

Issues with Validation of Analyses of Claims of Delay

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Issues with Validation of Analyses of Claims of Delay

The rules of federal and most state courts now require an expert to explain the scientific background that supports her conclusions. It is no longer permitted to simply say “in the opinion of the expert” nor “the computer analysis states” as acceptable and convincing evidence of the facts.

The basis of an analysis of the CPM for purposes of a claim of delay will be predicated upon the CPM logic and calculations comprising the as-planned schedule, and records of actual events having occurred on the subject project.

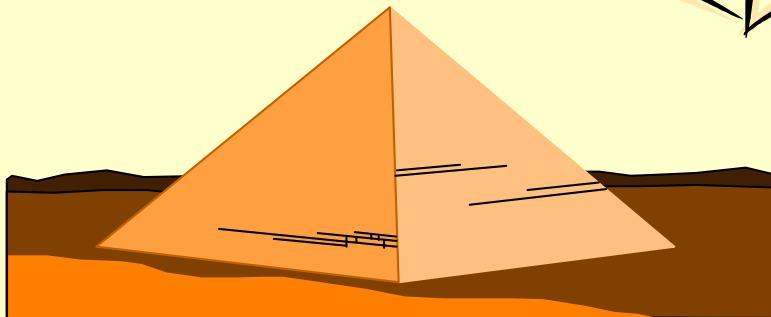
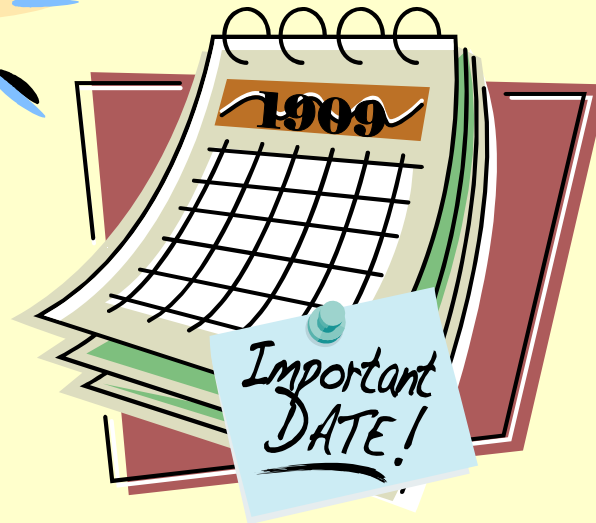
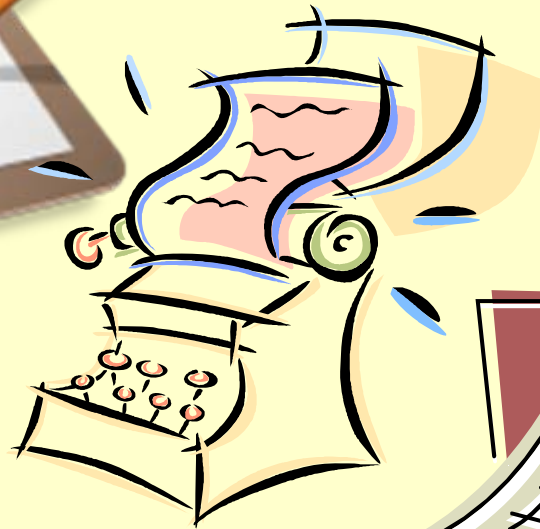
Three factors that (in the judgment of a court) may separate mere opinion from fact include:

- a logic integrity analysis
- a schedule quality analysis, and
- a forensics analysis comparing as-built to as-planned.

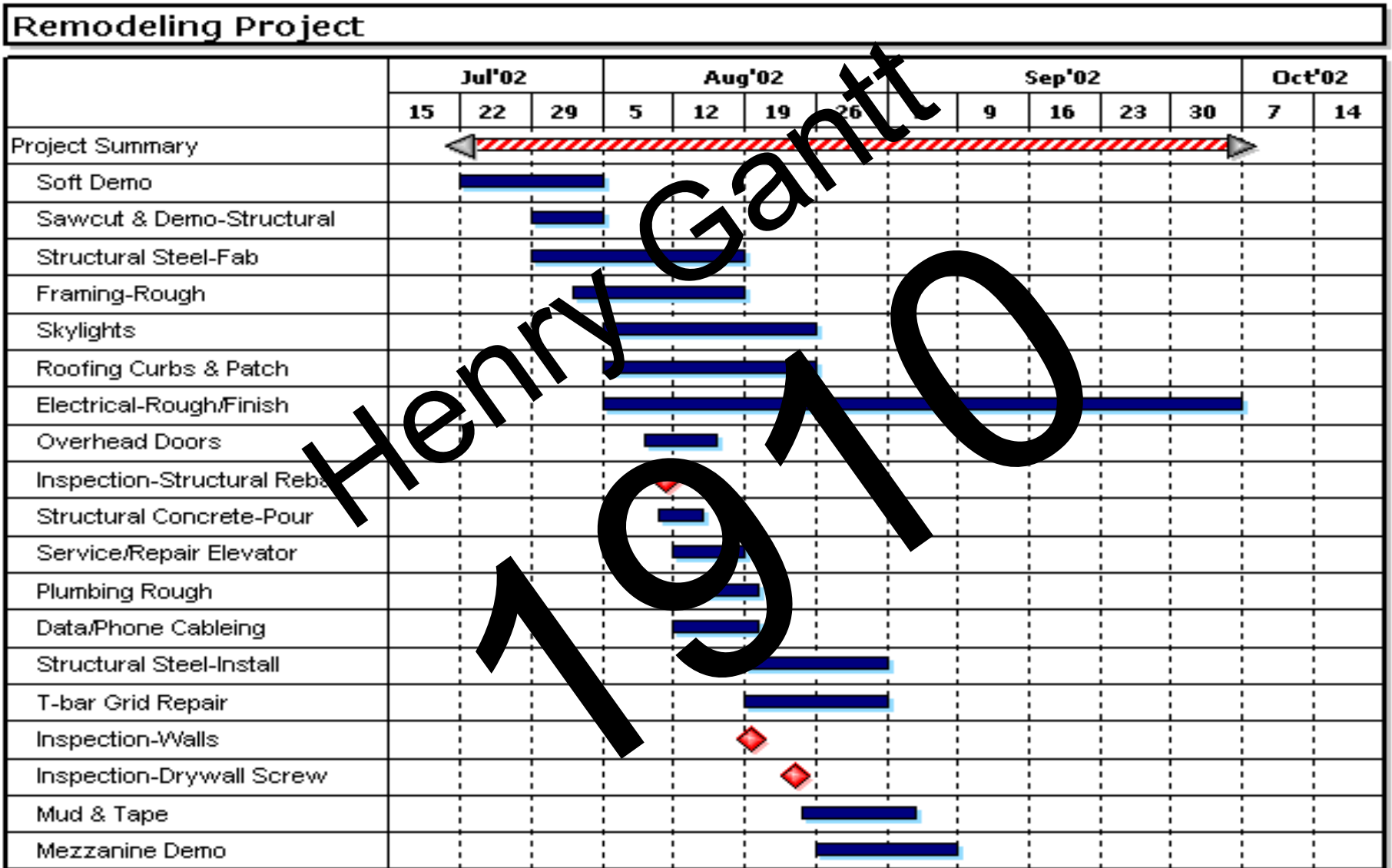
This presentation will focus upon how the court may be better apprised of these concerns based upon analytics provided by Acumen Fuse.



Before the Gantt Chart

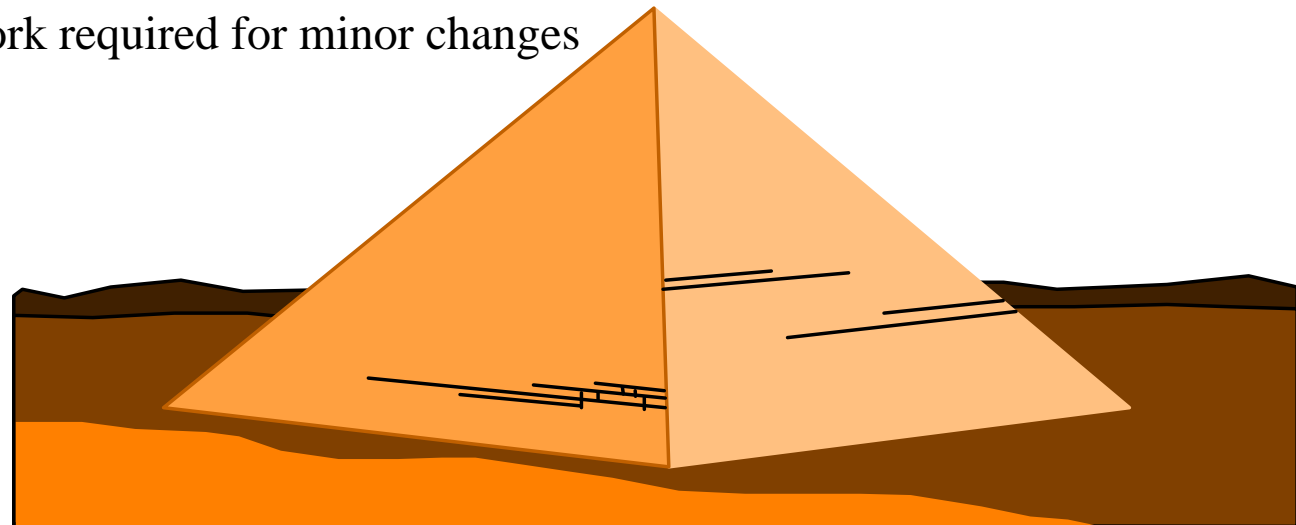
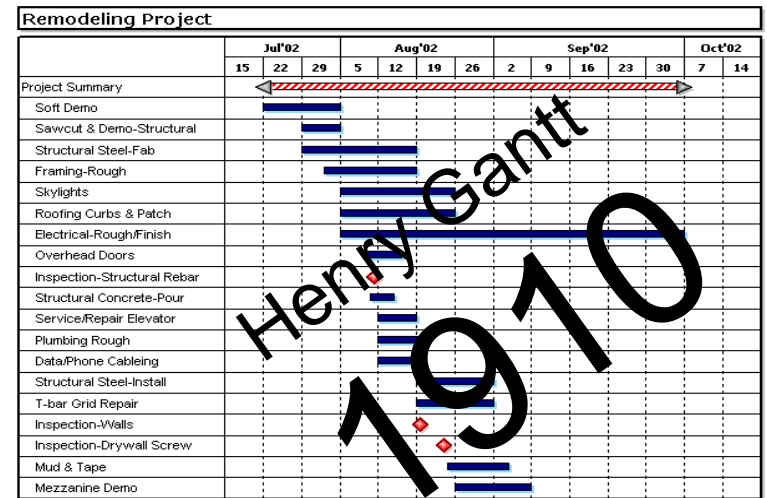


HISTORY OF PLANNING & SCHEDULING

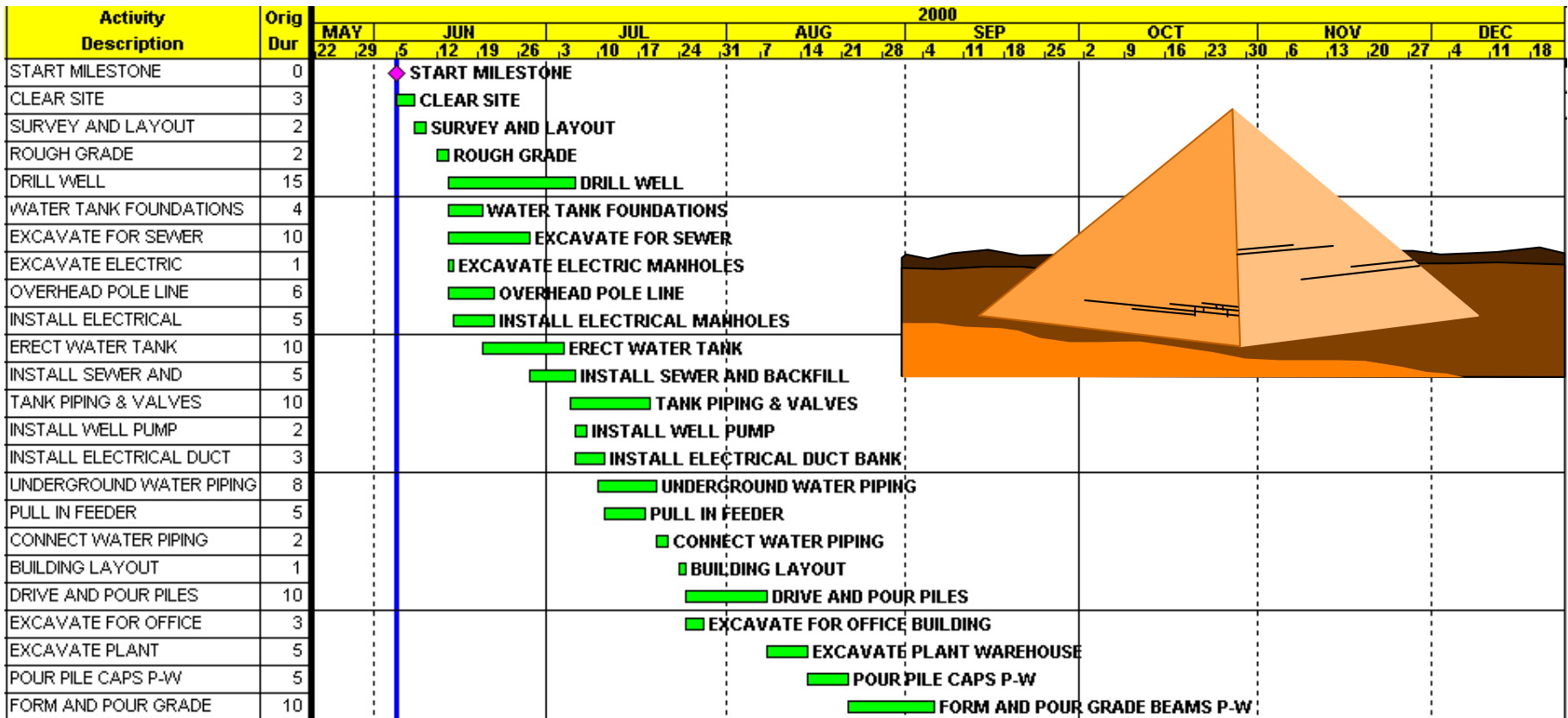


HISTORY OF PLANNING & SCHEDULING

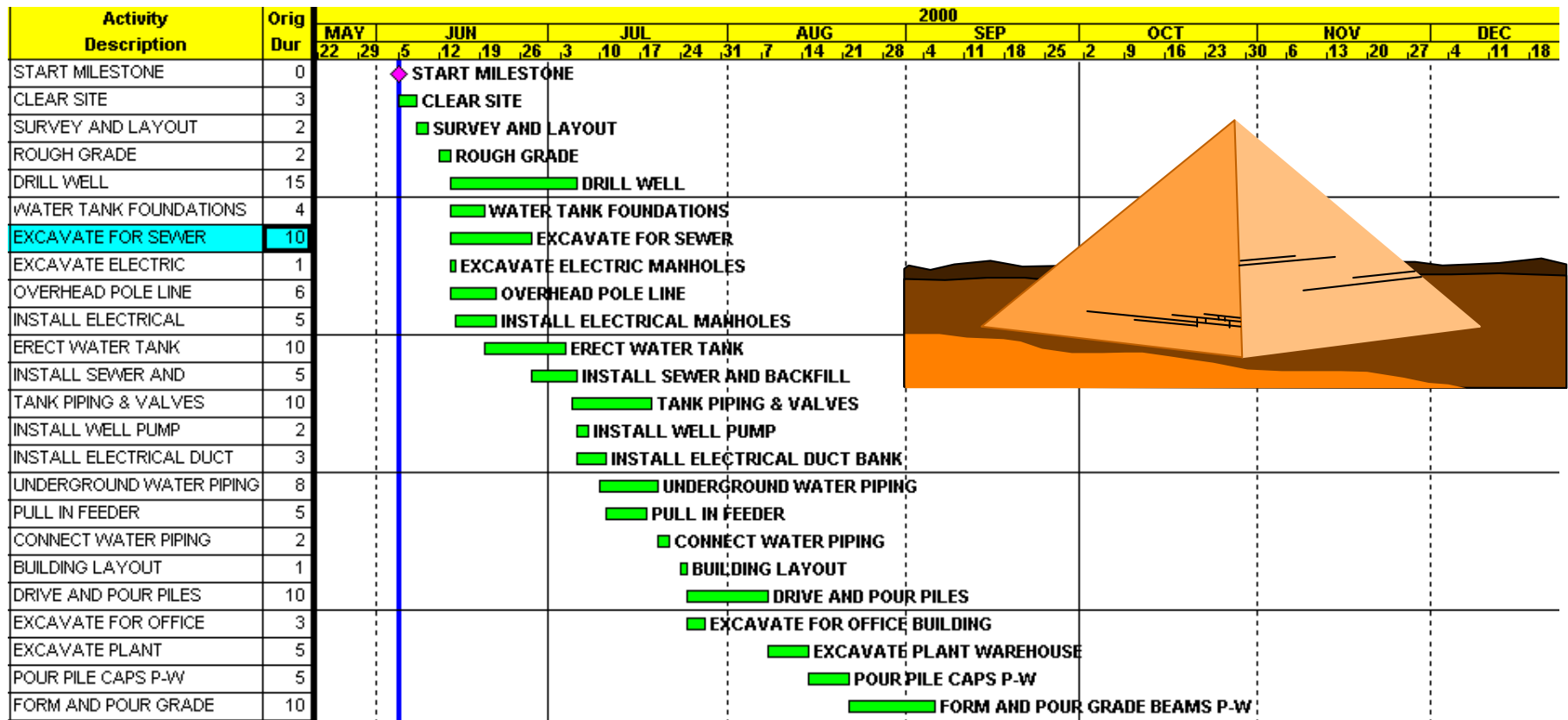
- Gantt Chart and other bar charts
 - advantages:
 - Easy to read
 - disadvantages:
 - Static, not dynamic
 - Relationships not defined
 - 40% rework required for minor changes



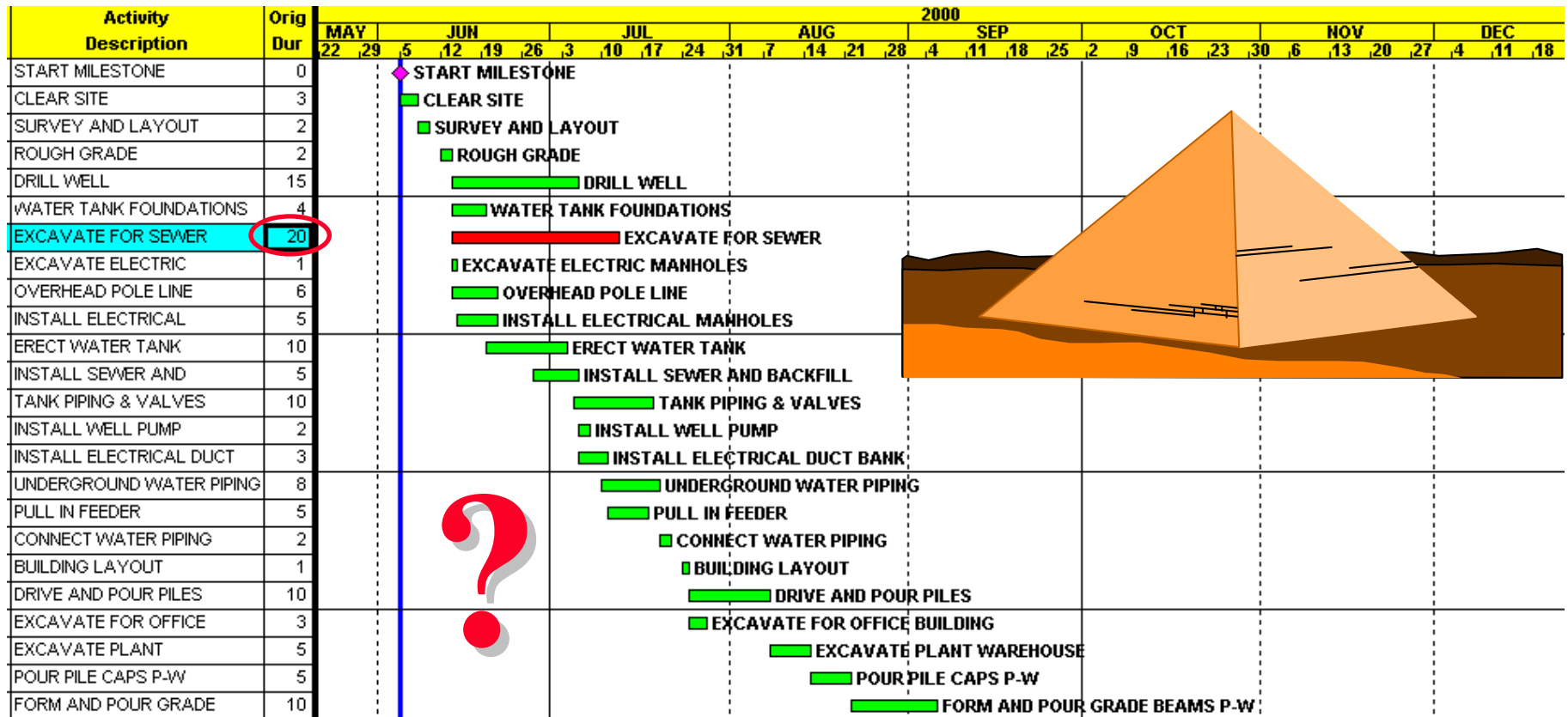
Gantt Charts are Easy to Read



But if you want to make even a small change...



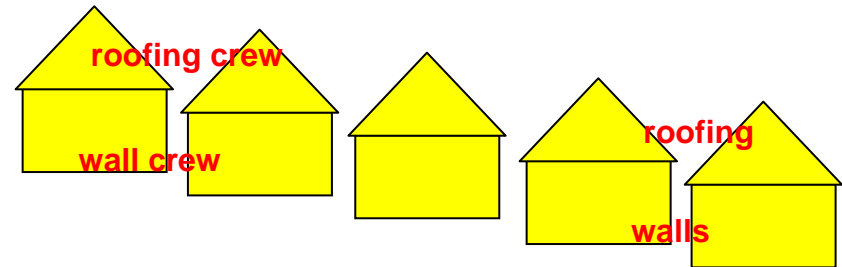
...to the duration of one activity ...
 you have a great deal of work to perform to determine the impact



How does CPM automate redrafting a bar-chart?

- What is the thought process for preparing a bar-chart?

- resource restraints then methodology?



- methodology then resource restraints?

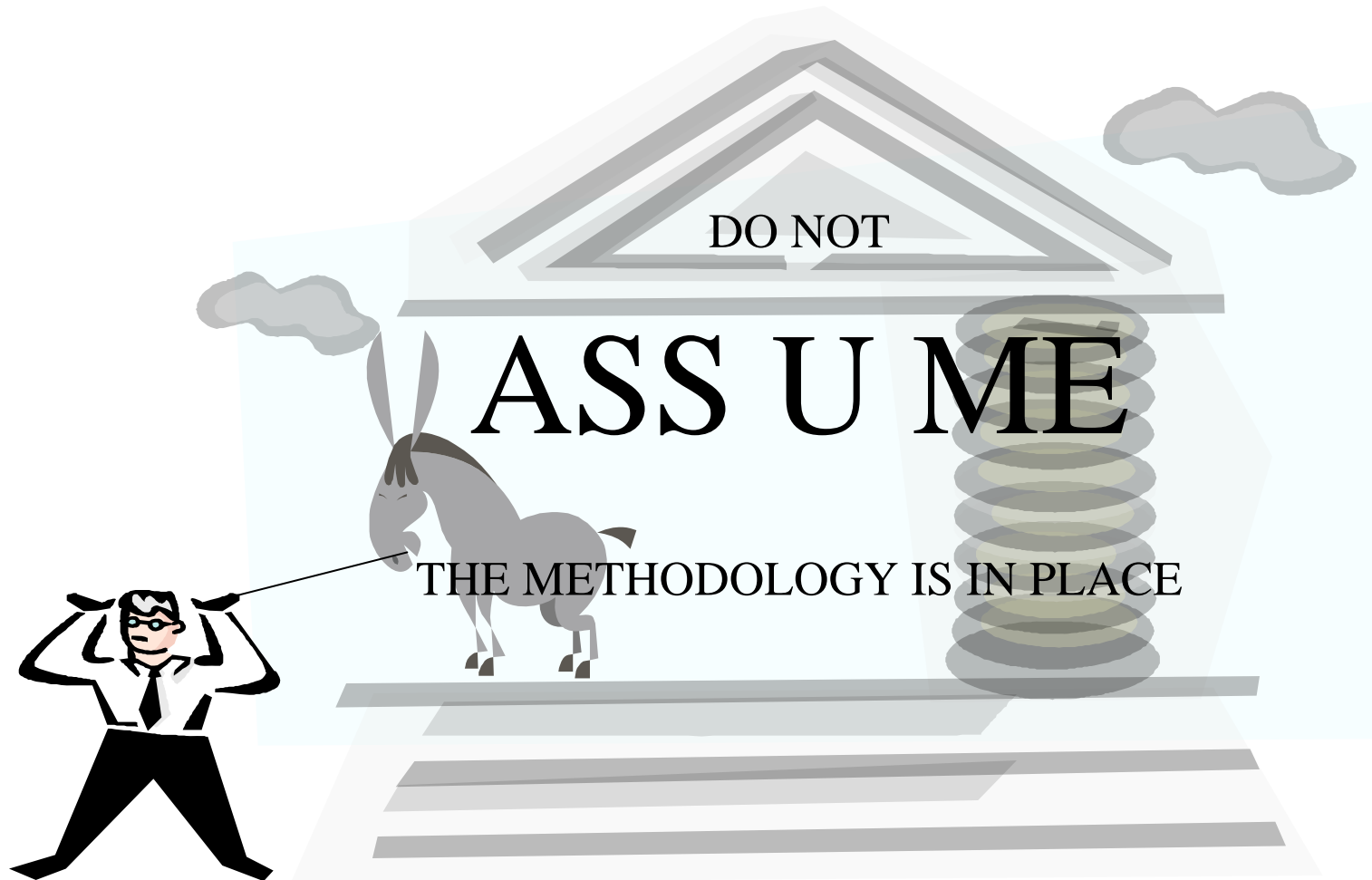
- which requires less re-work of the bar-chart?



How does CPM automate redrafting a bar-chart?



How does CPM automate redrafting a bar-chart?



How does CPM automate redrafting a bar-chart?

- What is the thought process for preparing an automated CPM bar-chart?
- methodology then resource restraints
 - set activities in required order
 - gravity or essential requirements
 - contract or command requirements
 - calculate schedule to review opportunities
 - allocate limited resources where supported by methodologies
 - discretionary distribution of men, materials and equipment
 - discretionary provision of staging areas, consumables and transport

Basic Rules
of the
Critical Path Method

Basic Rules of CPM

- map methodology then allocate resources

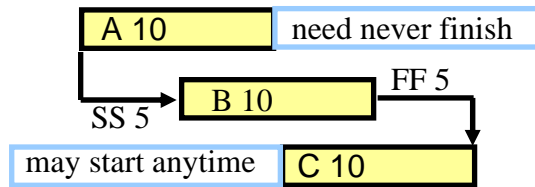
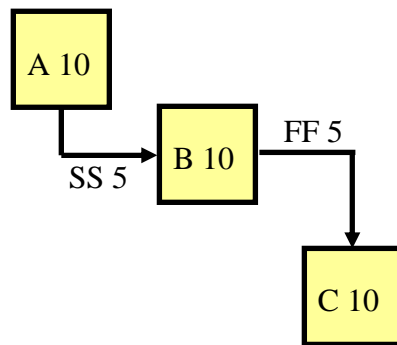
+

- start of each activity must be preceded by something
- finish of each activity must be followed by something

=

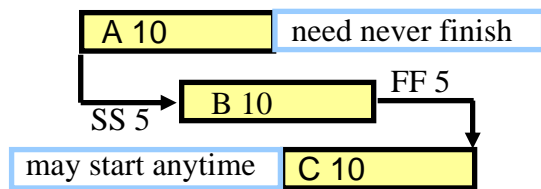
- each activity must be preceded by methodology
- each activity must be followed by methodology
- rules for allocating resources are more flexible

start of each activity must be preceded by something
finish of each activity must be followed by something

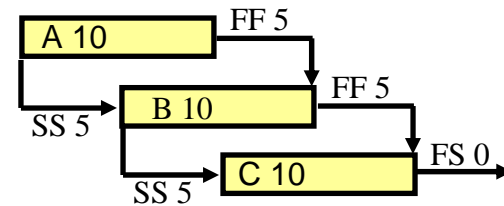


C may start before NTP
A is not required for project completion

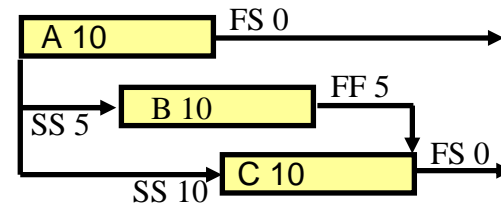
start of each activity must be preceded by something
 finish of each activity must be followed by something



C may start before NTP
A is not required for project completion

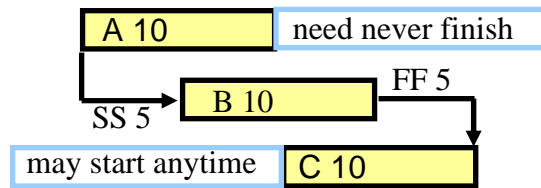


Problem solved with matching SS/FF restraints
or xS from / Fx to / any other activity

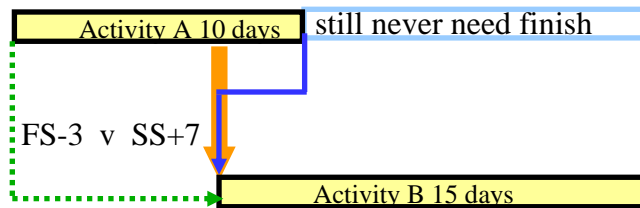


Note special problem for Microsoft Project
and solution by tying to other activities

start of each activity must be preceded by something
 finish of each activity must be followed by something



C may start before NTP
A is not required for project completion



FS with Negative Lag is really SS with remaining duration
A is still not required for project completion

Acumen Fuse Accepts Files from Many Sources

The screenshot displays the Acumen Fuse software interface. At the top, a navigation bar includes icons for 'F' (Fuse), '1', and a dropdown arrow. Below this, a horizontal menu contains 'Projects', 'Dashboard', 'Analysis', 'Logic', and 'Forecast'. The 'Projects' menu is expanded, showing several data source options: 'From Microsoft® Project', 'From Oracle Primavera' (highlighted), 'From Primavera Risk Analysis', 'From Excel®', 'From Open Plan®', 'From ASTA Powerproject', and 'From UN/CEFACT'. Below these options is a 'Get External Data' button. A tooltip is visible over the 'From Oracle Primavera' option, containing the text: 'Get External Data from a Primavera P6 XER file or a Primavera P3 file'. Below the tooltip, the 'Projects' list shows a folder named 'BridgeCasino (2356)' with two sub-items: 'b1ap.plan (1178)' and 'b1ab.plan (1178)', each with a red circular icon and a checked checkbox. At the bottom right, a status bar shows '1 1100' and 'SiteGS Clear & Rough'.

From Microsoft® Project

From Oracle Primavera

From Primavera Risk Analysis

From Excel®

From Open Plan®

From ASTA Powerproject

From UN/CEFACT

Get External Data

Get External Data from a Primavera P6 XER file or a Primavera P3 file

Individual or multiple projects can be imported from a single XER file. Use field mapping in Fuse to additionally import custom code and user defined fields.

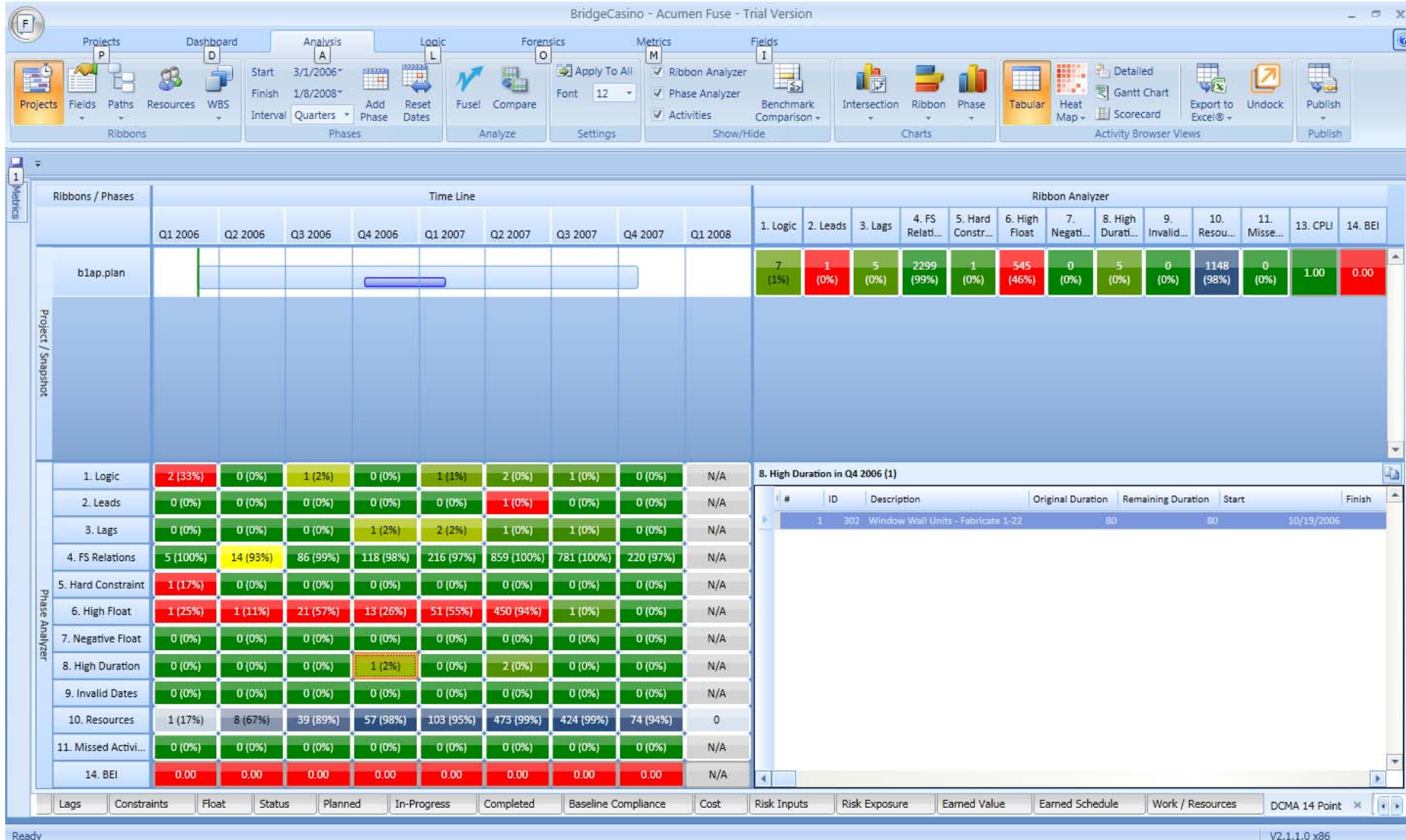
Projects

BridgeCasino (2356)

- b1ap.plan (1178)
- b1ab.plan (1178)

1 1100 SiteGS Clear & Rough

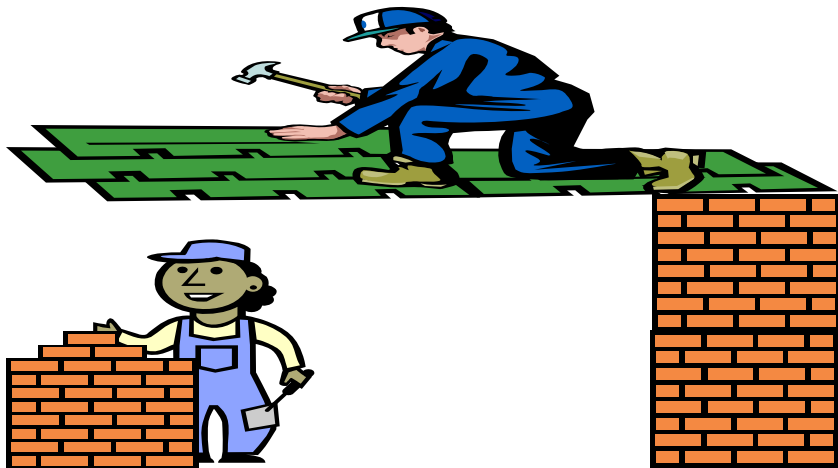
DCMA 14 Point Review – A Nice Start



start of each activity must be
preceded by something
physical

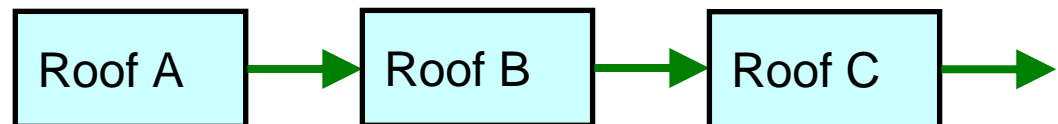
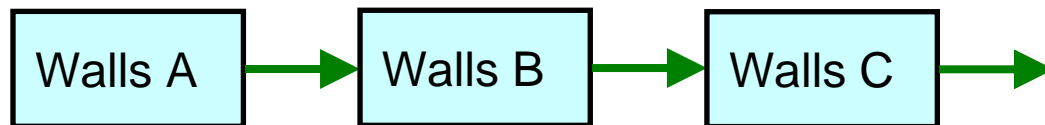
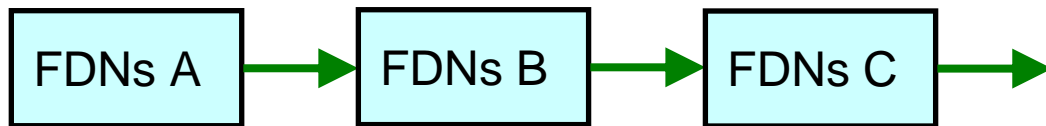
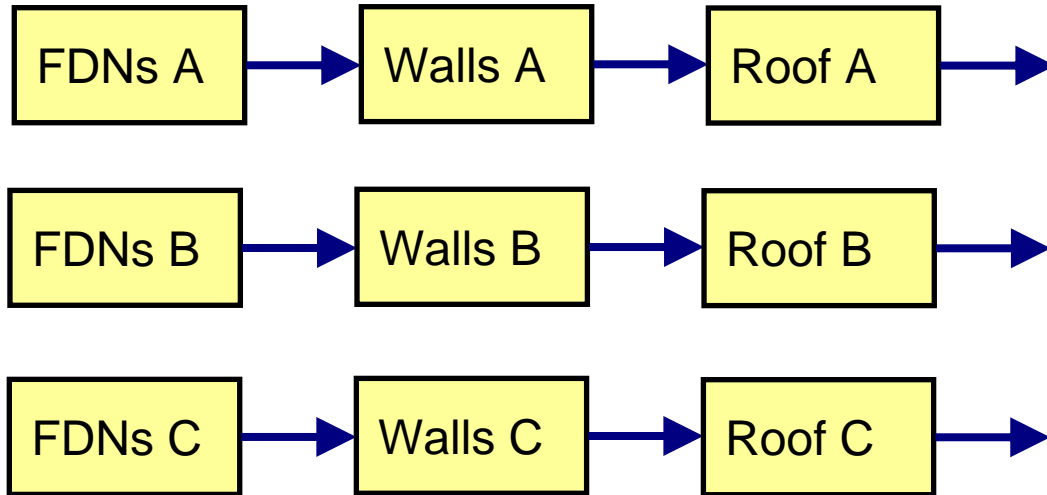
finish of each activity must
be followed by something
physical

each activity must be
preceded by methodology
and
followed by methodology

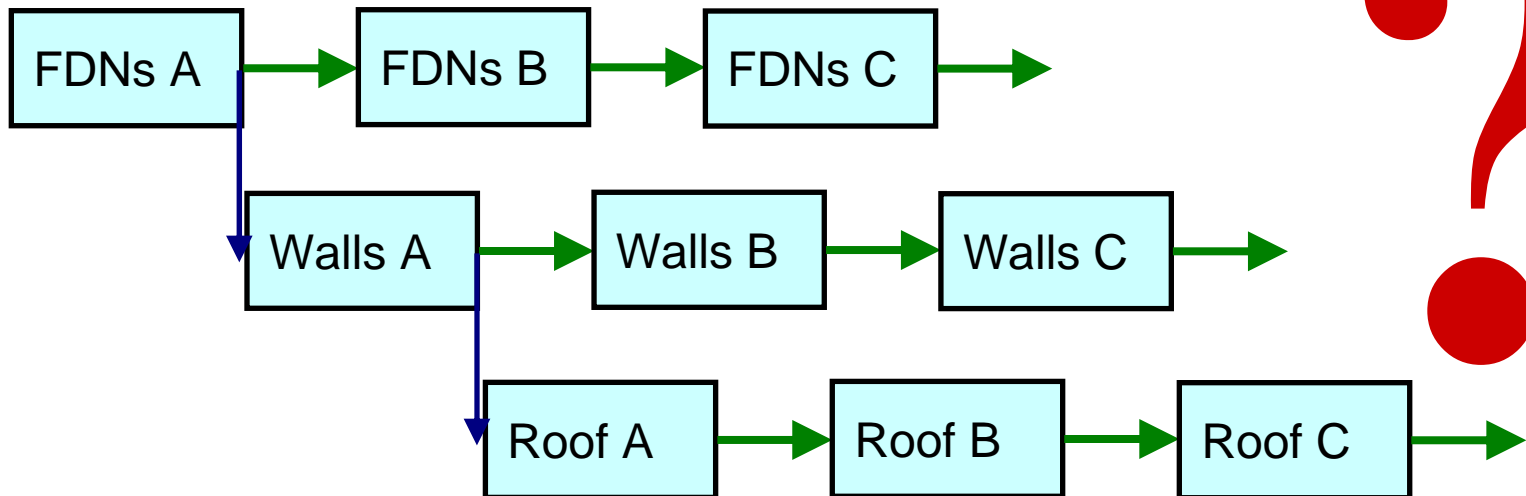
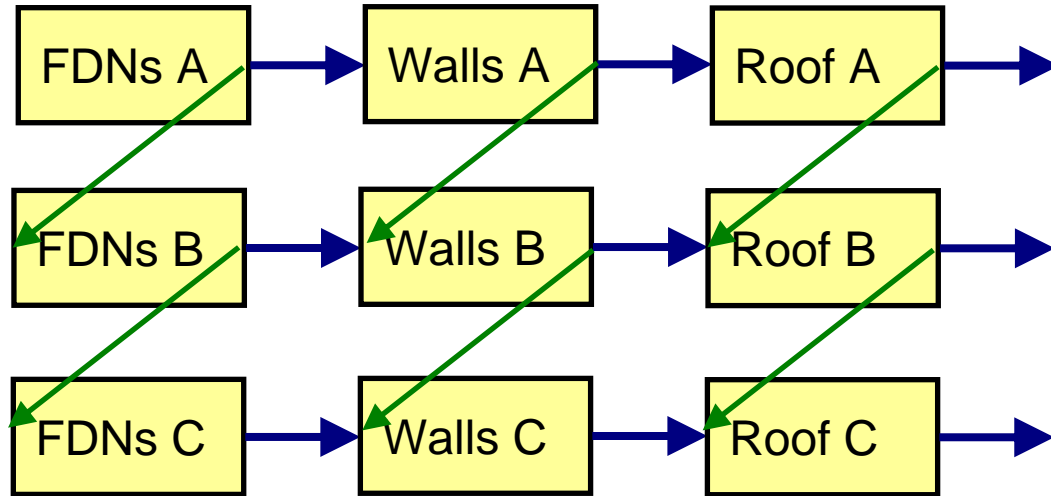


Map Methodology
then
Allocate Resources

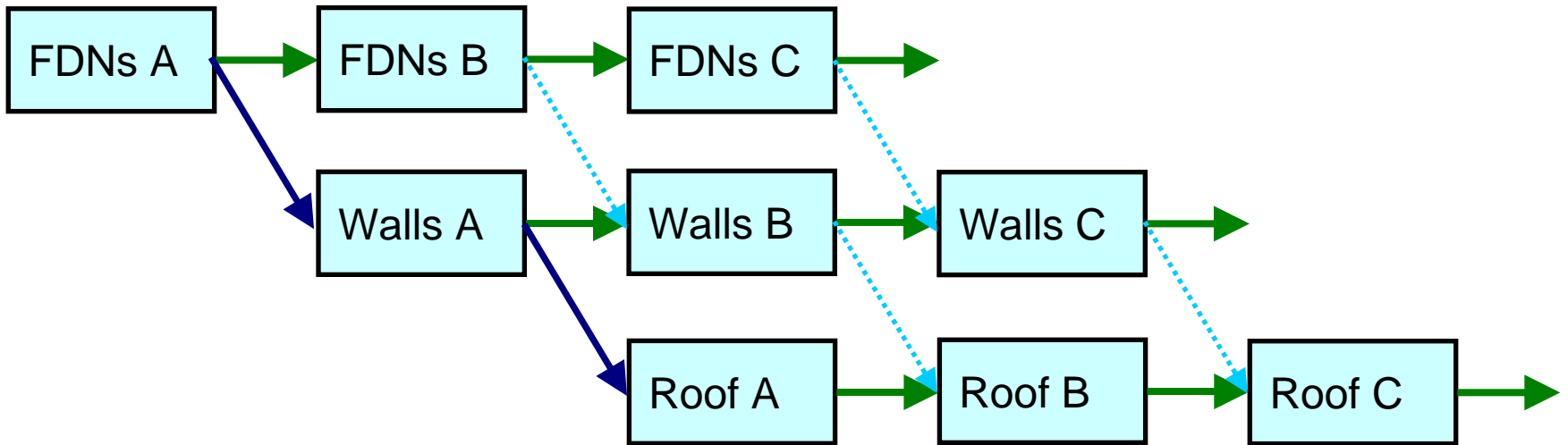
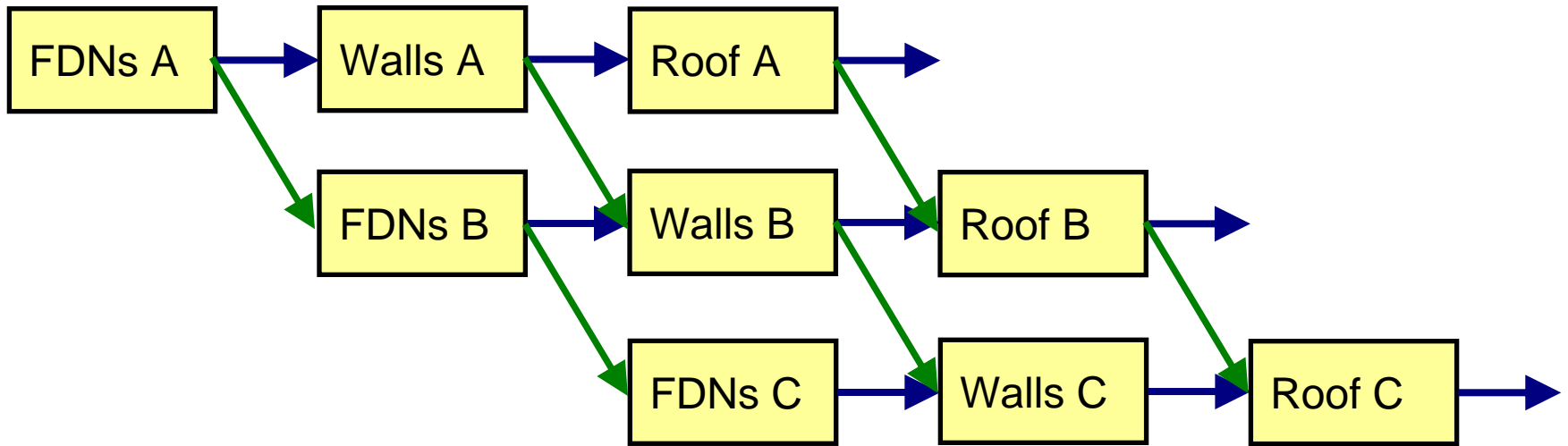
Map Methodology then Allocate Resources



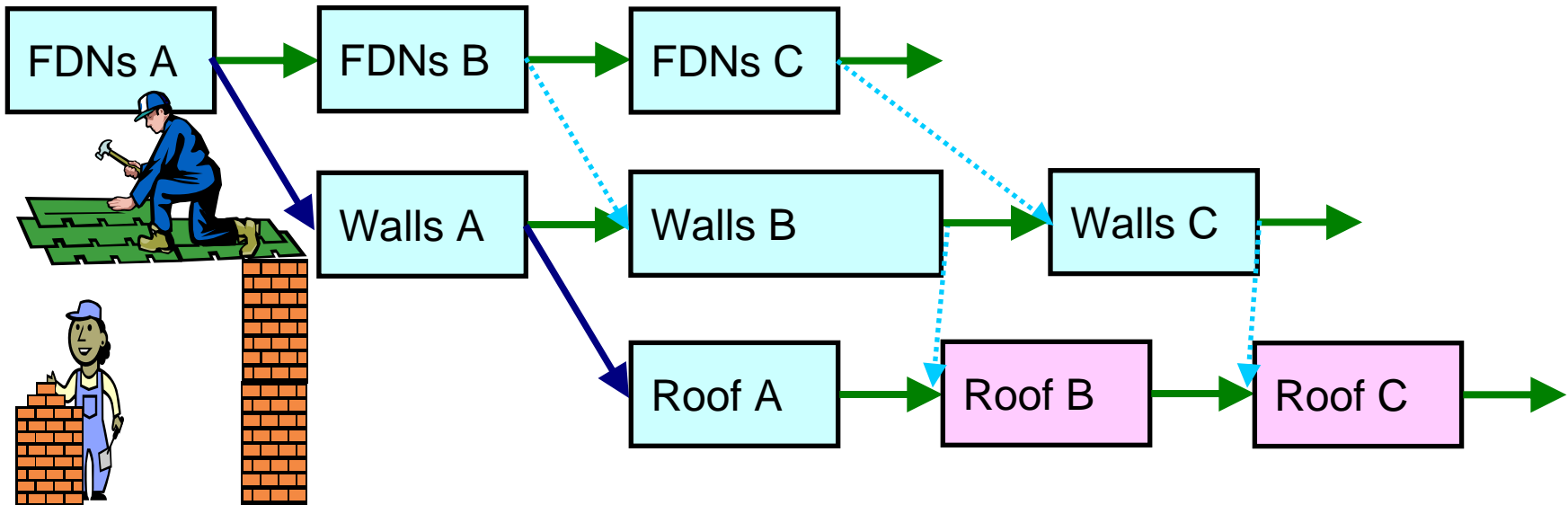
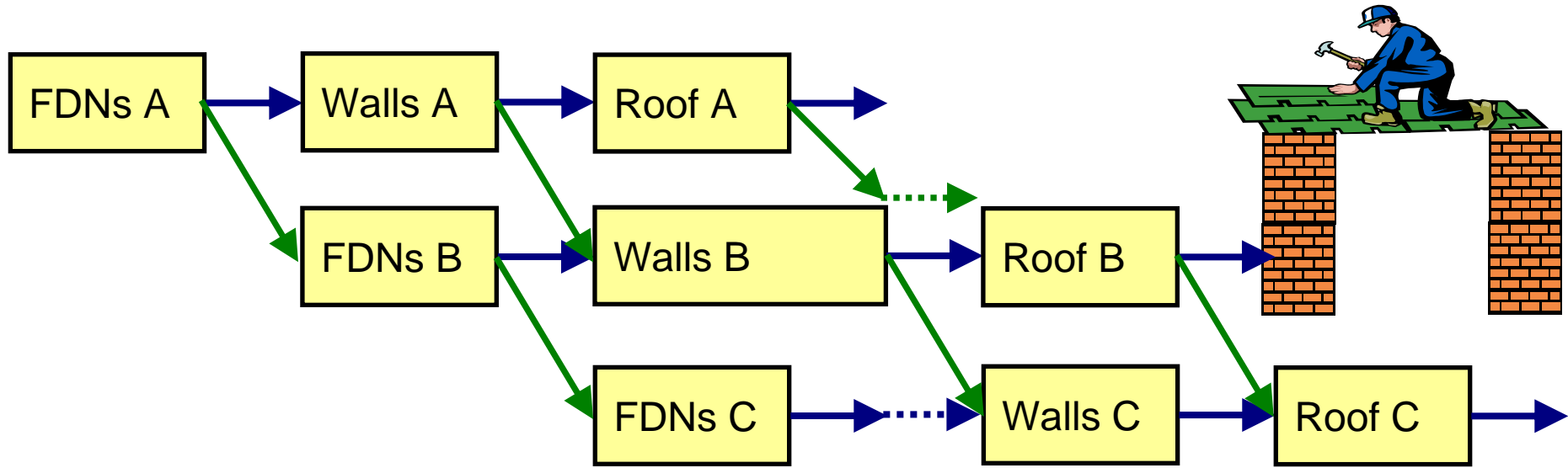
Map Methodology then Allocate Resources



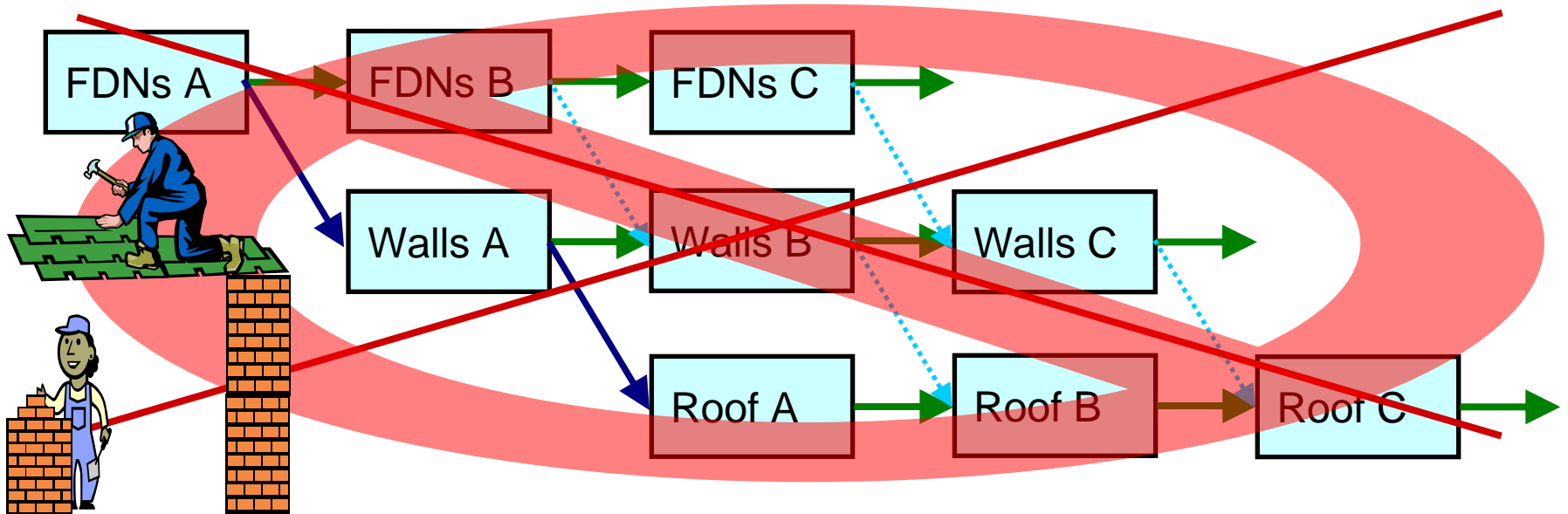
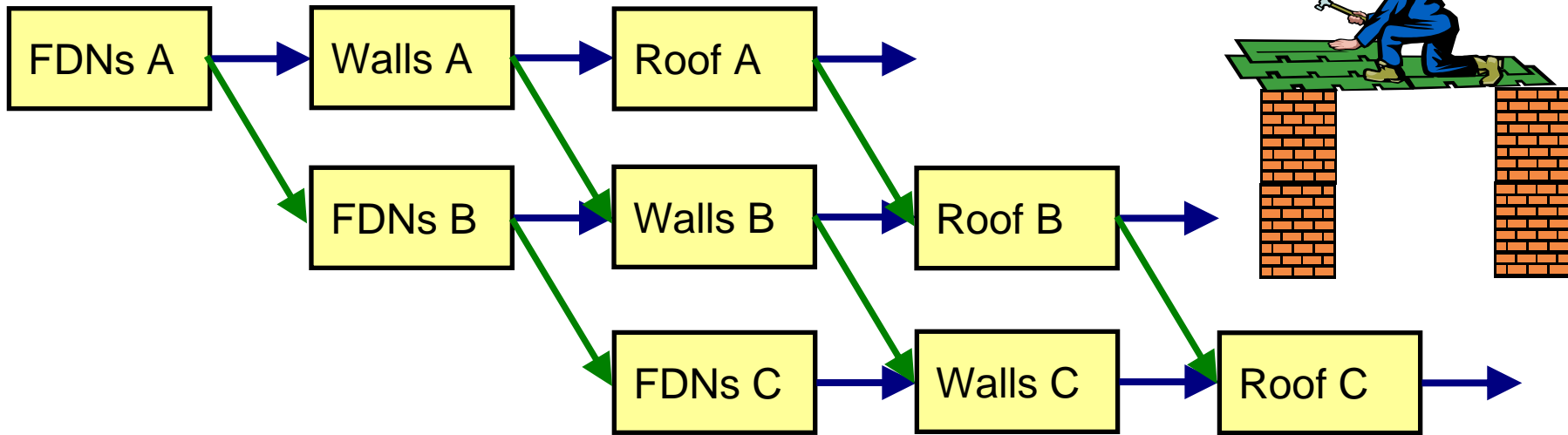
Map Methodology then Allocate Resources



Map Methodology then Allocate Resources

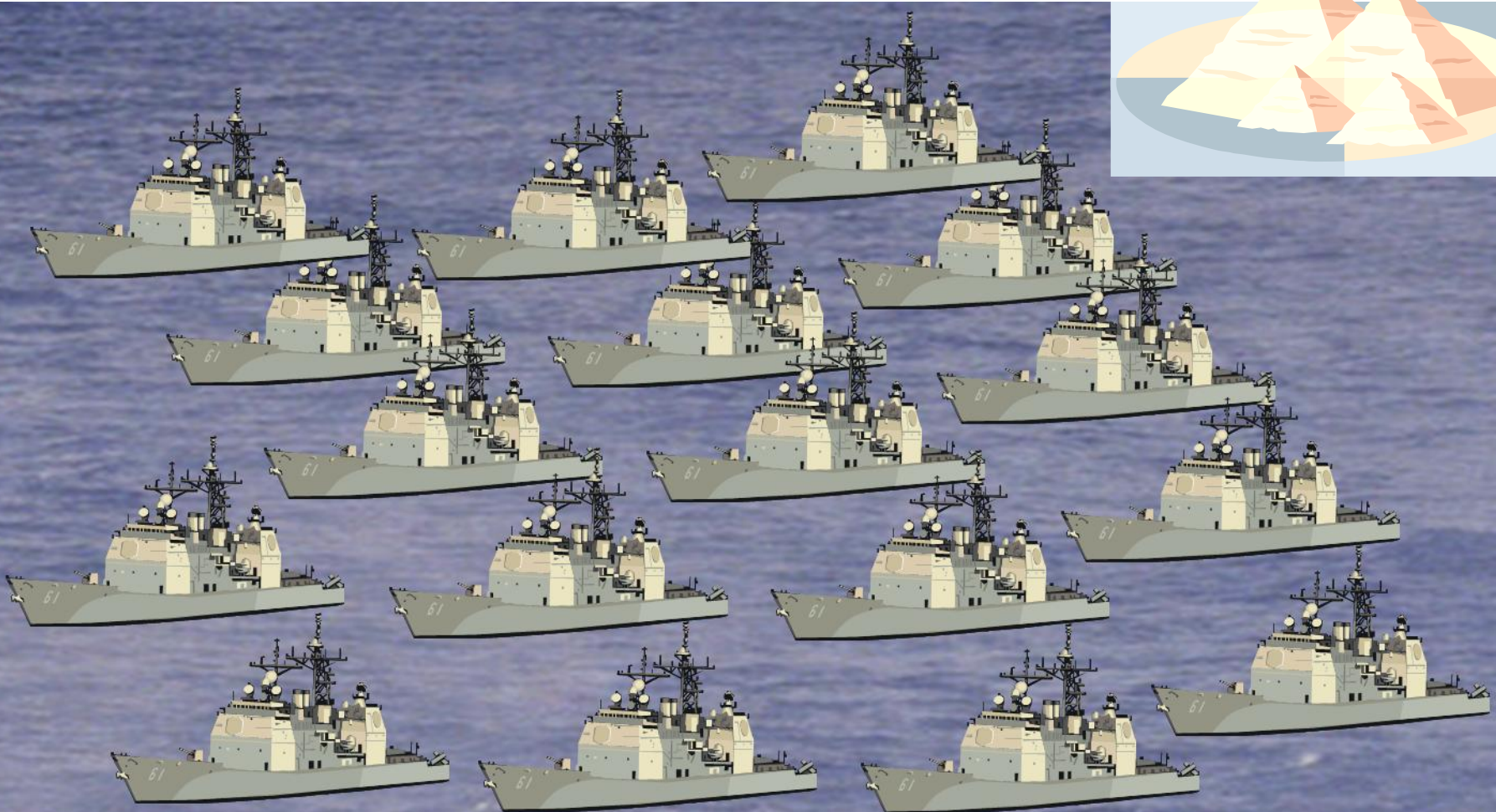


Map Methodology then Allocate Resources

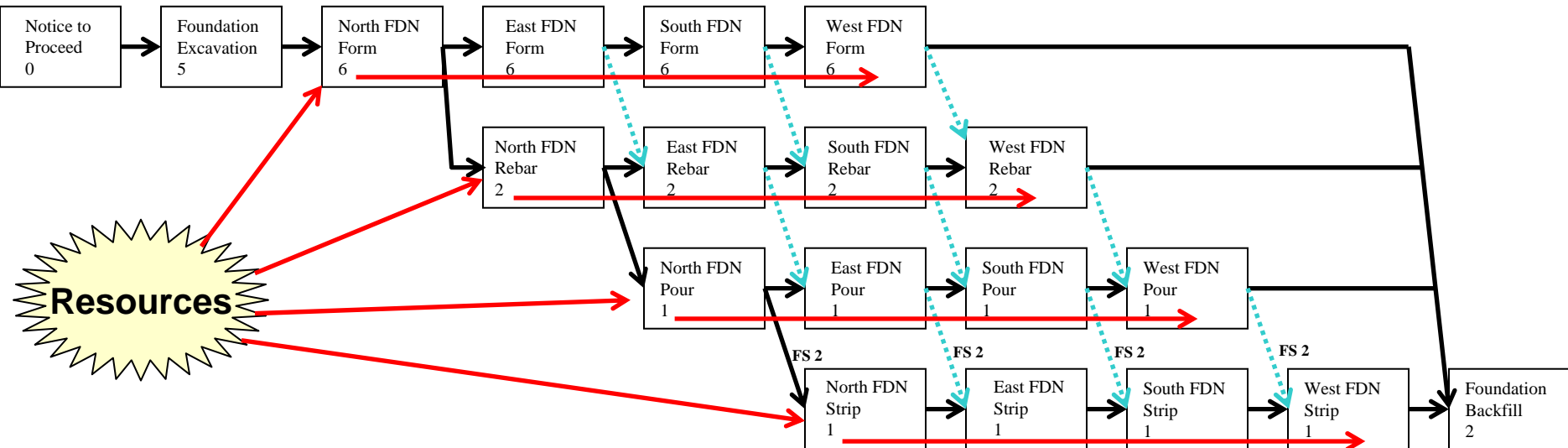
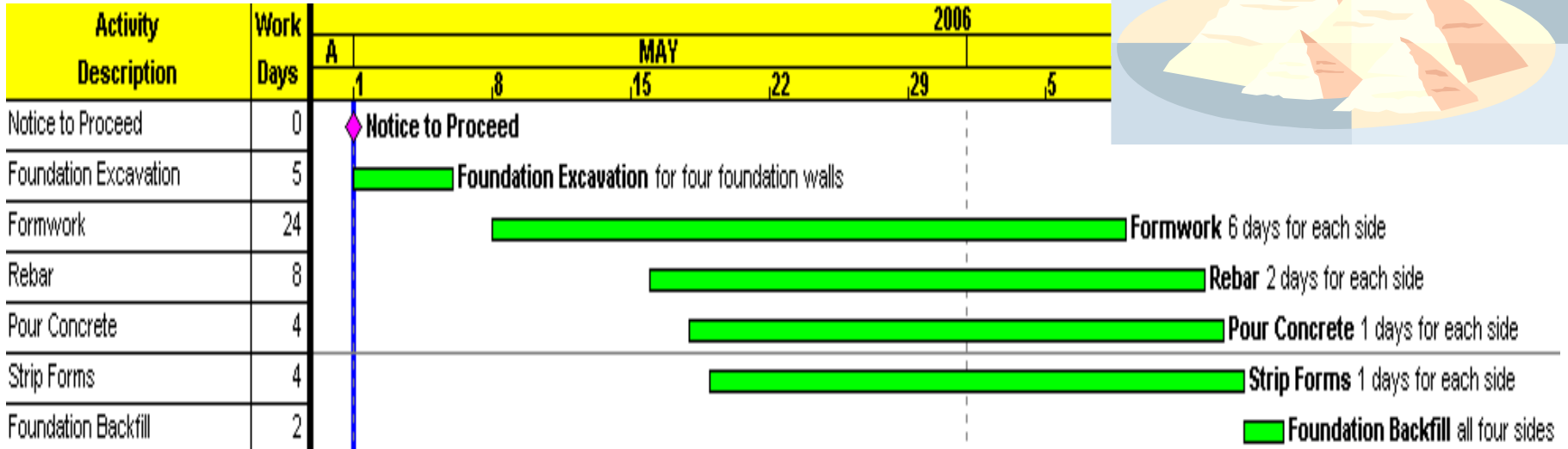
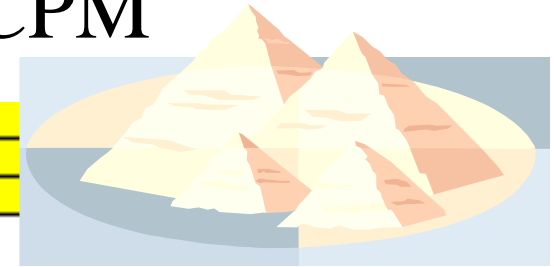


Scheduling Resources is Not CPM

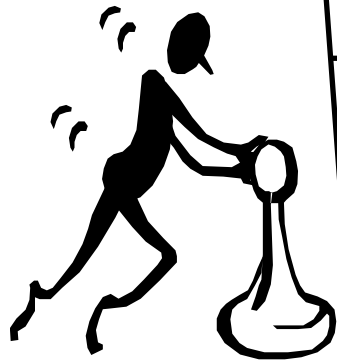
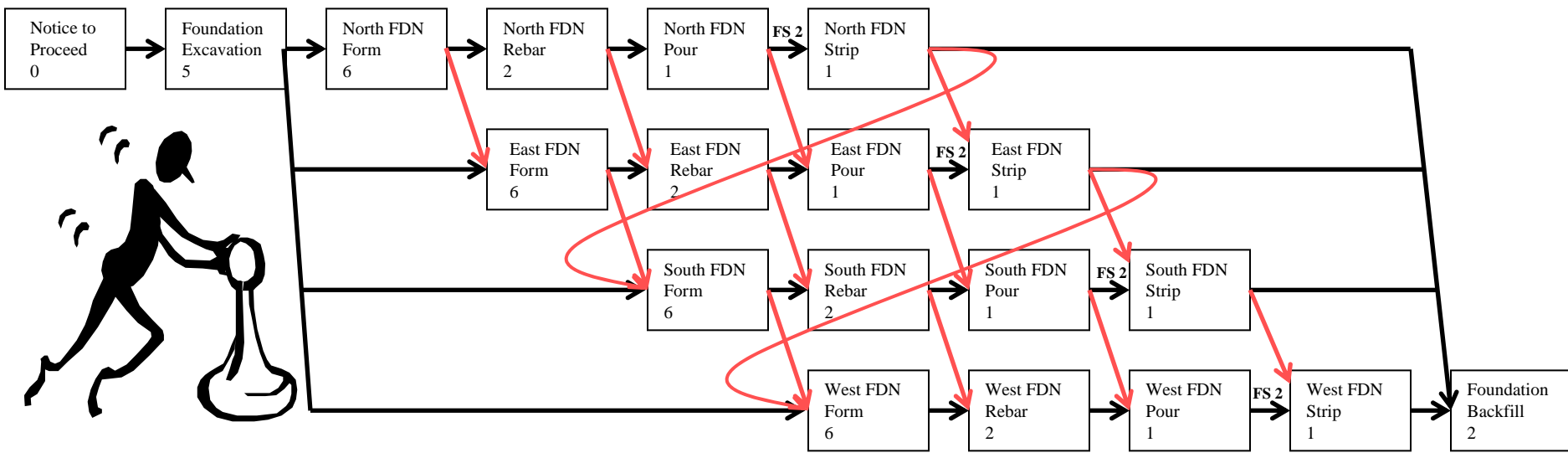
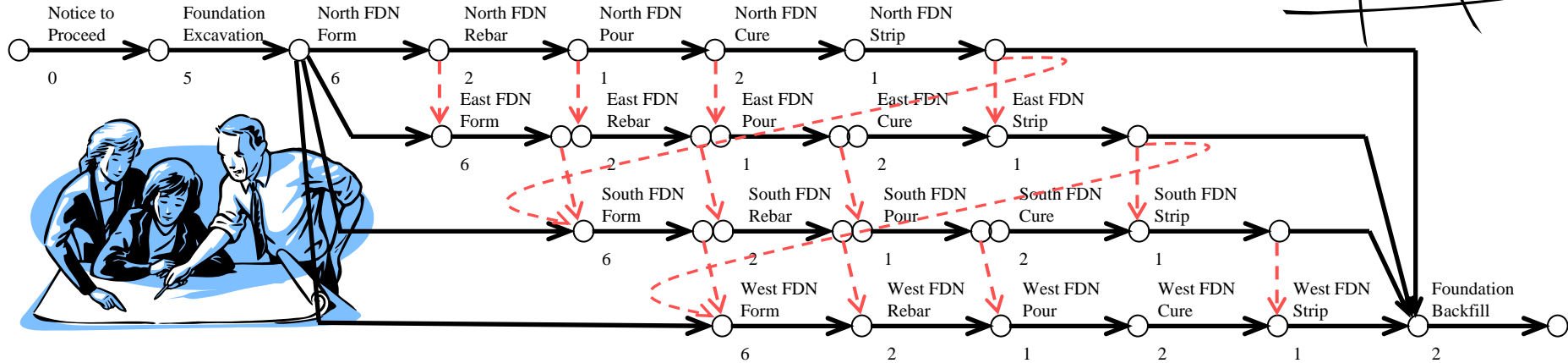
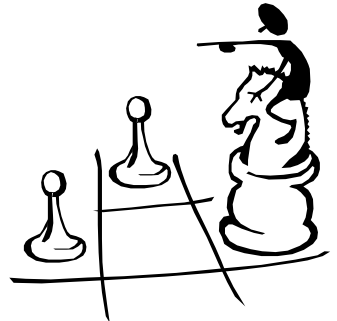
- Resource allocation scheduling versus CPM scheduling
 - *assurance* contractor allocating resources versus *assurance* completion on time



Scheduling Resources is Not CPM

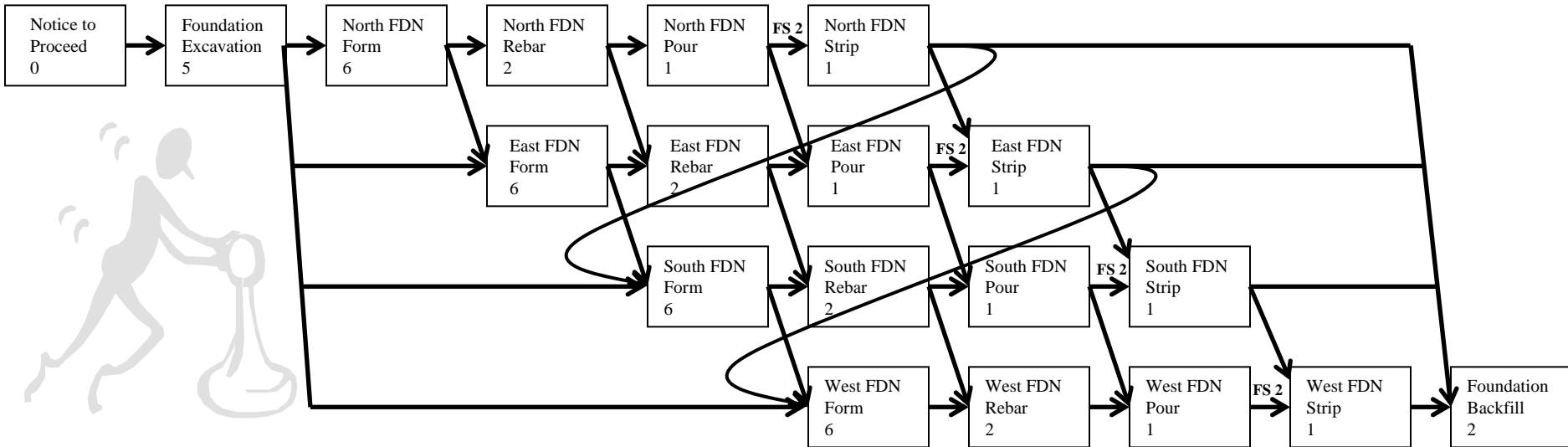
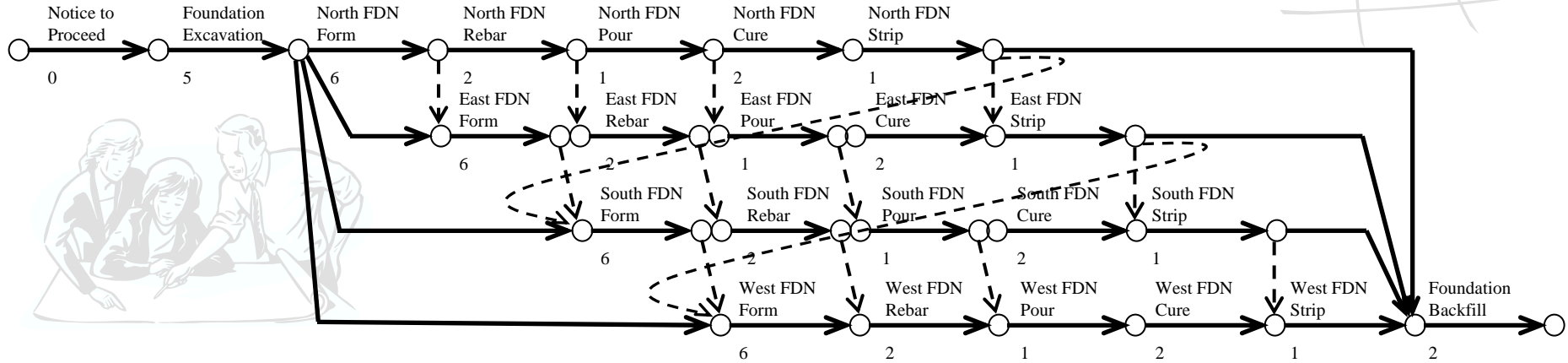


Plan – then **Schedule**



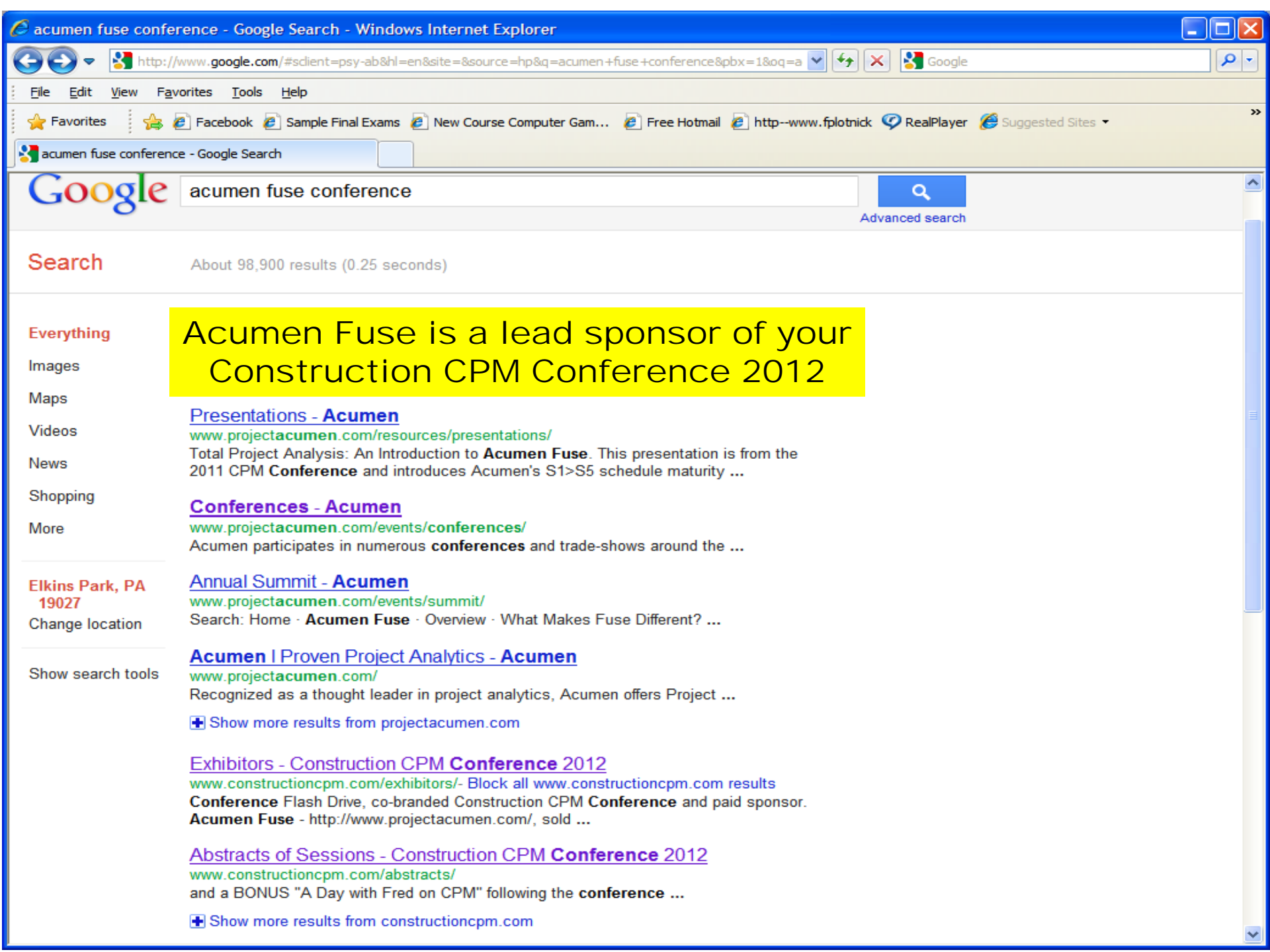


Plan – then Schedule



CPM is Based Upon Logic

- Hard physical logic vs. soft resource logic
 - Each activity **must have** at least one physical relationship as a predecessor
 - Each activity **must have** at least one physical relationship as a successor
 - Each activity should have **not more than one** resource restraint per resource
- Acumen Fuse checks for “hidden open ends”
- RDCPM[®] checks for physical logic backbone



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Total Project Analysis: An Introduction to **Acumen Fuse**. This presentation is from the 2011 CPM **Conference** and introduces Acumen's S1>S5 schedule maturity ...

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