

DESIGN → CONSTRUCTION: PROJECT DELIVERY METHODS

(SUPERPOWERS OPTIONAL!)



FISHBECK, THOMPSON, CARR & HUBER
engineers | scientists | architects | constructors

YOUR SUPERHERO TRAINERS TODAY

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KNOWING YOUR SUPERHERO TEAM

- Project priorities
- Define the superhero team contract entities:
 - Owner, Architect/Engineer, General Contractor, Construction Manager (CM), CM Agent
- Type of project delivery methods (contracts)
- When should the project delivery method be selected?
- Compensation methods for professional and construction services
- Advantages and disadvantages
- Which delivery method may be better for your project

PROJECT DELIVERY METHODS

What is most important to you?

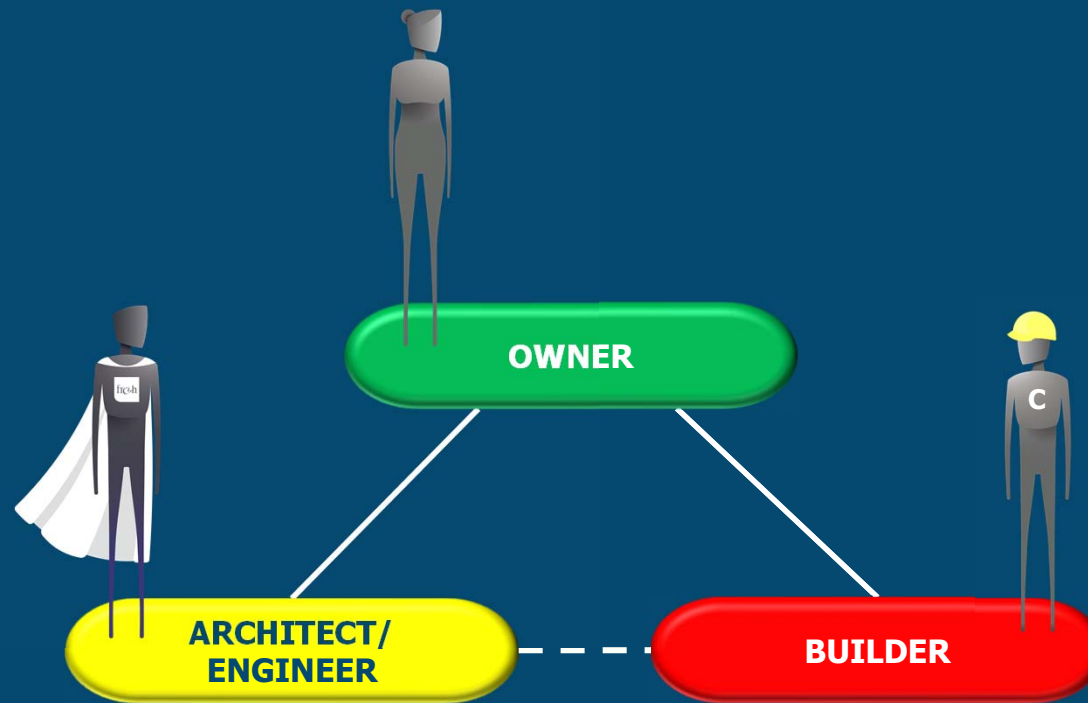
- Schedule?
- Design?
- Budget?
- Internal resources?
- Supplement your level of experience?



When should the project delivery method be selected?

- Preferably **before** contracting with a design firm and contractor

TEAM MEMBERS (Project Entities)



COMPENSATION METHODS

Categories for professional services and construction services:

- Lump Sum/Fixed Price (LS)
- Guaranteed Maximum Price (GMP)
- Reimbursable
 - Unit Price
 - Cost Plus Fixed Fee
 - Cost Plus Incentive Fee
 - Cost Plus Award Fee (performance based)
 - Time and Materials

DELIVERY METHODS

1. Design – Bid – Build (DBB)
2. Construction Manager at Risk (CM at Risk / CMR / CM@R)
3. Construction Manager Agency (CM Agency / CMa)
4. Design – Build (DB)
5. Integrated Project Delivery (IPD)
6. Integrated Services

A photograph showing four construction workers in white hard hats and high-visibility yellow safety vests. They are gathered around a large set of blueprints or plans spread out on a surface. One worker in the foreground is pointing towards the plans. In the background, a yellow forklift is visible, and the setting appears to be an industrial or construction site with concrete structures.

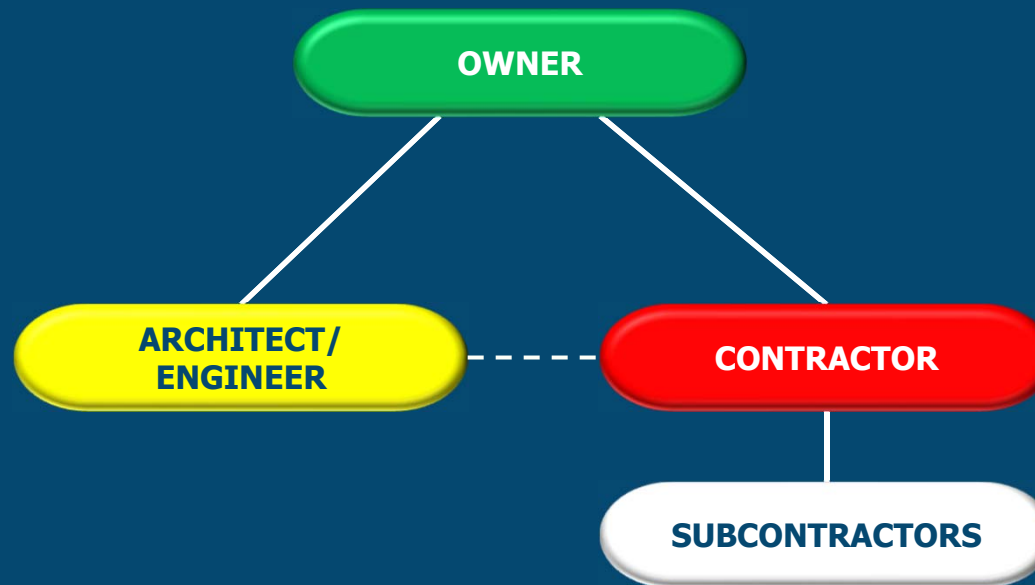
DESIGN-BID-BUILD

A project delivery method where:

- Separate contracts for design (Architect) and construction (Builder)
- Criteria for final selection may include
 - lowest total construction cost,
 - qualifications-based,
 - or a combination of both

As defined by:
The Associated General Contractors of America

DESIGN-BID-BUILD



DESIGN-BID-BUILD

ADVANTAGES

- Traditional, time-tested, familiar
- Owner has control and is involved in design; preferred when the owner is still developing project needs
- Competitively bid
- Widely accepted by public entities

DISADVANTAGES

- Sometimes adversarial relationship between contractor and design team
- Longer total project schedule for sequential periods of design→bidding→construction
- No contractor input on constructability during design
- Owner has little input on subcontractor selection
- Owner responsible for conflict resolution that may occur during construction



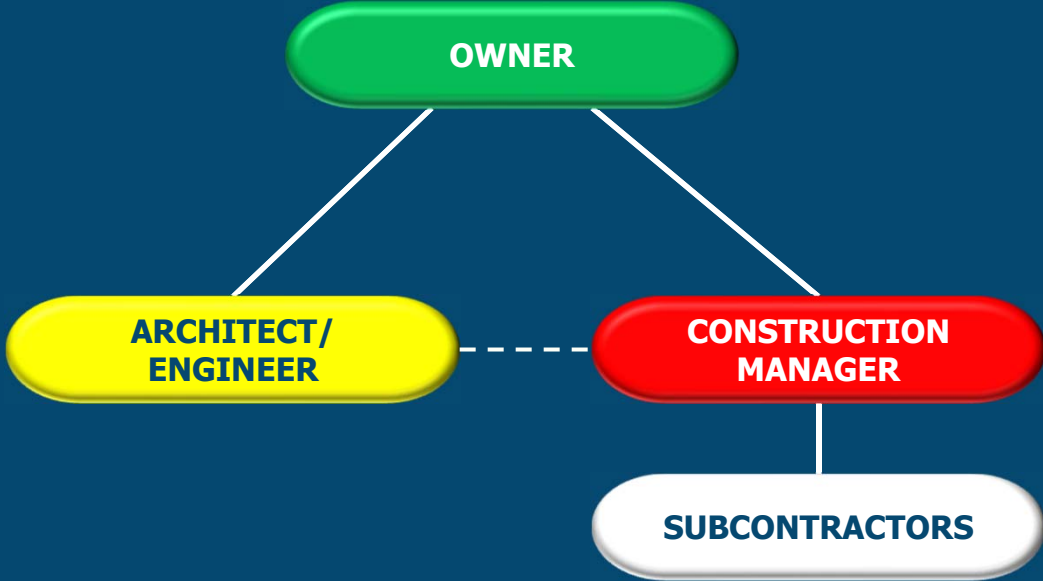
CM AT-RISK

A project delivery method where:

- Separate contracts for design (Architect) and construction (Builder)
- CM acts as a consultant to owner in development and design phases
- CM assumes the risk for construction performance (like a General Contractor)
holding all trade subcontracts during the construction phase

As defined by:
Construction Management Association of America

CM AT-RISK



CM AT-RISK

ADVANTAGES

- Contractor involved during design and provides constructability and cost savings suggestions
- Competitively bid
- Schedule reduced with expedited bid packages and early purchase of long-lead items
- CM handles all RFIs, field change orders, and conflict resolution as the owner's representative

DISADVANTAGES

- May be restrictions on public bidding requirements that forbid this form of contracting
- Sometimes adversarial relationship between contractor and design team can occur once a GMP is set

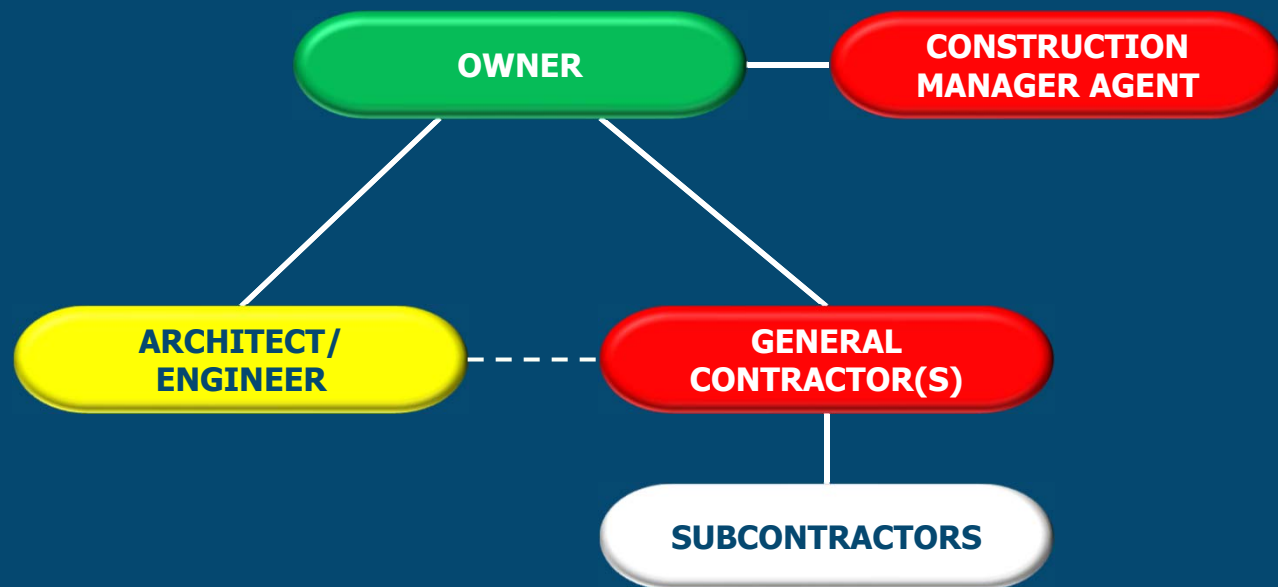
CM AGENCY

Management process whereby the Owner utilizes a CM as its principal agent to advise on or manage the process over the life of the project, or during specific phases of the project



As defined by:
Construction Management Association of America

CM AGENCY



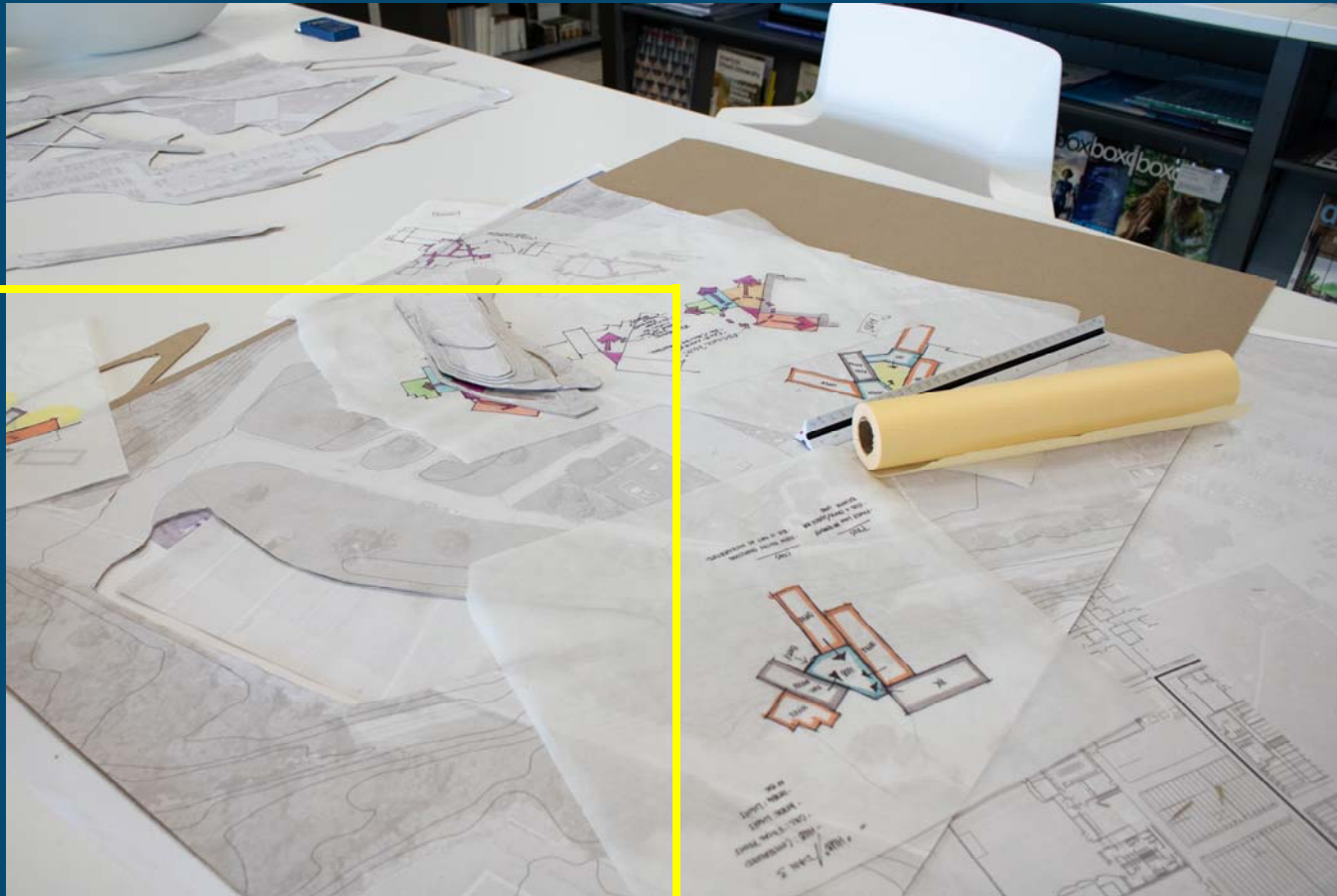
CM AGENCY

ADVANTAGES

- Provide constructability and cost savings suggestions
- Owner gains experienced advice
- Schedule reduced with expedited bid packages and early purchase of long-lead items
- CM Agent handles all RFIs, field change orders, and conflict resolution as the owner's representative

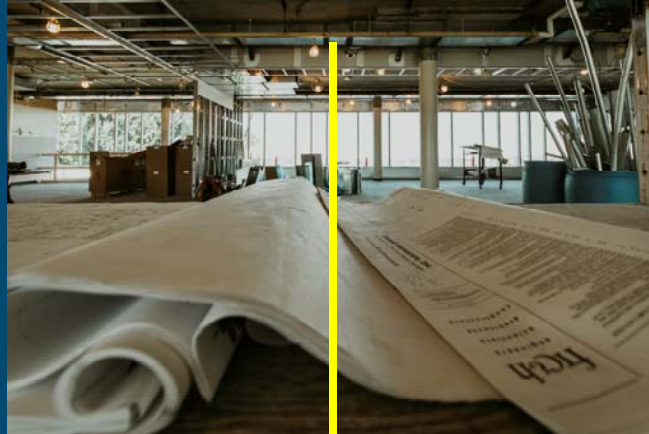
DISADVANTAGES

- Additional cost for CM Agency entity to administer construction contracts
- Owner holds multiple, separate construction contracts



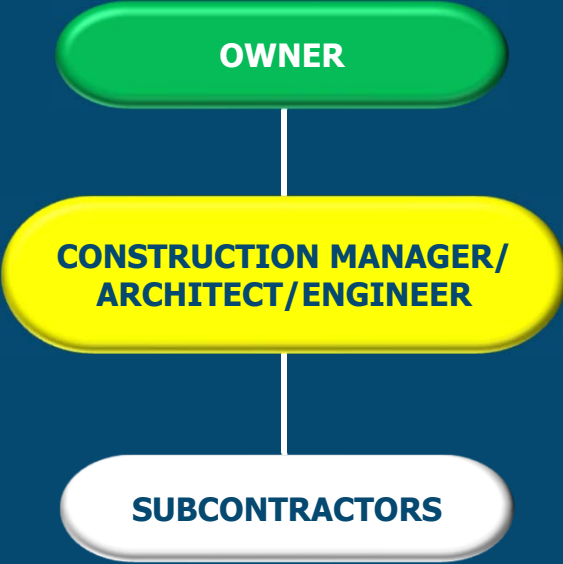
DESIGN-BUILD

A method of project delivery in which one entity (the design-build team) works under a single contract with the project owner to provide design and construction services.



As defined by:
Design-Build Institute of America

DESIGN-BUILD



DESIGN-BUILD

ADVANTAGES

- One source responsibility reduces owner's time and risk
- Reduced schedule through expedited bid packages and early purchase of long-lead items
- Contractor is involved during design and provides constructability/cost savings suggestions
- Integrated team for efficiency and innovation
- Coordinated communication between contractor and design team
- Reduced litigation claims
- Owner can choose early on between multiple design and construction options
- Project is competitively bid

DESIGN-BUILD

DISADVANTAGES

- Owner must produce bridge documents to outline exact needs (outline specs, plans, specific project requirements)
- Owner/Design-Builder contract must reflect complete understanding of all owner expectations
- Owner has no input when choosing subcontractors for the project, unless specifically requested during construction
- Restrictions on public bidding requirements forbid this form of contracting
- Less owner design control and involvement
- Owner must be responsive in decision making to take full advantage of the speed of design-build
- Contractor may not fully understand the design process

INTEGRATED PROJECT DELIVERY

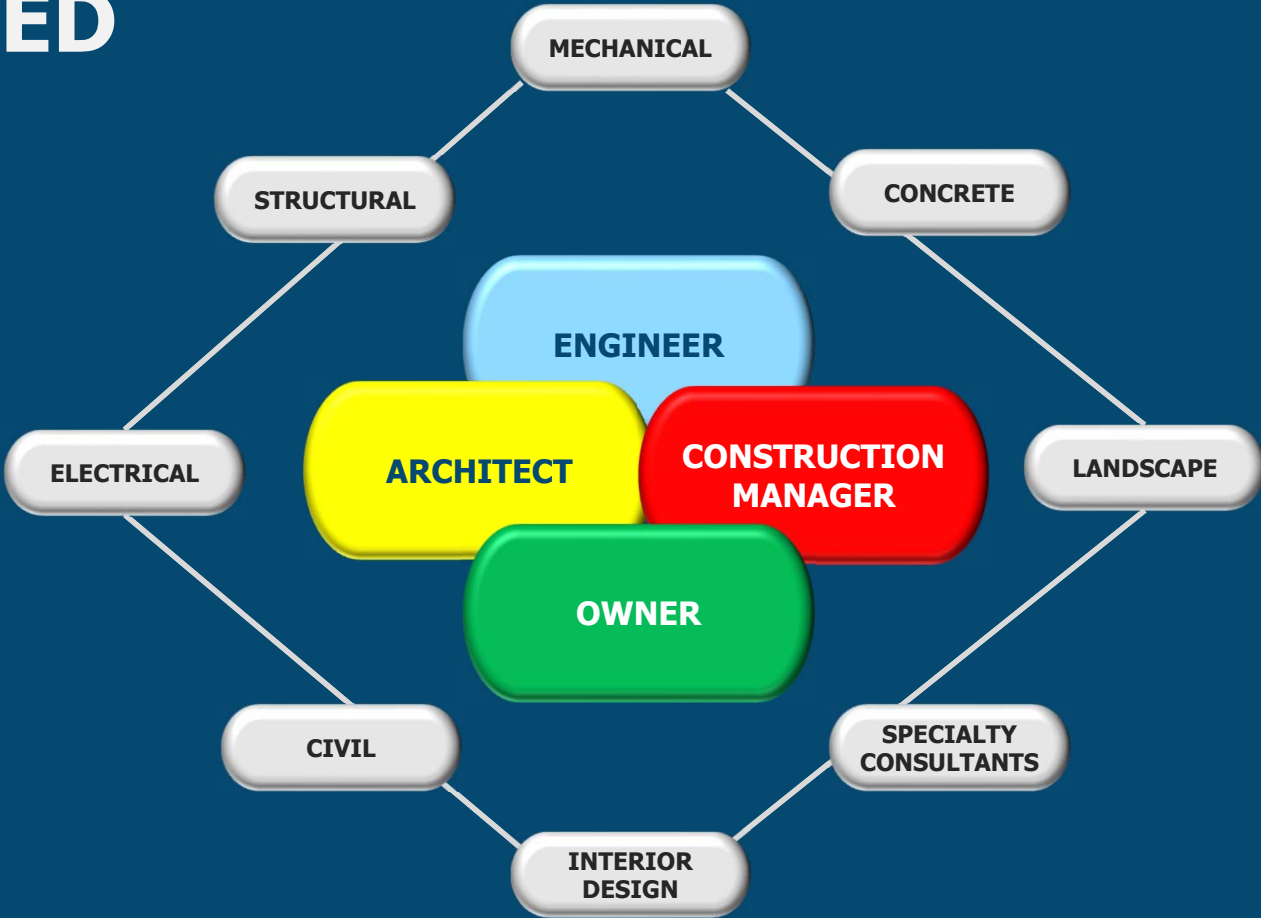
A project delivery approach for very large projects that integrates people, systems, business structures, and practices into a collaborative process, harnessing the talents and insights of all participants to:

- Optimize project results
- Increase value to the owner
- Reduce waste
- Maximize efficiency through all design and construction phases
- Risk and reward are shared equally among contract parties

As defined by:
The American Institute of Architects



INTEGRATED PROJECT DELIVERY



INTEGRATED PROJECT DELIVERY

ADVANTAGES

- Owner, Architect/Engineer, CM, subcontractor collaboration and team interests aligned with project goals
- Schedule reduced due to expedited bid packages and early purchase of long-lead items
- Extended design and efficient construction, due to shared risk and interest in success
- Ideal for large complex, uncertain, and quick projects
- Increased “value” of construction

DISADVANTAGES

- Newer and unfamiliar
- Arriving at an agreement on the terms and conditions of the final contract can be a lengthy process
- Chance of failure dependent on individual behavior, which is difficult to control or correct and can cause a breakdown in collaboration

INTEGRATED SERVICES

“An alternative single-source project delivery system which integrates professional design and construction services in a manner which provides the owner an efficient way of confidently controlling their project in regard to design, construction, cost, quality, schedule, and overall project performance.”

INTEGRATED SERVICES

A project delivery approach integrating Owner, Architect/Engineer, and CM into a collaborative team to:

- Optimize project results
- Increase value to the owner
- Reduce waste
- Maximize efficiency through all design and construction phases

As defined by:
The American Institute of Architects

INTEGRATED SERVICES

ADVANTAGES

- Owner, Architect/Engineer, and CM are a collaborative team
- Seamless communication between design team and contractor
- Owner can choose early on between multiple design and construction options
- Project is competitively bid
- Reduced litigation claims

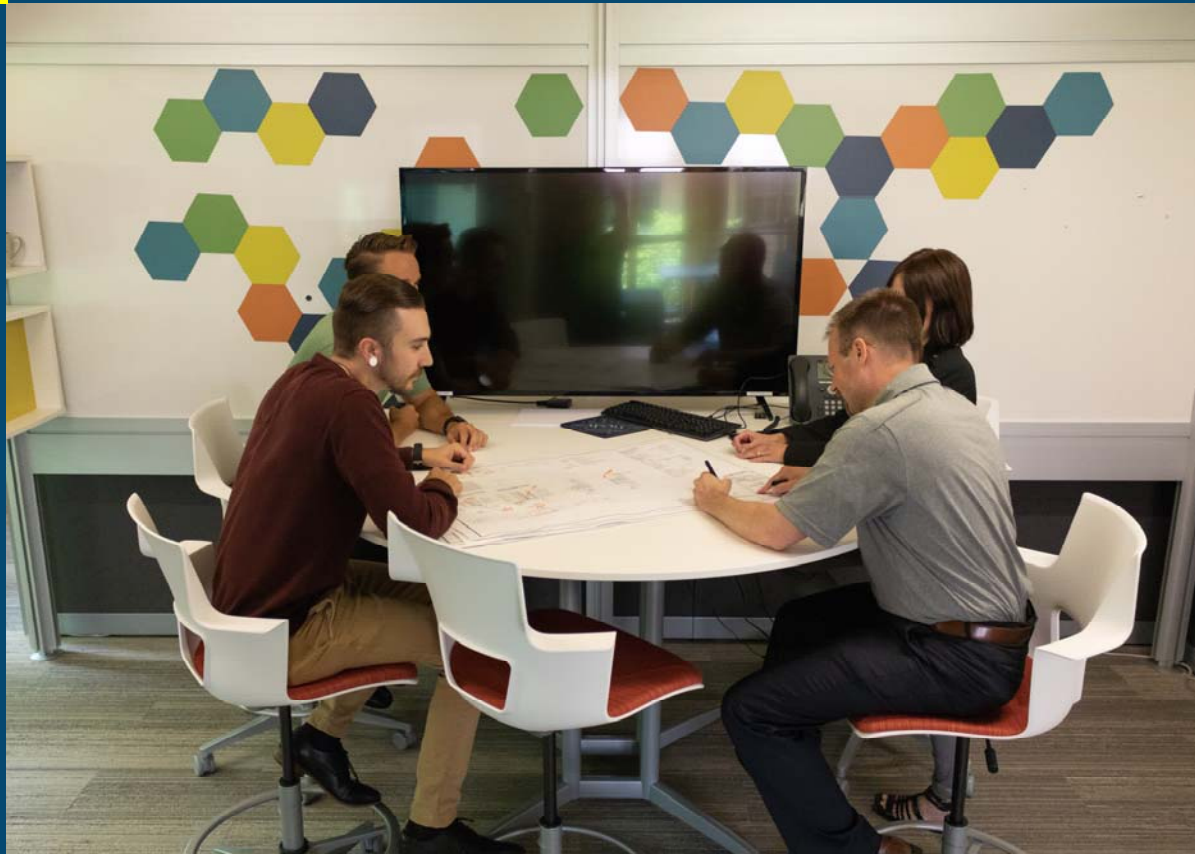
DISADVANTAGES

- Restrictions on public bidding requirements forbid this form of contracting
- Potential for less owner design control and involvement
- Owner must be responsive in decision making to take full advantage of the speed of design-build

ADVANTAGES SUMMARY

- HIGH
- ◐ MEDIUM
- LOW

	SCHEDULE CONTROL	COST CONTROL	DESIGN CONTROL	RISK MANAGEMENT	CONFLICT RESOLUTION
DESIGN - BID - BUILD	◐	◐	●	◐	○
DESIGN - BUILD	●	◐	◐	◐	◐
CONSTRUCTION MANAGER AT RISK	◐	◐	●	●	◐
CONSTRUCTION MANAGER AGENCY	◐	◐	●	◐	○
INTEGRATED PROJECT DELIVERY	●	●	●	●	●
INTEGRATED SERVICES	●	●	●	●	◐



SUPERHERO TEAM TRAINING COMPLETE!

Owner's decision factors for a project delivery method:

- Project type and scope/scale
- Tolerance for risk
- Project priorities
- Schedule
- Level of desired involvement
- Owner's capabilities and internal resources
- Regulatory requirements

THANK YOU!



FISHBECK, THOMPSON, CARR & HUBER
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