

# CB 510

# Project Management

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# What we learned so far

- Types of projects
- Stakeholders in a project
- Phases of project
- Why do we need project management

# ITS GAME TIME

Puzzle

# What is planning?

Planning is the process of defining “what” is going to be carried out, “how”, “where” and by “whom”.

# Why do we plan?

- *“He, who every morning plans the transactions of the day, and follows that plan, carries a thread that will guide him through the most busy life”, Victor Hugo*

# A plan should be S.M.A.R.T

- Specific
- Measurable
- Achievable
- Realistic
- Timely

# How to develop a plan?

- Statement of Method
- Work Breakdown Structure
- Dependencies
- Relationship

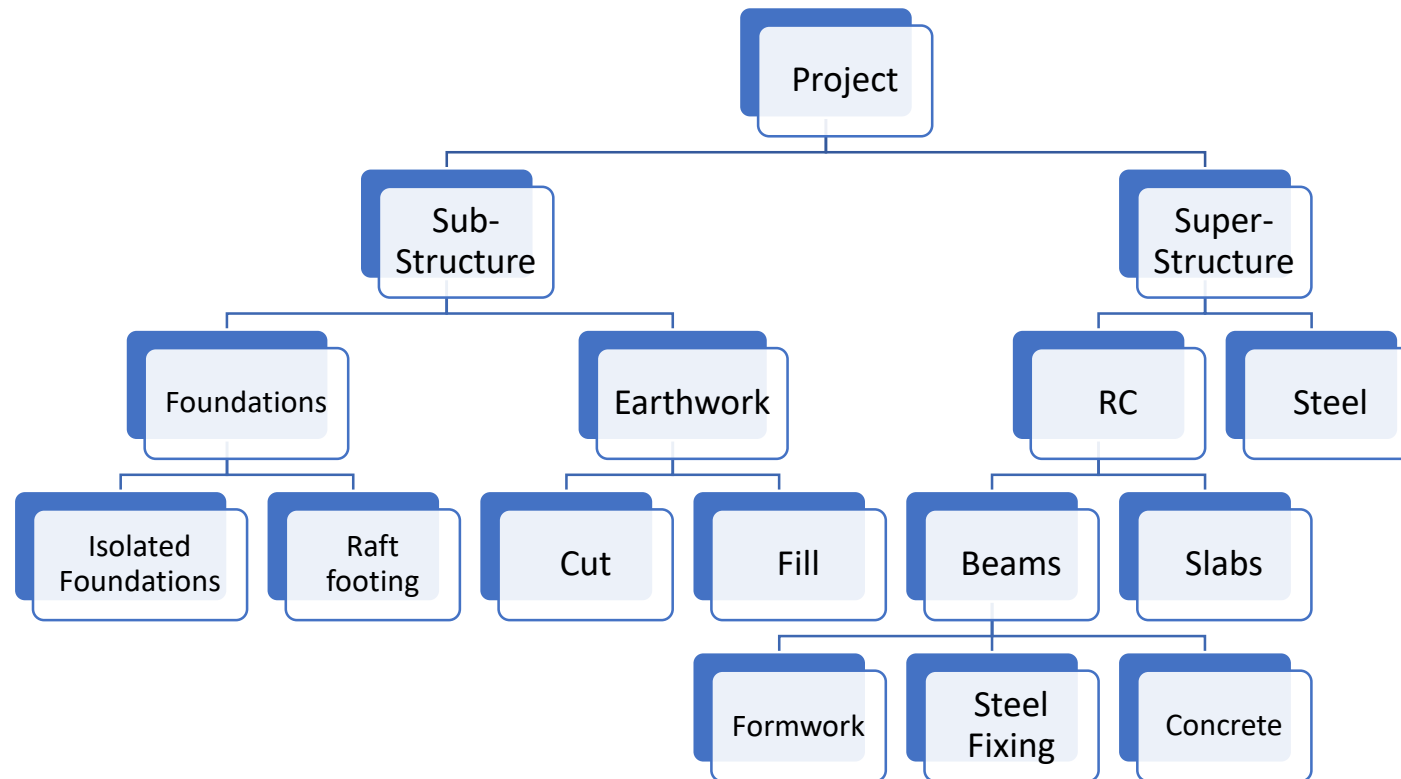
# Statement of Method

- How would you carry out a project?
- Types of equipment?
- Role of labor?

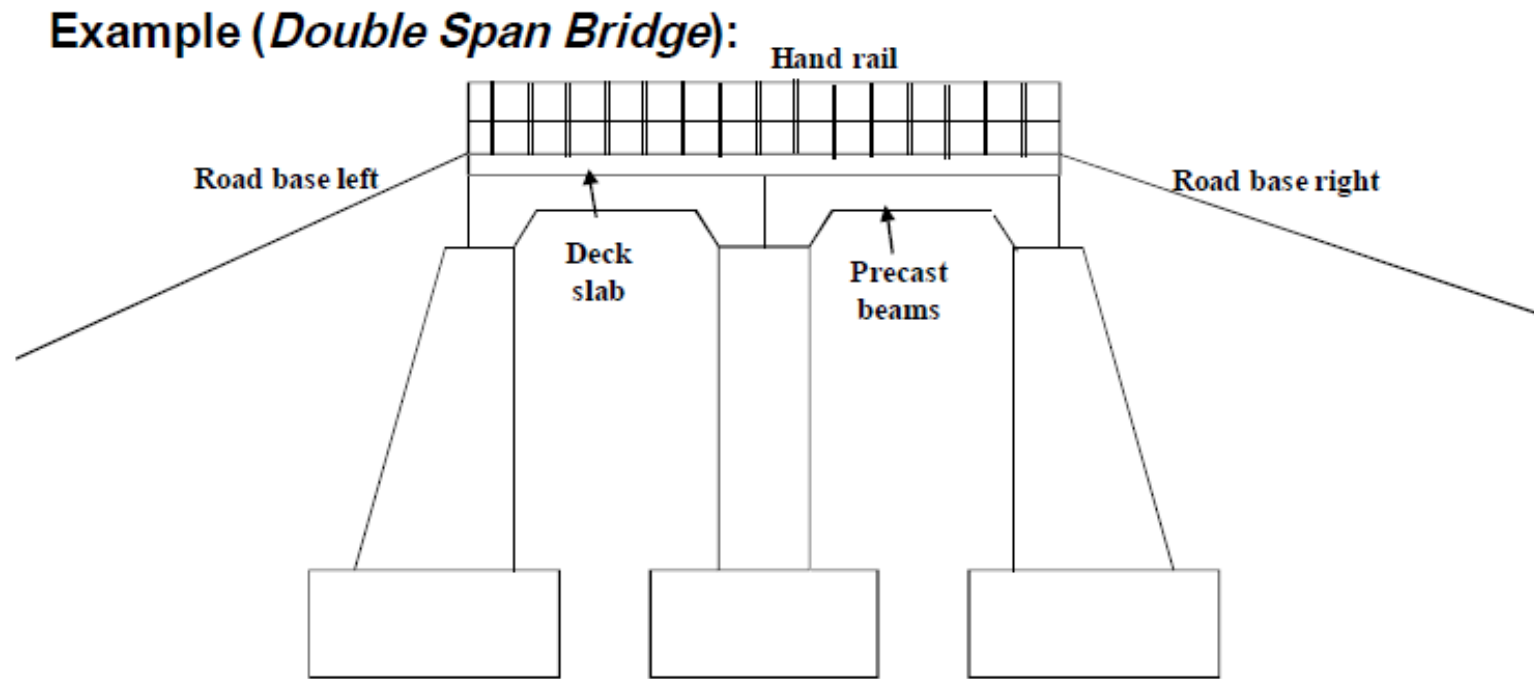


# Work Breakdown Structure (WBS)

- WBS is the hierarchical structure of the project, where we divide it into phases, categories, sections, and activities.



# Example



# Activities

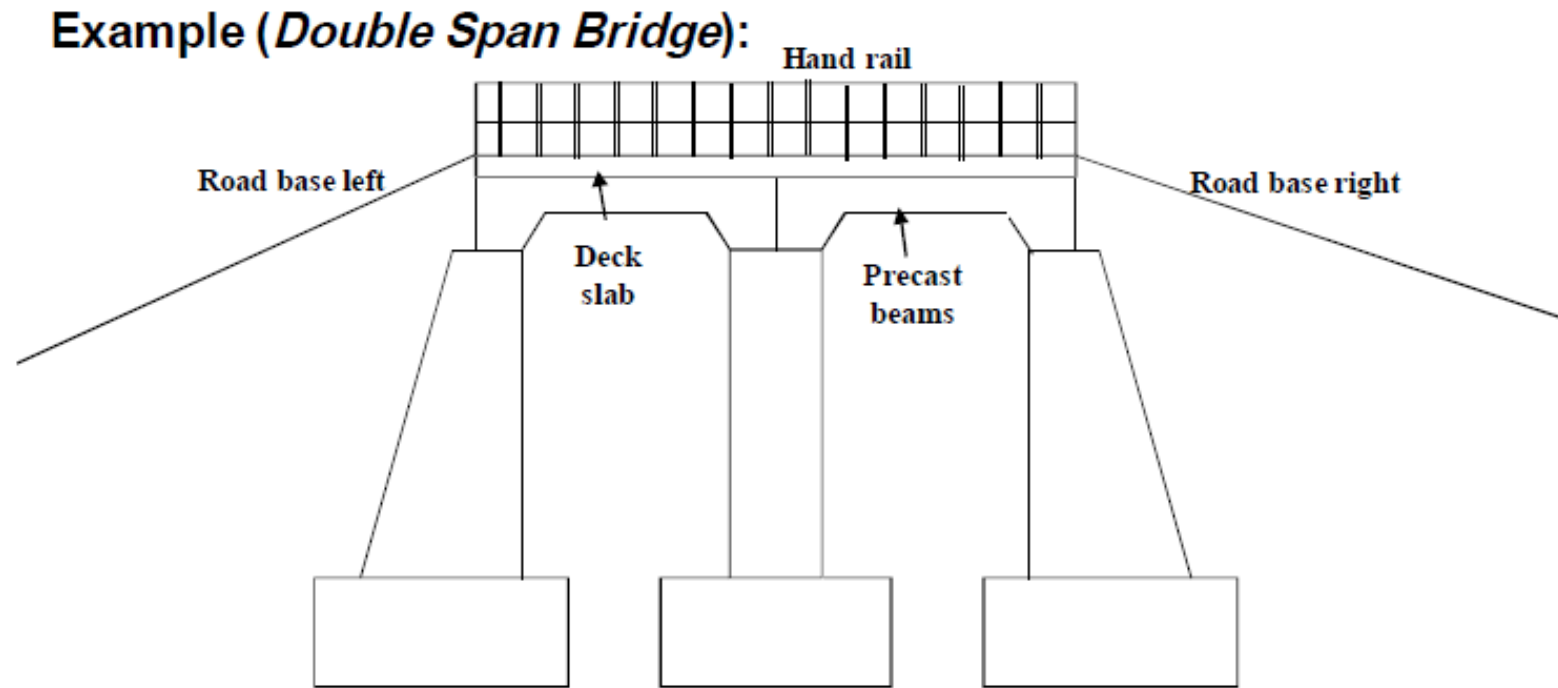
- Project is divided into packages, packages are divided into activities
- Activities consume time and resources
- Level of detail depends on: planning stage, project size and complexity, etc.

# Activities (cont'd)

- The predecessor and successor of activities need to be defined to plan them.
- Predecessors of an activity are the activities that logically and immediately precede it
- Successors of an activity are the activities that logically and immediately follow it.

# Dependencies and Relationships of Activities

# Last week example



<b>Code</b>	<b>Description</b>	<b>Predecessor</b>	<b>Code</b>	<b>Description</b>	<b>Predecessor</b>
10	Mobilization and site setup		100	Construct center pier	
14	Procure RFT		110	Erect left precast beam	
16	Procure Precast Beams		120	Erect right precast beam	
20	Excavate left abutment		130	Fill left embankment	
30	Excavate right abutment		140	Fill right embankment	
40	Excavate Center pier		150	Construct deck slab	
50	Foundation left abutment		160	Left road base	
60	Foundation right abutment		170	Right road base	
70	Foundation center pier		180	Road surfacing	
80	Construct right abutment		190	Bridge railing	
90	Construct left abutment		200	Clear site	

<b>Code</b>	<b>Description</b>	<b>Predecessor</b>	<b>Code</b>	<b>Description</b>	<b>Predecessor</b>
10	Mobilization and site setup	NA	100	Construct center pier	70
14	Procure Reinforcement	NA	110	Erect north precast beam	16,80,90,100
16	Procure Precast Beams	NA	120	Erect south precast beam	16,80,90,100
20	Excavate left abutment	10	130	Fill left embankment	80
30	Excavate right abutment	10	140	Fill right embankment	90
40	Excavate Center pier	10	150	Construct deck slab	110,120
50	Foundation left abutment	14,20	160	Left road base	130
60	Foundation right abutment	14,30	170	Right road base	140
70	Foundation center pier	14,40	180	Road surfacing	150,160,170
80	Construct left abutment	50	190	Bridge railing	150
90	Construct right abutment	60	200	Clear site	180, 190



# Relationships

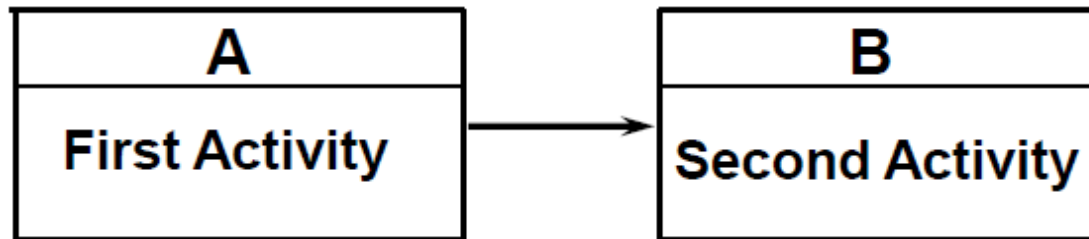
- Four type of activities relationships
  - Finish-Start
  - Start-Start
  - Finish-Finish
  - Start-Finish

# Relationships (Cont'd)

- Finish-Start

## ***Finish-Start***

*When A finishes, then B can start*  
*Default Relationship*

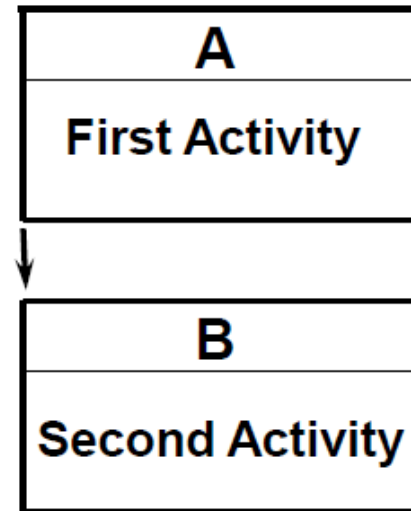


# Relationships (Cont'd)

- Start-Start

## ***Start-Start***

*When A starts, then B can start*

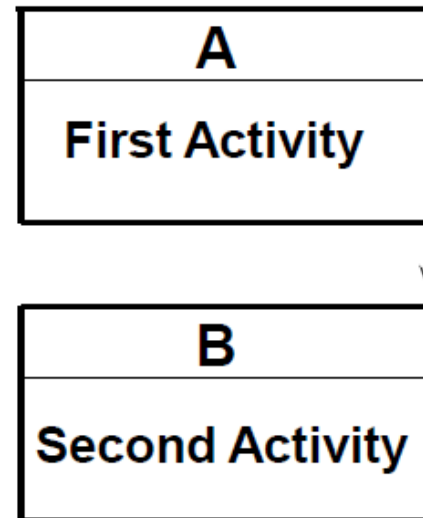


# Relationships (Cont'd)

- Finish-Finish

## ***Finish-Finish***

*When A finishes, then B can finish*

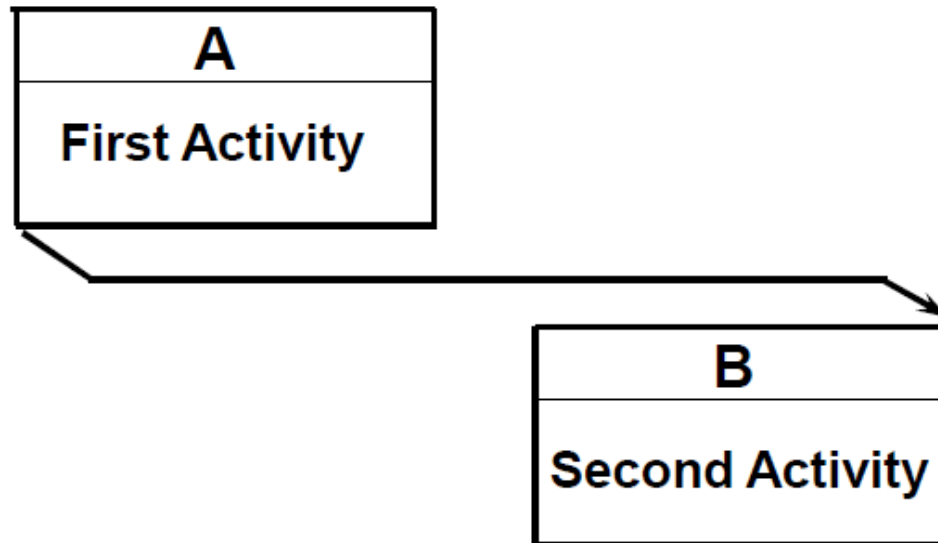


# Relationships (Cont'd)

- Start-Finish

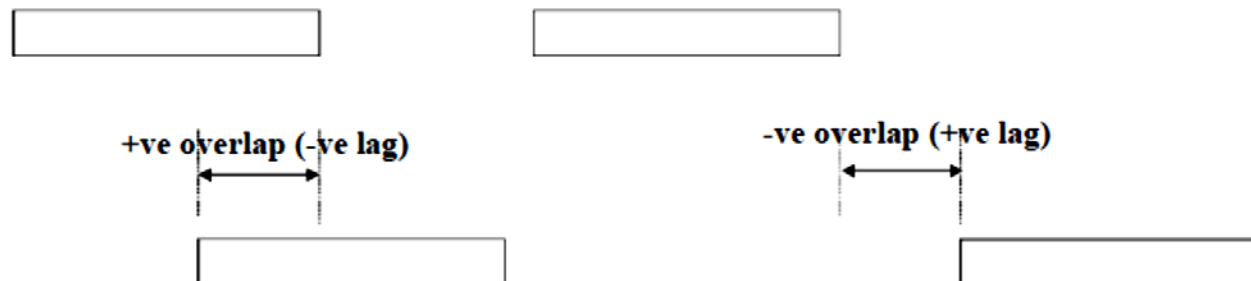
## ***Start-Finish***

*When A starts, then B can finish*



# Overlapping and Lag

- Activities can overlap to decrease the project duration or for constructability
- Activities can create a lag between itself and its successor due to constructability or site constraints



<b>Code</b>	<b>Description</b>	<b>Predecessor</b>	<b>Code</b>	<b>Description</b>	<b>Predecessor</b>
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