Accident Causes and Preventions
OSH
Situations
Every year, **337 million** workers fall victims of occupational accidents and diseases

- **work-related accidents and diseases** cause > 4 days absence
- **2.3 million** men and women workers die of work-related accidents and diseases each year
  - **360,000** fatal accidents
  - **1.95M** fatal diseases

*Source: ILO Safework - Introductory Report - 2008*
• Of the 360,000 fatalities – around 17% (or 1 in every 6) are from the construction industry
This means that:

At least 60,000 fatalities occur at construction sites, around the world, every year

• 1 fatal accident occurs every 10 minutes
Causes of Accidents
Common Reasons for Accidents

- Layman’s version:
  - ‘Oras na niya’
  - ‘Malas niya lang’
  - ‘Tanga kasi’
  - ‘Kasama sa trabaho’

NOT REAL CAUSES --- ONLY EXCUSES!
Accident

Accident is an event that is
- unexpected,
- unplanned and
- unwanted

that results in harm to people, cause damage or loss to properties.
OSHC Study (1998)

Factors That Contribute to the Occurrence of Accidents in the Construction Industry
Type of Project

- Vertical Project: 83%
- Horizontal Project: 2%
- Not stated: 15%
Injured Part of the Body

- Multiple: 32%
- Arm: 1%
- Body: 24%
- Eye/Ear/Face: 7%
- Feet/Legs: 7%
- Finger: 8%
- Head: 20%
- Lungs: 1%
Type of Trade

- Electrician: 2
- Welder: 2
- Checker/S.G.: 4
- Plumber: 3
- Steelworker: 12
- Foreman: 2
- Laborer: 25
- Carpenter: 8
Month of Occurrence
Time of Accident
Accident Theory

People

Environment

Equipment

Materials
Primary Causes of Accidents

- Unsafe Act
- Unsafe Condition
Unsafe Act

The human action that departs from a standard job procedure or safe practice, safety regulations or instructions.
Unsafe Acts

- Operating Equipment without Authority
- Disregard of SOP or instructions
- Removing Safety Devices
- Using Defective equipment
- Using improper PPEs or Using PPEs improperly
- Horseplay
- Working in an unsafe posture
- Absent-mindedness / Nervousness
- Willful intent to injure
- Working while under the influence of alcohol or drugs
- Improper lifting and carrying
- Lack of knowledge or skills
- Failure to understand instructions
Unsafe Condition

The physical or chemical property of a material, machine or the environment which could result in injury to a person, damage or destruction to property or other forms of losses.
Unsafe Conditions

Wet slippery floors

Unstable stacking of materials

Protruding re-bars

Live conductors without insulation

Equipment without machine guarding

Poor storage of combustible materials
Prevention of Accidents

Requires the promotion of safe behaviours and maintenance of a safe working environment.
Controlling Unsafe Acts

- **Reward:**
  - Financial bonus
  - Promotion
  - Extra responsibility
  - Incentive schemes

- **Active Encouragement of Involvement in:**
  - Decisions on Consultation
  - Risk Assessments
  - Safe Systems of Work

- **Provision of:**
  - Training
  - Good Working Environment
  - Welfare Facilities

- **Explanation of Ultimate Consequences**

- **Consistent/Controlled Discipline**
Systems to Control Unsafe Conditions

Engineering Control:
- Elimination/Substitution/Minimization
- Isolation/Enclosure of the Hazard

Administrative Control:
- Safe work practices, Signs and signage, Training and education,

Personal Protective Equipment
- Last line of defense
The first consideration for controlling hazards is to **eliminate** the hazard or **substitute** a less hazardous material or process.

- Performing good housekeeping will eliminate slip and tripping hazards
- An example of substitution method is utilizing a water-based paint rather than a solvent-based paint. This control measure minimizes flammable vapors as well as eliminates health concerns associated with solvent-based paints.
If hazards cannot be eliminated, then:

- **Enclosed Hazard**
  - Enclosure of the hazard, such as enclosures for noisy equipment.

- **Isolate Hazard**
  - Isolation of the hazard with interlocks, machine guarding, welding curtains, and other mechanisms.

- **Remove / Redirect Hazard**
  - Removal or redirection of the hazard such as with local and exhaust ventilation.

- **Redesign Workplace**
  - Redesign of workstation to minimize ergonomic injuries.
If engineering controls are not feasible then consider implementing administrative controls

Examples of administrative controls include:

- Limiting time exposure to hazards
- Provisions of safety signage
- Provisions of written safe operating procedures
- Conduct of job hazard analysis, and
- Creation and implementation of safety and health rules for employees.
Personal Protective Equipment as Last Line of Defense in Control Measures

- PPE is acceptable as a control method in the following situations:
  - Engineering controls do not eliminate hazard
  - While engineering controls are being developed
  - Administrative controls and safe work practices are not sufficient protection, and
  - During emergencies.
Personnel Protective Equipment

Personnel protective equipment (PPE) may be broadly divided as follows:

- Head Protection
- Hearing protection.
- Respiratory protection.
- Eye and face protection.
- Hand protection.
- Foot protection.
- Protective clothing.

*PPE does nothing to stop the hazard at source, but simply serves as a barrier protection to reduce the severity of the potential accident.*
Thank You for Listening!