

DESIGN BUILD FOR EDUCATIONAL FACILITIES



PRESENTED BY: Haskell | Walter P. Moore | Novus Architects **JULY 2021**



COLLABORATION

Haskell

Novus Architects

Walter P. Moore

Presenters

Ben Berling, DBIA, GPCP, GGP, CQMC
Project Manager / Developer & N.FL DBIA Chair
Haskell

904-318-4335

Ben.berling@haskell.com

Emily Kite, AIA, ALEP
Principal

Novus Architects

828-545-0198

emily.kite@novusarchitects.com

Scott Martin, PE, LEED AP
Principal / Project Manager / DBIA-FL Vert Market Chair
Walter P Moore

727-642-6212

smartin@walterpmoore.com



- Review of Florida Laws related to project procurement
- Overview of Design-Build, DBB and CMAR procurement
- Benefits of Design-Build Delivery
- Review common concerns of Owners and Practitioners in using Design-Build
- DBIA resources for Design-Build
- Q&A

LEARNING OBJECTIVE



Terminology:

- **Fixed Price Design Build**
 - Competitive Proposal Selection based on price and technical solution
- **Design Build (Progressive)**
 - Qualification Based Selection with no price component

Florida Law:

- Both allowed under FS 287.055(9)

DESIGN BUILD PROCUREMENT



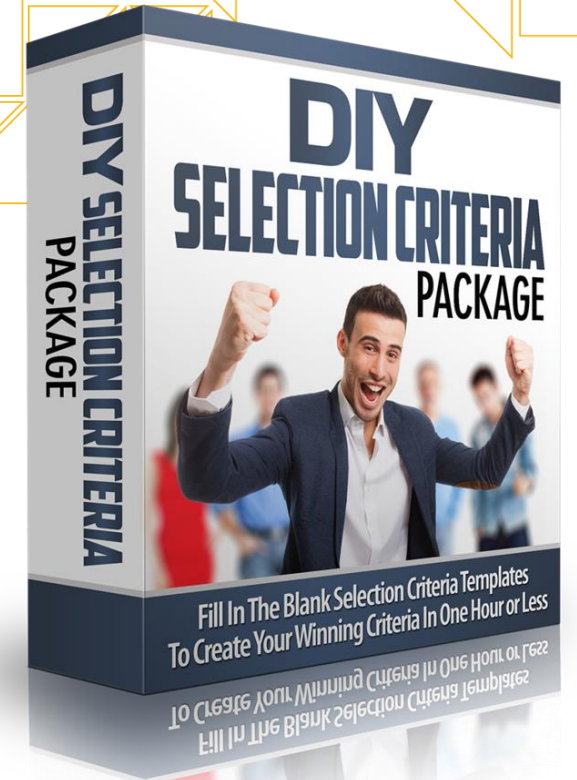
REVIEW OF FL LAWS

Florida Statute 287.055

PROCUREMENT OF PERSONAL PROPERTY AND SERVICES

- Law requires each organization to adopt this statute as their own if they choose

Statute	Progressive Design Build
Criteria packages with minimum requirements	Competitive selection or qualification based
D-B firm isn't limited to all-in-house general contractor	Team can form a partnership – one contract
Design Criteria Package applies to Competitive Proposal	Needs to be prepared by the Team – not prior
Qualifications based selection	Guaranteed maximum price and Completion Date





OVERVIEW OF DESIGN BUILD, DBB & CMAR PROCUREMENT



WHY DESIGN BUILD

- 1 Comparison of DBB vs. CMAR vs. DB delivery**
- 2 1998 study – Survey of 351 projects**
- 3 2018 study – Survey of 212 projects**
- 4 Used same methodology for benchmarks**

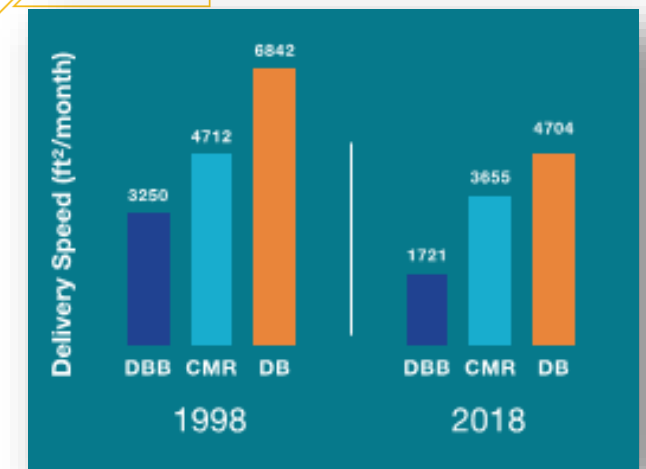
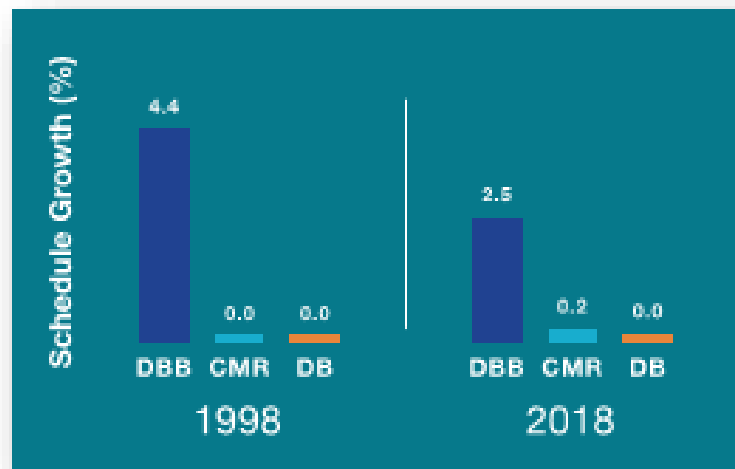




WHY DESIGN BUILD

Comparison of 1998 to 2018 Study Benchmarks | TAKEAWAYS

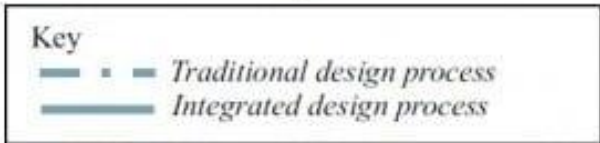
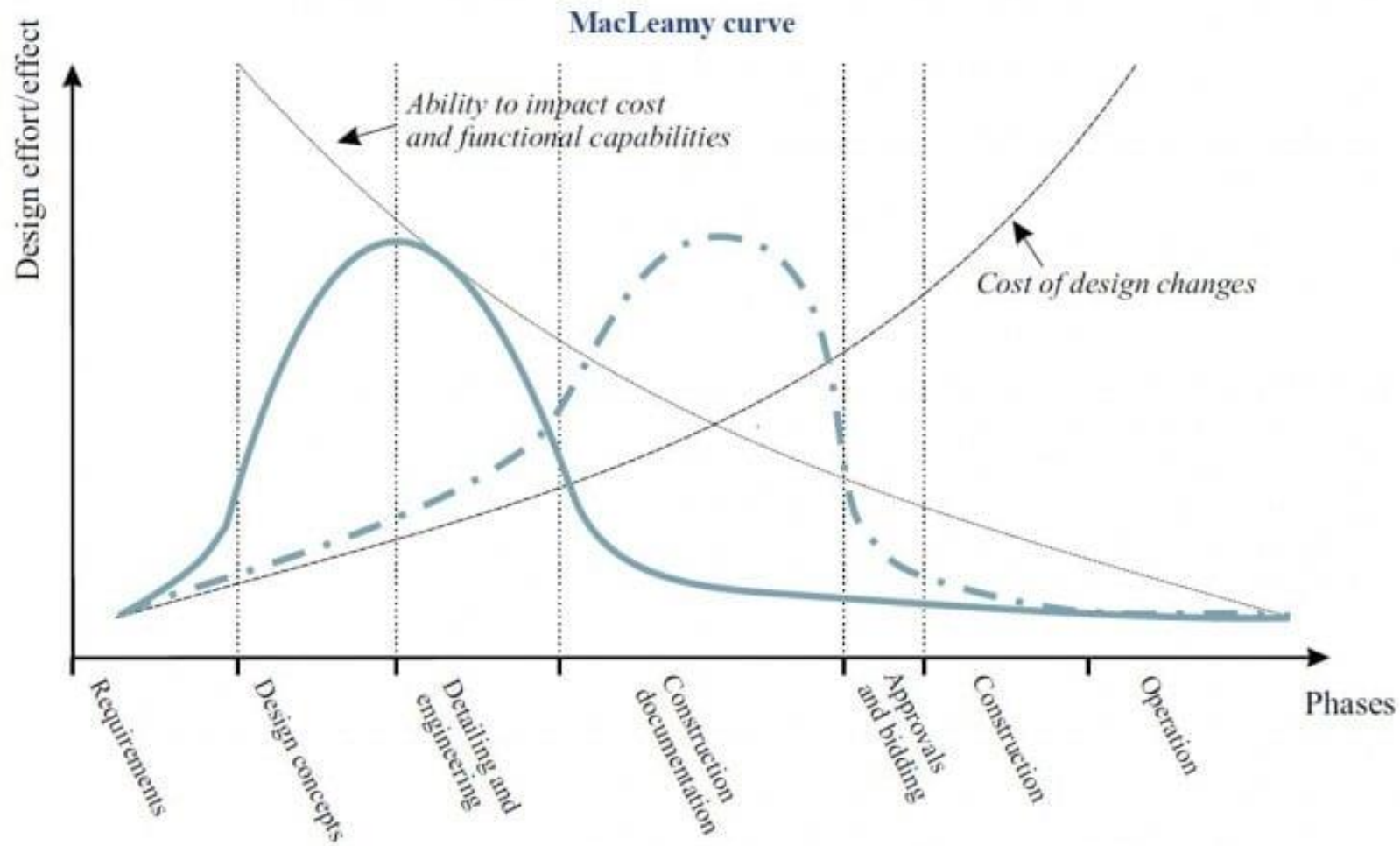
- Overall industry improved over last 20 years
- DB and CMAR closer on cost control – still outperforms DBB
- DB and CMAR still improve schedule over DBB





WHY DBIA? WHAT IS IT?

MACLEAMY CURVE



Source: Patrick MacLeamy, HOK (presentation)



BENEFITS OF DESIGN BUILD DELIVERY

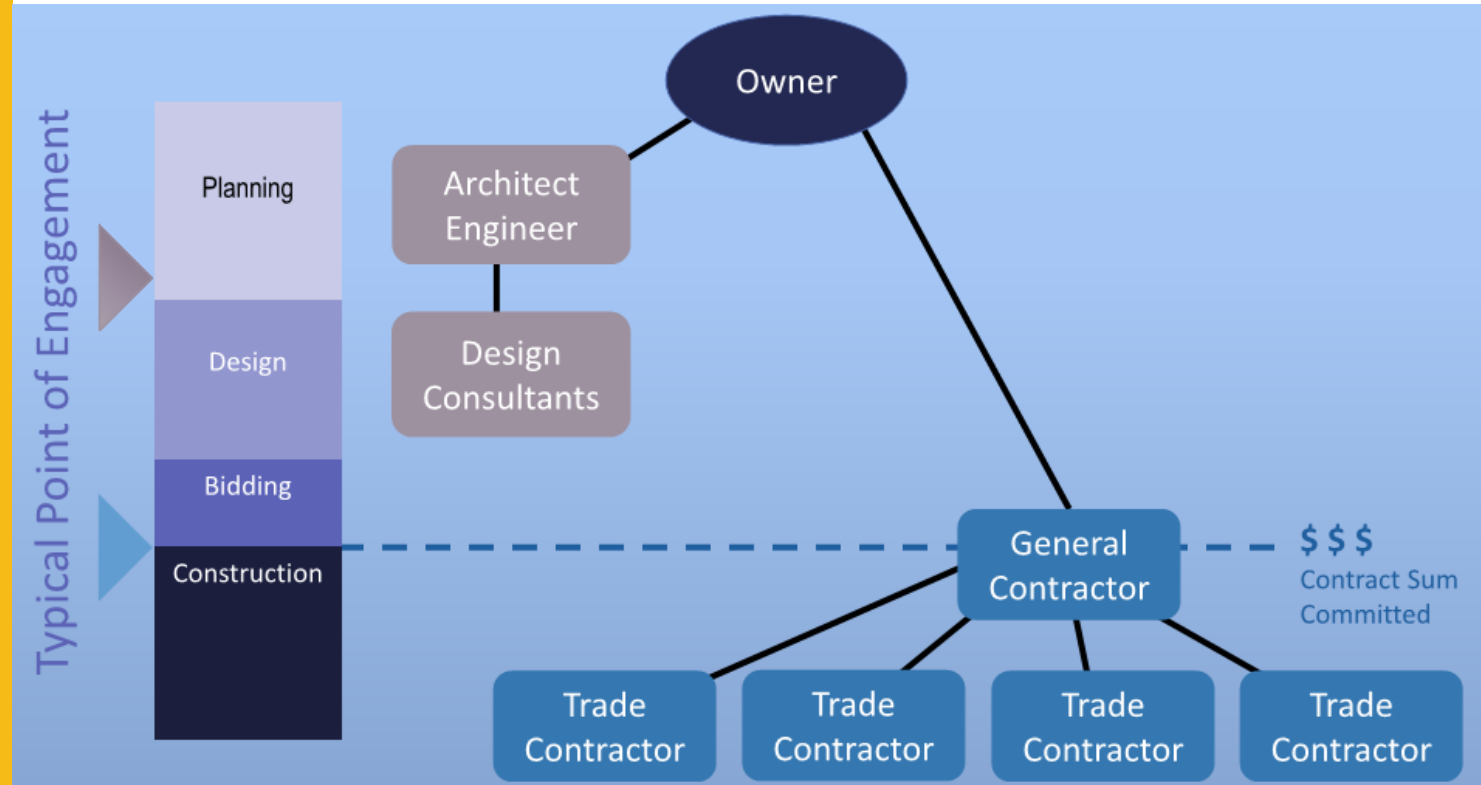


DESIGN-BID-BUILD DELIVERY

- Linear, sequential process
- Typical procurement approach
 - A/E selected on qualifications
 - Contractor typically selected on low price
- Design fully completed without contractor input
- A/E acting in Owner's interests, with an historically strong bond

Considerations

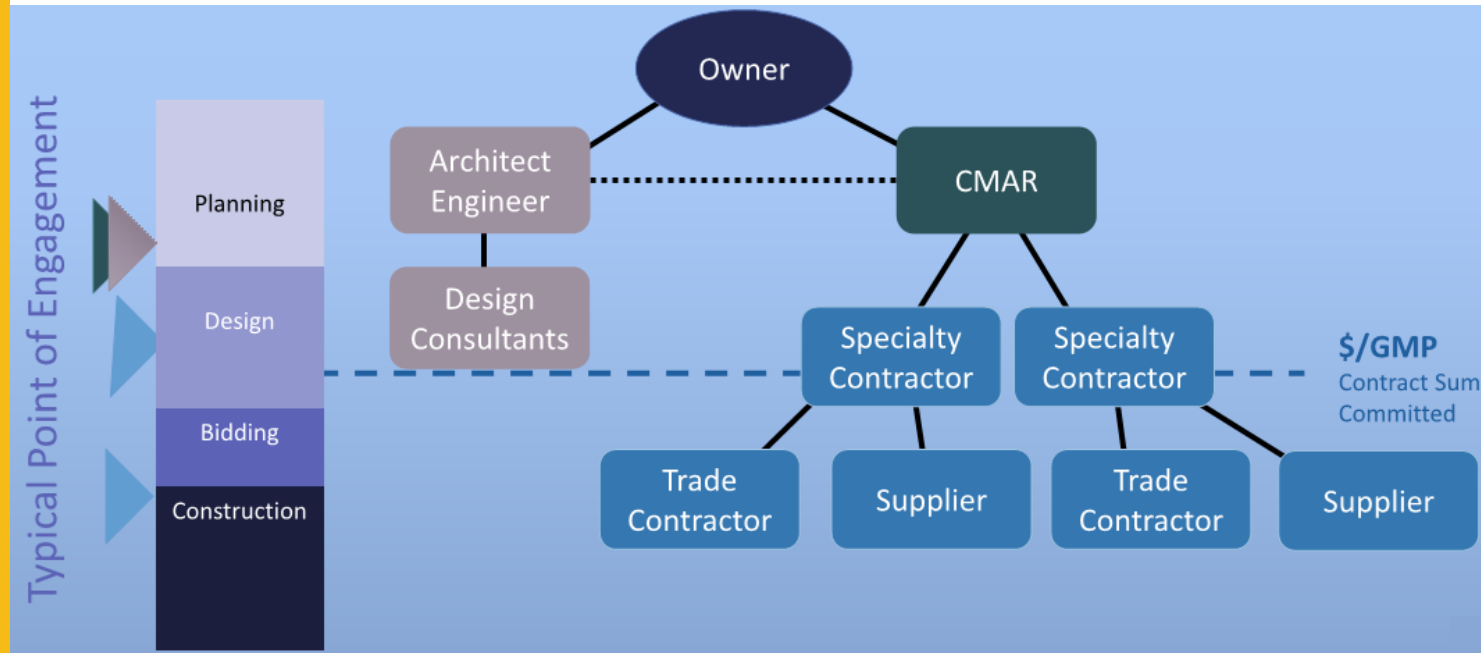
- Linear sequence incompatible with expedited project delivery
- Contractor input absent during design





CONSTRUCTION MANAGEMENT AT RISK

- CMAR generally selected by QBS or Best Value
- CM provides preconstruction services
- Potential to fast-track project
- Construction cost determined prior to complete design
- Owner manages designers and contractors under separate contracts

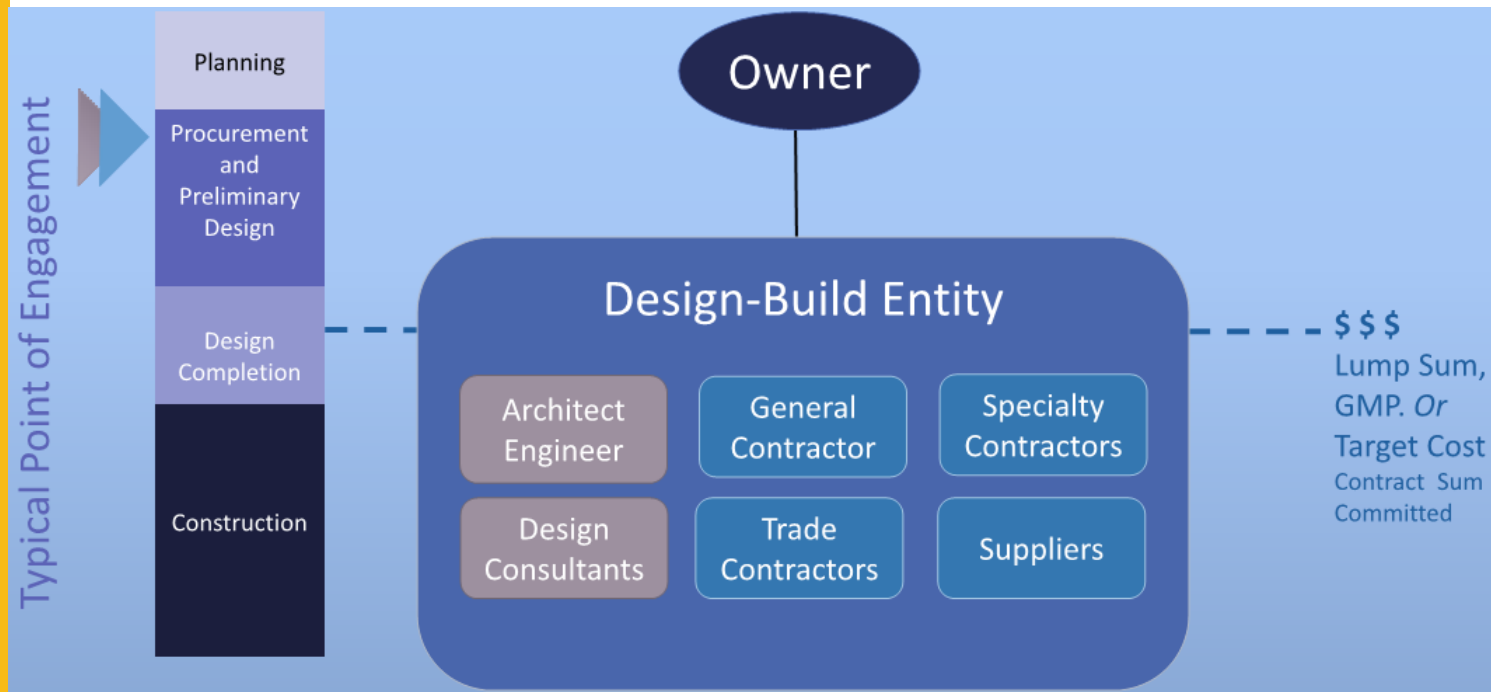




BENEFITS OF DESIGN-BUILD DELIVERY

Risk Transfer

- Design-Build delivery includes a single party accepting the contractually responsible (and risk) for both design and construction.



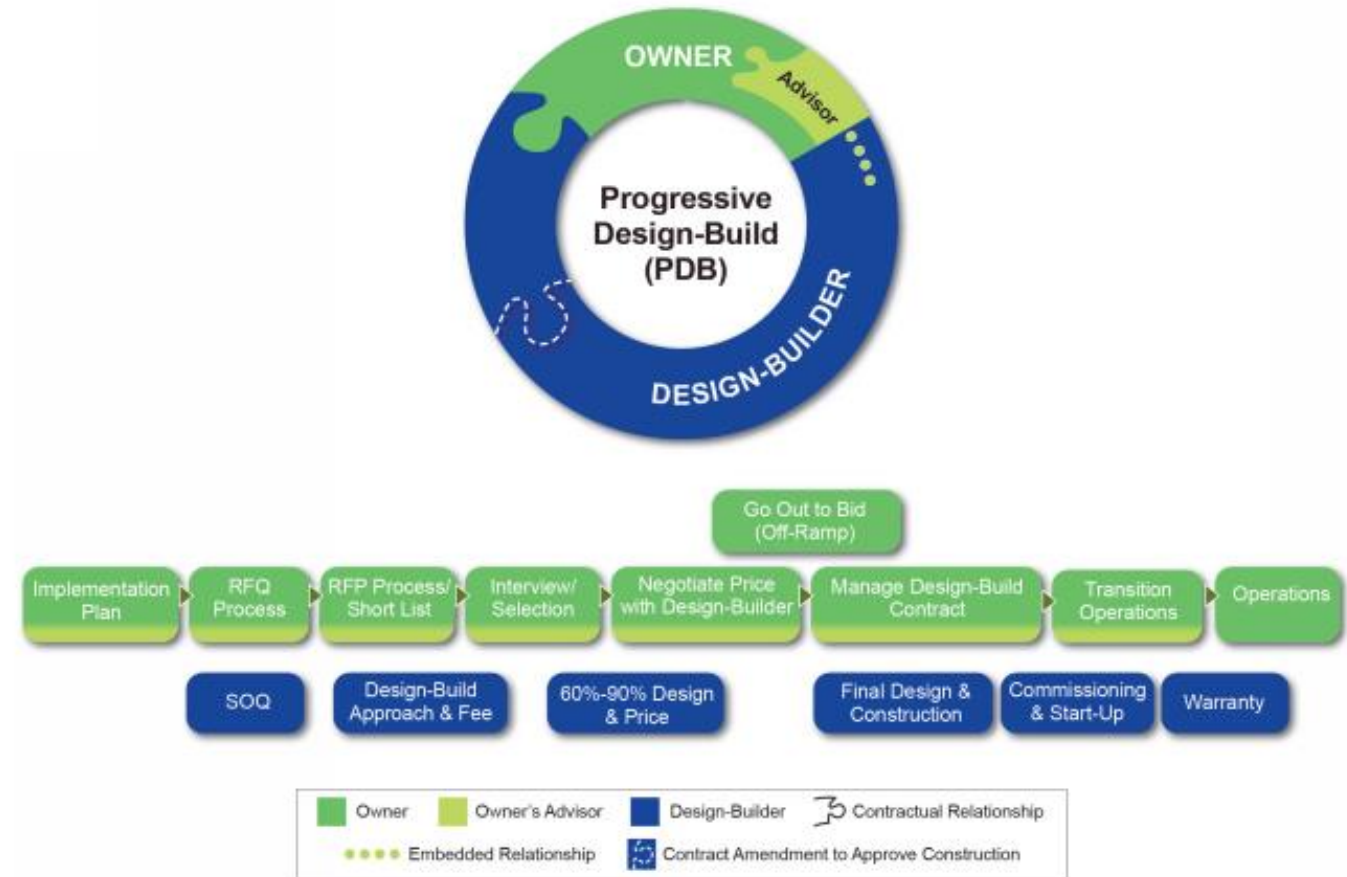


DESIGN-BUILD DELIVERY

Progressive DB

- Owner selects DB team early based on Qualifications or Best Value early in the life of the project
- Owner & DB Team “progress” towards a design and contract price together
- Phase 1 Delivery (Preliminary)
 - Budget level DD
 - Preconstruction services
 - Negotiation of firm contract price
- Phase 2 Delivery (Final)
 - Final Design
 - Construction
 - Commissioning

THE PDB PROCUREMENT PROCESS





BENEFITS OF DESIGN-BUILD DELIVERY

- 1** Defined by attitude of everyone involved in project
- 2** Success requires team to make the mental shift to think and act as a single entity
- 3** Master Builder was not a contractor, an architect or an engineer, but the embodiment of all three

DESIGN BUILD
IS A MINDSET





BENEFITS OF DESIGN-BUILD DELIVERY

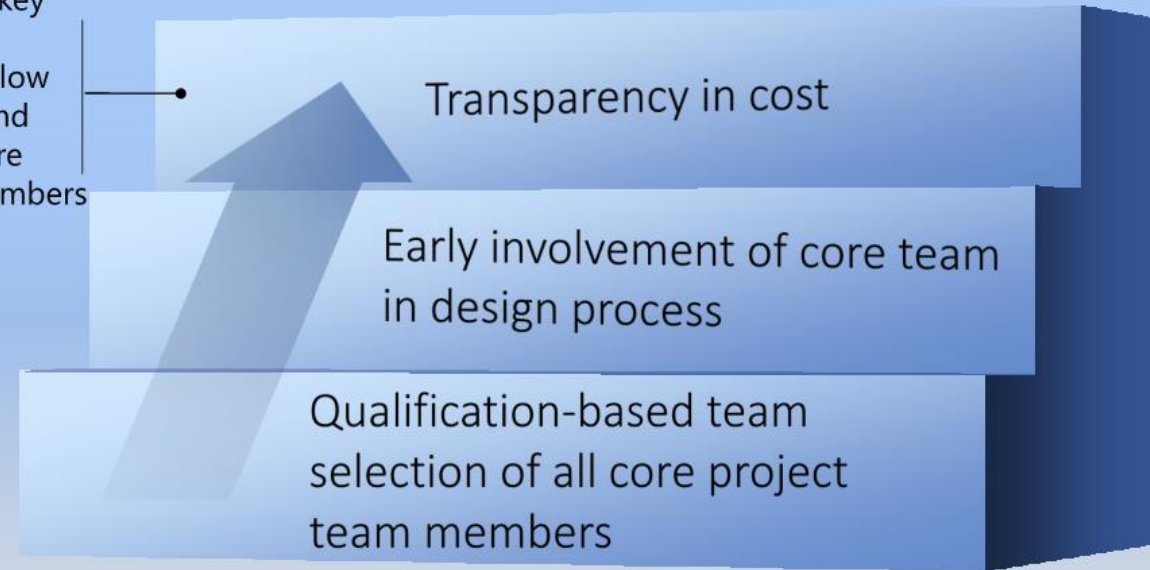
- Integration of Design and Build Teams Enhance Collaboration and Innovation

Creating the right team

- Trust-based collaboration is hard work, but key to success
- Critical for senior leadership to be drivers and champions for proper use of design-build
- Critical for all organizations working on project to be trained on design-build

STRATEGIES TO MAXIMIZE INTEGRATION AND GROUP COHESION

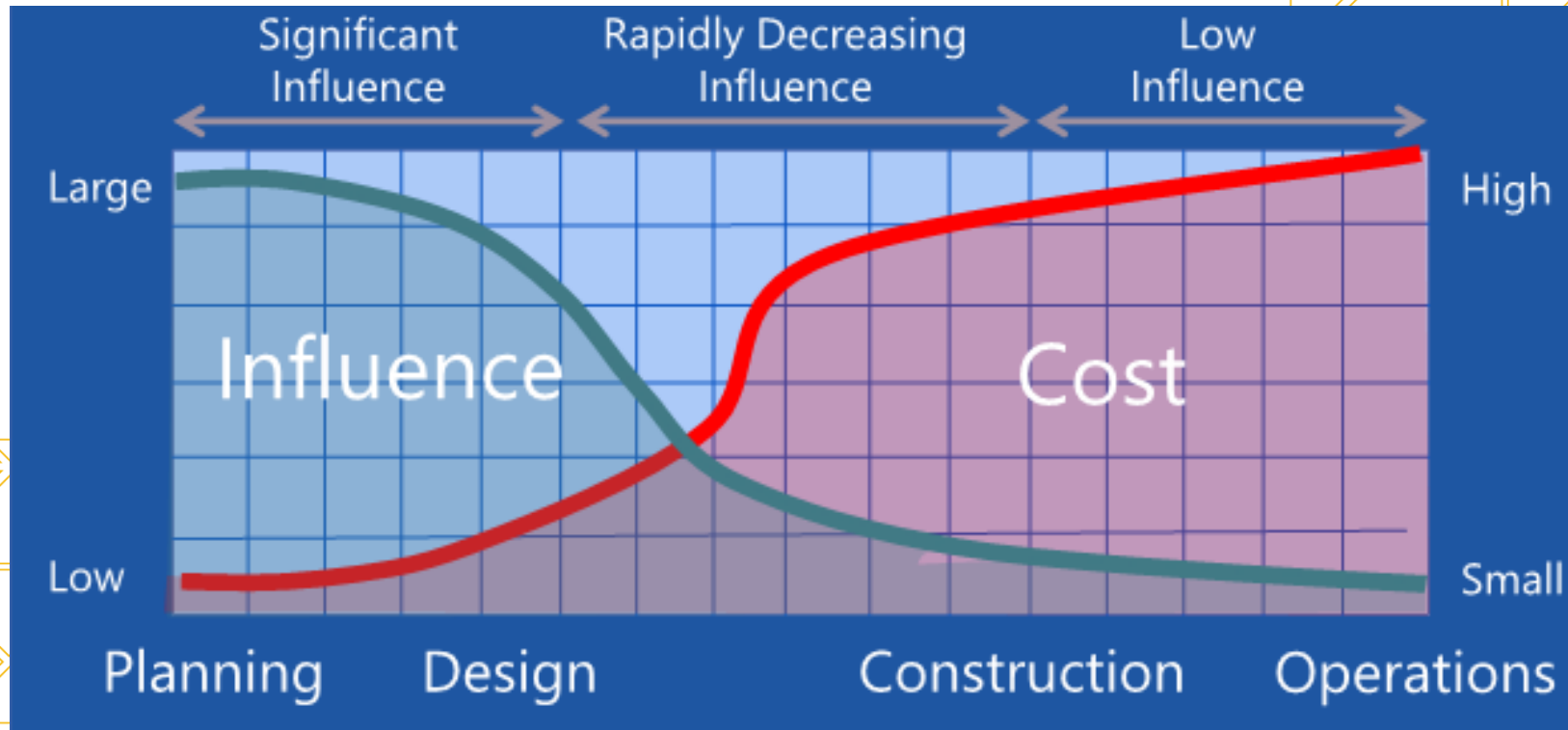
- Open book accounting by primary contractors and key specialty trades
- Contracts that allow for shared risk and reward for all core project team members





BENEFITS OF DESIGN-BUILD DELIVERY

Integration of Design and Build Teams Enhance Collaboration and Innovation





BENEFITS OF DESIGN-BUILD DELIVERY

Shortened Delivery Schedule

- Expedited Procurement
- Early Release of Long Lead Materials and Equipment
- Phased Design and Construction





BENEFITS OF DESIGN-BUILD DELIVERY

Integration of Design and Detailing Services

Traditional design



Traditional detailing



Integrated design



Design extension



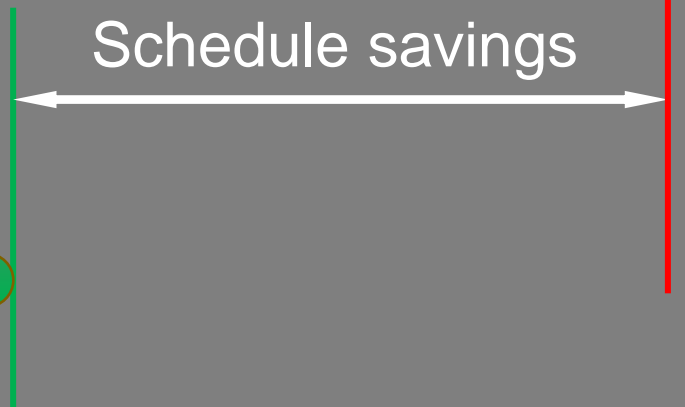
Early involvement



Integrated modeling and validation



Schedule savings





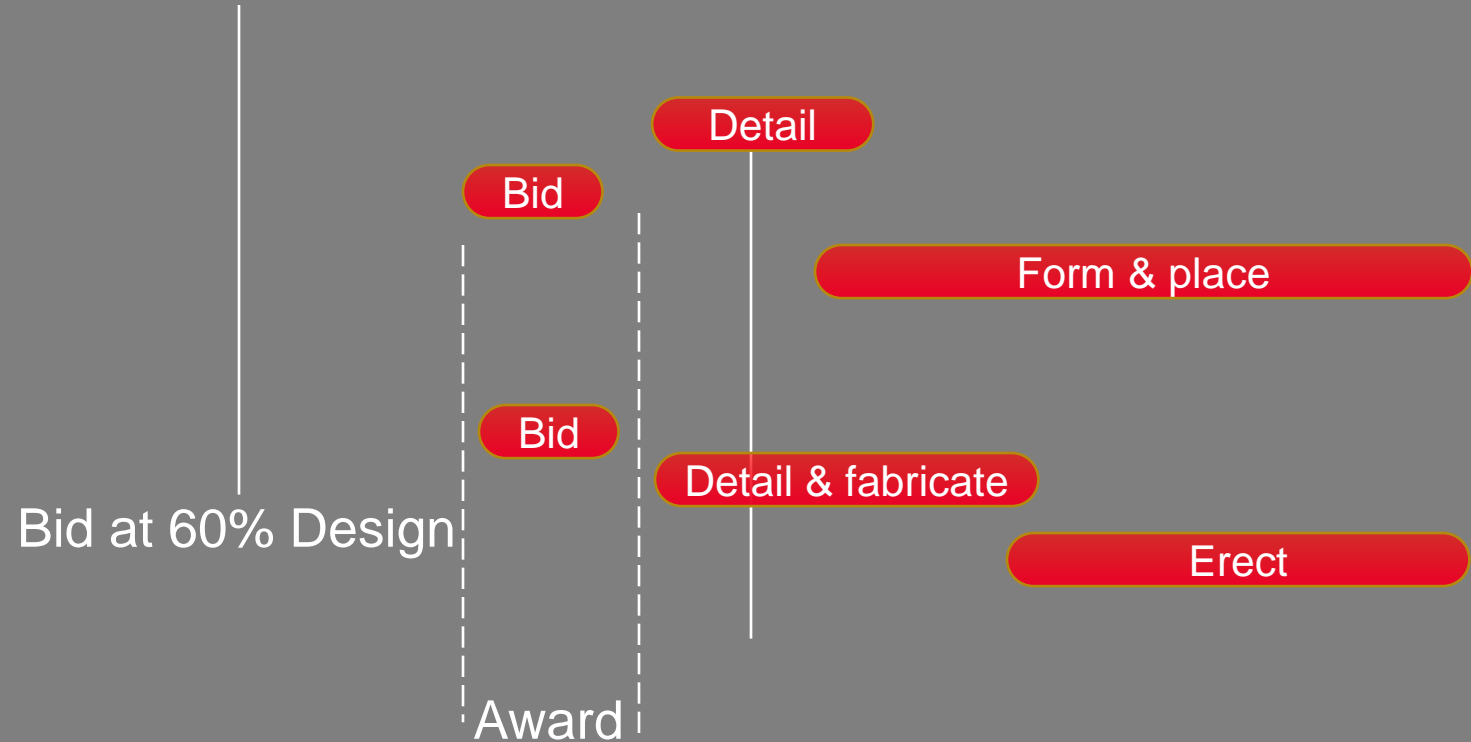
UNIVERSITY OF FLORIDA BALLPARK EXAMPLE

Concrete

Structural Steel

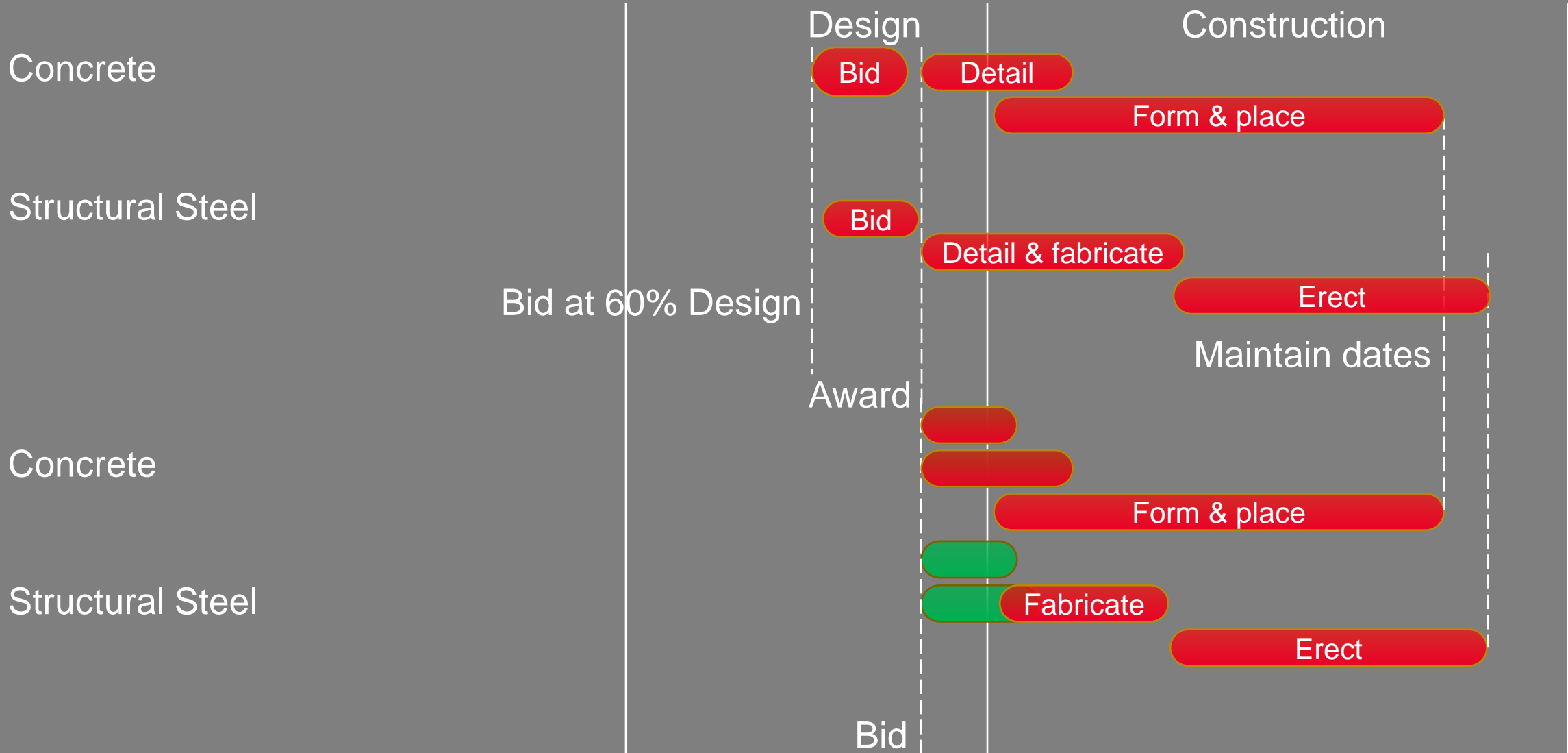
Design

Construction





UNIVERSITY OF FLORIDA BALLPARK EXAMPLE

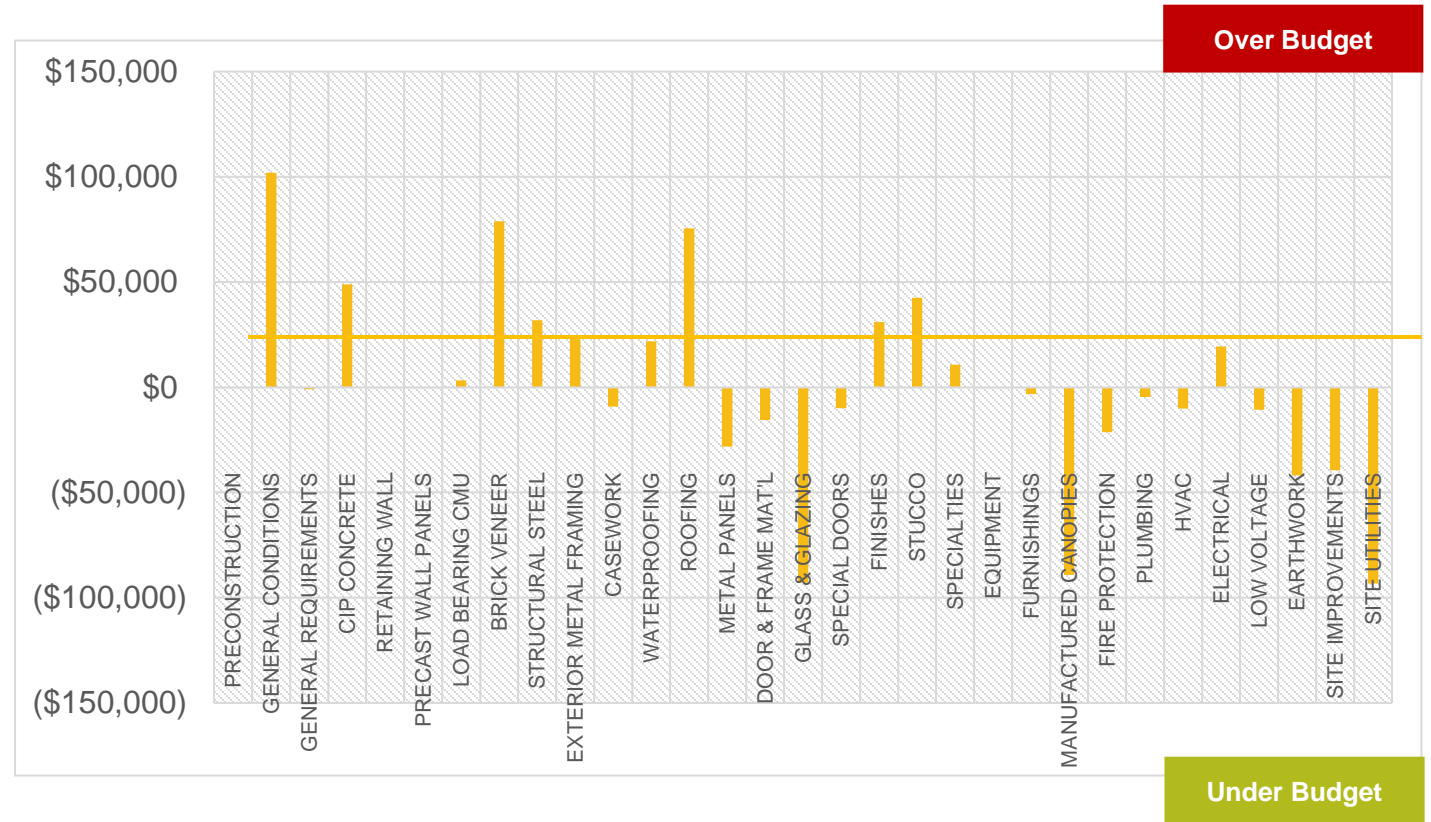




BENEFITS OF DESIGN-BUILD DELIVERY

UF Special Collections – Design to budget

- Establish basis of design as early as possible and assist in managing design to that basis
- Track changes and decisions during design to show budget trends
- Identify and track issues affecting cost or schedule
- Review weekly or bi-weekly
- See real-time cost trends
- Manage risk and opportunities

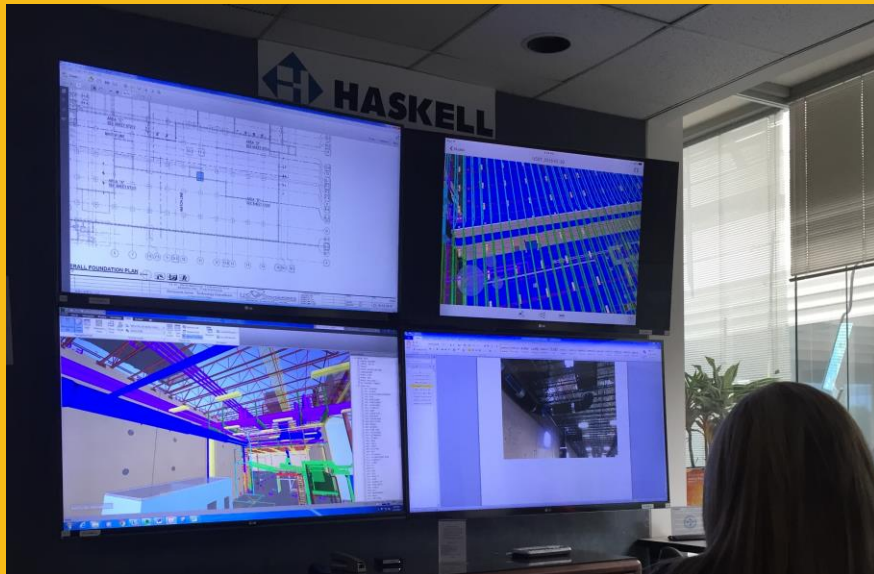




BENEFITS OF DESIGN-BUILD DELIVERY

Technology

- As a continuation of Enhanced Collaboration and Innovation, Design-Build delivery creates an environment where the use of technology can be maximized, which likely results in schedule, cost and client experience benefits.





SELECTING PROJECT DELIVERY SYSTEMS

- 1 Project Delivery Institute**
- 2 Published in 1999, updated in 2005**
- 3 Study of 351 projects**
- 4 Chapter 5: Selecting Project Delivery System**





PROJECT DELIVERY SYSTEMS

Study Findings – Primary Results

Comparisons

Metric	Design-Build vs Design-Bid-Build	CMAR vs Design-Bid-Build	Design-Build vs CMAR	Level of Certainty
Unit Cost	6.1% Lower	1.6% Lower	4.5% Lower	99%
Construction Speed	12% Faster	5.8% Faster	7% Faster	89%
Delivery Speed	33% Faster	13.3% Faster	23.5% Faster	88%

Study Findings – Secondary Results

Comparisons

Metric	Design-Build vs Design-Bid-Build	CMAR vs Design-Bid-Build	Design-Build vs CMAR	Level of Certainty
Cost Growth	5.2% Lower	7.8% More	12.6% Less	24%
Schedule Growth	11.4% Faster	9.2% Faster	2.2% Less	24%



BENEFITS OF DESIGN-BUILD DELIVERY

DB Value to Education Projects

COMPLEX RENOVATION PROJECTS ON ACTIVE/OPERATIONAL SCHOOL CAMPUSES

- Project phasing designed collaboratively by designers/contractor
 - Constructability considerations for sequencing of work/trades in multiple phases
 - Impact of phasing on construction durations
 - Logistics of campus safety for students/teachers throughout construction

FLEXIBILITY TO ALIGN THE DESIGN/ CONSTRUCTION SCHEDULE WITH THE SCHOOL CALENDAR

- Maximizing construction activities in summer months when campuses are not occupied
 - Availability of funding means that projects do not always kick-off at the most advantageous time of year
 - Early release construction packages/procurement opportunities can still hit summer targets





BENEFITS OF DESIGN-BUILD DELIVERY

DB Value to Education Projects – Case Study

Elementary School Renovation and Addition

- 65,000 SF Renovation
- 12,000 SF Addition
- Ongoing school operations throughout construction

Phasing Strategy

- Temporary modular classrooms onsite to ‘swing’ grade levels out of the existing building in phases to renovate existing classrooms.

Summer 2021

- Complete interior demolition of 16,000 SF of administrative offices and media center
- 12 week duration between the last day of school and the 1st day of school (June 1 – August 23)

Advantages:

- This strategy was designed by the DB team at the beginning of design 12 months before construction
- Strategy reviewed and adjusted throughout design to align with availability of construction funding
- Early procurement of all materials was necessary for successful summer outcome. Materials have been stored and waiting since March. Sub-contractors have been under contract and prepared to prioritize this work and schedule.





COMMON CONCERNS



COMMON OWNER CONCERNS

- No direct contractual relationship with designer if contractor leads the design-build team
- Owner desire/need to have design fully completed before construction begins
- Cost and time of procuring design-builders based on competitive technical and price proposals
- Procurement law limitations
- Ability to respond promptly to design submittals
- Fear that design and quality may be compromised
- Trusting the design-builder



2015 Design-Build Award Winner: Mission Hall: Global Health & Clinical Sciences Building



COMMON PRACTITIONER CONCERNS

- Single point of responsibility risk
- Cost to compete
- A/E loses direct relationship with Owner
- Proposing and pricing on incomplete documents
- A/E liability for proposal-related services
- Subcontractor inexperience with design-build
- Difficulty for inexperienced organizations to participate
- Owner's use of onerous contracts
- Owner ability to make mental shift required for design-build success





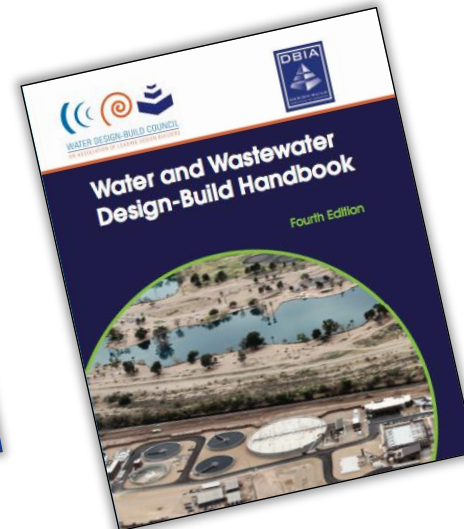
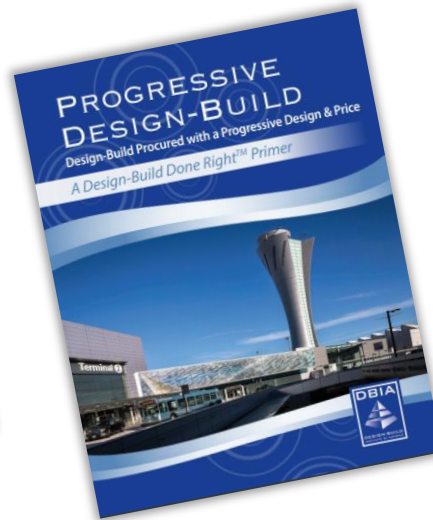
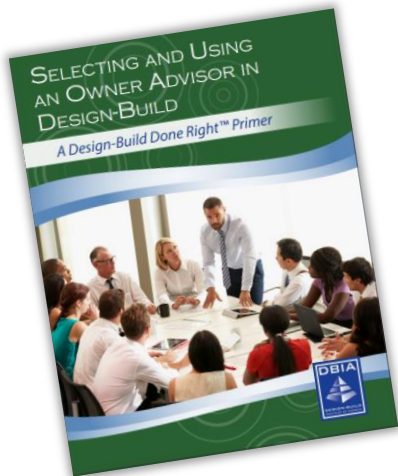
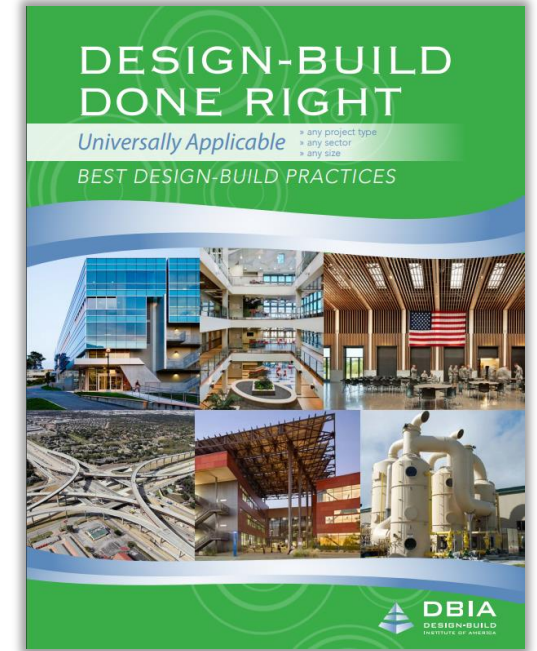
WRAP UP



DBIA DESIGN-BUILD RESOURCES

Best Practices

- Owner Training
- Select Owner Advisor with DB Experience
- Select DB Team with DB Experience
- Proven Procurement and Contract Docs
- Learn from Others – DBIA Conference
- www.dbia.org/resource-center





CONTACT INFORMATION

1 Ben Berling, DBIA, GPCP, GCP, CQMC
904-318-4335
Ben.Berling@Haskell.com
Haskell.com

2 Scott Martin, P.E., LEED AP
727.642.6212
smartin@walterpmoore.com
Walterpmoore.com

3 Emily Kite
828-545-0198
emily.kite@novusarchitects.com
Novusarchitects.com





QUESTIONS?