Design-Build / EPC Contracts

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Overview

• General Discussion of Design-Build Model
• Specific Design-Build / EPC Issues
Design-Build / EPC Model
Design-Build / EPC Model

• Owner contracts with D-B Contractor to design and construct a project

• Owner’s Statement of Requirements/Performance Specification/Output Specification can be prepared by Owner, Owner's Consultant or D-B Contractor

• Owner or Owner's Consultant administers contract

• D-B Contractor is responsible for:
  • Design, preparation of detailed technical specifications and drawings, procurement, construction, testing, commissioning
  • Meeting Owner’s Requirements
Design-Build / EPC Model (cont’d) 
Integrated Design-Builder

OWNER

EPC CONTRACTOR
with In-House Consultants

SPECIALTY SUBCONTRACTORS

VENDORS

LENDER

OWNER’S CONSULTANT

ADMINISTER CONTRACT(?)

PERFORMANCE SPECIFICATIONS

DESIGN TO PERFORMANCE SPECIFICATIONS, PROCURE AND CONSTRUCT
Design-Build / EPC Model (cont’d)  
Non-Integrated Design-Build
• If both integrated and non-integrated Design-Builder will submit proposals, this must be taken into account from the outset of the procurement process.
  • Can impact questions to ask in RFQ process
  • Can impact allocation of risk, caps and liabilities under the contract
  • Can impact remedies available to Owner for default, particularly Owner’s ability to obtain access to the design documents required to complete the project
Design-Build / EPC Model (cont’d)

- Risk tolerance of design-builder dependent on risk tolerance of:
  - Design consultants
  - Subcontractors
  - Equipment supplier

- Owner and design-build contract must recognize existence of contractual flow-down of risks and liabilities
  - Impacts contingencies and contract price
  - Impacts decision whether to submit a proposal
Some Advantages

• **Single point responsibility**
  • Opportunity for innovation and faster project delivery
  • Efficiency (design & construction expertise together)
  • Fitness for purpose
  • No real alternative for proprietary technology
  • Fewer changes and implementation simplified
  • Often reduction of claims (or number of claims)
  • Increased flexibility to address changed conditions
  • Reduced administrative burden for owner
  • Cost savings and more certainty of final price
  • Improved risk management for owner
  • Greater ability to evaluate contractors on factors other than cost
Some Disadvantages

- Loss of control and reduced owner involvement in design
- Cost of tendering (to all parties)
- Difficulty/time comparing different designs
- Cost of risks and contingencies
- Danger of Design-Build becoming Build-Design
- Environmental/regulatory processes
- Limited pool of qualified Design-Builders
- QA/QC largely in contractor’s hands
- Disputes tend to be larger and more complex
- Management of long term risks
- Some lack of project definition prior to contract award
- Consequences of default more drastic than for D-B-B
Selection of Design-Build

• Design-Build is always an option, but in deciding whether to go with Design-Build have to consider factors such as:
  • Extent to which perceived advantages outweigh disadvantages
  • Profitability of project
  • Risk tolerance of Owner
  • Resources of Owner
  • Pool of available design-build teams
  • Source and type of funding/financing
  • Schedule
Some Risk Mitigation Owners Often Use in D-B Contracts

- Clear performance specifications and milestone dates
- Clear, enforceable performance guarantees
- Fixed price with unit prices for specific risks (e.g. additional rock bolts)
- LDs for delay and failure to meet performance and availability guarantees
- Extensive ability to inspect, test and reject
- Extended warranties and liability for latent defects beyond those available under Design-Bid-Build
- Contract change provisions that require strict notice procedures and attempt to define Owner’s view of “reasonable” schedule extensions and compensation
Some Risk Mitigation DB Contractors Often Request in D-B Contracts

- Force majeure provisions providing extension of time and, preferably, compensation
- Change provisions providing both compensation and time for delay or disruption beyond contractor’s control
- Short time for payment and for Owner review of submittals
- Caps on liability and overall cap
- Exclusive warranties and remedies clause
- Exclusion of consequential damages
- Termination clause for owner default or extended force majeure
- Achievable contract schedule and performance guarantees
Design-Build / EPC Issues
Procurement Process

• Mitigating future disputes starts with design of procurement process
  • Risk register
  • Market sounding
  • Well drafted Performance / Output Specifications, integrated with commercial and legal parts of Contract
  • Consideration of means to mitigate subsurface risks for both parties
  • Consideration of extent to which rigorous design review process required
  • Consideration of peer review/technical panels to mitigate disputes and provide cost-efficient mitigation against design errors
Procurement Process (cont’d)

- **Transparency**
  - D-B procurement often considers factors other than price
  - Concerns often expressed over use of undisclosed criteria, preferences and favoritism that are open to abuse and even possible corruption.
- Process / Fairness monitor
- Disclosure of scoring matrix
  - Combining technical and financial scoring?
- Ensuring conforming proposals – competition agreements
- Controlling negotiation process
• Risk Register:
  • Proactive management tool for managing risks that includes:
    • Risk identification/description (by category)
    • Risk analysis - probability & consequence of occurrence
    • Estimated Exposure (range of values & most likely value)
    • Party to whom risk allocated & individual managing that risk
    • Potential measures to mitigate and manage risk
    • Monitoring (Trending & Updating)
  • Should be developed before RFP issued and updated throughout process and contract
  • Without a risk register, how can lawyers ensure risks adequately dealt with in RFP and in contract?
Procurement Process (cont’d)

• **Industrial v commercial/residential projects**
  - Environmental, regulatory and political considerations
  - Use of “Base Concept”
  - Responsibility for Owner’s preliminary design

• **Conforming terminology**
  - “commissioning”, “dry commissioning”, “wet commissioning”, “mechanical completion”, “substantial completion”, etc.
  - Sequence? Multi-train project?

• **Statement of Owner’s Requirements**
  - Black box? Detailed specification? Hybrid?
Base Concept/Schematic Design

• “Base Concept” generally consists of Schematic Design prepared by Owner

• Two primary advantages:
  • For industrial projects, facilitates environmental review process
  • For all projects, facilitates:
    • Proponents’ understanding of Performance Specifications and Owner’s general expectations
    • Public consultations

• Potential disadvantage:
  • May limit innovation
  • Cost and may result in delays to produce base concept
Adoption of Owner’s Detailed Design

• Rather than “Base Concept” for Schematic Design prepared by Owner, D-B Contracts sometimes try to force D-B Contractor to use detailed design prepared by Owner’s Consultant

• Primary advantages:
  • Perception Owner doesn’t pay twice for the design
  • Ensures Owner receives what it is expecting

• Potential disadvantage:
  • Limits innovation
  • Significant D-B Contractor resistance to accept design liability
  • Owner may retain liability for unsuitability of design
Adoption of Owner’s Detailed Design (cont’d)

• **Issue:** How developed is the design when the contractor is engaged?
  - Many contractors say 80%+
  - Not much (if any) design freedom left

• **Issue:** Is design so advanced that contract is not design-build but in essence:
  - Detail and Build, or
  - Document and Build

• **Issue:** Will Owner allow D-B Contractor to sue Owner’s consultant in negligence for errors and omissions in design?
Role of Owner’s Consultant

• No Owner’s Consultant (Architect/Engineer) in some D-B contracts
  • E.g. FIDIC Silver Book

• Owner's Consultant in other contracts
  • FIDIC Orange Book (role similar to Red Book)
  • New CCDC 14 (2013) “Owner’s Advisor”
  • Many custom forms

• Is/should there be a role for an Owner’s Consultant (Architect and/or Engineer)?
  • Prior to obtaining proposals from D-B Contractor?
  • After D-B Contract executed?
Role of Owner’s Consultant (cont’d)

• Recommend Owner’s Consultant, not consultants ultimately used by D-B Contractor, should normally be responsible for developing Performance Specifications
  • Owner’s that rely on D-B Contractor to develop Performance Specifications for Owner inadvertently transfer substantial risk back to the Owner

• Owner’s Consultant can be Owner’s in-house technical personnel and/or an independent consultant

• Role and responsibilities may vary, depending on complexity of project and inherent project risks
Role of Owner’s Consultant (cont’d)

• During performance of D-B contract, Owner’s Consultant can help identify gaps or problems in design
  • This role is critical if D-B Contractor provides limited warranties of short duration but completed facility has a long life

• Owner’s Consultant is essential to protect Owner if D-B Contractor’s consultant is on a fixed price with limited scope, does not provide field services, or doesn’t fully take into account future life-cycle issues.
Role of Owner’s Consultant (cont’d)

- Consultants often engaged early, but may not have specific experience in drafting performance based specifications/Statements of Owner’s Requirements

- Terms of retainer
  - Often lightweight
  - Often no provision for novation to D-B Contractor, in situations where Owner wants D-B Contractor to “take over” the design and the Owner’s Consultants.
Performance Guarantees

• Heart of a design-build contract for industrial contracts
  • Often poorly drafted, especially for industrial contracts/processes

• Close collaboration may be required between lawyers and consultants
  • Consultants prepare initial draft(s)
  • Lawyers review for enforceability in arbitral or judicial proceedings

• Enforceability is dependent on quality and completeness of drafting of Performance Guarantees
Performance Guarantees (cont’d)

• **Key questions:**
  - What is guaranteed?
  - On what is guarantee dependent?

• **Parties must focus on both inputs and outputs**
  - If inputs not to spec, are outputs really guaranteed?

• **Two levels of Performance Guarantees**
  - Performance guarantees for facility as a whole
  - Performance guarantees for individual components, equipment, subsystems and systems
  - Keep the distinction clear throughout the documents!
Performance Guarantees (cont’d)

- Performance tests are used to determine whether the Performance Guarantees are met.

**Questions:**

- Who develops the performance tests? When?
  - Does other party have opportunity to review and comment?
  - Resolution of disputes over performance tests?
- When are tests performed? Who schedules them?
- Who performs tests?
  - Clarify and confirm role of Owner’s personnel & contractor’s personnel
- How are measurements taken? Frequency? Number? Use average of all or discard highest and lowest?
- Consequences if tests stopped or failed?
  - Due to shortages/problems attributed to Owner
  - Due to deficiencies/problems in equipment?
Performance Guarantees (cont’d)

• LDs as a buy down for failure to achieve Performance Guarantees

• LDs are not always an adequate remedy if there is a fundamental failure of performance that goes to heart of the contract

• Alternative approach:
  • D-B Contractor must complete project to achieve a minimum level of performance (“Threshold Performance Level”)
    • No limit of liability (or liability limited to Contract Price) to achieve the Threshold Performance Level
    • LDs can only buy-down failure to achieve Performance Guarantees once all Threshold Performance Levels met
Suddenly a heated exchange took place during the Owner’s first site visit when he realized his perfect design-build moat specification never identified the purpose....
Statement of Owner’s Requirements

• D-B Contracts are performance based contracts

• Statement of Owner’s Requirements can vary from statement of outcome required (“black box”), to performance based specification, to detailed specification, or any combination thereof.

• Name can vary:
  • Owner’s Statement of Requirements
  • Employer’s Requirements
  • Performance Specifications
  • Output Specifications
  • Functional Specifications
• Performance Specifications should be focussed on performance, result or output rather than on detailed design or technical specifications

• Creation of the detailed design or technical specifications is responsibility of the successful proponent, and often required as submittals under the Contract.
• Consequences of failure to meet performance requirements must be addressed

• Need to address and clarify performance requirements, characteristics and expectations of:
  • Completed facility
  • Civil, mechanical and electrical parts of facility
  • Systems and sub-systems

• Clarity and consistency in Performance Specifications later facilitates timely review of design submittals from D-B Contractor during design review/submittal process
Statement of Owner’s Requirements (cont’d)

• Often poorly drafted and fail to focus on “Big Picture”

• Each section should include, in order:
  • Statement of purpose/objectives to be met
  • Performance measures and/or tests or other requirements that will demonstrate performance requirements are met
  • Detailed specs but only where something truly is critical to Owner
    • E.g. specifying stainless steel for particular embedded parts rather than allow carbon steel to be used for that application

• Detailed specifications can undermine performance specifications and enforceability of performance guarantees
Statement of Owner’s Requirements (cont’d)

• Level of detail in Performance Specifications
  • Balancing Act
    • Minimal amount to protect Owner vs. flexibility to D-B Contractor and innovation
  • Beware of specifications that are too detailed and specific
    • E.g. Specify overhead crane by function rather than by minimum and maximum hook elevations if floor and roof elevations not specified
    • Specifications must not conflict with Performance Requirements and Performance Guarantees or they prevent D-B Contractor from meeting them
      • Contract should address who is responsible in such case
Statement of Owner’s Requirements (cont’d)

• **Practice Tips:**
  - Drafting Performance/Output Specifications requires a joint effort from several individuals, often from different firms.
  - Consultants may be experienced in preparing detailed design or technical specifications, but must have experience with drafting performance based specifications.
  - An initial “drafting workshop” facilitated by someone experienced in drafting performance specifications can be very helpful.
  - Frequent team consultation meetings required to ensure internal consistency of and between:
    - Concepts, style and terminology
Statement of Owner’s Requirements (cont’d)

• Practice Tips (cont’d):
  • Prior to issuing Performance/Output Specifications to proponents, one knowledgeable person should be responsible for reading the whole Performance/Output Specifications to ensure:
    • Uniformity and compatibility of and among the different sections of the Performance/Output Specifications
    • Performance/Output Specifications read as one document, harmonized with the Agreement and Performance Guarantees
    • All definitions consolidated in one or two places
Design Requirements & Issues

• **Control over design in Owner’s Requirements**
  • How much does Owner want vs. need?
  • How much “interference” can D-B Contractor tolerate?

• **To what extent is design to be prescribed?**
  • Provides Owner comfort
  • Limits contractor flexibility & innovation
  • Impacts submission costs & schedule
  • Raises issue of who is responsible for design meeting its purpose and potential future claims
Design Requirements & Issues

• Are both design and detailed specifications to be complete and approved by Owner prior to contract execution?
  • Does this transfer risk to Owner?

• Specify submittal process to be used for review of detailed design (drawings and detailed technical specifications)
  • Design concept completed and approved before
  • Design basis memorandum completed and approved before
  • Detailed design completed and approved.
  • Opportunity for Owner to request changes early in process to mitigate cost and schedule impact
Who is the “Designer”

- For some projects, critical for there to be single point responsibility for overall design to ensure coordination
- Will Owner require a single design firm to have overall responsibility for the entire design or will Owner allow the design be parceled out to a number of firms?
- Gaps in design, and failure to fully integrate and coordinate design, between different design firms and major equipment manufacturers can lead to significant disputes
  - Remedial measures not always possible after project completion and Owner’s remedies may be inadequate
- Deal with this fully in Performance Specifications by identifying role & responsibility of “Designer” that will be under the D-B Contractor
- Consider requirements for final sign-off/certification of design as constructed
Standard of Care

• What is “Standard industry practice”, “Prudent Utility Practice”, “Current Practice”, etc.?
  • Such terms must be defined in contract since often no real “standard” exists and varies between companies/places

• No specific Canadian design standards and codes for some industrial projects

• Where design standards or codes exist, are they of general application or specific/applicable to the particular project under consideration

• Are the standards prescriptive or merely guidelines that leave considerable discretion to designer?

• Use definitions to define what is intended
Clarify application of design criteria and codes

- Are specified criteria minimum or maximum?
  - Prior to contract, “minimum” criteria
  - After contract, become “maximum” criteria
- Most codes leave room for interpretation
  - Under D-B-B, Owner's Consultant may use conservative interpretation
  - Under D-B, contractor’s engineer may be pressured to use “aggressive” interpretation
- Minimize issues by specifying criteria for application – e.g. additional load factors or capacity reductions for codes and standards
- Consider use of “reference projects” to simplify requirements
Design Review Process

- Disputes often arise over whether something conforms to requirements of Contract
- Design review process often inadequately described
- Define evolution of design and timing of submittals
  - Ensure programme/schedule includes allowance for review, rejection, re-submittal and re-review
  - Design “acceptance” or “approval”
  - Define categories of design documents
    - Next step in design contingent on previous step accepted or approved
    - Issues of non-conformance and potential changes identified early in design process
Design Requirements & Issues (cont’d)

Design Review Process (cont’d)

• Hands off or hands on approach?
  • Consequences - interference vs. input
• Tensions between D-B Contractor and design team where D-B Contractor controls purse strings
• Review by Owner/Owner’s Consultant vs. independent technical panel (e.g. independent geotechnical reviewers)
• Must balance D-B Contractor’s interests (need for flexibility) and Owner’s interests (prudent and safe design that will work and reduce life cycle costs)
Design Requirements & Issues (cont’d)

Modifying design to suit unanticipated site conditions
  • Should Owner require mandatory design representative at site?
    • To be representative of the “Designer” on site
    • To promptly identify when unanticipated conditions occur that impact design (i.e. proactive)
    • To coordinate field changes with design office

Final design
  • Design creep from preliminary design
  • Design “intent” vs. variation/change order
  • Final design or justification of preliminary design?
    • Or retroactive justification of what was done without final design (“build-design” vs. “design-build”)?
Performance Security and Holdbacks

- **Performance Security**
  - Performance “Bond”
    - Surety bond or L/C? Bank Guarantee? Promissory Notes?
  - Parent Guarantee (consider enforceability)
  - Retention

- **Lien Holdback**

- **Deficiency Holdback**

- **Warranty Holdback**

- **Cumulative Security**
  - If excessive, may dissuade potential proponents
  - Adversely impacts contractor’s cash flow, precipitating problem
  - Increases contract price
Contract Schedule Issues

Good Work. But I think we might need just a little more detail right here!
Contract Schedule Issues (cont’d)

- Schedules often imposed for political or other reasons
- Often treated as “boilerplate”
- Contract often includes schedule submitted with proposal, even when award has been delayed
- Schedule in contract for complex, multi-year projects often unrealistic past first year
- How to compel performance once delay LD cap reached?
Contract Schedule Issues (cont’d)

• Complex, multi-year industrial projects require different approach than building projects
  • Complete and detailed at outset v. progressively detailed
  • Distinction between “construction schedule” and “contract schedule”
• Commissioning / hand over schedule
  • Responsibility
  • Timing
  • Content
• Conditions precedent to progress payments:
  • Receipt of updated construction schedule within preceding 14 days acceptable to Owner
  • Receipt of “4 week look ahead” schedule within preceding 7 days
• Must distinguish between Baseline (Contract) Schedule and Construction Schedule
• If Owner supplies materials, equipment, facilities:
  • Require separate monthly schedule of delivery dates, consistent with latest updated construction schedule
  • Limit Owner delivery obligations in contract to later of dates in contract and dates shown on latest monthly schedule of delivery dates
Third Party Requirements

- Contract should address whether and extent to which relief available if a utility or other third party:
  - fails to provide a service, connection, utility, etc. when required
  - requires additional or higher standards/requirements/etc. to be met to inter-connect with third party’s facilities
Force Majeure

• Not a defined term in common law

• Consider breadth of clause
  • “Any cause beyond contractor’s control, including…”
  • “Any of the following causes beyond contractor’s control…”

• Confirm exclusions from Force Majeure
  • Delays in shipping by carriers
  • Weather conditions that do not meet defined criteria
  • Damage in transit
  • Shortage of labour
  • Etc.
Change in Law

- Review and consider exact wording
  - Domestic laws only or also includes foreign laws
  - Legislative enactments or also administrative policies
  - Some provisions only provide for additional cost but not extensions of time
    - D-B Contractor may still be liable for Delay LDs if original date note met
Quality Requirements

• QA/QC is often a concern for D-B contracts
• Schedule delays can pressure QA/QC
  • Ensure D-B Contractor’s QA Manager reports to head office, not D-B Contractor’s Project Manager
• Mere reliance on ISO and other broad standards is often not sufficient
• Clarify & specify requirements for inspection & test plans, shipping releases, QC release forms, NCRs, QC compliance certificates, etc..
• Note that field modifications to suit typically occur on fast track D-B contracts
  • Risk of “build-design” rather than “design-build”
  • To what extent can Owner live with this?
Commissioning and Turnover Requirements

• Often inadequately dealt with in Performance Specifications
• Commissioning schedules often inadequate in detail
• Owner’s/Owner’s Consultants often fail to recognize “Final O&M Manuals” never available until months after start-up
  • Must distinguish draft vs. final O&M manuals
• Address & clarify overlap of maintenance vs. warranty vs. deficiency work
• Address D-B Contractor use and replenishment of Owner spares
  • Impact on availability of long-lead time spares
Commissioning and Turnover Requirements (cont’d)

• Role of Owner’s O&M personnel during commissioning and training programs for O&M personnel often unclear
  • When are they to be available?
  • Equipment operation prior to facility turnover?
    • Pre and post commissioning
    • Direction and control of commissioning personnel and union jurisdiction issues
    • Responsibility for damage

• Scheduling of testing

• Responsibility for costs of consumables and O&M personnel prior to facility turnover
Insurance

- Owner controlled (OCIP) vs contractor controlled (CCIP)
  - Scope of project vs scope of contract
  - Risks allocated to contractor/retained by owner
  - Requirement for delayed opening/business interruption cover
- Liability for gaps & exclusions
- “Promise to procure”
- BUT – consider practical implications of availability of insurance and policy limits for large projects
  - Consider impact on contracting strategy and risk mitigation strategies
    - e.g. Relative merits of E&O Insurance vs. Independent Design Review Panels
Insurance (cont’d)

• Typical Policies
  • Wrap-up CGL
  • Builders All-Risk
    • Check for Rigger & Hook coverage
  • Professional Errors & Omissions
  • Marine Cargo vs. Inland Waters

• Other Policies
  • Environmental Contamination
  • Contractors Protective Professional Indemnity & Liability
    Owner’s Protective Liability
Termination for Default

• Failure is Not an Option

• Questions:
  • Other than insolvency of Design-Builder, what are the ramifications of termination?
    • On schedule, cost, warranties and guarantees?
  • Is there a difference between Owner’s ability to take over the work where there is termination of an integrated Design-Builder vs. non-integrated Design-Builder?
  • Many contract provisions impose obligations on Design-Builder. What remedies are available where Design-Builder fails to perform? If no remedies, how are those obligations enforceable?
Dispute Avoidance Considerations

- **Conform Contract to Proposal**
  - Consolidate Form of Contract with and conform to RFP, Q&A, Addenda & Proposal Submission

- **Establish and support one or more of:**
  - Independent Design Review Panel
  - Geotechnical Review Panel
  - Oversight Committee

- **Dispute Review Board**
Project Management Committee

**Owner’s Project Management Committee**

- CEO, CFO, Owner’s Representative/Project Manager, Independent Consultant, Legal
- Obtains weekly Key Indicator Report & Monthly Reports
- Meets monthly:
  - Receives project, contract, schedule and budget updates
  - Receives report on coordination issues with other contracts and third party requirements
  - Early identification of potential issues and strategy for mitigating and resolving same
  - Resource for and provide guidance to Owner’s Rep/Project Manager
Minimizing Scope of Dispute Where Failure Occurs on D-B Project

• Project completed
• Then you get a call: “Houston we have a Problem”
• The players:
  • Owner
    • Owner’s Insurer
  • D-B Contractor
    • D-B Contractor’s insurer
    • Designer
    • Designer’s insurer
  • Owner’s Consultant
    • Owner’s Consultant’s insurer
  • Finger pointing: operation, design, construction
Minimizing Scope of Dispute Where Failure Occurs on D-B Project (cont’d)

• **Problem:**
  - Emergency repairs required immediately to prevent even larger failure
  - Permanent repairs - schedule & cost

• **Alternative #1: Duck and cover**
  - Parties enter immediate litigation mode
  - D-B contractor denies liability and refuses to repair
  - Owner hires others to design and implement repair
  - Multiple parties and insurers inevitably involved
  - Dispute resolution heavy consumer of resources, is complex, lengthy and costly
Minimizing Scope of Dispute Where Failure Occurs on D-B Project (cont’d)

• Alternative #2: Practical Solution
  • Create “standstill agreement” with agreement of all parties and their insurers
  • Repairs:
    • Performed by contractor to its consultant’s design, at owner’s cost
    • D-B Contractor paid for cost of repairs, by owner and/or insurer(s)
    • Repairs and cost of repairs under close inspection and monitoring by owner and its insurers
  • Upon completion of project and repairs, lawsuits commence
    • Dispute is then primarily over liability, as contractor cannot claim owner paid too much for the repairs
    • Ultimately can be a dispute only between insurers
Minimizing Scope of Dispute Where Failure Occurs on D-B Project (cont’d)

• **Issues in lawsuit**
  - Liability, not damages
  - “Betterment” for minor improvement to ensure failure mechanism can never occur under any circumstance
    - Cost of “betterment” tracked separately during repairs

• **Result**
  - Settled through mediation shortly after pleadings closed and before any significant document production or depositions/examinations for discovery
  - Legal costs minimal
Summary of Design-Build Considerations

• **Owner**
  - Some advantages: lower up-front cost, reduced risk of claims, single-point responsibility, some room for innovation, forces early decisions on requirements
  - Some disadvantages: loss of control (e.g. design, QC, etc.), potentially higher cost of changes

• **D-B Contractor**
  - Some advantages: more control, ability to manage conflicts and problems more effectively, and possibly increased opportunity to win contract by innovation
  - Some disadvantages: much higher up-front bidding costs and substantially more risk
Summary of Design-Build Considerations (cont’d)

• **Key to success**
  - Use of team (consultants and legal) experienced in design-build
  - Expend substantial front end effort by Owner and Owner’s Consultant
  - Prepare comprehensive and well-drafted Performance/Output Specifications that clearly set out Owner’s requirements, expectations and, where applicable, performance guarantees
  - Designate one knowledgeable person to be responsible for constantly reviewing the whole of the Performance/Output Specifications for consistency and elimination of internal conflicts, and conflicts with “commercial” part of contract
Questions

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