

A bronze statue of Lady Justice, blindfolded and holding scales of justice, is the central figure. The background is a dramatic, cloudy sky with warm, golden light. The title text is overlaid on the left side of the image.

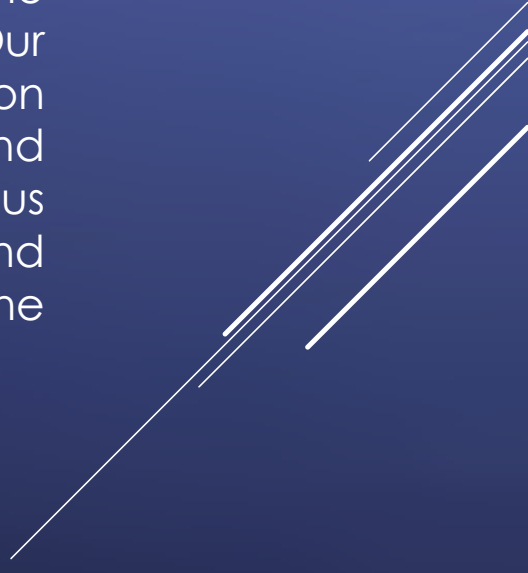
# INTRODUCTION AND LITIGATION BASICS

Vancouver, May 11, 2018

# Course Description

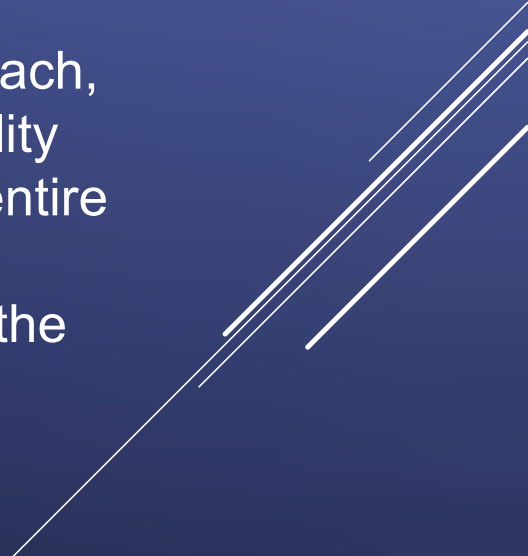
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With 71 percent of construction claims involving the performance of the building envelope components, questions arise regarding the responsibility for the proper installation of these systems. This seminar will explore the roles and responsibilities of both the designer and the contractor during the process of constructing building envelopes. Our discussion will include critical parts of the design and construction process that create the greatest liability. After defining the roles and identifying the critical areas of liability, we will examine the various tools required to mitigate risk by addressing the specific issues and determining how those tools can be applied in the field through the review of several pertinent case studies.

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# Learning Objectives

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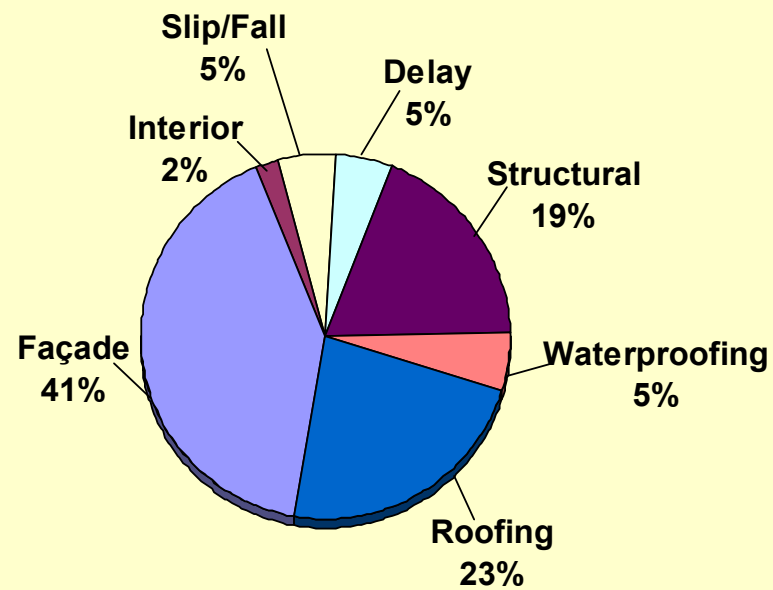
1. Develop an understanding of the legal roles and responsibilities for the Designer, Consultant and the Contractor.
  2. Explore the various liability issues relative to performance, value engineering, substitutions, and project complexity.
  3. Review risk mitigation tools such as creating a team approach, utilizing peer review early in the project, implementing quality assurance and quality control processes that engage the entire team.
  4. Examine two case studies with lessons learned regarding the identification of risk and how to manage it.
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# WHAT ARE THE PRIMARY REASONS FOR CONSTRUCTING LITIGATION?



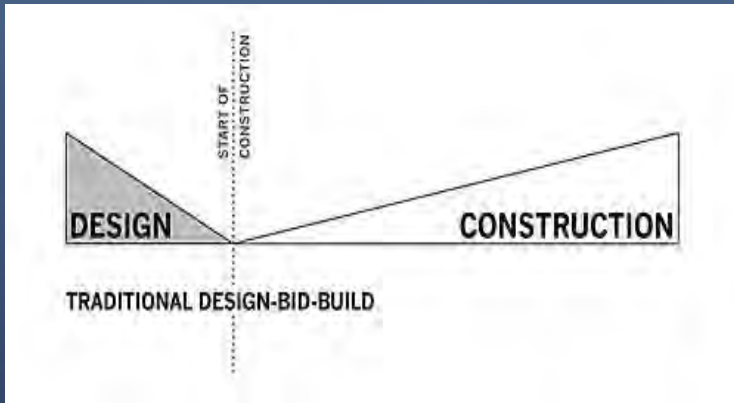
# OVERVIEW

**Sources of Construction Claims in Buildings**



- ▶ Design Phase Considerations
- ▶ Construction Considerations
- ▶ Building Envelope Case Studies

OVERVIEW



- ▶ Designer's Influence
- ▶ Designer's Responsibilities
- ▶ Design Considerations
- ▶ Team Involvement
- ▶ Quality Assurance and Quality Control
- ▶ Common Design Liability Issues

## DESIGN PHASE CONSIDERATIONS

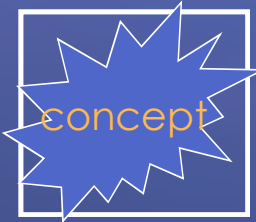




- ▶ Designers can influence
  - ▶ Basis of Design (Details and Specifications)
  - ▶ Bidding / Value Engineering Decisions
  - ▶ Submittal Process
  - ▶ Field Detail Implementation Decisions
  - ▶ Field Q/A testing procedures
  
- ▶ Designers cannot influence
  - ▶ Pure “money” decisions
  - ▶ Weather factors during and following construction
  - ▶ Installation Errors

DESIGNER INFLUENCE





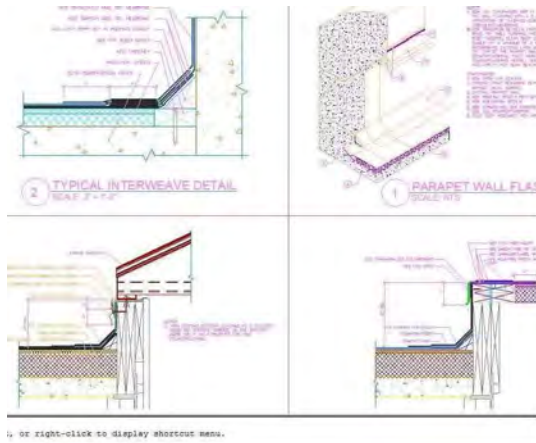
► Common Sense...the construction documents should:

- Carry enough information to convey design intent and the importance of a fully-integrated building façade
  - Convey how those materials and systems will be reconciled at the interfaces
- A failure to provide this information prior to bidding effectively shifts the burden of designing these details “downstream” to the submittal review and shop drawing phase.



Shop  
drawing  
review

## DESIGNER'S RESPONSIBILITIES



- ▶ Selection of systems
  - ▶ Appropriate systems: correct type, proven performance, etc.
  - ▶ Single source
  - ▶ Prefabricated vs. field installed
- ▶ Congruent performance
- ▶ Complexity of design
  - ▶ Less is more
  - ▶ Continuity and homogeneous detailing
- ▶ Quality Assurance and Quality Control
  - ▶ Prequalification
  - ▶ Continuity and homogeneous detailing
- ▶ Drawing details
  - ▶ To convey intent
  - ▶ Intersections and terminations

# DESIGN CONSIDERATIONS



## TEAM INVOLVEMENT

- ▶ Manufacturer
  - ▶ Design Development and Technical Support
  - ▶ Quality Assurance and Quality Control
- ▶ Contractor
  - ▶ Constructability
  - ▶ Cost impact
  - ▶ Scheduling
- ▶ Consultant
  - ▶ Peer Review
  - ▶ Building Envelope Consultant
  - ▶ Building Envelope Commissioning Agent



- ▶ Quality Assurance
  - ▶ Submittals
  - ▶ Mock-ups
  - ▶ Pre-construction Testing
    - ▶ Sealant compatibility, adhesion, and stain testing
    - ▶ Material testing
    - ▶ Laboratory mock-up testing
- ▶ Quality Control
  - ▶ Field Observations
  - ▶ Field Testing

## QUALITY ASSURANCE & QUALITY CONTROL

# COMMON DESIGN LIABILITY ISSUES

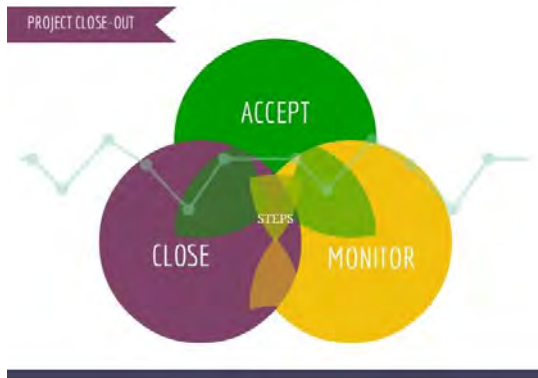
- ▶ Performance of systems specified
  - ▶ Basis of design meets performance requirements
  - ▶ Track record of successful performance
- ▶ Value Engineering
  - ▶ Cost vs. Quality
  - ▶ Control of the process
    - ▶ Impacts to other related components
    - ▶ Substantive changes may no longer be covered by documents
- ▶ Product substitutions
  - ▶ Once approved, becomes Architect's responsibility





- ▶ Designer's Role during Construction
- ▶ Designer's Obligation
- ▶ Contractor's Obligation
- ▶ Consultant's Obligation
- ▶ The Bottom Line
- ▶ Communication
- ▶ Construction Involvement

# CONSTRUCTION CONSIDERATIONS



- ▶ Designer's role and responsibilities clearly defined during construction phase?
  - ▶ Verification that components installed are those submitted and approved
  - ▶ QA/QC testing performed
  - ▶ Closeout documentation performed

## DESIGNER'S ROLE DURING CONSTRUCTION





ARCHITECT'S DESIGN

- ▶ The “fine print”...
- ▶ AIA A201
- ▶ § 4.2 ARCHITECT'S ADMINISTRATION OF THE CONTRACT
- ▶ § 4.2.2 The Architect, as a representative of the Owner, will visit the site at intervals appropriate to the stage of the Contractor's operations (1) to become generally familiar with and to keep the Owner informed about the progress and quality of the portion of the Work completed, (2) to endeavor to guard the Owner against defects and deficiencies in the Work, and (3) to determine in general if the Work is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the work. The Architect will neither have control over or charge of, nor be responsible for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

## DESIGNER'S OBLIGATION



- ▶ **CONTRACTOR** - the *Gambler* who never gets to shuffle, cut or deal
- ENGINEERS ESTIMATE** - Cost of construction in heaven
- BID** - Wild guess carried out to two decimal places
- BID OPENING** - Poker game in which the losing hand wins
- LOW BIDDER** - Contractor who is wondering what he left out
- CRITICAL PATH METHOD** - Management technique for losing your shirt under perfect control
- PROJECT MANAGER** - of an orchestra in which every musician is in a different union
- STRIKE** - Union effort to increase egg production by strangling the chicken
- DELAYED PAYMENT** - Tourniquet applied at the pocket
- COMPLETION DATE** - Point at which liquidated damages start
- AUDITORS** - People who go in after the war is lost and bayonet the wounded
- LAWYERS** - People who go in after the auditors and strip the bodies

## CONTRACTOR'S DICTIONARY

- ▶ The “fine print”...
- ▶ GC/CM Role And Responsibility
- ▶ § 3.3 SUPERVISION OF CONSTRUCTION PROCEDURES
- ▶ § 3.3.3 The contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons other than the contractor.

## CONTRACTOR'S OBLIGATION



## CONSULTANT'S ROLE

►What the Courts have said...

►“Therefore, the architect-engineer can not defend against the owner's claims by using the excuse that he was relying upon the information or work provided to him by an employee or consultant. The architect or engineer who has relied on a consulting specialist, though, may attempt to pass the liability down the line by invoking the indemnity clause of the consultant's contract with him. Nonetheless, from the perspective of the owner who hires him, the design professional's duty remains non-delegable.”

►The Mayor and City Council of the City of Columbus v. Clark-Dietz and Associates-Engineers, Inc., 550 F. Supp. 610, 624 (N.D. Miss. 1982). Accord, U.R.S. Co., Inc. v. Gulfport-Biloxi Regional Airport Authority, 544 So. 2d 824, 827 (Miss. 1989).

## CONSULTANT'S OBLIGATION

► What the Courts have said...

► "The presumption is that, if an architect is licensed and registered, he (she) has the capability of planning a building and supervising its construction in accordance with his (her) plans. Consequently, if he (she) undertakes a project, he (she) alone will be held responsible therefore. If he (she) delegates any part of his duties, he (she) does so at his (her) peril."

► But... it is often judged that, in the absence of an RFI, the contractor may assume design liability...always ask the question!

► *State Board of Registration v. Rogers*, 239 Miss. 35, 120 So. 2d 772, 775 (1960).

## THE BOTTOM LINE





# COMMUNICATION

The biggest problem in communication is that we do not listen to understand. We listen to reply!

## ► Preconstruction Meetings:

- Establish lines of communication at pre-construction
- Confirm that all relevant parties are included on correspondence, reports, etc.
- Determine how communication is documented for record

## ► ASIs, ESIs, RFIs:

- Limit misunderstandings thorough open communication prior to issuance of documentation
- Provide clear and timely responses
- Be aware that your response may one day be read by an attorney

## ► Field mock-ups and initial installations

- Approved installations as basis for project

## ► Periodic observations

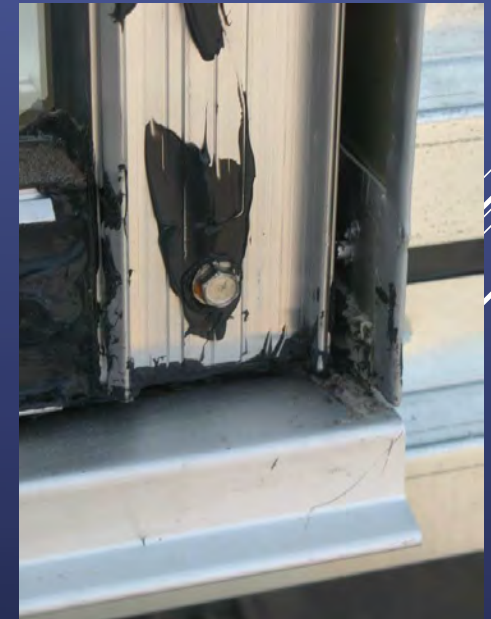
- Resolve construction issues/field detailing
- Regular intervals
- Timely reports (weekly)

## ► Field testing

- Selection of appropriate test specimen's
- Witness
- Review modifications

## ► Contract Disputes

- Architect's responsibility to mitigate
- Perform in a timely manner



# CONSTRUCTION INVOLVEMENT

- Medical Research Facility
  - ▶ Below-grade waterproofing, punched window and curtain wall systems, precast concrete panels, dimensioned stone cladding, and modified bitumen roofing
- Condominium High Rise
  - ▶ Above-grade plaza waterproofing, punched window and curtain wall systems, stucco cladding, and modified bitumen roofing

## Case Studies



- Design Phase
  - ▶ No field or laboratory mock-ups specified
  - ▶ No QA/QC testing specified
  - ▶ Poor communication
  - ▶ Ill-advised Owner driven product substitution
- Construction Phase
  - ▶ Poor communication
  - ▶ Lack of supervision and coordination
  - ▶ Poor installation (not in accordance with manufacturer requirements)
  - ▶ Damage by other trades

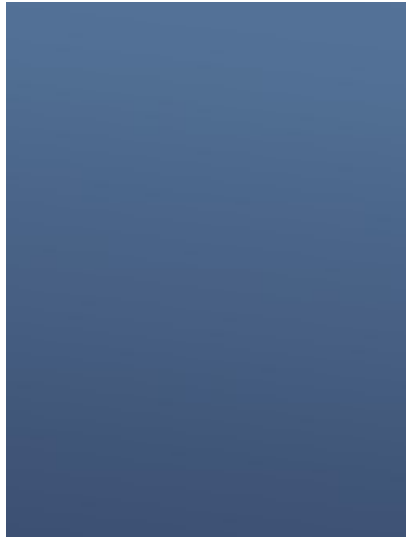
# MEDICAL RESEARCH FACILITY





- ▶ Waterproofing systems constantly compromised
- ▶ Lack of protection throughout project
- ▶ Onsite field verification full-time from the manufacturer

MEDICAL  
RESEARCH FACILITY

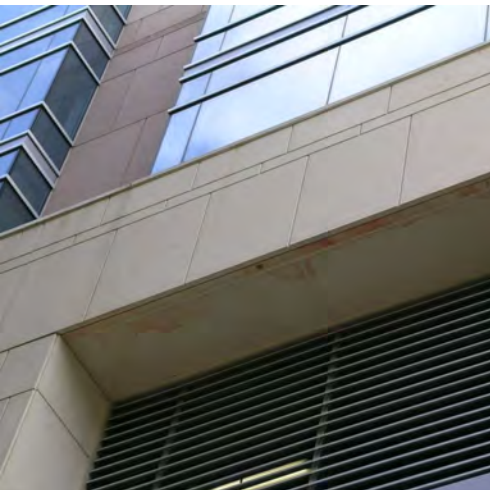


# MEDICAL RESEARCH FACILITY

Precast concrete panels with  
exposed clips

After notification, repairs were  
not instituted

After installation modifications  
difficult to achieve



# MEDICAL RESEARCH FACILITY

Leaks were observable early in construction

Sheet metal work was not properly executed





# MEDICAL RESEARCH FACILITY

Roof materials were constantly  
compromised

Damage to finished work was  
continuous

## ► Lesson Learned

- Don't assume that communication is progressing well. In this instance the consultant was not allowed to speak to the subcontractors and the consultants' reports were not distributed to the subcontractors.
- The schedule drove the process – the medical research facility had a hard open date. Several long-term (five to ten years) medical experiments were scheduled immediately after opening.
- The facility was seven months late because of construction deficiencies.

# MEDICAL RESEARCH FACILITY



- Design Phase
  - ▶ Contractor selection
  - ▶ Modifications to system selection/design
- Construction Phase
  - ▶ Excessive construction tolerances
  - ▶ Lack of coordination and supervision
  - ▶ Poor installation
  - ▶ Damage by other trades

## CONDOMINIUM HIGHRISE





- ▶ QA/QC procedures not firmly set in place.
- ▶ Self-adhering membrane punctured throughout construction.
- ▶ Inexperienced construction management team



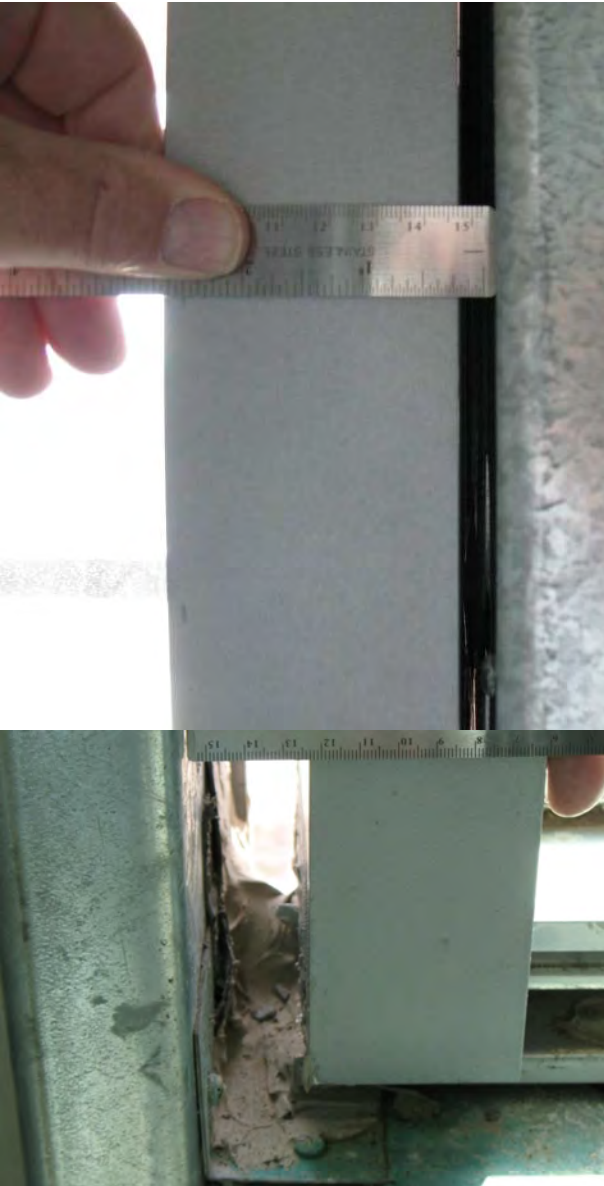
## CONDOMINIUM HIGHRISE



- ▶ Fasteners removed from self-adhered flashings
- ▶ Self-adhering membrane not flashed to penetrations



## CONDOMINIUM HIGHRISE



- ▶ Tolerance issues plagued the project from start to finish.
- ▶ The glazing contractor struggled to pass the air and water infiltration testing
- ▶ Sealants joints varied from  $\frac{1}{4}$ " (0.6 cm) to  $2 \frac{1}{2}$ " (6.35 cm)

## CONDOMINIUM HIGHRISE





# CONDOMINIUM HIGHRISE

Tolerance issues caused  
exaggerated window movement  
resulting in leaks.





Roof issues persisted because of staged construction.

Roof sections were removed and replaced

The roof was finally overlaid with a second layer to meet the wind uplift criteria

## CONDOMINIUM HIGHRISE



# CONDOMINIUM HIGHRISE

## ▶ Lesson Learned

- ▶ Communication was extensive throughout the project but it did not translate into corrected construction.
- ▶ The construction management team was inexperienced with little-to-no experience of the construction systems involved.
- ▶ The construction company replaced the team with their best team to finish the project.

# CONDOMINIUM HIGHRISE

- ▶ The presentations for this litigation discussion are based on a dialog between the presenters and the attendees.
- ▶ Please add to the discussion today with your experience in past projects that will illustrate the principles presented.
- ▶ Finally, the end goal of this day is to protect ourselves and others from litigation in the future.

## INTRODUCTION AND LITIGATION BASICS

THANK YOU!

QUESTIONS?



*Knowledge Experience Solutions*

**BUILDING EXTERIOR SOLUTIONS**