



# **A & A Works to 29 Elevated MRT Stations (J145-C1261C) INTERNAL SEMINAR (1)**

22 August 2003

# General About Planning and Scheduling

# Planning: An Analogy



## When a driver is driving:

- He has the destination and the planned route to go
- He has a map with him or in his mind
- He has rear mirror, side mirror and control panel to help him to judge and maneuver
- He often timely reacts and adjusts the car according to the road condition



## When a contractor is constructing:

- He has the defined budget, period, quality and safety target
- He has the approved plan to guide him
- He has various instruments such as baseline, rolling programme, S-curve, cash flow to help him gauge the site progress
- He revises his plan and acts accordingly to the ever-changing project conditions

# Planning: Input and Output

## Input

- Input Project Information:
  - Contract documents
  - Key dates
  - Specifications
  - Method statement

**From Top to Bottom: summary to detail**

- Construction knowledge
- Past relevant experience
- Etc.

## Process



## Output

- Output result:
  - Plan
  - Schedule
  - Reports

**From Bottom to Top: detail to summary**

# Planning: Basic and Value-Added Function

- **Basic Usage**

- Activity list (scope of works)
- Scheduling
- Avoid resource conflict

- **Value-Added Function**

- Weightage and S-curve
- Cost load
- Resource load
- “What if” function for various query

# Planning and Scheduling

- **Plan: *About method***

- Scope of work
- Work breakdown structure (WBS) or Activity Code (under P3)
  - Project → Activity
  - Depend on the required degree of details
- Sequence of work
- Phases of work
- Zoning and resource balance

- **Schedule: *About timing***

- Determine an activity duration
- Standard production rate
- Past similar job
- Volume of work
- Environment constraint
- Relationship of activities: predecessor, successor

# Planning: Working Cycle

- Define a plan
- Draft a plan
- Finalise a plan - baseline
- Presentation the plan to the project team
- Monitor and update the plan
- Report progress
- Revise the plan to reflect latest condition
- Action

# Scheduling: Type of Presentation

- Bar chart
- Linked bar chart
- Network diagramme
- Activity movement chart
- S-curve
  - Cumulative cost Vs. time
  - Cumulative manhour Vs. time
  - Cumulative weightage Vs. time
- Table and graphic reports

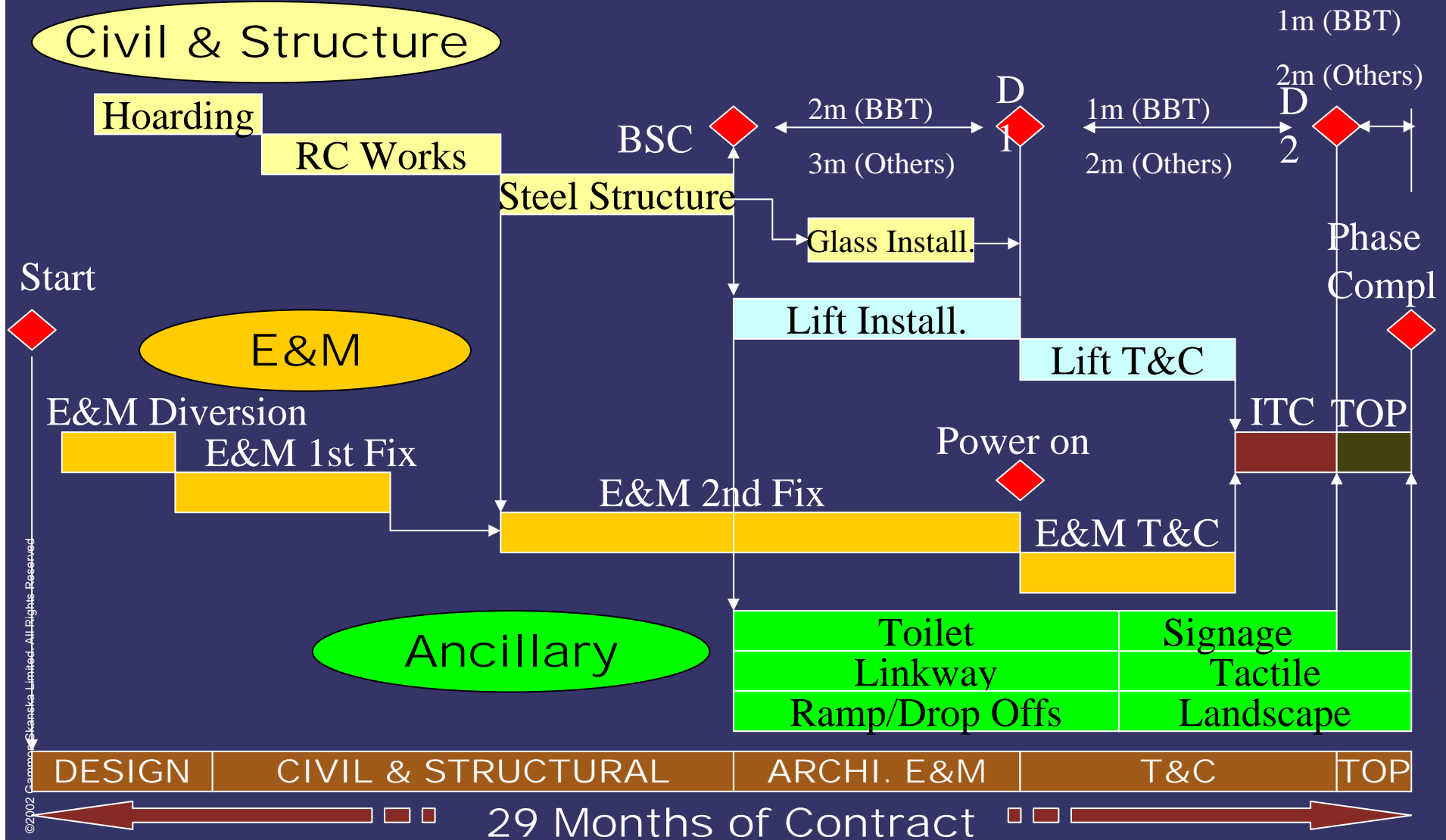


# Programmes for MRT Upgrading Project

# MRT Upgrading Project: Types of programme

- Baseline programme: for S-curve, progress payment assessment
- Working programme: for sub-con detailed monitoring programme
- CIP programme: interface among structural, E&M and SWC
- 4-weeks rolling programme: weekly monitoring programme

# MRT Upgrading Project: Overall Plan

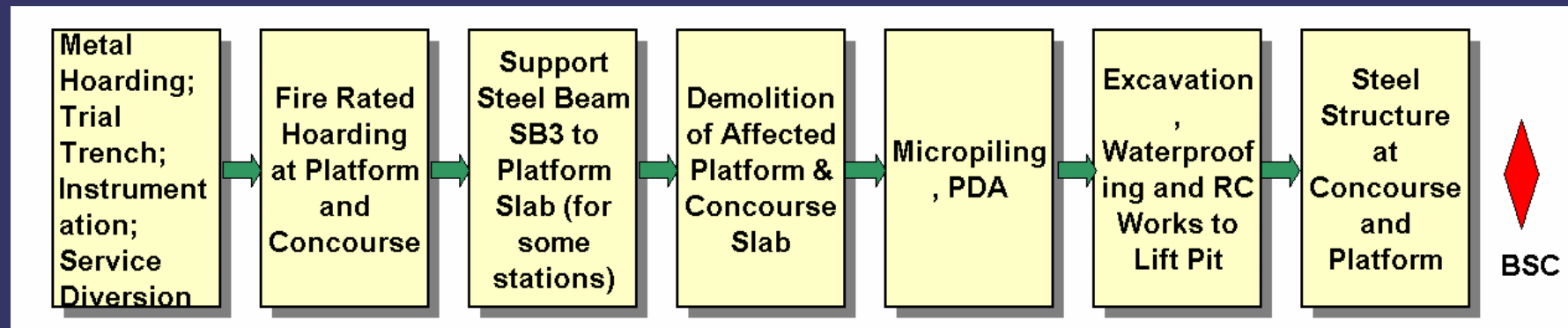


# MRT Upgrading Project: Typical Process

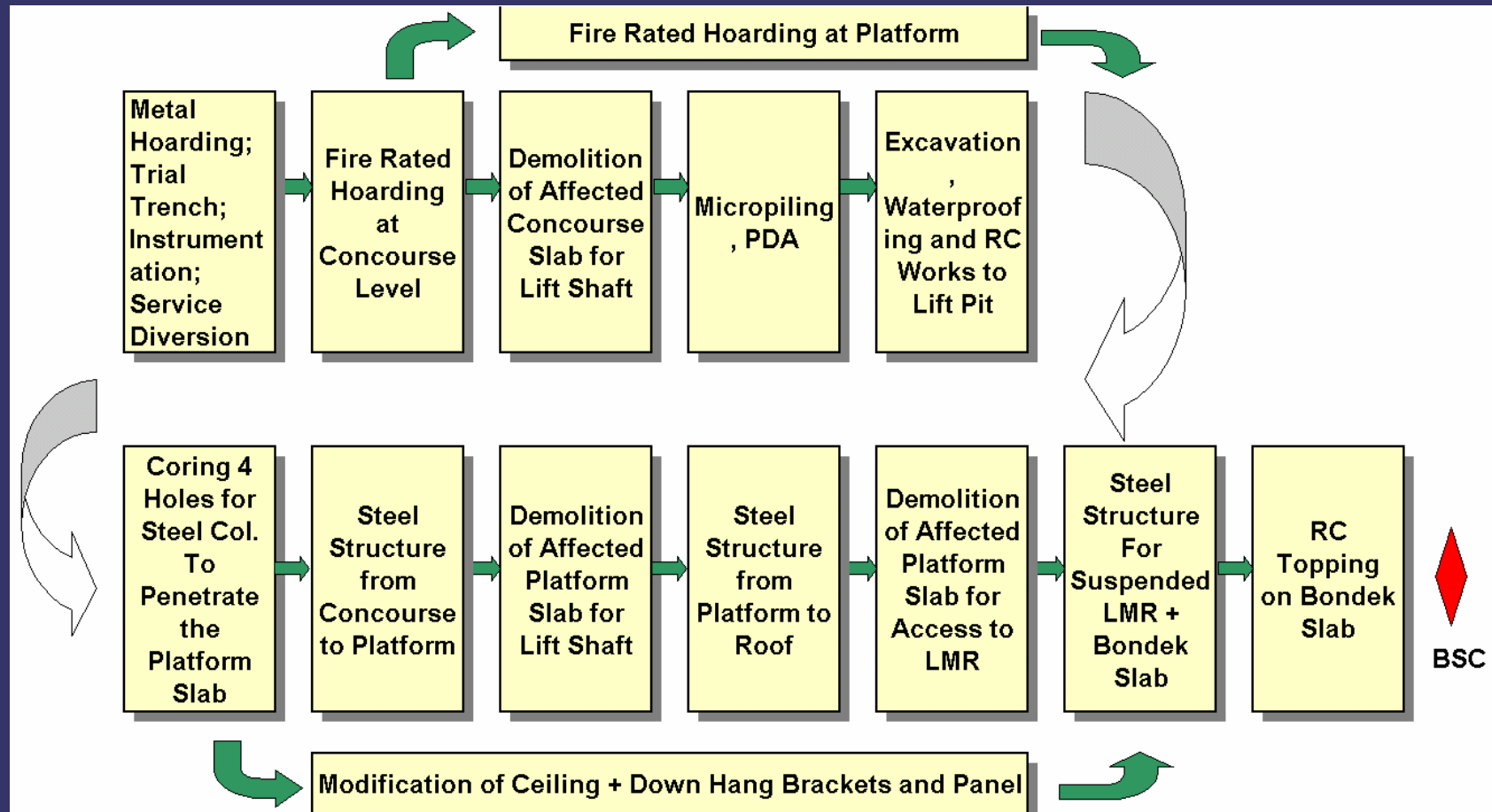


	Machine Roomless Type	Suspended Type	On Floor Type
Steel / Glass	BNL, LKS, CNG, RDH, JUR, TNM, SIM, KTB, YIS, SBW, ADM, MAR, KRJ, YWT, CCK, BGB, BDK	EUN, KAL, ALJ, KEM, BDK, PSR	CLE, CMW, QUE, AMK, WDL
RC Structure	BDK, SIM, YCC	NA	JUR, CLE, CMW, QUE, BDK, TNM, BBT

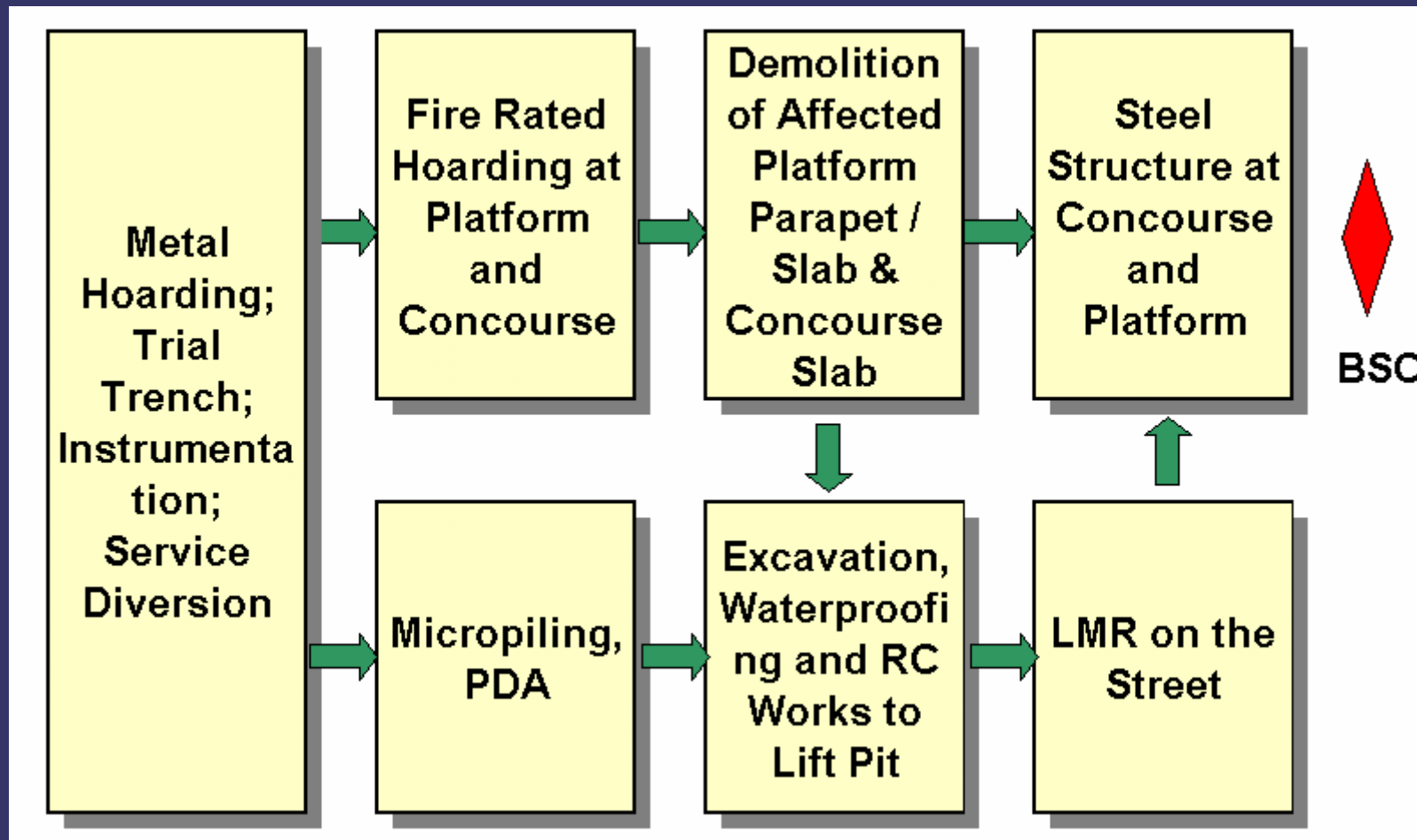
# MRT Upgrading Project: Machine Roomless Type



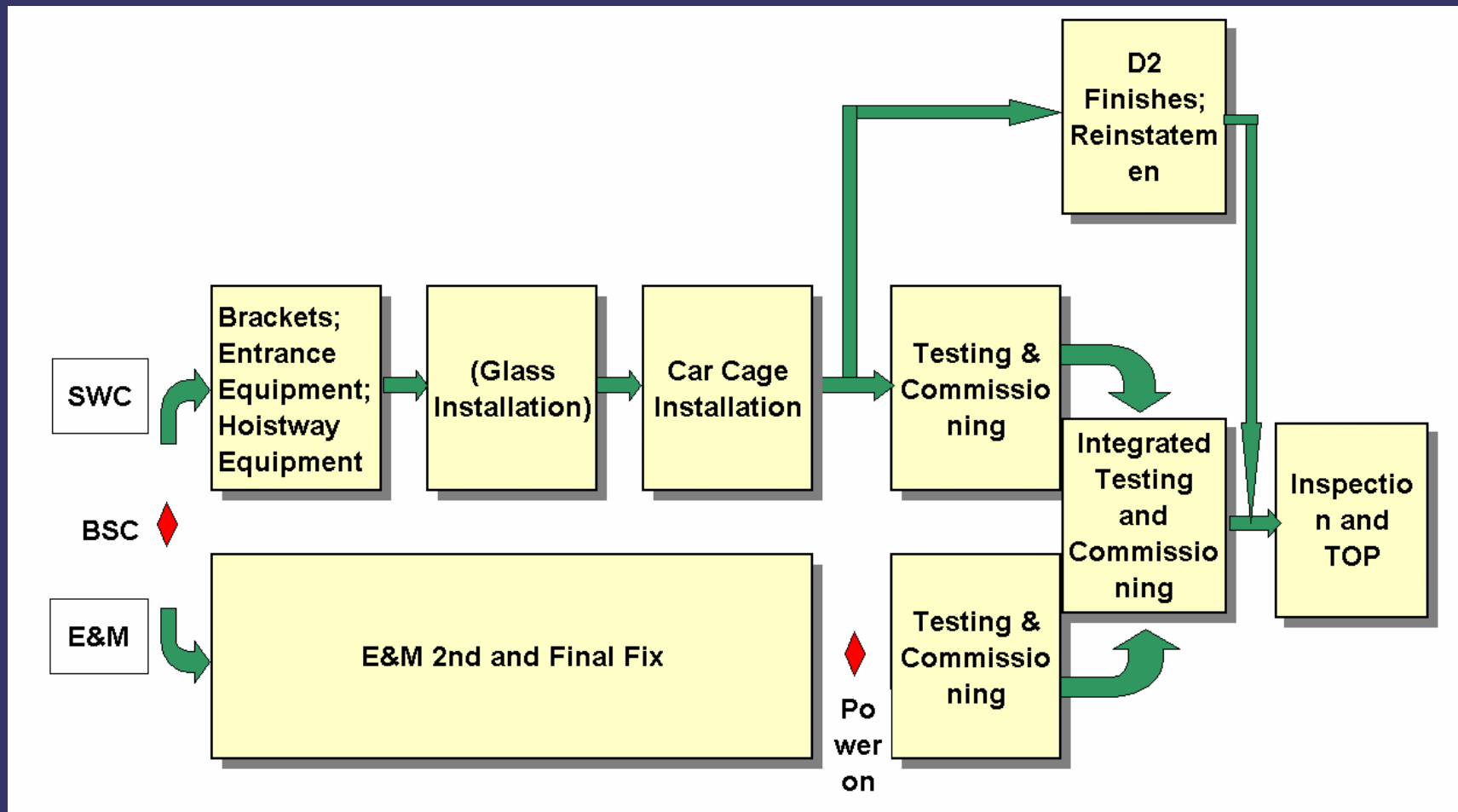
# MRT Upgrading Project: Suspended LMR Type



# MRT Upgrading Project: On Floor LMR Type (with Street Level)



# MRT Upgrading Project: CIP Programme





# Project Description and P3

# How to Describe a Project: An Analogy

- To describe a person
  - Race
  - Sex
  - Age
  - Height
  - Weight
  - Occupation
  - Etc.
- To describe a project (eg. MRT upgrading project)
  - Stage (stage 1, 2, 3, 4)
  - Area (station)
  - Phase (design, construction, installation, site testing and commissioning, integrated testing and commissioning)
  - Category (CAT 1, 2, 3)
  - Location (internal, external, toilet, linkway and ramp)
  - System (Service diversion, hoarding works, soil investigation, demolition, piling works, earthworks, RC works, structure steel works, etc)

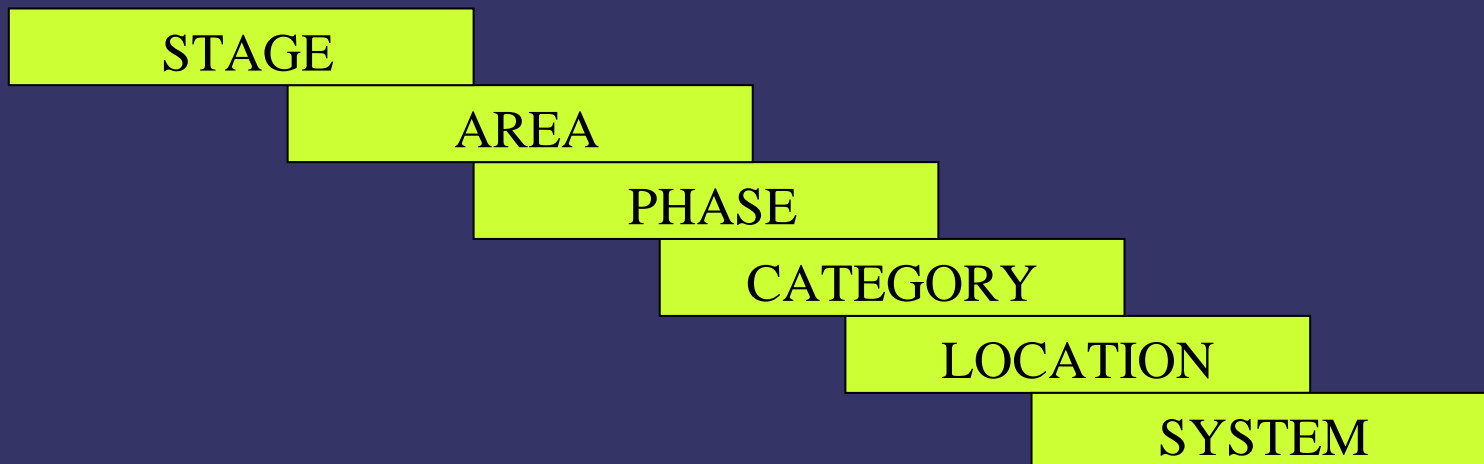
# How to Describe a Project: Data Query

- I want to find (in human language):
  - A person who is female, age between 20 to 30, Chinese, 170cm height
- I want to find activities which satisfy (in P3 language):
  - Between 31Oct02 to 01Aug03, not including E&M works, in proggress



# How to Describe A Project: Example from MRT Upgrading Project Baseline

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float	2003				
								DEC	JAN	FEB	MAR	APR
<b>STAGE 1</b>												
<b>STATION 29 BUKIT BATOK</b>												
<b>Construction &amp; Installation</b>												
<b>Internal Lift</b>												
<b>Lift No. 2</b>												
<b>Pre-condition Survey</b>												
AACNH0310	Conduct pre-condition survey	6	31DEC02	05JAN03	05FEB03	10FEB03	36					
AACNH0320	Submit pre-condition survey report	18	06JAN03	23JAN03	11FEB03	28FEB03	36					
<b>Instrumentation and Monitoring</b>												



# Progress Photo Gallery Extracted from MRT Upgrading Project

# Progress Photo Gallery 1

- Demolition



# Progress Photo Gallery 2

- Steel Structure Installation



# Progress Photo Gallery 3

- Caisson for BDK EXL1





# Progress Photo Gallery 4

- Micropiling and PDA



Thank You!