




The Role of the Design Professional During Construction

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- Questions related to specific materials, methods, and services can be addressed at the conclusion of this presentation.

OBJECTIVES

UNDERSTAND

- Understand what will be expected of the design professional during construction.

LEARN

- Learn about the various project delivery types in common usage today.

LEARN

- Learn how to manage construction and avoid common pitfalls



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OVERVIEW


- Construction Delivery Systems
- The Various Roles of the Design Professional
- Before Construction Begins
- Avoiding Bidding Pitfalls
- Managing the Construction Process
- After Construction



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CONSTRUCTION DELIVERY SYSTEMS


- Design-Bid-Build (DBB) or Design-Award-Build (DAB)
- DBB with Construction Management
- Design-Build (DB)
- Construction Manager/General Contractor (CM/GC)
- Design-Build-Operate-Maintain (DBOM)
- Build-Operate-Transfer (BOT)
- Public-private partnership (PPP, 3P, or P3)



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THE VARIOUS ROLES OF THE DESIGN PROFESSIONAL

- Client Education
 - Include "Post Construction Award Services" in Contract
- Engineering Staff Selection and Education
- Establish Contractor Submittal Protocols
- Process Requests for Information (RFI) During Bidding
- Analyze Bids/Proposals



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THE VARIOUS ROLES OF THE DESIGN PROFESSIONAL

- Process Contractor's Submittals
- Manage the Construction Process
- Review Contractor's Change Order/Value Engineering Requests
- Perform Inspection for Final Acceptance
- Prepare Record Drawings



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BEFORE CONSTRUCTION BEGINS

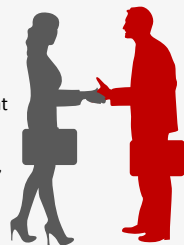
- Establish Shop Drawing Review Process – Require that submittals be numbered
- Establish RFI Log
- Establish change order process
- Educate Client regarding Record Drawings
- Performance Bonds
Amount and Bond Company Rating
Define in General Conditions contractor being in default and time allowed to cure



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AVOID BIDDING PITFALLS


- Limit Contractor's access to designer
- Request for Information (RFI) in writing only
- Include unedited RFI in response
- Provide response to RFI's to all Bidders at the same time
- Prepare Numbered Addenda for any RFI response that requires changes to plans, specifications, or bid date
- Obtain Client's approval of process



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MANAGING THE CONSTRUCTION PROCESS

- Processing Shop Drawing Review



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Shop Drawing Review Log

Shop Drawing Number	Date Rec'd	Item Description/Specification Section	Assigned to	Approval Status	Date Returned

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MANAGING THE CONSTRUCTION PROCESS


- Alert Client regarding potential problems and Change Orders
- Notify Client and Bonding Company if Contractor is nearing default and withhold payment
- Record Drawings
Alert Client if Contractor is not maintaining Record of Construction Deviations from Contract Documents



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AFTER CONSTRUCTION

- Prepare Record Drawings
- Lessons Learned



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A CASE HISTORY

The Hyatt Regency Hotel Walkway Collapse (1981)

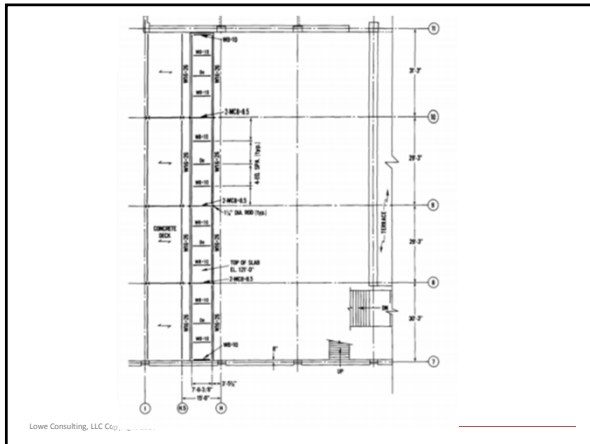


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CASE DESCRIPTION

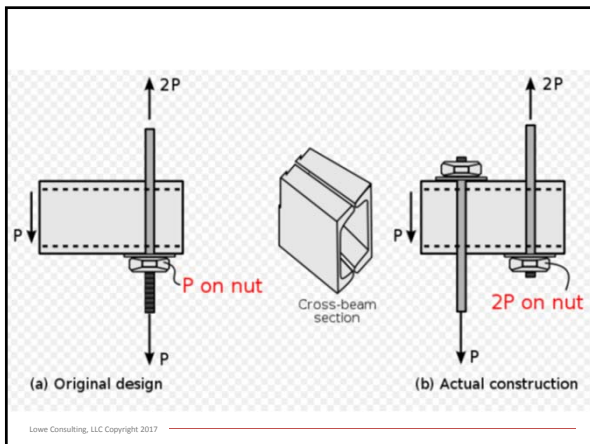
- 40-Story Structure with 50' atrium in center
- Walkways across the atrium at the 2nd, 3rd, and 4th floors, suspended from atrium ceiling
- Each walkways was approximately 120 ft. long and weighed 64,000 lbs.
- Each walkway was supported at ends and at quarter points by three sets of two 1.25" steel tie rods.
- 4th floor walkway was directly above the 2nd floor walkway

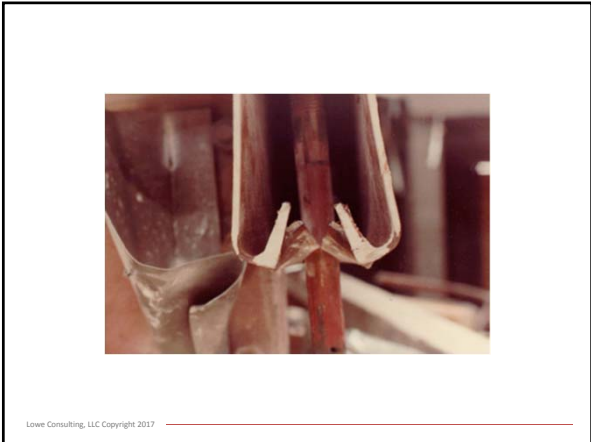
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CASE DESCRIPTION

- Contractor requested a design modification claiming that walkways could not be constructed as designed
- Contractor request made by telephone and approved without analysis of the effect of the change.





CASE DESCRIPTION

- Connections on 4th floor walkway failed, falling on to 2nd floor walkway
- Connections on 2nd floor walkway failed and both walkways fell to lobby below
- 1,600 People attending social event in the lobby below the walkways
- Approximately 40 people on each walkway
- Fire sprinkler system, with no shutoff valve, fed by tank on roof, was severed by falling debris and began flooding the lobby

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CASE DESCRIPTION

- Rescue operations took 14 hours
https://en.wikipedia.org/wiki/Hyatt_Regency_walkway_collapse
- 377 Page Report Prepared by the National Bureau of Standards
<http://fire.nist.gov/bfrlpubs/build82/PDF/b82002.pdf>

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THE AFTERMATH

- 114 people killed, 219 injured
- \$140 Million awarded in settlements
- All design engineers lost licenses and company lost license

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LESSONS LEARNED

- Persevere
- Perform a constructability review during design
- Have and use a PCAS
- Respond only to written RFI's for changes
- Carefully review, by qualified designers, requests for changes
- Document, Document, Document

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Thank you for attending!
