‘But is it on the critical path?’

Notes from an evening seminar held on the 12 May 2005 for the Adjudication Society Seminar in the London office of Ove Arup

Speaker
Peter Curtis – Ladymead Projects Ltd

Agenda
  o Introduction to critical path analysis
  o How its used in practice
  o Some things for adjudicators to look out for in progress monitoring and reporting
  o Views on the SCL Delay and Disruption Protocol

For further information please contact Peter Curtis:
Phone 01483 534 192
E mail petercurtis@ladymeadprojects.com
Web www.ladymeadprojects.com
Slide 1

Project Planning

Adjudication Society
12 May 2005
Peter Curtis
Ladymead Projects

Slide 2

Agenda

- Introduction to Critical Path Analysis
- How it's used in practice
- Some things for Adjudicators to look out for in progress monitoring and reporting
- SCL Delay and Disruption Protocol
- Questions and Answers

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Slide 3

Ladymead Projects

- Project management and training consultants
  - Helping clients improve the way they manage projects
  - Developing and better processes and procedures
  - Change management
  - Specialist technical support
    - Project planning and delay analysis
    - Risk and value management
    - Project audits, health checks, monitoring
    - Project launch and workshop facilitation
  - Bespoke training courses
  - Dispute resolution
- Course providers for the CIOB Adjudication courses
  - www.ladymeadprojects.com

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Why Plan?

“The great thing about not planning is that failure comes as a complete surprise and isn't preceded by periods of worry and depression.”

Sir John Harvey-Jones

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Critical Path Analysis

Introduction to Critical Path Analysis

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Critical Path Analysis

Precedence Method (Activity-on-Node)

Activity A — Activity B — Activity C — Activity D
Critical Path Analysis

**Logic Dependencies**

**Finish to Start (FS), or normal relationship:**
- Activity D can only start after Activity A has started
- Activity C

**Start to Start (SS) relationship:**
- Activity B cannot start until Activity A is finished

**Finish to Finish (FF) relationship:**
- Activity F cannot finish until Activity E has finished

**Logic Relationships can also have durations**

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<th>Lead</th>
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**Critical Path Analysis**

Forward Pass determines project duration
- Backward pass determines total float
Critical Path Analysis

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Monitoring and Reporting Progress

Progress Monitoring

- Is progress monitoring a simple process?
- Here are some of the issues
Assessing Progress

Slide 13

Cost

Time

50% Progress

Long run of shallow drainage
Curing concrete

Are all activities like this?

Slide 14

Assessing Progress

Cost

Time

50% Progress?

Data/Communications Cabling
Computer Equipment

Time and cost out of step
Time front loaded - Cost back loaded

Slide 15

Assessing Progress

Cost

Time

50% Progress?

Piping, electrics and controls
M & E Plant Room Installation

Time and cost out of step
Time back loaded - Cost front loaded
Slide 16

Assessing Progress

- Cost
- Time
- Work up design
- Drawings
- Contract
- Design

50% Progress?

Time and cost out of step

Time and cost unevenly distributed

How would you deal with this?

Slide 17

Assessing Progress

- Rate of Progress
- Learning Curve
- Winding Down

Progress is rarely even throughout an activity

How can this be dealt with on a programme?

Slide 18

Progressing Intervals

- M & E Installation – 16 week duration

How much detail should you show for the above activity assuming you will be monitoring progress every two weeks?

- Ideally the activities should be no longer than the reporting intervals i.e. 2 weeks in this example.
- Makes it much easier to assess progress accurately.
Two Approaches to Marking up Programmes

Percent Complete – Purely Historical

% of work complete

Remaining Duration – Looks to the future – updates the programme

Current forecast of time required to complete

Percentage Complete

% of work completed

Time Now

% of work not completed

Remaining Duration

Historical record of when work was carried out.

Also a traditional method

Pre-computer legacy

Current forecast of when work will be completed

No change

One week added to forecast

Shows activity

Starting 2 weeks earlier

Forecast to finish 2 weeks earlier

Gaining 2 weeks float

Now not critical
Slide 22

Marking up the Programme
Best Practice

- Historical record of when work was carried out
- Current forecast of when work will be completed
- Base line – records the original programme for each activity
- Proper recording should lead automatically to a contemporaneous ‘As Built Programme’ saving a huge amount of pain and trouble later on
- Essential for the recovery of entitlements for delays etc

Slide 23

SCL Delay Protocol

Pros:
- Very good idea in principle
- Recognition of importance of planning long overdue
- Sets high standard for project planning
- Promotes standard coordinated approach for industry
- Legal and dispute community
- Best agreed prior to commencing the project

Cons:
- One size fits all not practical for smaller projects
- Current lack of planning expertise
- Not universally accepted – difficult to put forward as best practice
- Origins give it an image problem
- Critical path analysis not only method of planning or most appropriate in all circumstances
- Question the weight attached to its use retrospectively

Slide 24

Examples of Software Outputs
Summarising larger programmes

Example from Powerproject

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