With almost half of all construction spending to occur in just 20 metropolitan markets AND megaprojects projected to explode from less than 2% five years ago to 20% of total construction volume over the next 3 to 5 years, it’s clear the cheese has moved… and having a clear strategy has never been more critical.

Scott Winstead, President
FMI Management Consulting
Annual nonresidential megaproject CPiP is expected to increase ~424% over the next five years, growing from $47 billion to just over $247 billion.

Over the next decade, annual nonresidential megaproject spending is expected to increase nearly 550%, reaching just over $304 billion.
Globally, less than 1 in 1,000 megaprojects achieve their promised business outcomes.

Australian Constructors Association
Megaprojects Forecast

Total annual nonresidential megaproject spend as a percent of nonresidential CPIP is expected to **increase from 6.2% in 2018 to 28% by 2023** and remain stable between 28% and 30% through 2028.
U.S. Nonresidential Megaproject Spending, Historical and Planned Activity
Construction put in place forecast, 2012-2028

Historical Nonresidential Megaproject CPiP as % of Total Nonres (2012-2018) = 2.6%
Forecast Nonresidential Megaprojects CPiP as % of Total Nonres (2019-2028) = 24.4%

Source: FMI, Building permits, Reed, Dodge
U.S. Nonresidential Megaproject Spending, Historical and Planned Activity
Construction put in place forecast, 2012-2028

Historical Nonresidential Megaproject CPiP as % of Total Nonres (2012-2018) = 2.6%
Forecast Nonresidential Megaprojects CPiP as % of Total Nonres (2019-2028) = 24.4%

Source: FMI, Building permits, Reed, Dodge
Increasing urbanization is leading to more complex and concentrated design and construction activities.
Top risks remain consistent:
- Limited skilled/craft labor
- Limited field supervisors

NEW top risk:
- Design-related issues
What Are Impacts on Today’s Risk Environment?

Talent issues are driving M&A activity among E&C firms:

Top 3 reasons for M&A activity:

- Increase internal expertise (52%)
- Enter new key markets (48%)
- Increase available talent (43%)

23% of firms have merged with or acquired a firm in the last five years.

Source: 2020 AGC/FMI Risk Survey
Leadership-Related Risks

55% of study participants do not identify and develop high-potential employees—a missed opportunity to create a sustainable leadership pipeline.

Source: 2017 FMI Talent Development Survey
Design-Related Risks

Most common methods for bringing design in-house include:

- Hire external designers and create new design team (42%)
- Transfer internal candidates to create new design team (27%)
- Purchase a design firm and keep as separate entity (12%)

Source: 2020 AGC/FMI Risk Survey
Design-Related Risks

In-house design is most effective for:

- Reducing change orders
- Improving the design timeline
- Improving design accuracy
- Reducing design-related risks
- Improving communication across design teams

Source: 2020 AGC/FMI Risk Survey
Where Does Technology Play?

Over half (56%) of AGC risk survey respondents stated that they have a technology strategy in place.

Source: 2020 AGC/FMI Risk Survey
Construction Company Mini-Pilot Results

50%+ Non-Compliance Baseline Rate

**Observed Incident Rate**

- 54.55% per client criteria

**Total Observed Incidents**

- 90

**Number of Days Audited**

- 7

**Completed Audits**

- 165

---

**Summary**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Total Incidents</th>
<th>Incident Rate</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO. Employee Too Close to Energized Equipment</td>
<td>28</td>
<td>16.97%</td>
<td>165</td>
</tr>
<tr>
<td>PO. Employee Too Close to Live Loads</td>
<td>24</td>
<td>14.55%</td>
<td>165</td>
</tr>
<tr>
<td>PO. Housekeeping</td>
<td>16</td>
<td>8.70%</td>
<td>165</td>
</tr>
<tr>
<td>PO. Improper PPE</td>
<td>14</td>
<td>8.48%</td>
<td>165</td>
</tr>
<tr>
<td>PO. Pedestrian Safety</td>
<td>3</td>
<td>1.82%</td>
<td>165</td>
</tr>
<tr>
<td>PO. Spotting</td>
<td>2</td>
<td>1.21%</td>
<td>165</td>
</tr>
<tr>
<td>PO. Designated Zones Improperly Marked</td>
<td>1</td>
<td>0.61%</td>
<td>165</td>
</tr>
<tr>
<td>PO. Dust Control</td>
<td>1</td>
<td>0.61%</td>
<td>165</td>
</tr>
<tr>
<td>PO. Fall Protection</td>
<td>1</td>
<td>0.61%</td>
<td>165</td>
</tr>
<tr>
<td>PO. Ladder Safety</td>
<td>0</td>
<td>0.00%</td>
<td>162</td>
</tr>
<tr>
<td>PO. Traffic Safety</td>
<td>0</td>
<td>0.00%</td>
<td>165</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>90</td>
<td>54.55%</td>
<td>165</td>
</tr>
</tbody>
</table>

**Audit Details - Last 90 Days Only**

- VideoStart: 7/16/2018 2:19:59 PM
  - Site: 45 Broad, Outpost 2
  - Criteria: PO. Employee Too Close to Energized Equipment
  - # of Events: 1

- VideoStart: 7/16/2018 2:15:00 PM
  - Site: 45 Broad, Outpost 9
  - Criteria: PO. Employee Too Close to Live Loads
  - # of Events: 1

- VideoStart: 7/16/2018 2:10:00 PM
  - Site: 45 Broad, Outpost 000033
  - Criteria: PO. Housekeeping
  - # of Events: 1

- VideoStart: 7/16/2018 1:25:00 PM
  - Site: 45 Broad, Outpost 5
  - Criteria: PO. Employee Too Close to Energized Equipment
  - # of Events: 1

- VideoStart: 7/16/2018 0:00:00 PM
  - Site: 45 Broad, Outpost 9
  - Criteria: PO. Employee Too Close to Live Loads
  - # of Events: 1

---

**Incident Rate Comparison**

- 45 Broad: 54.55%
- Construx: 50.74%
- Asphalt Plant: 44.59%
- Fansal Ct Northport: 41.67%
Microsoft Power BI Performance Reports

Construction Client – 90%+ Reduction in Highest Risk Behaviors at First Pilot Job Site, Which Was a Complex NYC High Rise Foundation Job

Baseline Incident Rates of ~35%

Post-Feedback Incident Rates of ~3%

Hyperlinks to Flagged Video Events (see next slide)
Technology Strategy Process

- Foundation
- Structure
- Technology Selection and Adoption
- Continuing innovation and evaluation, BI
The evolving role of the Risk Manager....
Questions & Discussions

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Privately-held firm with deep implementation capabilities dedicated to the Built Environment, including Energy

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