

Lecture #1

Station 1 - Significance of the Construction Industry -

- The construction industry is very important as it forms a part of everyone's daily life.
- The construction industry generates 12.4% of global GDP and was valued at \$9.5 Trillion in 2014. The construction industry also employs a significant proportion of the global workforce with 200 million employed which is 10% of the global workforce. Construction by 2030 is set to grow to a value of \$17.5 Trillion and generate 14.7% of global GDP.
- Construction also allows for other industries to flourish through a variety of ways such as the development of crucial infrastructure such roads & ports.
- The future of the construction industry is centered in the immense growth of Asian nations and other developing markets. Some of the fastest growing construction markets include - China, India, USA, Mexico, Canada, UK, Nigeria and Indonesia.
- The largest construction managements include - India, China, Japan, USA, Indonesia & the UK.
- Key Trends in regions going towards 2030-
 - **Europe** - UK is growing substantially due to ageing infrastructure along with foreign investment from China.
 - **North America**- USA is going through economic development and thus housing and infrastructure is developing. Canada- Stable growth supported by oil and gas.
 - **Latin America**- Mexico through investment and trade with the US is growing to become the biggest construction market in Latin America. Brazil is experiencing lower growth due to political instability within the country. Mining is booming in Colombia
 - **Africa**- Nigeria's construction industry is projected to grow by 160% moving towards 2030 fueled by population growth and GDP growth. Qatar's growth is fueled by the arrival of the 2022 FIFA World Cup however growth is set to drop afterwards.
 - **Asia**- India is the largest growing construction market within the continent due to the demand of residential property. Healthy growth is also occurring in Vietnam, Indonesia and Myanmar by the growth of manufacturing.

Station 2 - Australian Construction Industry -

- The construction industry in Australia over 2017 -2018 is valued at \$220 Billion and employs over 1 million Australians. The construction industry further supports 20% of the Australian economy. By 2023 10% of the workforce will work in construction.
- Civil projects are growing significantly in Australia over 2019-2020. Projects such as apartments and telecommunications however are shrinking.
- Australia has some of the lowest hours worked in the construction industry when compared to other countries.

Station 3 - Career in Construction -

- The construction industry has a higher average salary in comparison to other industries. A construction manager has an average salary of \$112,000 in comparison to \$67,000 in all other industries.
- Roles in the construction industry include - cadet, site engineer, HSE advisor, construction manager etc.

Station 4 - Management Principles -

- Management is the attainment of organisational goals in an effective and efficient manner through planning, organising, leading and controlling organizational resources.
- Efficiency is gaining the most amount of output for the least amount of resources. However the project has to be effective in fulfilling its purpose and the work has to be done thoroughly. Management involves finding the balance between the two.
- **Four Management Functions - Plan to use resources effectively, Organise resources to help achieve objectives, lead people and influence them to move effectively and control the activities. Planning, Organising, Leading & Controlling.**
- **Managers have a variety of roles including interpersonal roles (people), informational roles (information) and decisional roles (actions).**
- Interpersonal roles include being a figurehead, leader and a liaison.
- Informational roles- Monitor, Disseminator & Spokesperson
- Decisional Roles - Entrepreneur, disturbance handler, resource allocator and negotiator.
- 4 resources on construction sites - manpower, money, machinery & materials.

- Manager Identity - generalist, coordinates different tasks, gets things done through others, a network builder and works in a highly independent manner.
- Common Challenges of managers - increased workload, supervising former peers, responsibility for other people, being caught in the middle and dealing with the unexpected.
- Leaders require particular qualities however managers require the ability to lead. Some qualities include being visionary, communicator, good interpersonal skills etc.

Station 5 - Managerial Ethics -

- Ethics refers to the code of moral principles and values that govern behaviour of a person or a group with respect to what is right or wrong.
- A variety of approaches exist to achieving moral management and leadership -
 - Utilitarian Approach - moral behaviour brings the greatest good to the most number of people.
 - Individualism Approach - Moral acts promote the individual's best long-term interests, this means it brings the best result.
 - Moral Rights Approach - Moral acts protect rights of individuals the best such the Right to Free Speech.
 - Justice Approach - Moral decisions must be made based on the standards of equity, fairness and impartialness.
- Dilemmas exist to management such as the ethical dilemma. I.e demolish homes for new hospitals and thus there is an ethical dilemma between the rights of both parties along with the communal benefit of the hospital.

Station 6 - Construction Management-

- Construction Project Management refers to the overall planning, and control of a project from inception to completion. This will involve ensuring that the project meets the client's standards by being completed with quality, on time, safely within time and financial constraints. The project must also meet on government safety standards.
- The key stakeholders within a construction project include -
 - Owners - determine schedule, outline the needs and the requirements of the end user, determine the scope, creating the overall budget and provide funding.
 - Designers - Architect, engineer, landscape architect, interior designer.
 - Contractor- Interpret plans and specification, implement construction methods & are responsible for all construction activities
- Other secondary stakeholders include -
 - Subcontractors, suppliers and vendors.

- Inspectors, utility companies, insurance and labour unions
- Government, financial institutions, trade associations, educational institutions.

- Construction Life Cycle -
 - Inception → Feasibility → Strategy → Design and Tendering → Construction → Engineering Commission → Completion and handover → Client occupation and commission.

Station 7 - Management Levels of Construction -

- Management Levels (Highest to Lowest)-
 - Organisational
 - Project
 - Operational
 - Task

Lecture #2

Station #1 - Project Management Book of Knowledge -

- Project - refers to a temporary endeavor undertaken to create a unique product, service, or result.
- A project is temporary and unique.
- Project Management Body of Knowledge covers various management topics -
 - 1.) **Integration Management** - project charter, project plan, execution, monitoring & controlling, change control, close project.
 - 2.) **Time Management** - define activities, sequence activities, estimate activity resources, estimate activity duration, develop schedule, control schedule.
 - 3.) **Procurement Management** - plan procurements, conduct procurements, administer procurements, close procurements.
 - 4.) **Human Resource Management** - Develop HR plan, acquire project team, develop project team, manage project team.
 - 5.) **Quality Management** - Plan quality, quality assurance, quality control.
 - 6.) **Risk Management** - plan risk management, identify risk, qualitative risk analysis, quantitative risk analysis, plan risk response, monitor and control risks.
 - 7.) **Cost Management** - estimate costs, determine budget, control cost.
 - 8.) **Scope Management** - collect requirements, define scope, create WBS, verify scope, control scope.
 - 9.) **Communications Management** - plan communications, manage communications, control communications.
 - 10.) **Stakeholder Management** - identify stakeholders, plan stakeholder management, manage stakeholder management, control stakeholder management.
- Understand the logic -
 - 1.) Project Starts - need to identify scope
 - 2.) Project has a lot of risks - risk management
 - 3.) Project needs contractors/designers - procurement
 - 4.) People are the ones who work- HR and stakeholders
 - 5.) People need information - communications
 - 6.) Achieving project objectives- time, cost, quality, safety and sustainability.
- As the construction project continues the level of influence on the project will change along with the cost related to making changes.