

Introduction to Construction Management

1. Give short answers to the following questions:

A. What makes the construction industry different from other industries?

The Construction Industry differs from many other industries in a number of ways. Every single project is completely unique, no two projects in the construction industry are ever the same. This is due to the ever changing ground conditions, unpredictable weather and Geographical obstacles that can arise with different locations around the world.

With a constantly evolving industry, new technologies, new techniques (and even old techniques which have been modified for efficiency or safety) meaning that adaptations in procedures are forever being made to meet the with quality demands and the rigid time constraints involved with the construction industry.

The Manufacturing industry for an example of differences, has standardization which makes everything easier to control and manage.

B. The accident rate in the construction industry is four times higher than that in any other industry. Why?

The typical Construction Project by nature has numerous dangers and unpredictable risks, this is due to the moving of machinery/equipment, supported structures, and even the sheer number of labourers/bodies that have to be managed and controlled - Some Construction Projects can have thousands of workers on site at any single time.

Strict and clear procedures need to be in place to ensure the safety for everyone, on and off site, however due to an ever rapid evolution in technologies and materials.

Efficiency for time and money means that constant research into the most effective safety practices and methods specific to that site/project.

Losses from construction accidents due to incorrect/outdated safety procedures can actually eat up all of the profits that were set to be made.

C. Outline the main duties and responsibilities of the construction supervisor.

The main duty of the construction supervisor is to motivate and coordinate activities of other workers to get the job done on time, without mistakes, and to the right quality whilst still staying

within budget. Construction Supervisors are the First-Line of management, which means they take instructions and report to the Mid-Level Management team.

The Construction Supervisor is also in charge of disciplinary actions, making sure everyone is working together safely and without conflict between workers and also the general public.

Development and training within the workforce is another of the Construction Supervisor's duties any time a new challenge arises. On site amenities, checks on tools and equipment to be issued to labourers, drinking water, sufficient parking and making arrangements for cleaning crews are also all responsibilities of the Construction Supervisor.

2. Discuss some important features of the construction industry.

The Construction industry is one of the oldest industries, spanning back thousands of years creating different types of infrastructures small and gigantic, from small residential projects, to enormous Sports stadiums and Skyscrapers.

In an ever evolving industry, due to new methods/techniques, rapid technology improvement and new/different materials. Just these few example help to show the challenges face in this industry compared to others. The Dangers and risks are high - but are always changing.

The Construction Industry as i mentioned previously never has an identical project, no matter what it is, there are too many variable factors which involved from Project to Project - for example; Weather changes/extreme weather, Ground conditions and even the location of the project.

Before a Project begins, agencies and Contractors will bid competitively to win the project. They will then divide the work out between their own contractors and labourers, this means that thousands of companies and labourers can all be collaborating on the same project at the same time.

The Construction industry is very complex, comprising of hundreds and thousands of individual tasks to be completed by both labourers, machinery, logistical teams, HR and many, many more. The Construction industry yet requires moving resources such as labourers, equipment, machinery and resources from one place to the other to create products under continuously changing and hazardous working conditions.

With projects moving from one location to another, the agencies involved must ensure that they have well trained and hard working, confident labourers to make the right decisions and tackle any challenges that arrive correctly and safely. The involved Agencies HQ will probably not be onsite and may not even be in the same country as the current project - so trust in their workers is very important

Productivity is a major issue in the Construction industry, Compared to other industries.

Productivity has never been high for Construction, despite the large number of people employed

in this industry. There are three main factors attributed to the Low productivity of the Construction industry, which are:

- ❖ Supply
 - The Supply of resources is impaired by the immobile nature of projects and the harsh conditions during the construction process.
- ❖ Demand
 - The demand for construction products tend to be seasonal or cyclic, making it a highly unpredictable market
- ❖ Insufficiently trained personnel
 - A lack of adequately-trained personnel is the single most important factor for low productivity records. Availability of well-trained personnel to carry out important decisions in executing activities becomes very important to produce a high quality output and to meet the product demands.

3. How has the growth in technology affected the construction industry?

In a constantly evolving industry like Construction; new technologies, new techniques (and even old techniques which have been modified for efficiency or safety) mean constant that adaptations in procedures are forever being made to meet the with quality demands and the rigid time constraints involved with the construction industry.

New technologies, Techniques and Materials all bring with them new challenges. Labourers and personnel need to be informed of the safety implications involved and then promptly trained accordingly.

With new and advancing technologies, Construction Projects are continuously able to complete the project *Faster, Safer and in the long run - Cheaper*. This means projects are completed more quickly and efficiently and in most cases more safely, as personnel are using better equipment and machinery.

Overall, New advancements in the Construction industry inevitably leads to much better Profits to everyone involved. There will be less construction accidents/injuries to pay out, wasted materials can be avoided, time restrictions can be met or even reduced with better technological advancements and efficient techniques/procedures.

New Technology Software plays a big role in the construction industry, whether it's dedicated Construction Software allowing key members of the project to stay up to date with progress,

plan and report on the next steps or even just as a communication platform for the agency/contractors direct to the project site. CAD(Computer Aided Design) Software is now used for working on the Project's initial plans and designs. There are now even Estimation Calculators/Formulas for working out Resources/Man Power/Man Hours required. With Thousands of personnel involved in the bigger projects, HR/Payroll Technologies have simplified the task of making sure everyone is paid on time for the work they have completed.

Finally, there can be negative side if Technology advances too quickly and too often. Training is not cheap and can in some cases take a long time to complete, but it is essential. If people are aren't trained correctly or at all, accidents WILL happen and somebody WILL get hurt. Accidents like this can wipe out the projects entire profits and possibly even cause a death or serious injuries to personnel and the General Public.