

Alternative Construction Delivery Models

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What is a “Construction Delivery System?”

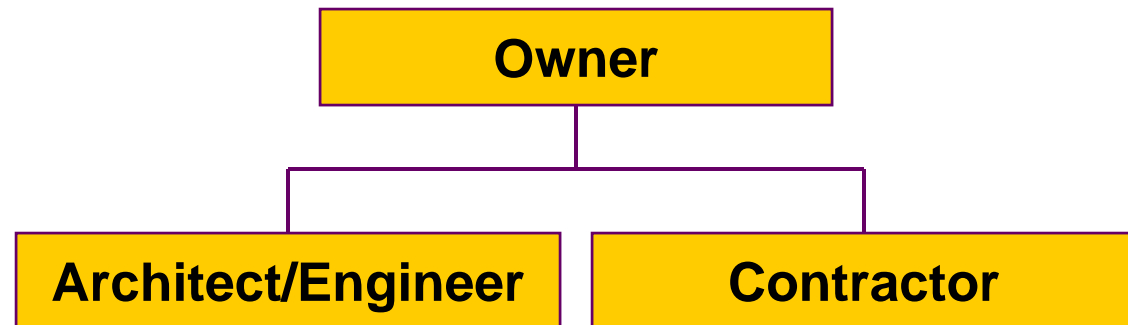
A process designed to achieve the satisfactory completion of a construction project from conception to occupancy.

Examples of “Construction Delivery Systems”:

- **Design-bid-build (the “traditional” system in the public sector)**
- **Negotiated GMP (the “traditional” system in the private sector)**
- **Design-Build (AB 1402)**
- **Design-Build (Lease/leaseback)**
- **CM—multiple prime**
- **CM at risk (CM/GC)**

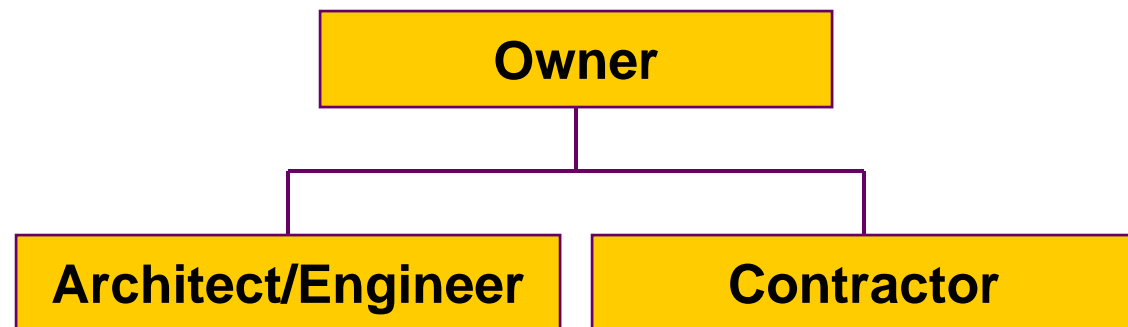
What is Design-bid-build?

- An system in which an owner retains a designer under a professional services contract to prepare complete construction documents and then bids the work, awarding a lump sum contract for construction of the facility to the low bidder
- The “traditional” method in public construction



What is Negotiated GMP?

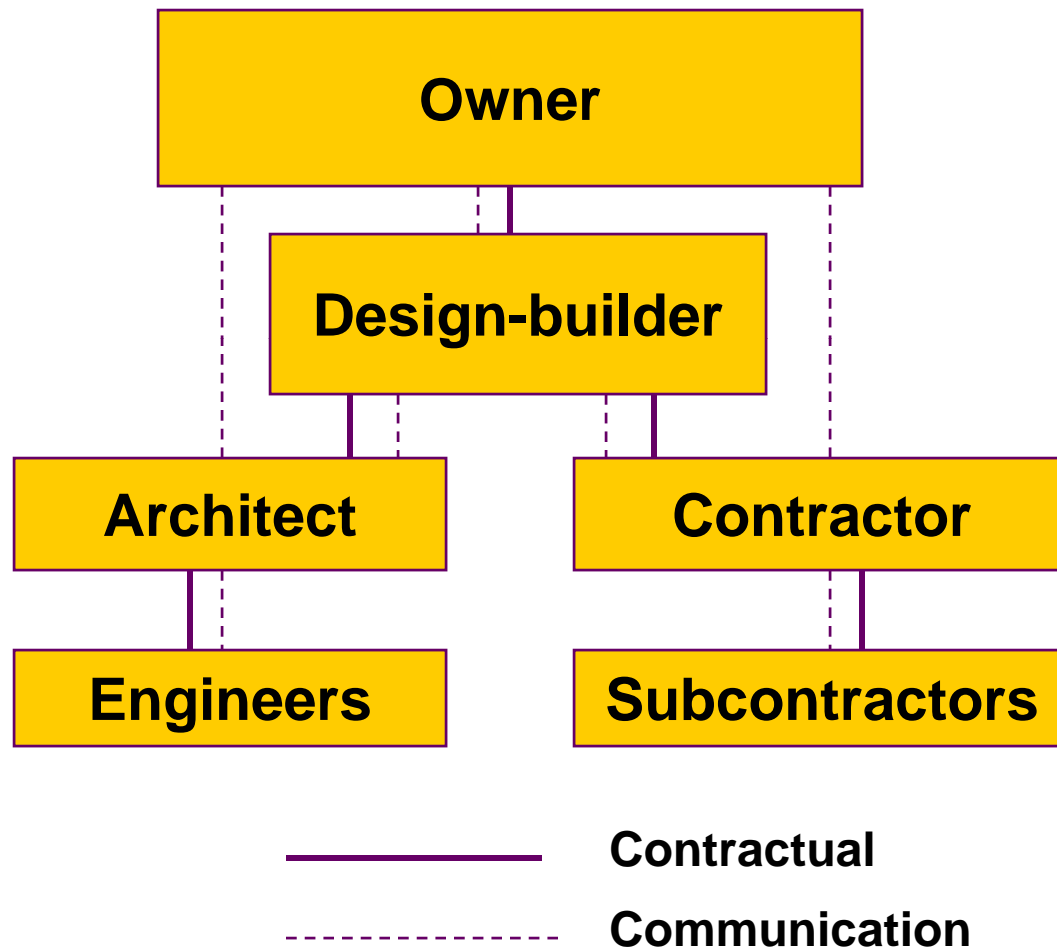
- **A system in which an owner retains a designer under a professional services contract to prepare complete construction documents and negotiates a guaranteed maximum price (GMP) contract with a selected contractor for construction**
- **Not presently authorized for public school construction**



What is Design-build?

- **A system in which an owner contracts with one entity to perform both design and construction under a single contract**
- **Authorized for California public school projects by AB 1402 (Education Code sections 17250 *et seq.*)**

Design-build



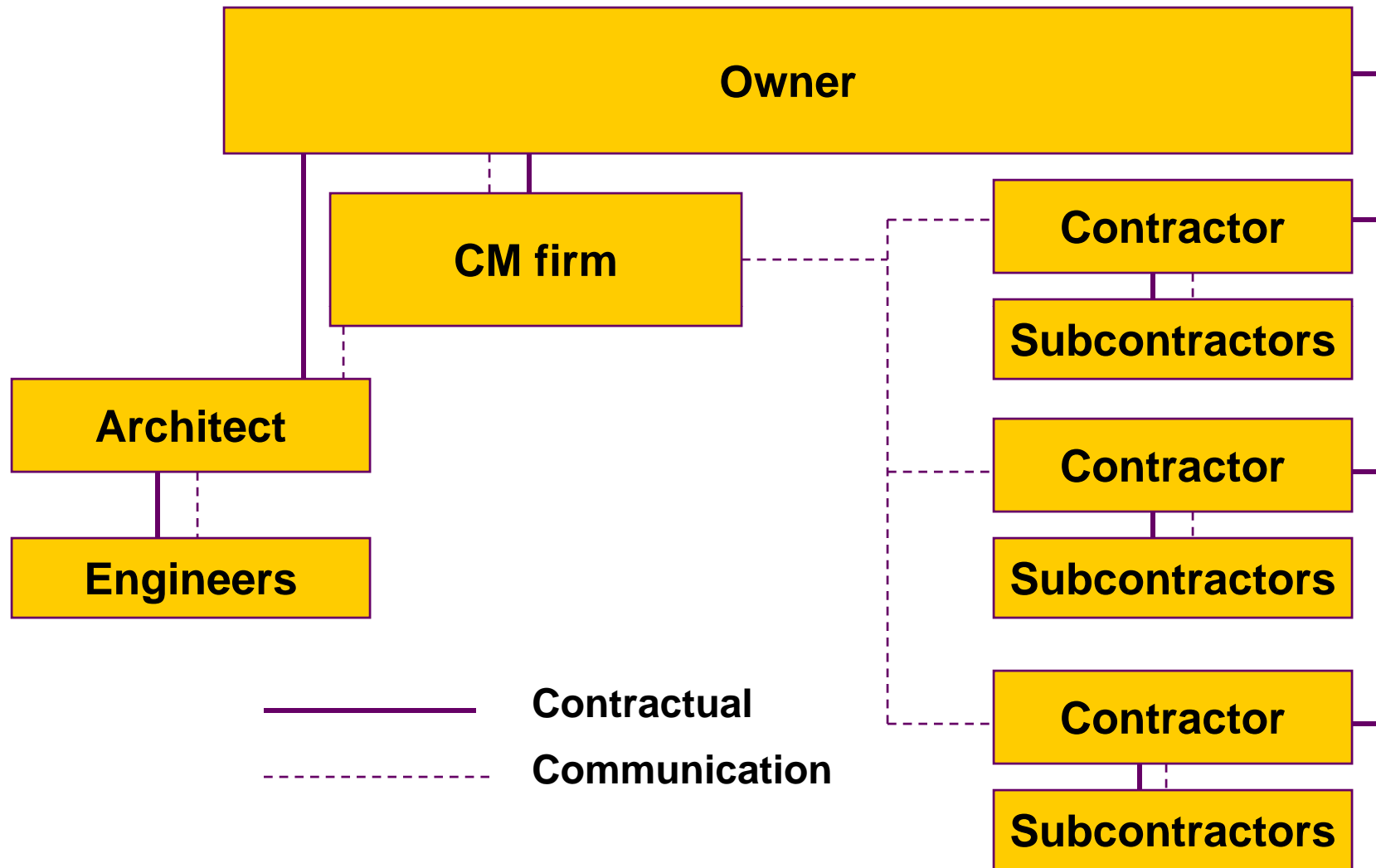
What is Lease/leaseback?

- **A system in which a third party (often a developer) leases the property from the district, constructs and finances the facility, and then leases it back to the owner.**
- **Design may be contracted directly by owner or through leasing entity**
- **Authorized under Education Code section 17406**
- **Ownership of facility reverts to district at end of lease term**

What is Multiple-prime CM?

- **Several specialty contractors are engaged to do specific portions of the work**
- **Each contractor has a direct contract with the owner**
- **Breakdown of work may be by phase, by trade, or both**
- **Each prime contractor may also have subcontractors**
- **Work is managed for the owner by a CM firm**

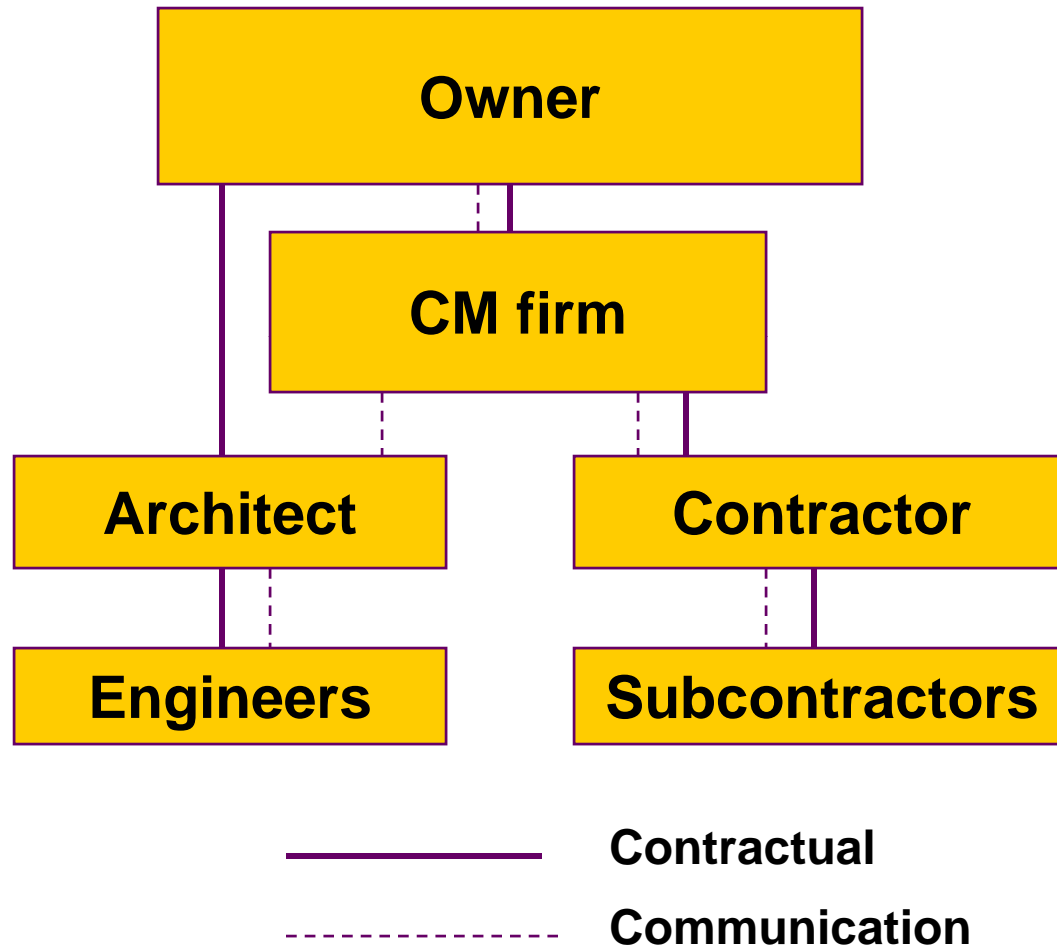
Multiple-prime CM



What is CM at-risk?

- **Design is completed by an architect under a professional services agreement**
- **A CM is chosen by a qualification-based selection process (Govt. Code 4525)**
- **Subcontractors bid directly to the owner**
- **After bid, subcontracts may be assigned to the CM , who guarantees the total construction cost.**

CM at risk





***What are the typical risks on
a construction project?***

Primary components of owner's risk

- **Budget**
- **Cost**
- **Schedule**
- **Design deficiencies**
- **Code compliance**
- **Unforeseen conditions**
- **“Force majeure”**

- **Initial budget must include all project costs including “soft” costs, appropriate contingencies, and an allowance for construction cost escalation (inflation)**

- **Bid price may exceed budget**
- **A project awarded within budget may encounter excessive change orders**
 - **Program changes (user's)**
 - **Unforeseen conditions**
 - **Design errors or omissions**

- **Delays may come from many causes, both natural and man-made**
- **Contract will define who assumes risk for various types of delay**
- **Owner may incur additional collateral costs if occupancy is delayed**

Design deficiencies (“The Gap”)

- **Owner warrants that documents are complete and accurate (Spearin doctrine)**
- **Contractor is entitled to rely on completeness and accuracy**
- **Design professional is held to negligence standard**
- **Owner cannot be unjustly enriched**

Code compliance

- **Is related to design deficiencies**
- **Responsibility generally follows same principles**
- **Public agencies cannot shift this responsibility to contractor (PCC 1104)**
- **Variable code interpretations between jurisdictions**

Unforeseen conditions

- **Accuracy of as-built drawings**
- **Importance of adequate site investigation**
- **Statutory restrictions on risk transfer**

Force majeure

- **Risks unanticipatable by definition and beyond the control of either party**
- **Includes:**
 - **“Acts of God”**
 - **War**
 - **Strikes**
 - **Unusually severe weather**
 - **Unavailability of materials**



How do various project delivery systems allocate/mitigate risk?

Design-bid-build

- **Owner takes risk for:**
 - **Design deficiencies (“the Gap”)**
 - **Costs and delays for owner-initiated changes**
 - **Delays due to design schedule**
 - **Costs and delays due to unforeseen conditions**
 - **Costs and delays due to unexpected code interpretations**
 - **Contractor default**

- **Owner is no longer responsible for design deficiencies, but still at risk for:**
 - **Quality of program information supplied**
 - **Effectiveness in defining performance requirements and quality standards**
 - **Delays and costs due to deficiencies or changes in above**
 - **Loss of control over project design**

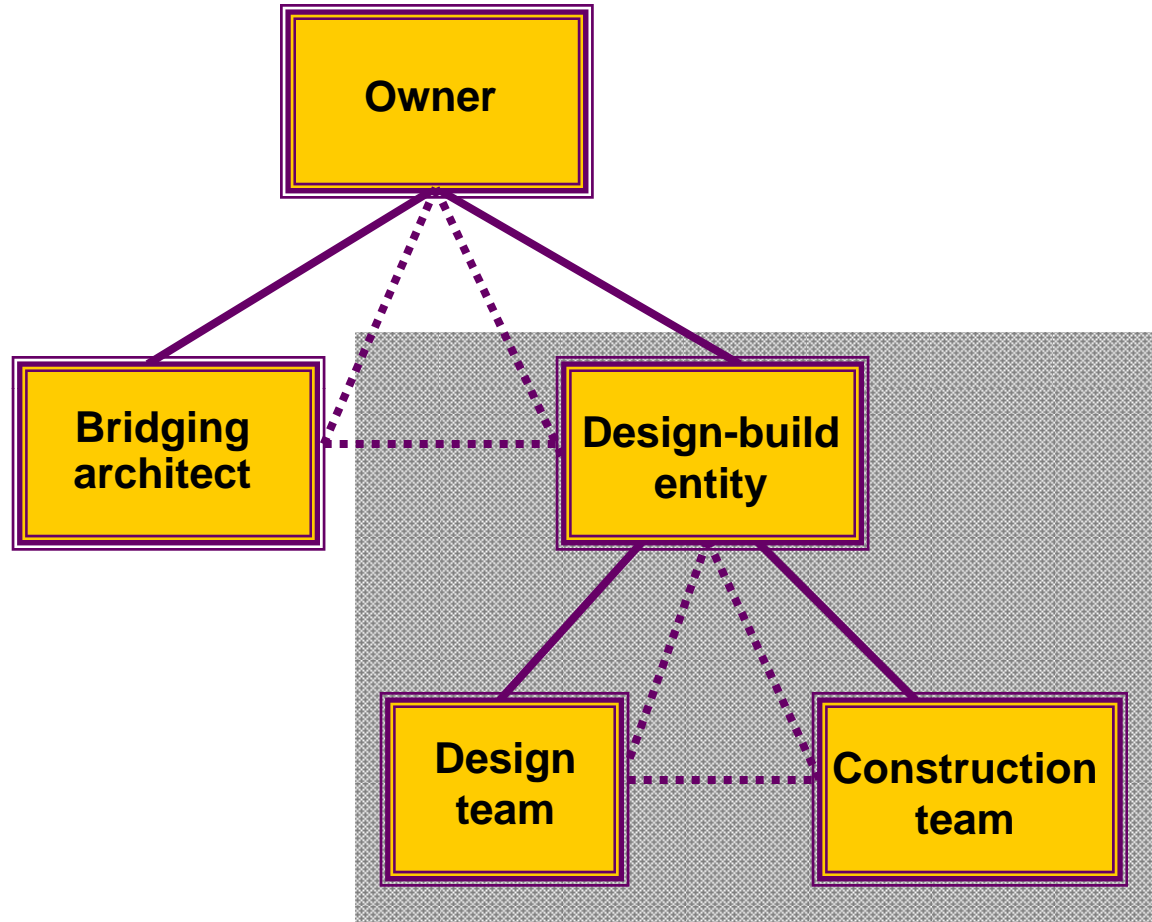
Design-build: common misconceptions

- **May not be faster – a reasonable effort is needed for thorough project scoping in predesign**
- **Not all project problems go away**
- **Elimination of design-related change orders is not the same as “No Change Orders”**
- **The designer’s professional responsibility does not change**

Bridging—a variation of design-build

- **Owner hires “bridging architect” to prepare conceptual design documents and possibly to advise during balance of process.**
- **Design-build entity completes design documents and constructs the project**
- **Slower delivery, but greater control**
- **Delays cost commitment**

Bridging



————— Contracts
..... Communication

Bridging: appropriate uses

- **Owner requires formal, competitive selection of design-build entity**
- **Owner desires assistance in planning, programming or other predesign activities**
- **Project is not well defined**
- **Controlling risk is a high priority for owner**

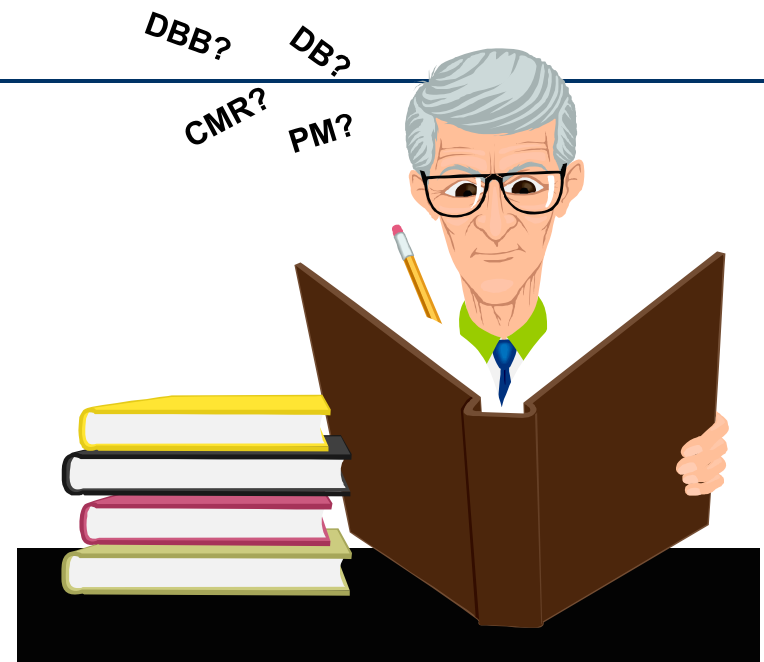
- **Risk of design deficiencies follows design contract (i.e. may be owner or leasing entity)**
- **Most other construction risks move to leasing entity (cost, schedule , but probably not unforeseen conditions or force majeure)**
- **Task and risk of proper program definition still goes to owner (similar to design-build)**

- **Owner's risks are:**
 - **Same as design-bid-build, but may share risks of design defects if CM provides preconstruction services**
 - **May share some risk through contingency**
 - **May require increased administrative cost to track project billings & payments**

Multiple-prime CM

- **Owner's risk is similar to design-bid-build, but may increase due to multiple direct contracts**
- **May require increased administrative cost to track project billings & payments**
- **Owner is at risk for CM's ability to coordinate various contractor's work**

Selecting a project delivery system



What drives selection of the delivery process?

- **Project characteristics**
- **Client goals/objectives**
- **Organizational constraints**
- **Political concerns**
- **Process flexibility**

Sources of further information

- **Design-Build Institution of America:**
 - dbia@dbia.org
- **Guidelines published by California Department of Education:**
 - <http://www.cde.ca.gov/cdepress/downloads.html>
- **Prequalification Questionnaire published by Director of Industrial Relations:**
 - <http://www.dir.ca.gov/dlsr/pqdb.doc>
- **Capital Program Management, Inc.:**
 - <http://www.capitalpm.com>
 - jay@capitalpm.com