



# Safety and Quality in Engineering & Construction

**“Protect Your High Value Assets”**



# Presenter

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# What Are the Challenges Today?

- Major problems lie in the FIELD execution of the project. Severe delays in Civil Defence approval!
- A major disconnect between Design & Construction
- Down stream delays are often due to poor Construction, resulting in poor Commissioning, Operability/Reliability.
- A Facility with excellent specification has little or no value if the design is not properly translated into Construction and Start-up

# What is a Successful Project?

*"Built On Time, Within Budget, in a Safe Manner (i.e., No Accidents) with Great Design, Good Quality & Excellent Documentation"*

- If you were able to deliver on ALL of the above, then most people would say that it was a successful projects!

*"What about how well the facility performs Post Handover?"*

*" What about Safety, Operability, Availability, Reliability and Maintainability? "*

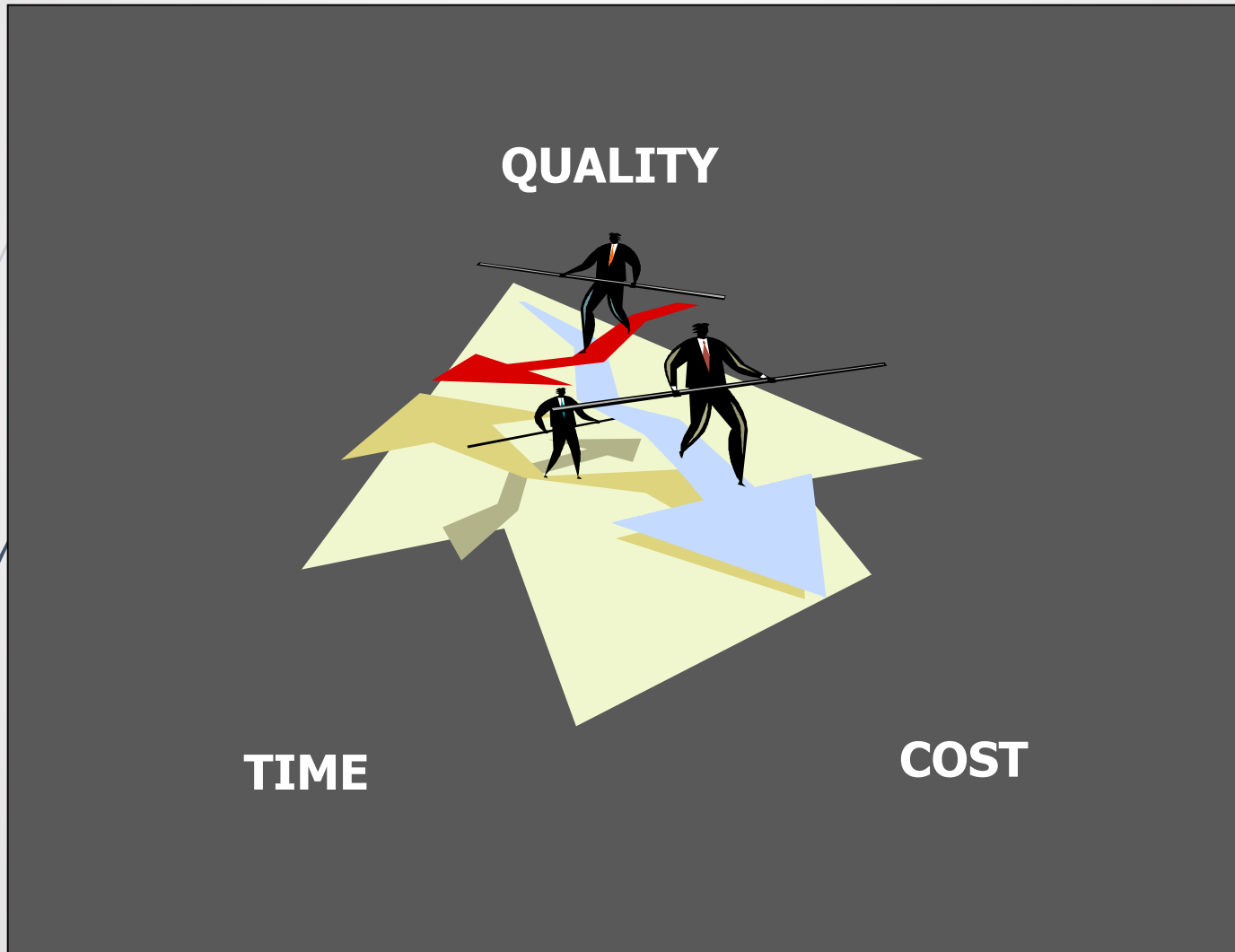
- A facility that breaks down after a month into production is of no use to anyone!

## Therefore a Successful Project is:

*"A successful project is where a facility reaches OPTIMAL OPERATION, in a safe manner, in the SHORTEST possible TIME-FRAME, generating CASH at the earliest possible opportunity"*

*"A successful project is where a facility achieves a HIGH AVAILABILITY & RELIABILITY during the first-cycle operation, maximising cash flow through the first-cycle operation"*

# RISK MANAGEMENT



## What Does a Contractor do?

- A Contractor does NOT generally BUILD anything/everything!
- A Contractor will usually take a design:
  - Break it down into manageable packages
  - Sub-contract the work into packages which will allow the contractor to reduce his risks and make a reasonable fee on the project.
  - A contractor will usually select and manage sub-contractors.

## What Does a Contractor do?

- A Constructor does NOT generally BUILD everything!

### *In a Nutshell:*

*“ A facility one builds is as good as the  
**SELECTION & MANAGEMENT**  
of the **SUB-CONTRACTORS ! ”***

- A contractor will usually select and manage sub-contractors.



# The Two Worlds

DESIGN/ENGINEERING

**QUALITY  
(QbD)**

**QUALITY  
& SAFETY  
=  
ZERO  
ACCIDENTS  
& DEFECTS**

**SAFETY  
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# Construction Safety / Quality Challenges

- The construction site TRANSITROY
  - Teams specifically formed for projects
- The construction industry has a high number of collapses, especially during a downturn!
- Lack of commitment towards Safety/Quality as it may take several years to “Pay offs”
- Implementation of Safety/Quality in construction requires the selection of the appropriate sub-contractors who are committed to Safety & Quality

# CQM Program to Mirror Safety Program

## Safety Program

Contractor Safety Qualified  
Safety Assessment  
Job Specific Safety Plan  
Safety Procedures  
Safety Training  
Safety Monitoring

## Quality Program

Contractor Quality Qualified  
Quality Assessment  
Job Specific Quality Plan  
Quality Procedures  
Quality Training  
Quality Monitoring

# QM Program to Mirror Safety Program

## Safety Program

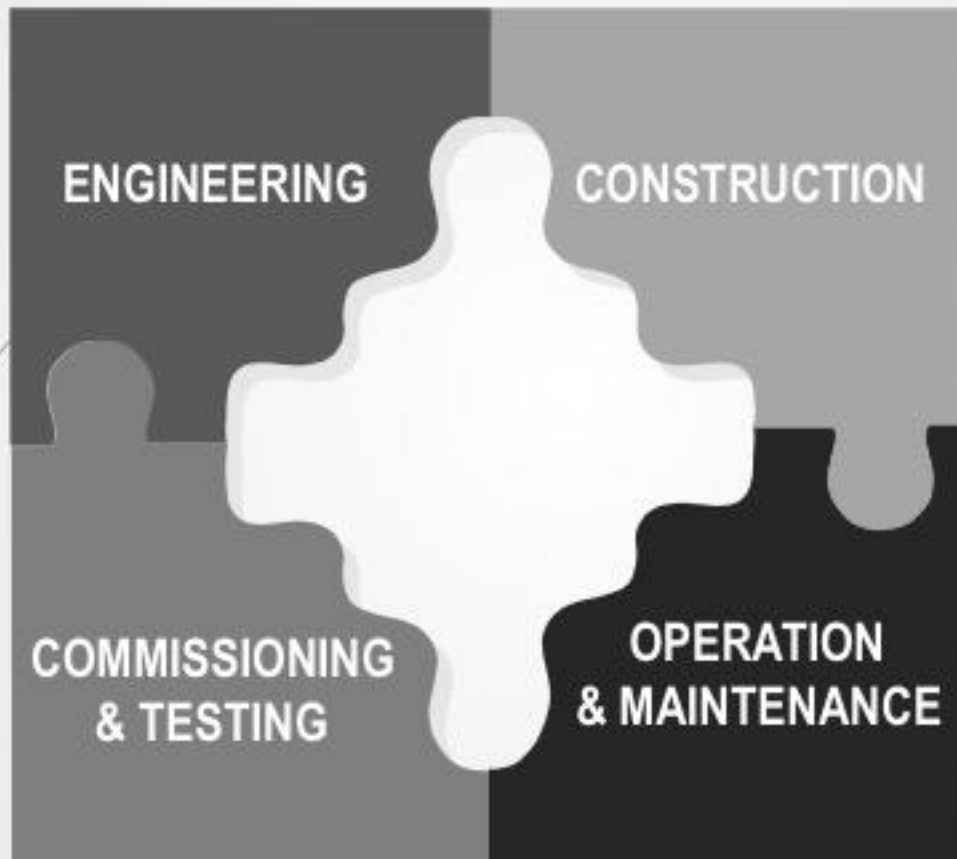
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Safety Assessment  
Job Specific Safety Plan  
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Safety Monitoring

## Quality Program

Contractor Quality Qualified  
Quality Assessment  
Job Specific Quality Plan  
Quality Procedures  
Quality Training  
Quality Monitoring

***The Two Worlds Aligned !***

# An Important Piece in the Puzzle?



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