



Agenda

- Introduction
- Project Risk Management
- Designing the “Best Fit” Insurance Program
 - Risk Inventory and Assessment
 - Risk Allocation
 - Project Insurance Program Design
 - Contract Formation
 - Procurement and Negotiation
- Final Thoughts



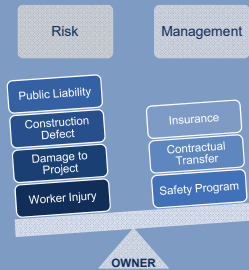


Suddenly, a heated exchange took place between the King and moat contractor

Source: Gary Larson



Balancing Project Risks



Construction Truths



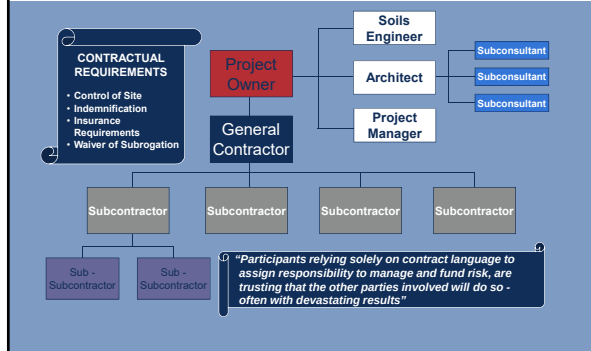
- Every Project is a unique mix of risks because it hasn't been built before in the same location with the same team
- Risk is an essential part of the construction business – without it, there would be little reward
- What can go wrong, will go wrong (unless managed properly)
- You can't manage risk if you haven't identified risk

Risk + Management = RESULTS

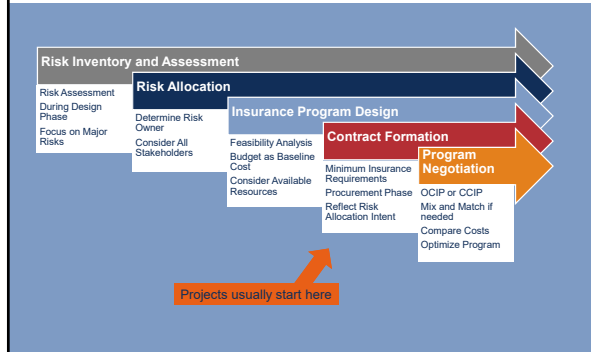


**Project Risk
Management
and Insurance
Program
Design**

Traditional Approach to Project Risk Management



Steps to Building "Best Fit" Project Insurance





Risk Assessment



Simple Risk Assessment: Ask Critical Questions

- What are we building?
 - Has it been done before?
 - Are there available contractors with capacity to perform?
- How can it impact the public?
 - Traffic impacts
 - Business disruption
- Can we contain cost?
 - Is design mature (scope creep)?
 - What project delivery system should we use?
- What issues will drive public impact and cost containment?
 - Experience of the project team
 - Inspection/oversight experience

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Risk Assessment



More Advanced Risk Assessment: Checklist Approach

Underground Excavation Projects: 1. Soils Caving/Settlement - Shoring Means and Methods. 2. Damage to Utilities - Identify nearby utilities and crossings, especially cast iron lines. Require protection plan. 3. Damage to Nearby Structures - Identify critical/sensitive structures. 4. Groundwater Control - Identify in geotechnical report. 5. Unknown Obstructions - Any potential based on historic maps, piles, etc... 6. Excessive Vibration - Shoring methods (i.e. slide rail, sheet piles) or jack hammering.	Microtunneling Bore and Jack Projects: 1. Settlements - Identify anticipated settlements, monitoring, action limits? 2. Encountering Obstructions - Potential for obstructions? State clearly in Geotechnical Report. 3. Proper machine selection - Machine should be able to handle geotechnical requirements and other details called out in specifications - be specific. 4. Break-in/Break-outs - Below Groundwater Table? Top hat required? Entry/Exit Soils. 5. Monitoring Jacking Pressures - Ensure pressures are within proper ranges. 6. Experienced Contractor - Prequalify Contractors.
Rehabilitation work (CIPP, Pipe Bursting): 1. Experienced Contractor - Is Contractor experienced in CIPP/Pipe Bursting. Prequalification. 2. Steam vs. Water - Steam curing allowed? Is water readily available? 3. Excavation Required - Can liner-bursting head fit through existing MH or does MH casing and/or cone need to be removed?	Wastewater Treatment Plant and Pump Station Projects: 1. Coordination with Operations Staff - Shutdowns may be weather dependent. 2. Unknown Utilities/Piping - need good as-builts, lots of old utilities on site. 3. Electrical Instrumentation and Process Submittals - Very detailed, can take a long time for approval. 4. Equipment Procurement - identify major equipment requiring long lead times, owner provided equipment must be compatible.

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from City of Portland,
Bureau of Environmental
Services Risk Assessment
Manual 2009

Risk Assessment

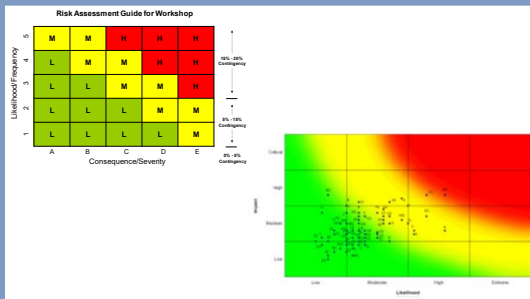


Complex Risk Assessment

- Facilitated Risk Assessment discussion
- Invite all Project participants (design team, engineers, contractor, subcontractors)
- Broad discussion of what could go wrong and how it will impact project
- Agree on impact and severity measurements (material impact based on project budget)
- Build Risk Map and Risk Register to prioritize major risks
- Build risk mitigation (including risk allocation method) for each major risk

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Complex Risk Assessment



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Step 2: Risk Allocation



Risk Allocation - Attitudes



Owner / Public Agency	Design Team	Contractor
Doesn't want construction risk	Disclaims construction risk	Likes construction risk and can price it
Doesn't want design risk	Likes design risk	Understands design risk
Has lots of assets	Has very few assets	Has some assets
Has public immunity	Limits liability to contract value	Agrees to indemnify but relies on insurance
Has very few resources to manage Project	Has limited resources	Will sell you resources
Is operating in public interest	Is protecting its profits	Is protecting its profits

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Risk Register



Risk Register

Phase: Conceptual Design

Client: ABC School District

Risk ID	Risk Issue	Risk Owner	Frequ	Sever	Risk Impact	Mitigation Plan	Contingency Required
1.0.a	Project Funding Viability	District	5	E		Thorough project feasibility analysis	22.5% (of budget)
2.3.d	Coordination between design team members	Lead Architect	3	1		Frequent coordination meetings attended by CM	2.0% (of design)
2.4.b	Project Budget Adequacy	District	5	E		Ongoing Risk Assessment through CM firm and RM firm	21.0% (of budget)
3.5.c	Project Insurance Cost and Alternatives	District	2	C		OCIP Feasibility Analysis and Risk Allocation plan	11.0% (of insurance)
5.7.d	Constructability of Design Alternatives	Lead Architect	4	C		Constructability Review with select Contractor	10.5% (of project)

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Factors Affecting Risk Allocation Decisions



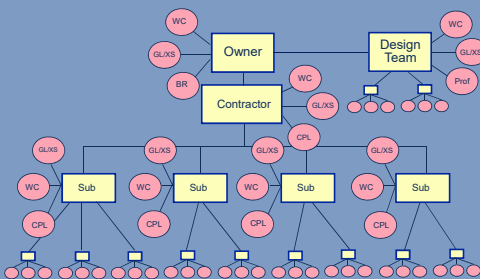
- Size of Developer, A/E and Construction Firms
- Nature of the Project
- The Contract Delivery System
- Environmental Implications of the Project
- The Potential Consequential Damages
- Insurance Mechanisms
- Financial Considerations

Risk = Cost



Step 3: Insurance Program Design

Traditional Project Insurance Delivery



Wrap Up Program (aka OCIP or CCIP)

Optimized Program:
Simplified Structure
2 to 3 Insurers
Insures ALL Project Participants
Adequate Limits
Consistent Coverage
Decreased Cross Litigation



What is a Wrap Up?

- Single, Project-specific insurance program
- Purchased and controlled by the owner (OCIP) or contractor (CCIP)
- Insures owner, general contractor, and all contractors performing work at the project site
- Typical coverages include: General Liability, Excess Liability and Builder's Risk
- Can include Workers' Compensation (projects over \$90M in OR per ORS 737.602)
- Additional coverages may also be included

Other Wrap Up Advantages



- Isolates Construction Risk to Project-Specific Policy
- Known Coverage, Insurers & Limits
- Completed Operations Coverage through Statute of Repose (10 yrs OR)
- Unified Defense in Claims
- Control of Insurance Line Item (Cost of Insurance)
- Increased Scrutiny and Coordination of Safety
- Enhanced Bid Environment for Subcontractors
- Disciplined Review of Project Risk Exposures



Step 4: Contract Formation



Contract Formation



- Contract must be finalized to get bids
- Changes in risk allocation intent will change contract price/bid
- Match risk allocation intent and insurance program design
 - Modify indemnity language if appropriate
 - Modify insurance requirements if intended
- Keep an open mind for alternatives as long as it doesn't shift risk and cost

Project Delivery Systems as a Risk Management Tool



Design-Bid-Build (DBB) – The traditional U.S. project delivery method, which customarily involves three sequential project phases: design, procurement, and construction.

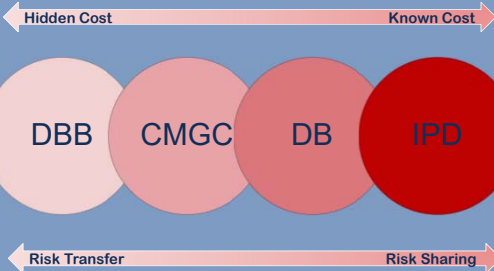
Construction Management At Risk (CMAR) – A project delivery method in which the Construction Manager acts as a consultant to the owner in the development and design phases, but assumes the risk for construction performance as the equivalent of a general contractor holding all trade subcontracts during the construction phase. This delivery method is also known as CM/GC.

Design-Build (DB) – A project delivery method that combines architectural and engineering design services with construction performance under one contract.

Integrated Project Delivery (IPD) – A project delivery method that contractually requires collaboration among the primary parties – owner, designer, and builder – so that the risk, responsibility and liability for project delivery are collectively managed and appropriately shared.

From "An Owner's Guide to Project Delivery Methods,"
Construction Management Association of America (CMAA)

Risk Transfer and Project Delivery Method





Step 5: Procurement and Negotiation

Project Insurance Procurement



- Large contractors have sophisticated insurance programs that operate as a profit center
- Contractors will retain risk and add cost of risk retention to the contract price/bid
- If resources are available, taking on some of the risk will limit the Contractor's profit and minimize Project cost
- If resources are limited, allowing the Contractor to enhance profit may be acceptable as long as they have a comprehensive program that can be validated

Project Insurance Procurement Strategies



- Understand that if too much risk is shifted to bidders, they will load contingency in the project cost – so ask for transparency
- Ask bidders to quantify insurance costs
- Ask bidders to provide creative alternatives for insurance to manage project cost
- Specify and price safety and quality program requirements
- One party (Owner or Contractor) does not have to supply all project insurance – can mix and match to achieve “Best Fit”

Additional Risk Management Strategies

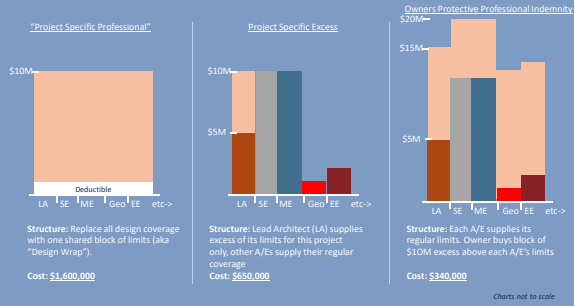


- Procurement Strategies
 - Compare OCIP vs CCIP cost
 - Compare Contractor Builders Risk vs Owner Builders Risk
- Audit and Compliance
 - If CCIP chosen, validate that coverage meets spec and covers Owner/Developer interests
- Consider shared savings clause so that if contractor saves money on insurance it is shared with Owner

Example: Professional Liability



Comparison of Options (\$300M Public Project):



Last Step: Validate



- Contractual requirements do not guarantee that insurance is structured properly
- Unless coverage against specifications is validated, risk management intent can not be achieved
- Consider "Insurance Peer Review" scope on large complex projects



Conclusion and Questions

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