# Construction Health and Safety Management(CoTM4232)

2020

# CHAPTER-ONE

# INTRODUCTION

**DEFINITION**

Construction health and safety management

1) Construction

- it is the action of building something, typically large structure.

- The creation of large entity or infrastructure.

2) Health

- It is state of wellness something
- Appearing in level of functional.

# Con't……..

3) Safety

- The absence of danger act
- Keep every thing with normal condition/safe.

✓***Therefore, construction health and safety management is the management of state of wellness and preventing danger at construction site.***

# Safety Engineering: Environmental, Health and Safety Management

- Safety engineering is an engineering discipline which assures that engineered systems provide acceptable levels of safety.
- Safety engineering assures that a life-critical system behaves as needed, even when components fail.
- **At this time the environmental issues also need to be managed, and again often by using the same techniques and practices safety.**
- **In general, *safety is minimizing of unsafe acts and unsafe conditions at workplace.***

# Function of safety engineering

- Anticipate, identify and evaluate hazardous conditions and practices.
- Develop hazard control designs, methods, procedures and programs.
- Implement, administer and advise others on hazard control programs.
- Measure, audit and evaluate the effectiveness of hazard control programs.
- Draft a future safety plan and statement based on real time experiences and facts

# The significance of construction industry

- Construction industry is a sector of national economy engaged in preparation of land and construction, alteration and repair of buildings, structures and others real property.

- It have the following significance /virtue

- An integral part of infrastructure development of a country
- Major contribution to economic growth of the country.

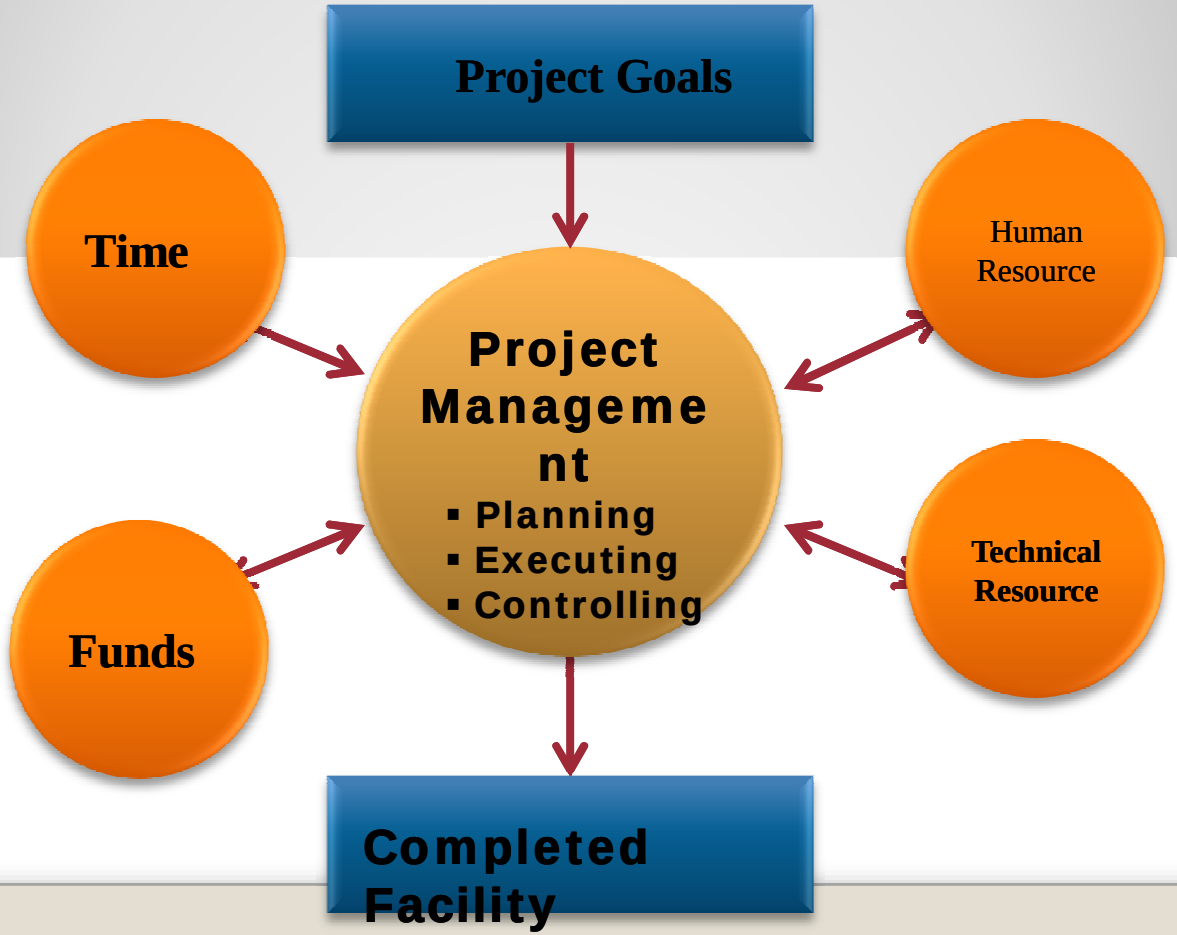
# Con't…….

- Can generate much number of employments.
- Longer life of product compared to other industries
- Exciting & dynamic environment to work in

The unique features of construction industry

- ✓Time bounded
- ✓Complexity
- ✓High cost
- ✓Uniqueness of people relation ship
- ✓……

# The main elements of construction project



# Con't……

- General goal of a construction project is:-

Project complete

- ✓ on time,
- ✓ within budget
- ✓ with the stated quality
- ✓ **Within safe environment .**

# The Challenges/Limitations of construction projects

Only **20%** of most construction projects meet the four requirements

- Project Delay
- Over Budget
- Failed Quality
- Unsafe safety
- **Major Problems of Safety**

*‘ Safety in construction is a prime requisite but often is neglected’*

# History/Evolution of Safety & Health at work Place

**Birth & Evolution of Modern Safety Movement**

- **Mid-1900 century compensation law to provide protection of Industrial workers**
- **In the first days the scope was restricted to *accident* prevention**
- **Later days the scope was extended to protect workers' *health***
- **Early days concern & focus on *Industry/ factory* and *Mines***

**Replaced with *occupational* attempting to embrace all types of employment**

/International Labour Organization (ILO) and World Health Organization (WHO)/

# Facts on Safety at Work

## Loss of life, injuries & Occupational disease

- 6,000 people die each day as a result of work related accidents and diseases
- 2.2 million work-related deaths a year
  - 1.7 million are from work related diseases;
    - 160 million incidents of work related disease every year
    - 438,000 deaths per year from hazardous substance exposure
    - 10 % of all skin cancer is attributed to hazardous substance exposure at work place
    - Asbestos dust claims 100,000 deaths every year from past exposure
    - Silicosis/ fatal lung disease caused by exposure to silica dust affects tens of millions of workers
  - 350,000 are from workplace accidents
  - 158,000 are commuting accidents

# Facts on Safety at Work:

## Loss of life, Injuries & Occupational disease

**Construction work is considered to be dangerous**

- **60,000 fatal accidents a year on construction sites.**
- **1 in 6 of all fatal work –related accidents**
- **One fatal accident every ten minute**

(Source: ILO)

- **108,000 fatal accidents with construction, 30% of all work related accidents.**

(Source WHO)

# The Cost of Safety

- **In an Industry where controlling cost & time in projects is significant factor, it is not possible to ignore economic argument on safety prevention**
- **Assigning monetary value to unwanted & unplanned occurrence** / ILO definition of Occupational accident/ **is a challenge;**
  - **Material loss with no injury occurrence** ( easy to assess)
    - **direct & indirect costs**
  - **Human loss or injury occurrence** (Difficult to assess)
    - **ethical pitfalls**
    - **legal ramification**
    - **direct & indirect cost** /Compensation/

- **Universal Consensus/recognition that there is a moral, legal & economic necessity to maintain safe working practice on construction sites.**

# *Basic terms*

**a) Accidents**

The end products of sequences of events or actions resulting in an undesired consequence which results in physical harm and property damage.

**b) Injury**

A consequence of an incident but not the only possible one.

It has been shown that hundreds of incidents occur in the construction industry for every one that causes injury or loss.

Rely on injury records only allow a review of a minority of incident those which happened to result in serious injury consequence

# Con't……

**c) Hazard**

The inherent property or ability of something to cause harm – the potential to interrupt with process or person. Hazards may arise from interacting or influencing components. It describes potential for harm.

**d) Risk**

The chance or probability of loss, an evaluation of the potential for failure.

It is the like hood harm will result in particular situation or circumstances, coupled with a measure of the degree of severity of that

# Con't….

**e) Environment**

The totality of all material whether in their natural state or modified or changed by human, their external spaces & the interactions which affect their quality or quantity & the welfare of human or other living beings, including but not restricted to, land atmosphere, weather & climate, water, living things, sound, odor, taste, social factors, & aesthetics."

**(Federal Negarit Gazeta-No.7 31; October, 2002- P1940**

# Con't….

**f) Hazardous Material**

Any substance in solid, liquid or gaseous state, or any plant, animal or micro organism that is injurious to human health or the environment.

**g) Hazardous Waste**

Any unwanted material that is believed to be deleterious to human safety or health or the environment;

# Con't.....

**h) Pollution**

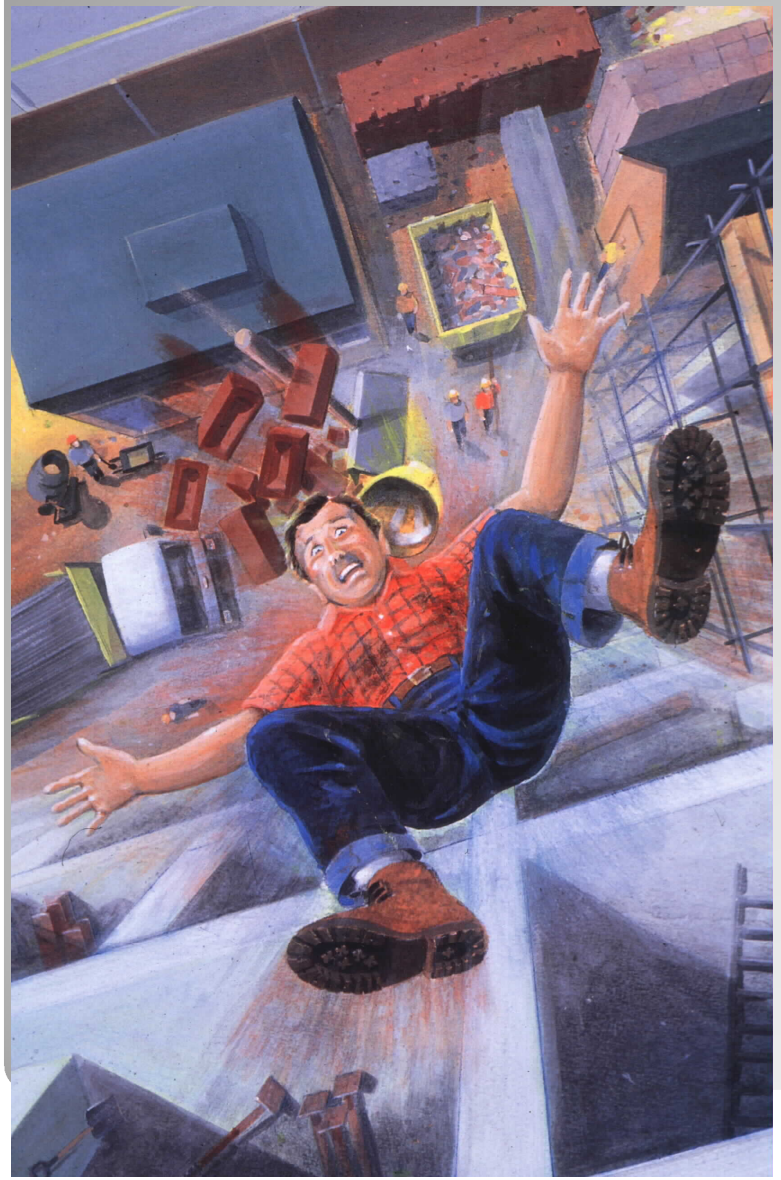
Any condition which is hazardous or potentially hazardous to human health, safety, or welfare or to living things created by altering any physical, radioactive, thermal, chemical, biological or other property of any part of the environment in contravention of any condition, limitation or restriction.

**Pollutant**

Any substance whether liquid, solid, or gas which directly or indirectly:

(i) Alters the quality of any part of the receiving environment so as to effect its beneficial use adversely; or

(ii) Produces toxic substances, diseases, objectionable odor, radioactivity, noise, vibration, heat, or any other phenomenon that is hazardous or potentially hazardous to human health or to other living things;



# thank you!
# Stay safe!

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