2018 Forum on Construction Law Annual Meeting
Taking Care of Business: A Mini-MBA Program for the Construction Lawyer

Risk Management From the Inside
What Does Risk Look Like?

What are the potential impacts from this incident?

What risk management techniques are most relevant?
Traditional Risk Management Techniques

1. Risk Avoidance (don’t do it)
2. Contractual Allocation (contract negotiation)
3. Contractual Risk Transfer (pass on to others)
4. Mitigate – Prevention (limit the probability of loss)
5. Mitigate – Reduction (limit the effects of loss)
6. Risk Retention (budget/self-insure)
7. Portfolio Diversification
8. Risk Transfer - Insurance
9. Accept Residual Risk

• Risk is uncertainty
• Natural events or man made
• Risk is present in every phase of business
Project-Based / Operational Risks

Greatest Risks to Successful Projects

Design / Project Changes & Scope...
Budget / Cost Overruns
Project Approval Process
Safety
Site Conditions

Remember your mother’s sage advice: *Concern yourself with things within your control and spend less time worrying about the things over which you have no control*
Labor Shortages

“When I grow up, I want to work in one of the most dangerous professions in the world. I want to work outside, rain, cold, or blazing hot! I want to be constantly dirty and uncomfortable, and under pressure the entire time that I am working. I want to wear heavy boots, an ugly helmet, and have lots of uncomfortable tools hanging from my belt. I really want to make fairly low wages for performing lots of physically taxing demands so that it becomes harder to perform as I get older. Most of all, I want a job where I have poor benefits and little respect from everyone else!”

-Nobody, ever
Labor Shortages

- Old Industry problem nearing Crisis level
- Post-Recession Realities
  - Hiring in the industry has annual growth rate nearly double the overall economy
  - Construction pays almost 10% more per hour than average private-sector jobs
  - YET . . . .
- 75% of US construction firms struggle to fill hourly craft positions
Labor Shortages

Why?
- Recession exodus
- NO exposure
- The pros are aging
- Increase in work = manpower is spread thin ... and can afford to be picky

Solutions / Risk Management
- Retention models
- Education / recruitment
- Risk shifting
Subcontractor Default – The Perfect Storm

- Increased backlogs
- Competitive market
- Thin Labor Pool
- Under-capitalization
Subcontractor Default – Solutions / Risk Mgmt

Surety Bonds (Payment & Performance)

Subcontractor Default Insurance (SDI)

Contractors don’t starve to death, rather, they die from gluttony!
Shifting the Risk

Party with greatest control gets greatest share of risk

- Damage for Delay
- Differing Site Condition
- Defective Design
- Design-Build and CMR
What are the potential impacts from this incident?

1. Damage to critical equipment
2. Re-direction of project resources to deal with acute issue
3. Delay in obtaining replacement equipment
4. Damage to third party property
5. Loss of use of rail line – impacting unknown other parties
6. Environmental impact
7. Personal injury
8. Demurrage
9. Delayed completion of project – liquidated damages
10. Disruption and resequencing – inefficiencies
11. Others
What risk management techniques are most relevant?

1. Contractual allocation
   a) Risk of loss
   b) Responsibility for project delays, LDs
   c) Force majeure
   d) Insurance requirements – ocean cargo / builder’s risk

2. Contractual risk transfer – Flow-downs to equipment suppliers and subcontractors

3. Mitigation – Loss prevention

4. Mitigation – Loss reduction

5. Risk Transfer – Insurance
The ERM Process Includes Actions to Sense, Evaluate, Monitor and Respond to Internal and External Risks

What are the knowable unknowns?
Likelihood of Occurrence
Percentage of Risk Failure Leading to a Significant Market Decline

Executive Time Spent
Percentage of Time Spent by Audit Departments on Risk Types

Source: CEB (now Gartner) 2014 Share Shocks Analysis
Blockchain
Blockchain – 3 Questions / Answers

What is blockchain?

How is it being used in the marketplace?

How might it be used in the Design / Construction Industry?
Block Chain - What Is It?

1. A decentralized database
2. Which chronologically and securely records transactions
3. Enables peer-to-peer transactions

Train Track Analogy

- Digital Token
- Value Being Transacted (Money, Service, Asset, Data)
No Intermediaries

https://www.youtube.com/watch?v=ru_vu-T0hd8&feature=youtu.be
<table>
<thead>
<tr>
<th>Finance</th>
<th>Energy</th>
<th>Real Estate</th>
<th>Medical</th>
<th>Gov’t</th>
<th>A/E/C</th>
</tr>
</thead>
</table>

Who Is Using Blockchain?
A/E/C Industry Implications

SMART CONTRACTS
The “Original” Smart Contract
If / Then Examples – Service Purchase

- **If** service is provided, **then** the service provider requests inspection.

- **If** inspection meets standards for Task A, **then** payment is triggered and lien rights released in proportion to payment.

- **If** payment is completed for Task A, **then** notification is sent to responsible party for Task B that work may commence, etc.
If / Then Examples – Supply Purchase

Client purchases structural beams from supplier:

- **If** supply leaves the supplier site, **then** partial payment is made to supplier and liability transferred to shipping company.
- **If** beam arrives on site, **then** remaining payment is made to supplier and liability transferred to contractor on arrival.
Decentralized Autonomous Organizations
Funding Infrastructure – Initial Public Token Sale

- Comparable to Crowdfunding and P3
- Enables private sector to invest in public infrastructure
- Value proposition =
  1. Direct project benefits
  2. Discounted access over the life of project
  3. Value of token appreciates over time – behaves as an asset that can be sold / traded
Strategic Risk Engagement

- Strategic Executive-Level Conversations
  - Engage your IT, CIO, or your Chief Learning Officer to be briefed on what it is, how it functions, and use cases (within and outside of A/E/C industry)
- Kickstart committee work
- Develop a strategic road map that will help identify and leverage skill sets firm wide
<table>
<thead>
<tr>
<th>Rank</th>
<th>Firm</th>
<th>1997 Revenues</th>
<th>1997 Revenues</th>
<th>Current Rev (S = Sold, B= Bankrupt)</th>
<th>Ownership Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CH2M Hill</td>
<td>0.9</td>
<td></td>
<td>S / Jacobs (pending)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>AECOM</td>
<td>0.7</td>
<td></td>
<td>13.0</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Black &amp; Veatch</td>
<td>0.7</td>
<td></td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Dames &amp; Moore</td>
<td>0.7</td>
<td></td>
<td>S / URS / AECOM</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>ICF Kaiser</td>
<td>0.5</td>
<td></td>
<td>B / S / Earth Tech / IPO</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Parsons Brinckerhoff</td>
<td>0.5</td>
<td></td>
<td>S / Balfour Beatty / WSP</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Montgomery Watson (MWH Global)</td>
<td>0.5</td>
<td></td>
<td>S / Stantec</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>OHM</td>
<td>0.5</td>
<td></td>
<td>S / IT / Shaw / CB&amp;I</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>IT Group</td>
<td>0.4</td>
<td></td>
<td>B / S / Shaw / CB&amp;I</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>URS</td>
<td>0.4</td>
<td></td>
<td>S / AECOM</td>
<td></td>
</tr>
</tbody>
</table>

70% of firms no longer around. Why?

Red = no longer
Key Takeaways

- Risk = Uncertainty and is not inherently bad or good
- Traditional Risk Management Techniques – Operational Risk
- ERM – Strategic Risk; what are the “knowable” unknowns?
- Labor Market Concerns / Subcontractor Default
- Technological Risk / Blockchain – An Uncertain Future
- Strategic Executive-Level Conversations: Be Aware and Engage
Resources

- ABA Presentation Paper, Risk Management From the Inside
- Don Tapscot, Blockchain Revolution
- Chamber of Digital Commerce, Smart Contracts: 12 Use Cases for Business and Beyond
- Steven Johnson, Beyond the Bitcoin Bubble (New York Times)
- Coindesk, A Beginner’s Guide to Blockchain Technology
- Nathanial Popper, Digital Gold (just for fun because it’s interesting history)
- Podcasts: Unchained, Hashpower, & Tim Ferriss’s podcast with Nick Szabo and Naval Ravikant