logical that at least basic requirements be included in the contract agreement. Interestingly, none of the Standard Form DB Contracts address insurance requirements in a comprehensive manner. While all the standard forms require that the DB Contractor be named as an additional insurer in its general liability and auto policies, the question of
whether or not the DB Contractor is covered under separate professional liability policies remains open. Typically, Owners have considered a type of Project Policy to address this issue, but many professional liability carriers are no longer providing that vehicle, or required substantial premiums.

As a primer below is a general discussion of insurance requirements under the AIA A201 Standard Form between the Owner and Contractor, as well as the AIA B141 & B151 Standard Form between the Owner and Design Professional. Many of these concepts can be modified to meet the specific requirements of the DB Project delivery method.

Generally under the AIA A201-1997 Standard Contract Form, Article XI, sub-sub-article 11.1.1 recognizes that claims will be made against the contractor that arise out of the contractor’s operations. For this reason standard contract requires that the contractor carry commercial general liability insurance to address the following types of claims:

Claims under workers compensation law;

Claims for damages relating to injury or death of the contractor’s employees;

Claims for damages because of bodily injury, sickness or death by persons other than the contractors’ employees;

Claims for damage insured by usual personal injury liability coverage;

Claims for damages to property other than the work itself;

Claims connected to the operation of a motor vehicle;

Claims for bodily injury or property damage arising out of completed operations; and

Claims involving contractual liability insurance applicable to the contractor’s indemnity obligations.

Interestingly, the A201-1997 form does not require the contractor to name the Owner as an additional insured under its liability policy. Thus while requiring the contractor to have commercial general liability insurance benefits the owner in several respects, i.e., limiting the owner’s exposure for loss because of the contractor’s adequate insurance, the owner may still be potentially exposed to risks for which its own active or passive negligence may have resulted in the loss.
In regard to the design professional, ironically AIA document B141-1997 and AIA document B151-1997 the standard form contracts between the owner and the architect, do not have explicit insurance requirements. While most architects and other design professionals have professional liability insurance in order to insulate the design professional from the risks of loss due to alleged negligent preparation of the plans and specifications and/or administration of the project, typically these requirements are addressed as a provision independently negotiated between the owner and the design professional and inserted into the standard form.

Overall it is important for the design professional to consider the contract document as a whole, including the use of a limitation of liability and indemnity provision in determining its insurance needs on a given project and for a specific owner, as the weight of authority in California seemingly dictates that the courts will focus upon the contract document as a whole in defining the design professional’s risk in conjunction with that of the owner and the contractor in the event that a dispute arises at the conclusion of the project.

VI. G. Dispute Resolution

The various standard forms address disputes resolution in a manner that primarily attempts to avoid the courthouse and the litigation process, opting instead for formal Alternative Dispute Resolution (“ADR”) methods to resolve disputes. While the approaches do differ, generally the standard forms are still promoting the use of ADR that does not interfere with either parties’ statutory rights, i.e. mechanics liens, warranty, etc.

Also it is important to note that different jurisdictions have construed the use of a “mandatory” ADR process over a parties’ statutory and constitutional rights to access to the litigation process in varying ways, and in some instances have strictly construed those statutory and constitutional rights as rights that can not be waived by contract. For example, there are some jurisdictions that limit the parties ability to waive their right to a jury trial by agreeing to ADR as the contract mechanism to resolve disputes. Thus, a critical view of a specific jurisdictions’ case authority in the context of the enforcement
of “mandatory” ADR provisions, may be necessary.\textsuperscript{33}

\textbf{The AIA Standard Forms}

The AIA has long been an advocate of the binding arbitration approach to dispute resolution. In more recent versions of the AIA standard forms, including A191, the AIA has also advocated a mandatory mediation process to be held prior to arbitration or litigation (see A191 (Part 1) § 6.2, (Part 2) § 10.2).

As in all AIA documents, the ADR process is a function of the rules promulgated by the American Arbitration Association (“AAA”). The AAA is among the oldest and well established ADR providers in the United States, and Internationally. Of course it is not the only provider of ADR services that is recognized and utilized to assist in the resolution of commercial disputes.

In the AIA ADR process the dispute procedure is initiated by a written request to the other party and to the AAA. Uniquely, a request to mediate may be made concurrently with a demand for arbitration, but mediation is to proceed first in an attempt to resolve the dispute before the arbitration process is commenced. That process is also driven by the filing of the demand for arbitration with the AAA and the other party, but is often delayed by the selection of either the single arbitrator or panel of arbitrators. Hence the view is to allow the parties to initially mediate the dispute in order to attempt to facilitate

\textsuperscript{33} This section is not intended to be an exhaustive review of the ADR process. The different jurisdictions’ views of the use of ADR as an exclusive, contractual mandated means to resolve disputes is in and of itself an interesting, but entirely different topic. Even an analysis of the different forms of ADR available, which typically includes a comprehensive tutorial of the pros and cons of the ADR process, and addresses the classic ADR issues, i.e., jurisdiction, arbitration’s binding effect, arbitrator’s authority, enforceability of awards, vacatur of awards, confidentiality, waiver to right to trial, etc., is beyond the scope of this section. Thus, the discussions of what considerations should be given to dispute resolution in the DB venture are more appropriately developed in conjunction with a balance of the individual business goals of the DB venture, the parties views of ADR & dispute resolution in general, and the statutory and legal authority of the jurisdiction in which the DB venture is being developed. This is solely intended to be a general discussion of the ADR processes promulgated by the different DB delivery method standard form contracts – an initial step in the development of a comprehensive ADR scheme.
an efficient and effective resolution.

Arbitration may be commenced at any time during the contract by either party. No specific time lines are required other than the initiation of the ADR process within a “reasonable” time of when the dispute arose. This contractual form of dispute resolution does not limit, or toll, a parties rights. Those are more appropriately addressed by a legal analysis, which considers the facts surrounding the dispute, the manifestation of the claims alleged and the applicable statute of limitations in the jurisdiction in question. This basic tenet is true for all the standard forms.

The AIA scheme allows for the consolidation, or joinder, of additional parties to the ADR process. As is typically mandated by the statutory construct of each jurisdiction, whether or not a party may be joined in or separate actions consolidated is determined upon the answer to the inquiry - whether or not there are “common issues of law or fact” among the participates and the disputes in question. Absent a separate contractual obligation for parties to enter in to an ADR process, the consolidation of actions, or the joinder of different parties the arbitration requires written consent.

**The AGC Standard Forms**

The ADR process included in the AGC standard forms while similar to the AIA scheme, includes a requirement for “direct discussion” among the parties prior o the commencement of the ADR. If the dispute is not resolved by those means, the parties are required to enter into a formal mediation process under the AAA Rules.

If that mediation process is unsuccessful, the parties are required to submit to one of a menu of ADR procedures, including Dispute Review Boards, “advisory” or non-binding Arbitrations, Mini Trials, binding Arbitrations, and/or litigation. This “menu” is typically a separate exhibit to the AGC standard contract, or comprehensive language may be inserted in the standard form through a supplemental provision. In any form care should be given in selecting the appropriate forum to resolve disputes. Also that “discussion” and “decision” should take place during the formation stages of the Project.

The AGC documents also expand the general consolidation and joinder requirements to those parties who are “necessary to resolve a claim.” Absent similar requirements in all
other entities contracts involved in the DB venture, the consolidation of separate actions, or joinder of the other entities in the ADR selected would require written consent of the Owner, the DB Contractor, and the entity whose action was being sought to be consolidated or joined. Note that the AGC documents, unlike the AIA standard forms, expressly permit the recovery of attorneys’ fees by the prevailing party.\textsuperscript{34}

As with all standard forms, including the AIA, the AGC standard documents contain a “continuation of the work” provision, requiring that the DB Contractor continue work on the Project at its own cost for the disputed work and without disruption of the schedule during the pending ADR process. Of course that assumes that the ADR process was initiated during the course of the design development and construction of the Project, which typically is not the case. dispute resolution proceedings. Note that if the DB Contractor continues to perform, the Owner is required to make payments for the base contract work not in dispute.

\textit{The DBIA Standard Forms}

The DBIA approach to ADR is some what broader. It still requires mediation prior to a binding arbitration, but also requires “Step Negotiations” as a pre-condition to initiating the ADR process. Of course, there is also a continuation of the work provision much like the AGC ADR process, so the DB Contractor is required to continue with the disputed work during the pending negotiations.

The “Step Negotiations” process is essentially a means by which the parties enter into formal, good faith negotiations to resolve the dispute at its lowest level first, but, if unsuccessful, then elevates the process to the next managerial level within thirty days to resolve the dispute. If the dispute cannot be resolved through the direct senior representatives’ negotiations, the matter is referred to AAA for mediation, and the selection of a mediator. If the mediation is unsuccessful, the dispute is elevated to binding arbitration under the AAA rules.

\footnote{Again the discussion of whether or not a party should consider inclusion of an attorneys’ fees provision in its contract is one that is driven by several considerations, a discussion of which exceeds the scope of this section.}
Interestingly, the “Step Negotiations” process is initiated by a written “statement” of the claim submitted within twenty-one (21) days after the events giving rise to the claim. The Notice Statement is to provide a comprehensive review of the circumstances giving rise to the claim, the specific contractual entitlement and relief requested. No distinction is made between the issuance of the Notice Statement and what are typically referred to as a Change Order Requests. Moreover, there is no requirement that separate requests be combined. Thus, as a practical matter this process may be more cumbersome, as there may be more than one claim in different phases of the “Step Negotiation” process at one time, unless some thought is given to the manner in which the Notice Statement should be made, and how multiple claims are handled.

Interestingly, the DBIA scheme does not address issues, such consolidation or joinder of parties, and the effect the “Step Negotiations” process has on the statute of limitations. Also the provision fails to address the circumstance where there may simultaneous “Step Negotiations,” and how those different, discrete phases inter-relate with one another, if at all.

As with the AIA and AGC requirements once the binding Arbitration phase of the stepped process is initiated, parties may be joined or consolidated with any Arbitration with necessary parties, or those parties substantially involved in, or affected by the dispute. Again this is a different standard for consolidation and joinder than outlined in the AIA and AGC schemes.

The final Arbitration award is binding and the prevailing party is also entitled to recover all legal fees and expenses.

**The EJCDC Standard Forms**

The EJCDC ADR process is similar to the AIA A191 proceedings, but is set forth in a separate attachment to the contract form, not in the body of the form itself. This of course invites the development of a different approach to ADR, or may invite the exclusive use of litigation as the means of resolution.

Again mediation is a pre-condition to the binding Arbitration, which is initiated by a separate Demand. The express terms of the standard form provide for an automatic stay
to the Arbitration process while the mediation is moving forward. If mediation is unsuccessful, Arbitration must be commenced within a “reasonable” time, but no later than the statute of limitations.

Again the Arbitration may be joined or consolidated with any necessary parties or parties substantially involved in the dispute, or by written consent. Interestingly, the EJCDC ADR provision seeks to prevent the justification for a third party beneficiary claim against the Owner providing that, “the provision of such subcontract consenting to joinder shall create any claim, right or cause of action in favor of Subcontractor, Supplier or Engineer against OWNER.”

**Conclusion**

While the various standard forms each address disputes resolution in a manner that primarily attempts to avoid the courthouse through the use of the ADR process, each party entering into the DB venture need to address their own concerns regarding the levels of risk attributable to the different ADR procedures suggested, as well as how those compare to the statutory schemes permitted by their jurisdiction.
NOTES