



# Pre-construction Services: Cure or Curse?

Presented by

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# What & Why?



# The Drive to Pre-Construction Services

- National Transportation Safety Board concludes “inadequate peer review” was a major factor in the pedestrian bridge collapse at FIU.
- Kentucky Transportation Cabinet concluded that constructability reviews save over 1.25% of the project budget on average.

# Agenda

- Industry Trends & Dynamics
- An Issue Wide Model
- Peer Review Potential and Perils
  - The Designer of Record
  - The Peer Reviewer
- Constructability Review Challenges and Accountability



# Professionals Standard of Care

A/E is negligent if A/E fails to use the skill and care that a reasonably careful A/E would have used in similar circumstances. This level of skill, knowledge, and care is sometimes referred to as “the standard of care.” (CACI 600.)

A/E is not necessarily negligent just because A/E’s efforts are unsuccessful or A/E makes an error that was reasonable under the circumstances. (CACI 502.)

# \$ in the Standard of Care

“The average impact of design imperfection is cited by owners in the research as typically 3% to 5% of construction cost.”

- McGraw Hill/AIA Large Firm Roundtable Report – *Managing Uncertainty and Expectations and in Building Design and Construction*

# Who?

## **Final Settlement Marks the End of FIU Bridge Collapse Litigation (1/31/22)**

After nearly two years of litigation, the family of one of six people killed in the 2018 FIU bridge collapse has privately settled its lawsuit against the engineering consulting firm [peer reviewer].

All other claims against the engineering firms that were involved in the bridge construction were previously settled in 2019. The settlements amounted to a total of \$103 million.

# My World Today

- Major Airport Renovation & Expansion
- Design-Build Based on Owner Criteria
- Owner introduces “Seismic Peer Review Panel” at 30% Construction Documents
- Leads to \$14M quantity growth
- Leads to 195 day delay



# An Overall Model

- Objective(s)
- Timing
- Scope
- Standards
- Process
- Resolution/Closure
- Accountability

# Objective Awareness

- *Peer review provides confirmation and assurance that the design is sound and that the design specifications are clear. (New Jersey Law Journal – 2019)*
- *Constructability review is a process used during project design to infuse construction knowledge into the design process. (World Conference on Transport Research Society – 2017)*

# Realistic & Communicated Objectives

- Defined & Realistic
- Limited

*Client has chosen to engage the Project team in specific, limited, and focused pre-construction activities in order to confirm and validate elements of the Project program and plan as set forth below. Client recognizes that design and construction remains a dynamic and evolving process and that different parties may have different opinions or positions. Unless expressly agreed otherwise, such pre-construction services are not a warranty or guarantee of cost, schedule, or any other issue. In the event of differing positions, Client shall have the final authority to direct or authorize an action.*

# Timing

- Milestones as a Menu
- Ends of the Spectrum
  - Programming
  - Final
- Note: Schedule Impacts
  - Recognize the sequence
  - “Manager” or “Control” Imperatives
- Recognize the Costs & Fees

# Scope & Standards

## Basics

- Code
- Clear
- Conflicts
- Safe
- Constructable

## “Alternates”

- “Value Engineering”
- “Enhancements”
- Discretionary

# Process

- Timing
- Manager/Controller
- Sequencing
- Communication
- Input Format
- Resolution & Closure

# Resolution/Closure

- “Open” Issues
- Disagreements
- Direction & Resolution

# Resolution & Closure

## Express

*Client shall be informed of the results of the pre-construction services as identified in this Agreement. Client shall review and approve such reports or actions and shall promptly take action, make directions, or provide authorization on issues identified by such reports. A/E may rely on and proceed with its services based on such authorization or direction. If Client fails to provide such action or provide a response, the A/E may proceed with its services and shall not be responsible for any issues which might have been resolved or different based on Client's actions.*

## Default

*Client shall be informed of the results of the pre-construction services as identified in this Agreement or otherwise agreed to and shall be deemed to accept the stated response to or resolution of such issues except only where Client disagrees or directs otherwise in writing.*



# Resolution & Closure

<b>Sheet/Detail/ Specification/ Material</b>	<b>Position A by:</b>	<b>Position B by:</b>	<b>Client Direction</b>	<b>Client Signature &amp; Date</b>
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# Accountability

## Peer Review

- Prime A/E of Record
- A/E of Record Team
- Peer Reviewer
- **Client**

## Constructability & Cost

- Reviewer
  - Contractor
  - Construction Manager
  - “Advisory” Reviewer
- A/E Team
- **Client**

# Peer Review Potential & Peril

*A/E is negligent only if A/E was not as skillful, knowledgeable, or careful as another reasonable [insert type of professional] would have been in similar circumstances. (CACI 602)*

# Growing Peer Review Imperative

- Mostly for engineering and not architecture.
- Evolving even more in public projects for all disciplines.
- Now often engaged as supplemental service or part of internal QA/QC.
- Examples of Mandates: New York, Florida, and California now have mandatory peer reviews for some project types for structural engineering and geotechnical engineering.

# ASCE Policy Statement 351

*The American Society of Civil Engineers (ASCE) promotes and supports the use of peer reviews for projects. Peer review is the practice of obtaining an independent, unbiased evaluation of the adequacy and application of engineering principles, standards and judgment from an independent group of professionals having substantial experience in the same field of expertise. Peer reviews are in addition to the normal quality control and checking procedures required on any engineering assignment.*

# Peril Response?

NSPE:

- Provide that third-party peer reviewers who are licensed professional engineers are immune from civil liability as long as the third-party reviewer acts in good faith and has no other role in the project besides performing the peer review.
- State clearly that peer review must be done before substantial completion of the project and the peer reviewer must not be an employee, coworker, partner or sub-consultant of the professional engineer whose design is being peer reviewed.

Immunity statutes now exist in: Kansas and Missouri

# Common Model & Perils

Sheet/Detail/ Specification	Comment	Resolution

# The A/E of Record

- To list or not to list?
- Reject/exclude the extraneous.
- Respond, resolve, and **close**.
- Secure confirmation/signoff of peer reviewer.



# The Peer Reviewer

*Peer Review is for general conformance of the Project plans and specifications with Codes and other identified regulations, internal conflicts, omissions of necessary information, and safety. Where an issue is identified, the Peer Reviewer will not provide the correction or remedy since the final design shall remain the sole responsibility of the A/E of Record or the contractor supplying shop drawings, submittals, or other design input.*

# Intended Beneficiaries

*Peer Reviewer's services, communications, and documents are intended for the sole benefit of \_\_\_\_\_ and shall not create any third-party rights, benefits, or causes of action.*

... and? ...

*Peer Reviewer's communications and documents shall be provided solely to \_\_\_\_\_ and shall not be provided to any other persons or entities without Peer Reviewer's written consent.*

# Limitations of Liability

*Peer Reviewer shall have no liability or other financial responsibility to Client or any third party except only to the extent caused by Peer Reviewer's sole negligence or sole breach of this Agreement.*

*Client shall limit Peer Reviewer's liability to Client and any third parties to the greater of \$\_\_\_\_\_ or \_\_\_% of Peer Reviewer's fee for the Project.*

# Constructability Review: A Real World “Perspective”

- Major Public Project
- First Time Using Pre-selected Contractor for Pre-construction Services
- Contractor receives equivalent of 5% of cost for Pre-construction services.
- Simultaneous review by Construction Manager, Peer Reviewer, and Permitting Agency.
- 95% of Issues “Resolved”
- Contractor issues over 1,200 RFIs during construction with corresponding change order requests.

# Constructability Imperatives

- Scope & Standards
- Manager
- Documentation
- Closure
- Accountability

# Constructability Scope & Standards

*Contractor/CM's review of design documents prior to permitting shall include review of the following issues:*

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*Contractor/CM shall remain solely responsible for all cost, schedule, sequence, and safety issues.*

*Where an issue is identified by Contractor/CM prior to its final pricing or contract for the Project, it shall include the issue, its status, and the impacts of same in its Contract price and shall not be entitled to any additional compensation or schedule adjustment for the issue.*

# Available Printed Resources

- Pre-construction Services: Cure or Curse?
- Pareto Principles of Professional Service Agreements
- PE Magazine: “Sixteen Clauses You Need to Know”
- Know your Limitations: A Design Professional Guide to Limited Liability
- Skating on Thin Ice: Surviving and Succeeding on Projects with Precarious Project Terms

# Questions & Answers

## Thank You!

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