CONSTRUCTION PROJECT MANAGEMENT

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CERTIFICATION COURSE BY

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CONSTRUCTION
PROJECT MANAGEMENT

Module 3

Construction Project Safety
[Importance of Safety]

Aim:

"To focus on why safety is important and how it can be improved"

Construction Project Safety

Module 3 - Unit 1

Course Objectives

• **Construction Fatalities**	• **Safety Standards**
• **Examples of Construction Accidents**	• **Safety Leadership**
• **Examples of the Impacts of Poor Safety**	• **Improve Safety by Training**
• **The Results of Poor Safety**	• **Improving Safety on our Projects**
• **Safety Does Not Come Naturally**	

Slide 3.3 Construction fatalities

- The U.S. Bureau of Labor Statistics released its annual National Census of Fatal Occupational Injuries report for 2019 and reported that the private construction industry had 1,061 fatal injuries for the year, up 5% from 2018 and the sector's highest number of worker deaths since 2007.
- Causes of death and the number of workers killed in the private construction industry included:
    - Exposure to harmful substances or environments, including electricity and extreme temperatures (167).
    - Contact with objects and equipment, including struck-by and caught-in/between incidents (146).
    - Roadway incidents involving a motorized land vehicle (142).
    - Roadway collisions with an object other than a vehicle (34).

Slides 3.4 – 3.10 Examples of construction accidents [Space for Notes]

Slides 3.11 – 3.22 Examples of the impacts of poor safety [Space for Notes]

Slides 3.23– 3.25 The results of poor safety

- People can be killed or injured.

- People's lives can be changed forever by an accident.
- Accidents damage equipment.
- Accidents delay projects.
- Accidents take time to investigate.
- Accidents are bad for reputation.
- Clients don't want to employ contractors with a poor safety record.
- Accidents lead to an increase in injured worker compensation.
- Often injured workers must be paid while they are recovering.
- Key workers could be injured which delays the project – think of injured foreman or crane operator.
- Workers are stood down while the area is made safe.
- Accidents could damage completed work.
- Accidents could damage materials.
- Accidents impact morale on the project.
- People don't want to work for companies that don't look after their workers.
- Safety violations can lead to monetary fines.
- Safety violations could get the job stopped by the client or authorities.
- Working in unsafe conditions can reduce productivity.
- Accidents could lead to the company being sued.
- Your personal reputation could be destroyed.
- You could go to jail.
- You could be injured or killed in an accident.

- **Is your life worth sacrificing to save some time on the project, or so that your company makes an extra dollar?**
- **Is anyone's life worth sacrificing to save time or to make money?**
- **Poor safety costs money!**

Slide 3.26 Safety does not come naturally

- *"Safety doesn't happen naturally. Consider recent maintenance tasks you did at home or in the garden, I'm sure if you analyse these you'll find you didn't use the correct personal protective equipment, or follow proper safety procedures.*
- *I know I'm guilty of numerous safety breaches every time I work in the garden!*
- *In fact, if you think about the last time you were driving, did you obey all the rules? There were probably times when you used your mobile telephone while driving, exceeded the speed-limit, didn't stop at a Stop sign, crossed an intersection after the traffic light turned amber, and even took a chance overtaking another vehicle when there was a possibility of approaching traffic.*
- *When walking, do you stop at the traffic light and wait for it to turn in your favour, or are you impatient and cross as soon as you see a gap in the traffic?*
- *We've all done these things, so why should we expect to do things any differently at work?*
- ***If you engage in unsafe behaviour outside the work place, the chances are that most of your workforce does the same thing."***

Slides 3.27 – 3.28 Safety standards

There are many standards and rules for safety.

These include:

- National and state standards.
- Industry standards.
- Company standards.
- Client standards.
- Project standards.
- Your standards.

Which standard do you follow?

The most stringent safety standards should apply on your project, but most importantly apply standards which will not endanger any lives, standards that will prevent accidents.

Slides 3.29 – 3.31 Safety leadership

- Safety isn't something that happens naturally.
- Safety is about changing behaviour and changing mindsets.
- Safety cannot be left entirely to the safety advisors, nor can it be driven only by the Project Manager.
- **Safety is a team effort that needs support from the whole management team and all the workers.**
- To achieve this, **the Project Manager has to lead the team** – and lead by example.
- Safety must be set-up properly from the start of the project, which should be scheduled and planned in such a way that the work can be done safely –

– the client's deadlines and schedule should not dictate otherwise.

- Safety must be enforced uniformly from the start of the project. It is difficult to change workers bad habits part way through the project.

Safety leadership:

The Project Manager must be aware that their team is always watching their actions:

- It's important they are seen to be safety conscious at all times.
- Always wear the correct and appropriate personal protective equipment.
- Do not break safety rules.
- Don't walk past safety violations without taking corrective action.
- Observe operations to ensure they are being conducted safely.
- Understand the safety legislation, as well as the safety standards and rules required by the Client and the Contractor.

- **It certainly doesn't work to discipline a worker for failing to keep to the required safety standards when you're guilty of breaching the same standards.**

- ❑ **Never walk past or look away from unsafe actions. How terrible if there was an accident that you could have prevented?**

If only you had said something! Would you want a terrible accident on your conscience?

- ❑ **There is no excuse for poor safety.**
- ❑ **We must understand the true cost of poor safety.**

Slides 3.32 – 3.33 How can we improve safety, and an example of improved safety by training [Space for Notes]

Slides 3.34 – 3.35 Improving safety on our projects

We can improve safety by:

- Good leadership.
- Training – does your team understand why safety is important? Do they understand the hazards? Or are they just doing as they are told?
- Using skilled people.
- Communication.
- Good inductions.
- The right equipment.
- Understanding the risks and managing them.
- Good housekeeping.
- Barricading.
- A safety coordinator for each job.
- Using personal protective clothing.
- Not taking short cuts.
- Selecting the best methodology.
- Correct material handling.
- Taking safety into account when planning and scheduling the project.
- Everyone to understand the cost of poor safety – both monetary and people's lives.
- The crew being proud of a good safety record.
- **Get the project culture right – if there's poor safety I can guarantee the project has other problems.**
- **Everyone to take care of themselves and each other.**

Construction Project Safety

Module 3 - Unit 2

Course Objectives

• Why Safety Documentation is Essential	• Cause of Poor Environmental Practices
• What are Safety Documents	• Examples of Damage to Environment
• First Aid Facilities	• Construction Waste
• Worksite Tidiness	• Reduce Environmental Damage
• What to do if there is an Accident?	• Create a Good Image
• Poor Environmental Practices	

Slides 3.39 – 3.44 Examples of why good safety documentation is essential and OSHA fines

[Space for Notes]

Slides 3.45 – 3.47 Safety Documentation

Why safety documentation is important:

- The correct records and documentation are there to protect your workers –

– but they are also vital to protect you as the Project Manager should there be an accident on the project.

- The documents set out the checks and procedures to follow, they highlight the project and task hazards.
- They provide proof that the safety checks and inspections have been performed.

But good documentation alone does not make a safe work place. Documents alone do not protect people.

Problems with safety documentation:

- The documents are cut and paste from other projects which may have different conditions and hazards.
- The documents do not take cognisance of the construction methodology.
- The documents are prepared by a Safety Manager alone and the Project Manager has little input into their contents.
- The contents are not shared with those doing the work.

- The documents are left in a drawer and forgotten.
- The documents are not updated to reflect changing conditions, hazards, and construction methodologies.

Safety documentation includes:

- The project safety plan.
- Safety registers.
- Incident/accident reports.
- Job/task hazard assessments..
- Prestart inspections.
- Tailgate or toolbox safety meeting minutes.
- Signed attendance lists for toolbox meetings and inductions.
- Signed receipts for personal protective equipment.
- Safety audit results and remedial actions.
- Hazardous material data sheets.
- First-aid treatment register.

Slide 3.48 First-aid facilities

- All projects must have a first-aid kit which is readily available, in an accessible, clearly marked location, close to the work areas.
- The first-aid kit must have sufficient stock and material to enable basic first-line medical treatment to be administered.
- It should have a register listing the contents, which should be updated as items are removed.
- The kit should also be inspected regularly, and missing and expired stock replaced.
- There should be people in every work area trained to use emergency equipment, which would include qualified first-aiders.

Slides 3.50 – 3.51 Why keeping the worksite tidy is important

- Materials and tools lying on the ground and not packed neatly:
    - Create trip hazards.
    - Obstruct emergency evacuation routes.
    - Create a fire risk.
    - Cause the items to be damaged.
    - Items on elevated work areas could be knocked off causing injury to people below, and damage to the item and objects below.
- A poorly ordered project reduces productivity. Workers have to search for items, disentangle equipment, and work around obstructions.
- Poorly stacked materials could fall over causing injury and damage.
- It creates a good impression with the Client and their representatives, and gives the impression that the project is well organised and managed.
- Safety inspectors are less likely to find issues if they are confronted with an orderly project.

Enforce good housekeeping from the start of the project because it's difficult to change people's people's poor habits part way through.

It's often just as easy to stack an item neatly, as it is to throw it randomly on the ground, and it doesn't take any longer to put an item of equipment back into its storage container than leave it lying around.

Slides 3.52 – 3.53 What to do if there's an accident

Does everyone know what to do? Often, time is of the essence.

- There must be access to a telephone – remote areas may require a satellite phone or radio.
- Emergency contact details must be available.
- First-aid kits must be accessible.
- First aid must be rendered.
- Construction projects are usually cluttered, busy, and confusing spaces so someone should be dispatched to meet the emergency response team.
- Often emergency services must be given health insurance details so that the injured person can receive the best treatment – ensure these details are available.
- Photographs should be taken of the accident scene.
- Insurance providers may need to be notified.
- The incident should be investigated to ensure that the issue does not occur again.
- The client should be notified.
- Serious accidents may require that the authorities are notified.
- When there is a serious incident or accident the media may get involved. –

– Delegate one person to talk to the media and ensure that there is a consistent story sticking to the known facts only.

- Follow up with the injured person.
- Create a written plan to avoid a similar accident occurring again.

Slides 3.54 – 3.57 Examples of poor environmental practices [Space for Notes]

Slides 3.58 – 3.59 Poor environmental practices cause

- Fines.
- Damage to reputation due to:
    - Poor media attention.
    - Unhappy neighbours.
- Unhappy Client.
- Poor public perception.
- Projects being stopped by the authorities.
- Costs to clean up the damage.
- Extra costs caused by:
    - Energy inefficient equipment..
    - Disposing of waste which could be recycled.
    - Wasted water.

- Clearing excessive vegetation.

- Poor worker health due to:
  - Dust.
  - Noise.
  - Smoke.

What world do you want to leave behind for your children and future generations?

Slides 3.60 Example of damage to the environment [Space for Notes]

Slides 3.61 – 3.62 Construction waste [Space for Notes]

Slides 3.63 – 3.64 Reduce environmental damage

You can reduce environmental damage by:

- Reducing rework.
- Separating and recycling.
- Controlling stormwater runoff.
- Educating employees.
- Providing waste bins..
- Selecting the right type and size of equipment.
- Ordering the correct quantity of materials.
- Reducing breakages.
- Protecting areas of vegetation which do not have to be removed.
- Fixing leaking pipes – oil and water.
- Not mixing dangerous materials with general waste – like asbestos, oils, and chemicals – and dispose of them in designated locations.
- Ensuring everyone on the project is environmentally aware and takes care.

Guess what – nearly all of these suggestions save money – they do not have to cost money!

Treating the environment well will lead to other benefits, including:

- **More clients.**
- **Neater project.**
- **Happy neighbours.**
- **Better health for all.**

Slide 3.65 Create a good image for your company.

- Where specific environmental interventions are undertaken on your project share this with the local media. People like positive stories and this is an opportunity to create free advertising for your company.
- More clients these days are employing contractors with good environmental credentials. If your company has a good environmental record it may benefit you winning future projects.
- Help win support from neighbours and the local community by helping and contributing to local environmental actions – this will result in less potential conflict and complaints.

Don't damage the environment that your children and future generations will inherit.

Summary Module 3

Slides 3.67 – 3.68

- Each year many workers are injured and killed on construction projects.
- But the cost of poor safety has other consequences, including fines, legal action, projects being stopped, poor media attention, loss of property, additional insurance costs, reduced productivity and more.
- It is possible to complete projects safely without accidents and injury.
- The cost of poor safety is far higher than the cost of good safety practices.
- There are different safety standards and it is important to apply the most stringent applicable standard, but whatever these standards may be you must ensure that lives are not put in danger.
- Safety is a team effort, but the Project Manager must set the example.
- Safety on your projects can be improved with training, proper project inductions, the right equipment, constant and open communication, not taking short cuts, everyone understanding the true cost of poor safety, setting the project culture right.
- Project Managers must never walk past an unsafe act, or accept poor safety.
- Good safety documentation is important. It protects you, the company, and your team.
- Unfortunately safety documents are often poorly done, or lie forgotten in a drawer.
- Documents must be updated to reflect the changing conditions and hazards.
- A well stocked first-aid kit must be available.
- Untidy projects are unsafe, look unprofessional and usually impact productivity.
- It is important that everyone knows what to do if there's and accident.
- Projects should be environmentally friendly. Poor environmental practices can lead to fines, poor media attention, the project being stopped, unhappy neighbours, and even additional costs to remove rubbish.
- Good environmental actions often save money.

"HAQE: To level up"

Quiz – Module 3

True of False:

1. _____ Construction is a dangerous occupation, and it is impossible to complete a project without and accident.
2. _____ If someone is seriously injured or is killed on the project the Project Manager could go to jail.
3. _____ Accidents cost money.
4. _____ The safety standards to follow on the project are those set by the Client.
5. _____ First-aid kits should be locked in an office.
6. _____ Damage to the environment can lead to the company being fined.
7. _____ If the client says it is safe to work in a certain manner, then they are responsible if this results in an accident.
8. _____ Safety documentation is a waste of time.
9. _____ The Project Manager does not have to obey all the safety rules on the project.
10. _____ It is impossible to change poor safety behaviour.

Multiple Choice

11. Who is responsible for safety on a construction project:

A. The Client.
B. The Project Manager.
C. The Safety Manager.
D. The workers.
E. All the above.

12. We can improve safety on our projects.

A. By ensuring everyone understands the consequence of poor safety.
B. By using skilled trained workers.
C. Understanding the risks and managing them
D. Changing people's behaviour
E. All the above.

13. Project Managers should:

A. Lead by example.
B. Turn a blind eye to unsafe acts.
C. Always obey the safety standards.
D. A & C.
E. A, B & C.

14. Poor environmental practices can:

A. Result in fines.
B. Cause extra costs.
C. Cause poor media coverage of the project and company.
D. Result in the project being shut.
E. All the above.

15. The following should not dictate safety:

A. Cost.
B. The construction schedule.
C. Who may be injured.
D. A & C.
E. A & B

Homework

- Read: Chapter 5 of "Successful Construction Project Management" – pgs. 88-109
- Please complete all activities and or forms sent to your email as it pertains to the corresponding Module.

Activity Questions

Please answer the following questions based on Module 3.
Once complete transfer your answers to our digital form for our teacher to review. (Forms provided in email)

Questions:

1. Is it possible to avoid accidents in construction?

2. What are the impacts of poor safety?

3. What standard should be set for safety on your project?

4. How can we improve safety?

5. How can you make your project environmentally better?

Additional Reading Extra

Notes: Please see email for clickable links

Module 3 Safety

1. An important topic we did not cover is heatstroke. Are you aware that countless people die each year from heatstroke? Who is at risk? How can you avoid the dangers of heatstroke on your project.
   These articles discuss the dangers of heatstroke and this article discuss some methods to beat heatstroke

2. Another key topic we didn't discuss is silicosis.
   Do you know what silicosis is? Are you exposing workers on your project to silicosis? Did you know that silica dust exposure could be nearly as harmful as asbestos?
   Here's another article on the dangers of silicosis.