How Safety Professionals Can Influence Design Professionals to “Engineer Out” Hazards – Crossover #317

STE, Inc. Background
Engineering, Safety & Training Consultants
- 28 Years Experience
- Master Degree Structural Engineers
- Certified Safety Professionals
- International Authors, Presenters, Trainers on Safety
- 300 million sq. ft. of Facility & Fall Protection Design
- Over 500 hours of Specialized Safety Training

Agenda
3. How to Educate Designers On Safety Requirements.
4. Examples.

Why Don’t Engineers & Architects Design The Hazard Out?

Primary Factor.
C _ _ _ _ E

Contributing Factors.
1. Lack of awareness of the design community’s safety responsibilities
2. Lack of training & knowledge of OSHA Regulations & ANSI Standards
Contributing Factors.

3. Design with end user codes vs construction, maintenance and operations in mind.

4. Lack of safety experience.

Beyond Building Codes – Designer Responsibility.

E/A are NOT taught to design in personal safety into facilities, machines and processes using OSHA & ANSI requirements for:

- Construction
- Maintenance
- Use
- Demolition

Beyond Building Codes

Engineers and Architects (E/A) are taught that their specific design duty is to adhere to National Building Code requirements.

- Prevent the Collapse of the Structure
- Seismic Conditions
- Wind Conditions
- Intended Use of the Building – Hospital vs School vs Warehouse
- Building Safety vs Personal Safety

Beyond Building Codes

E/A University Curriculum does not include classes on personal safety requirements.

E/A Background

1. Don’t know what they don’t know.
   - Need for safety training beyond building codes
   - How to pre-plan projects to include safety
   - How to connect design with safety
   - How to apply design & safety into construction, maintenance, use and demolition activities
   - Competent Person Training
   - Qualified Person Training
2. Professional Liability

3. How to communicate the need to owners

Safety Influence
Invitation to Bid Criteria
  E/A Safety Training
  E/A with Safety Personnel

Contract Requirements
  E/A pre-interviews all divisions
  Proof of Training
  Incorporation of OHSA, ANSI, ASME requirements in addition to building codes

Safety Influence
Selecting an E/A firm with credentials that match the project criteria

Safety Influence - Preplan
- Identify In-House Project Team
  - Interview to Identify
    - Work Activities
    - Safety Issues
    - Recommendations
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<tbody>
<tr>
<td>Identification of hazards</td>
<td>Safety Influence-Preplan</td>
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<tr>
<td>Prior to design</td>
<td>– Identify Design &amp; Construction Project Team</td>
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<td>At design review</td>
<td>• Interview to Identify</td>
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<td>– Safety Training Credentials</td>
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<td>– Safety Policy</td>
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<td>– Experience with Similar Projects</td>
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<td>– Qualify Design &amp; Construction Project Team</td>
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<td>• Safety Scenarios – “What Would They Do?”</td>
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<td>• Ask how they review drawings to identify &amp; eliminate hazards? (vs creating)</td>
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<td>– Create An Understanding of What Personal Safety Issues Are Involved.</td>
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<td>• In-House Committee</td>
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<td>– Fall Protection</td>
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<td>– Confined Space</td>
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<td>– Machine Guarding</td>
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<td>– Lockout/Tagout</td>
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<td>– Security</td>
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<td>– Site/Project Specific Safety Plan is Developed</td>
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<td>– Identify Project Safety Requirements to Design Out Hazards associated with:</td>
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<td>• Facility</td>
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<td>• Machine</td>
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<td>• Maintenance</td>
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<td>• Operation</td>
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Value of incorporating safety into design & construction projects

- Keep Workers Safe & Families Strong
- Efficient Project Planning
- Competitive Edge
- Higher Level of Production
- Innovative Problem Solving

Job Safety Analysis At Conceptual Design Stage

**Who, What, When, Where, Why, How?**

**WHO** is involved?
**WHAT** job task is involved?
**WHEN** is work performed?
**WHERE** is work performed?
**HOW** is the work performed?
**WHY** is the work performed in this manner?

Develops and/or Enhances Your Safety Culture

- In-House Safety Team
  - Management
  - Purchasing
  - Legal
  - Engineering
  - Safety

- Eliminate/control hazards in the design phase
  - Training of Competent Persons, Qualified Persons
  - Pre-plan each design & construction activity
  - Use the Hierarchy of Control

**Strengthens Members of the Team**
- Common Language
- Stronger Understanding
- Unified Approach