

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



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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

1. Beyond Building Codes – Safety Design Responsibility.
2. How Safety Professionals Can Influence Designers.
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.

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 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

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

E/A Background

2. Professional Liability

E/A Background

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

- Develop Safety Design Criteria

Safety Influence

- Selecting a 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

Safety Influence

Identification of hazards
Prior to design
At design review

2. How Safety Professionals Can Influence Designers.

Safety Influence - Preplan

- Identify Design & Construction Project Team
 - Interview to Identify
 - Safety Training Credentials
 - Safety Policy
 - Experience with Similar Projects

Safety Influence - Preplan

- Qualify Design & Construction Project Team
 - Safety Scenarios – “What Would They Do?”
 - Ask how they review drawings to identify & eliminate hazards? (vs creating)

Safety Influence - Preplan

- Create An Understanding of What Personal Safety Issues Are Involved.
 - In-House Committee
 - Fall Protection
 - Confined Space
 - Machine Guarding
 - Lockout/Tagout
 - Security

Safety Influence-Preplan

- Site/Project Specific Safety Plan is Developed
- Identify Project Safety Requirements to Design Out Hazards associated with:
 - Facility
 - Machine
 - Construction
 - Maintenance
 - Operation





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







