

CONSTRUCTION SAFETY & ENVIRONMENT MANAGEMENT

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CONSTRUCTION SAFETY



Overview

- Accident- Effects & Causes
- Responsibilities & Organizations for safety
- Planning for safety
- Safety management system
- Benefits / Barriers in construction safety

ACCIDENT- EFFECTS & CAUSES



Accident

“Any unplanned, uncontrolled, unwanted or uor undesirable event, or sudden mishap which interrupts an activity or function”

Effects of accidents

- Injury (disability, pain, suffering)
- Damage (equipment, building)
- Loss (life, earning, output, image, time)
- Emotion (following injury, pain, death)

ACCIDENT- EFFECTS & CAUSES



Causes of accidents

“Accidents don’t just happen, they are caused”

- **Plant & Equipment (faulty staircase, electrical hazards, defective/incorrect equipment)**
- **Environment (high noise, insufficient light)**
- **People (careless, untrained, overstressed)**
- **System of work (poor design/site procedures)**
- **Natural Hazards (EQ, Typhoons, Landslides, etc.)**

RESPONSIBILITIES AND ORGANIZATION FOR SAFETY

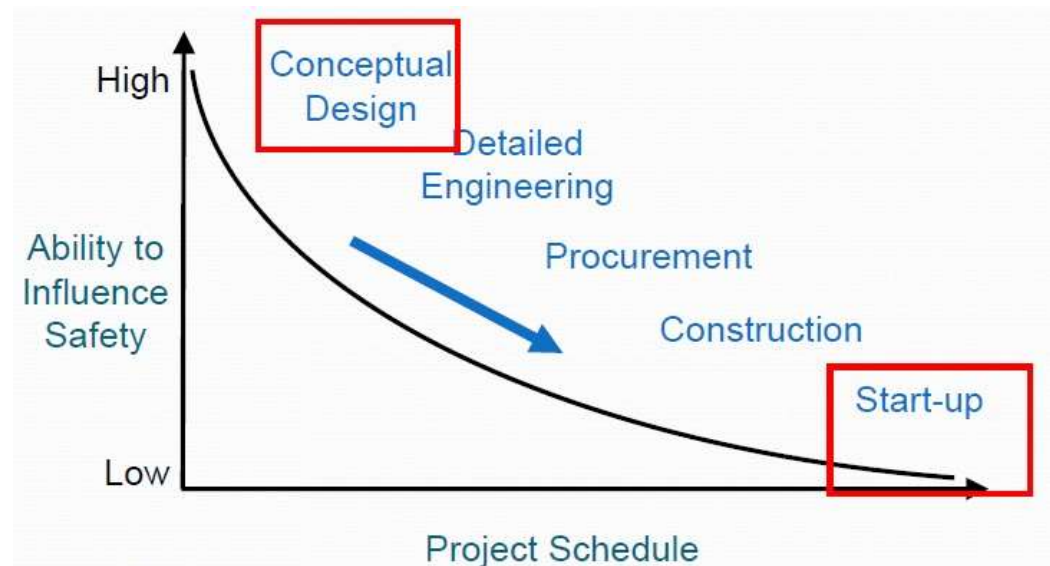
- There are humanitarian, legal, and economic grounds for providing a safe place and system of work.
- Clear allocation of responsibilities within the management structure, especially at senior executive level and safety advisers.

The Role of Safety Adviser

- Establishment and review of safety regulations to meet organization's requirements.
- Relevant legislative requirements.
- Safety content necessary in all trainings.
- Regular inspection of safety standards in all work areas.

PLANNING FOR SAFETY

- Plant & Equipment (design, layout, inspection)
- Workplace (maintenance of clean & orderly places with clearly defined access ways and fire exits)
- Facilities (adequate first-aid and medical facilities and hygienic wash and eating areas)
- Procedures (prevention and practice of major emergency and first-aid procedures in the event of serious hazard situation)
- Training (provision of effective training for fire fighting, rescue and first-aid crew)



SAFETY MANAGEMENT SYSTEM



“Accident prevention is the process of removing or controlling accident causes”

Three major elements for accident prevention process;

- 1. Workplace inspection.**
- 2. Accident investigation and follow-up.**
- 3. Safety training.**

SAFETY MANAGEMENT SYSTEM



- Workplace inspection (audit and review, safety survey/inspection/sampling, hazard potential assessment)
- Accident investigation (data collection, checking evidences, selecting main evidence, analyzing the evidence) and follow-up (decide, notify and record the most likely cause (s) of accident).
- Safety training (part of safety policy, allocate responsibilities, define objectives, implement and monitor, review the over all effectiveness)

BENEFITS OF CONSTRUCTION SAFETY



- Reduced site hazards
- fewer injuries and fatalities
- Reduced workers compensation premiums
- Increased productivity
- Fewer delays due to accidents during construction allow continued focus on quality
- Encourages client-designer-constructor collaboration

BARRIERS/LIMITATIONS



- Like many good ideas, construction safety faces a number of barriers that slow down its adoption.
- Potential solutions to these barriers involve long-term education and institutional changes.

Barrier-1: Fear of Liability

- Barrier: Fear of undeserved liability for worker safety.
- Potential solutions:
 - Develop revised model contract language.
 - Propose legislation to facilitate construction safety without inappropriately shifting liability onto client/designers/contractors.

BARRIERS/LIMITATIONS



Barrier-2: Increased Construction Costs

- **Barrier:** Implementation of construction safety rules will increase both direct and overhead costs for designers.
- **Potential solutions:** Educate owners that total project costs and total project life cycle costs will decrease.

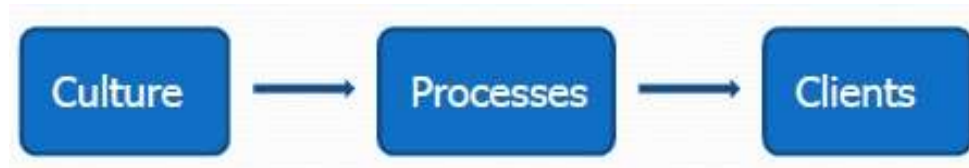
Barrier-3: Lack of Safety Expertise

- **Barrier:** Few engineering firms possess sufficient expertise in construction safety.
- **Potential solutions:**
 - Add safety to design professional's curricula.
 - Develop and promote safety courses for professionals.

CONCLUSIONS

Three Steps towards Safety

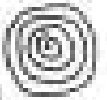
1. Establish an adoptable culture
2. Establish adoptable / enabling processes
3. Secure clients who value life cycle safety



THANKS

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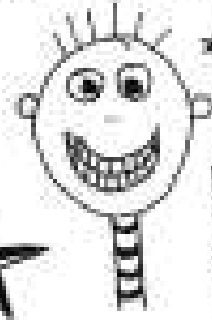
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