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Challenges with Change

About the Speaker

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- ❑ 30 years' construction experience in the UK, Europe, Americas, Middle East and Far East.

Challenges with Change



About the Topic

‘Challenges with Change’ will look at the different ways in which changes evolve and occur in construction projects, and the ways in which these challenging situations can be met.

Standard procedures for change management, or change control, can be effective but predictably will not cover every eventuality. Some of the common problems leading to delays and disputes will be discussed and potential strategies to deal with those problems identified.

Agenda

- What is Change?
- Typical contract process for dealing with change
- Volume and value – Does it make a difference?
- Sequential change – Break down or roll up?
- Strategies for dealing with change
- Conclusions

What is change?

Definition:

change

/tʃeɪn(d)ʒ/

verb

1. make or become different.

What is change?

Change is a change to the baseline document.

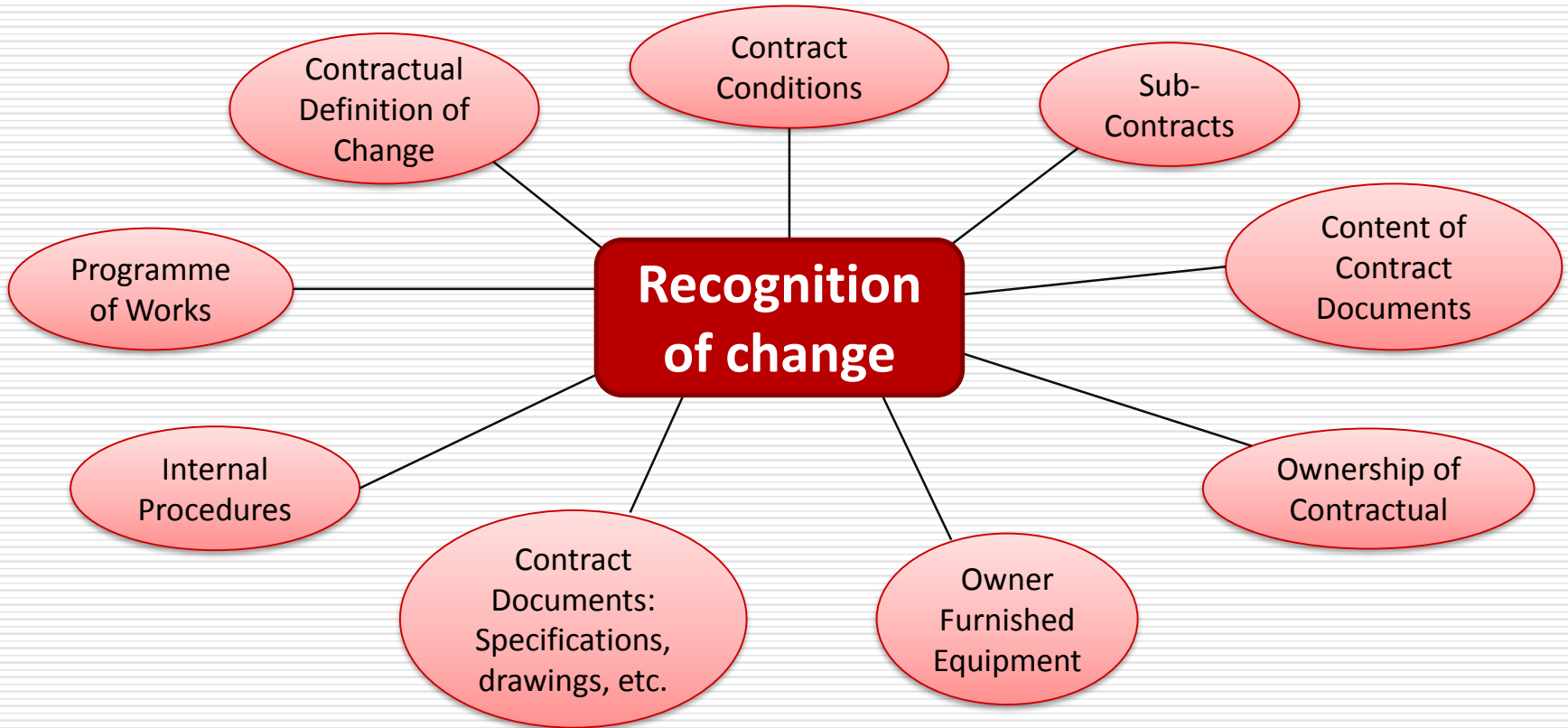
The contract documents:

- Documents
- Drawings
- Specification
- Conditions of contract
- Correspondence
- Contractor's tender

How to recognise change?

- Must understand the contents of the contract.
- During the project, Contractor may be issued with docs from Employer or an event that is a change and Contractor is entitled to a change in the Price and / or completion date.

How to recognise change?



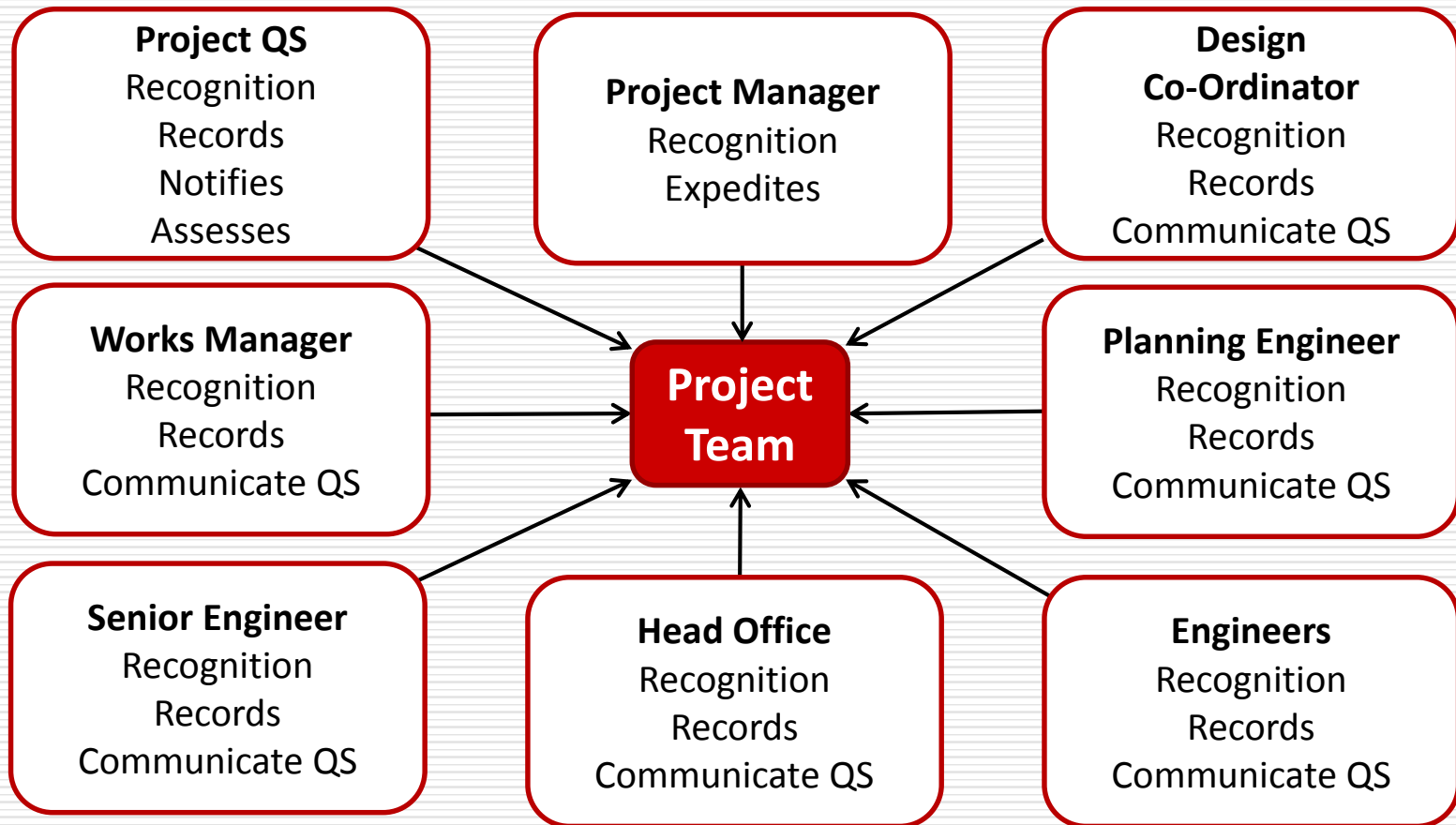
Change

- ❑ Read the contract and understand the baseline
- ❑ Identify a change has occurred
- ❑ Be aware that changes will occur
- ❑ Appreciate that the correct contractual process may not always be followed
- ❑ Refer back to the baseline as a reference point
- ❑ Constantly monitor events, occurrences, and communications to identify the cause or effect of change:
 - Drawings - new, revised, on hold
 - Progress updates
 - Cost reports

Change – The Programme

- If the Contract does not contain a programme the Contract will call for a programme to be submitted for approval within a period of time.
 - NEC –period stated in the Contract Data Part One (31)
 - JCT – “As soon as possible after the execution of this contract ,if not previously provided”(2.9)
- This programme MUST represent the Contractor’s tender programme, i.e. the information upon which the tender was based.
- This programme must NOT have included within it anything other than the information contained in the Contract.

Change and the Project Team



Change

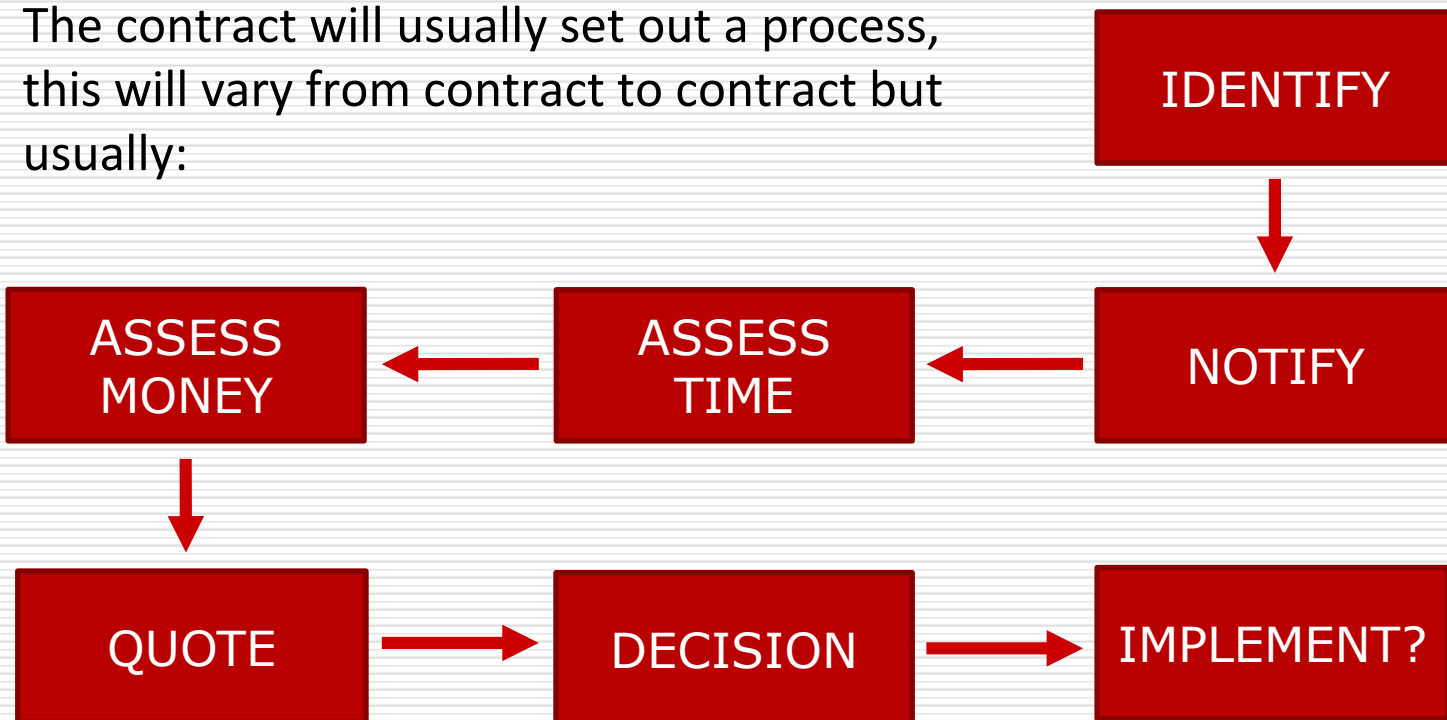
Standard forms define and categorise change:

- NEC3 – Compensation Event
- FIDIC – Variation
- JCT FORM – Relevant Event
- PPC 2000 – Change order
- IChemE – Variation
- Other – Relief event

Each contract sets out whether each type of change gives the Contractor time and/or money as a result of the change, or is a Contractor risk item.

Typical Change Process

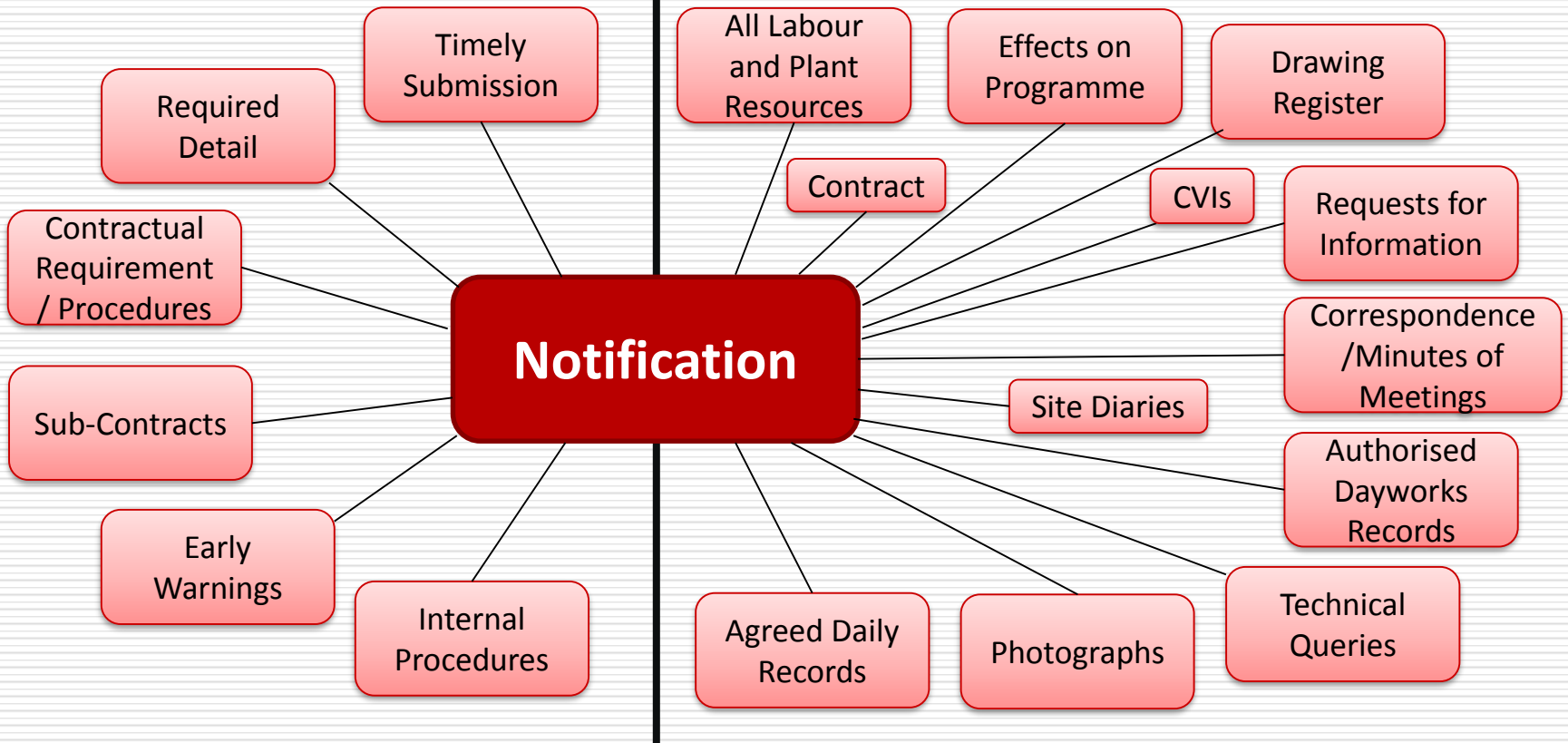
- The contract will usually set out a process, this will vary from contract to contract but usually:



Records

Requirements

Examples of Records Required



Loss and Expense Provisions

JCT Contracts



NEC Contracts



JCT Forms of Contract

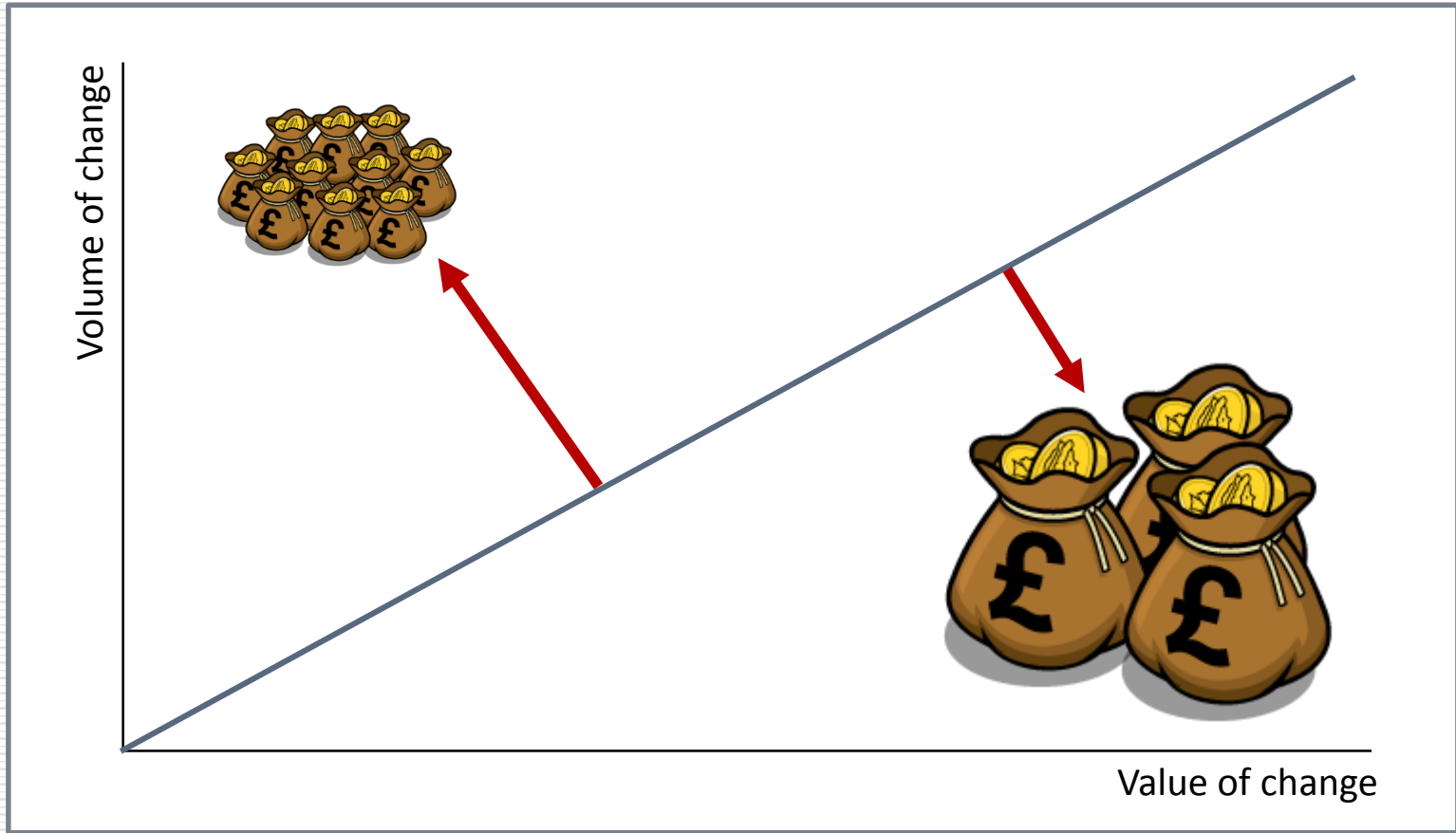
Clause - Loss and Expense

- Requires the Contractor to support his application for Loss and Expense with information upon request by the *Architect*.
- Requires the Contractor to submit to the *Quantity Surveyor* details of Loss and Expense.

Clause – Extension of Time

- Requires the Contractor to submit causes and the expected effect of each event on the Completion Date.

Change: Volume and Value



Low Volume / High Value Change

Typically found on larger civil engineering schemes, a limited number of high value changes cause:

Challenges

- Can take time to price & programme
- Important to capture all of the effects
- Extended time needed to price
- Time needed to liaise with supply chain
- Time needed to carry out design work

Strategy

- Allow adequate time and programme the assessment period
- Allow adequate resources

Issue 1 - High Volume / Low Value Change

May be found on complex building projects, such as refurbishment of listed structures, or change of use. For example 5000 minor changes can be the following cause:

Challenges

- 5,000 minor changes, each under £1,000
- Each may have negligible effect of itself
- Measured together the cumulative impact can be significant
- Change on change can be an issue

Change on change

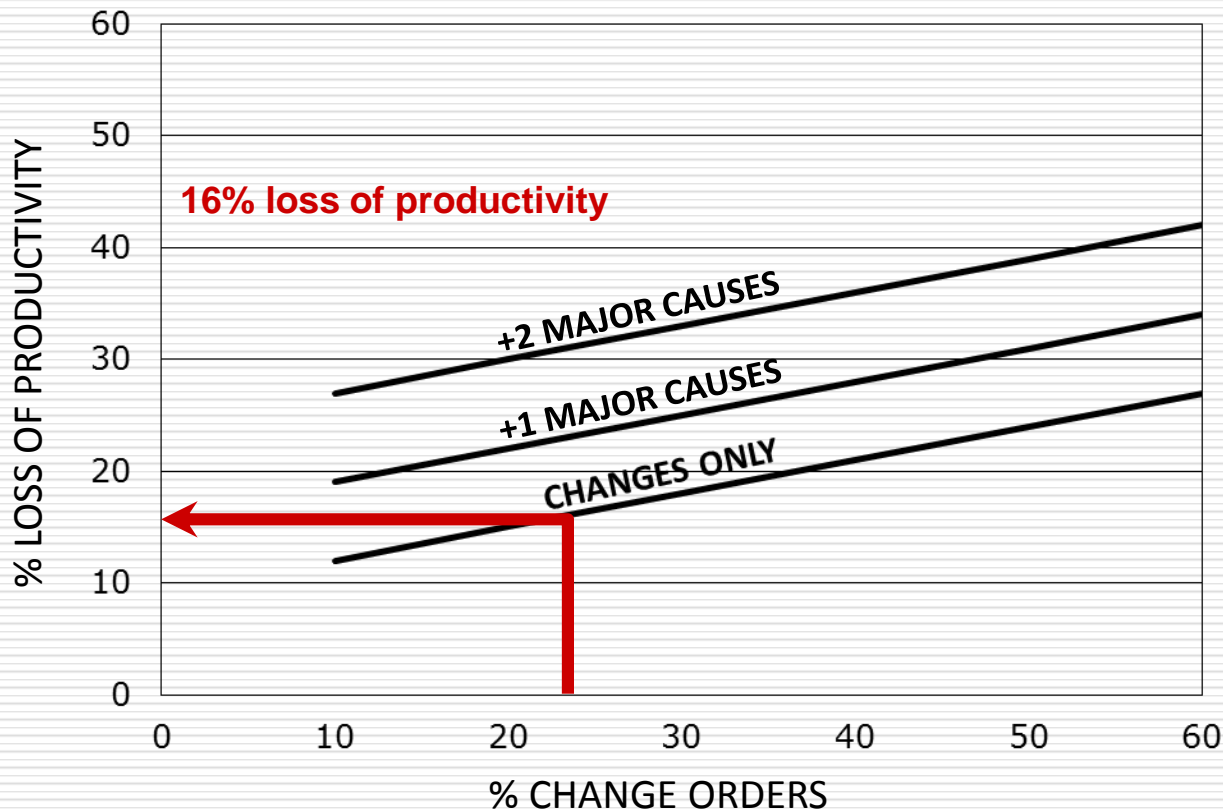
- ❑ In the scenario with 5,000 minor changes.
- ❑ Each change can be very simple in terms of costs of labour and materials to assess, although the effect on programme and preliminary costs could be too small to measure.
- ❑ Sometimes things change, and then change again or change back.

However

- ❑ Several hundred, or even thousand, minor items could have an enormous cumulative effect.

Statistical Studies

Variations Cumulative impact:



Leonard Curve

Charles A Leonard

Total spent man-hours:

150,000

Variation man-hours:

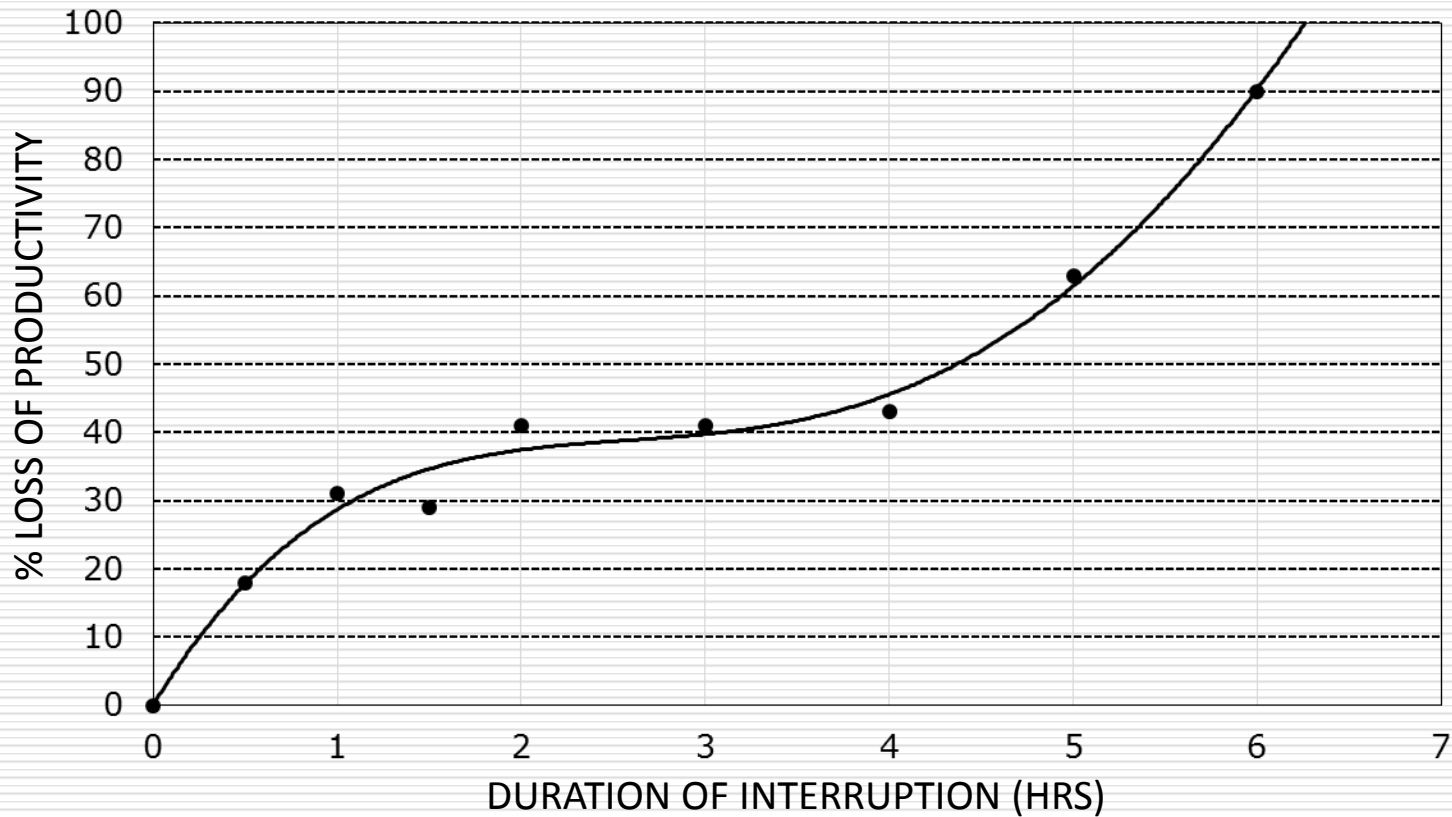
38,000

% Change Orders

25%

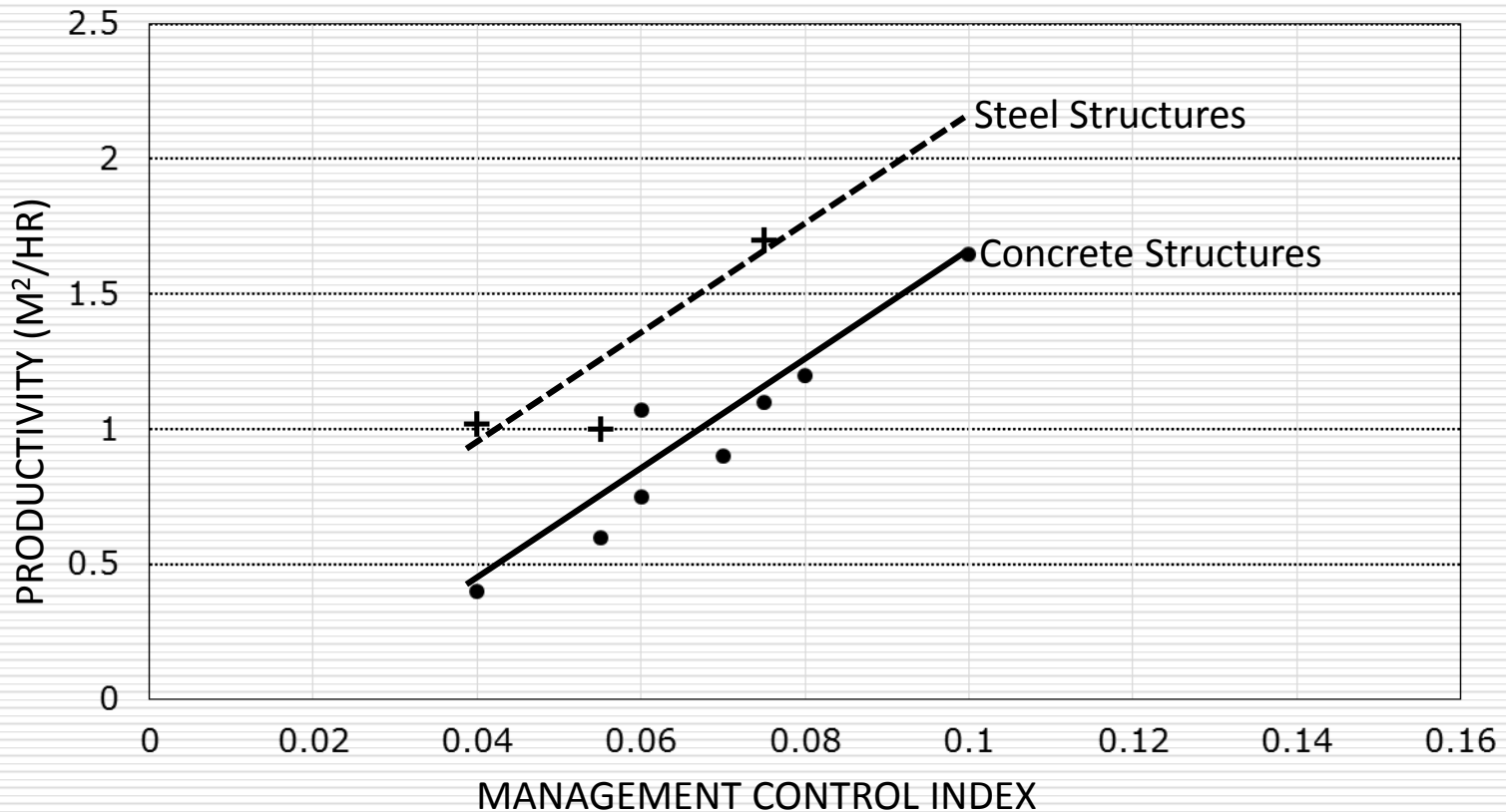
Statistical Studies

Interruptions



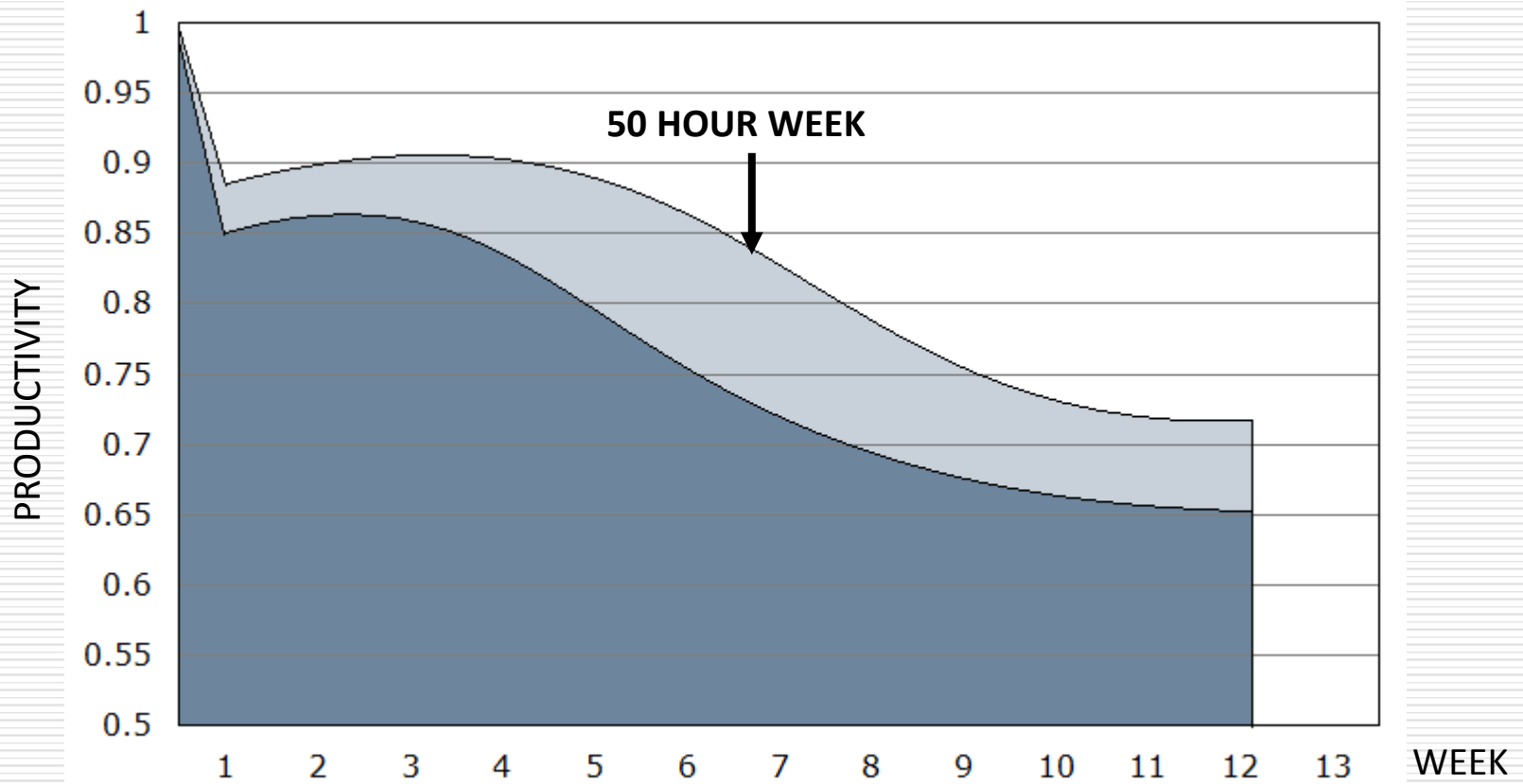
Statistical Studies

Management Ratios



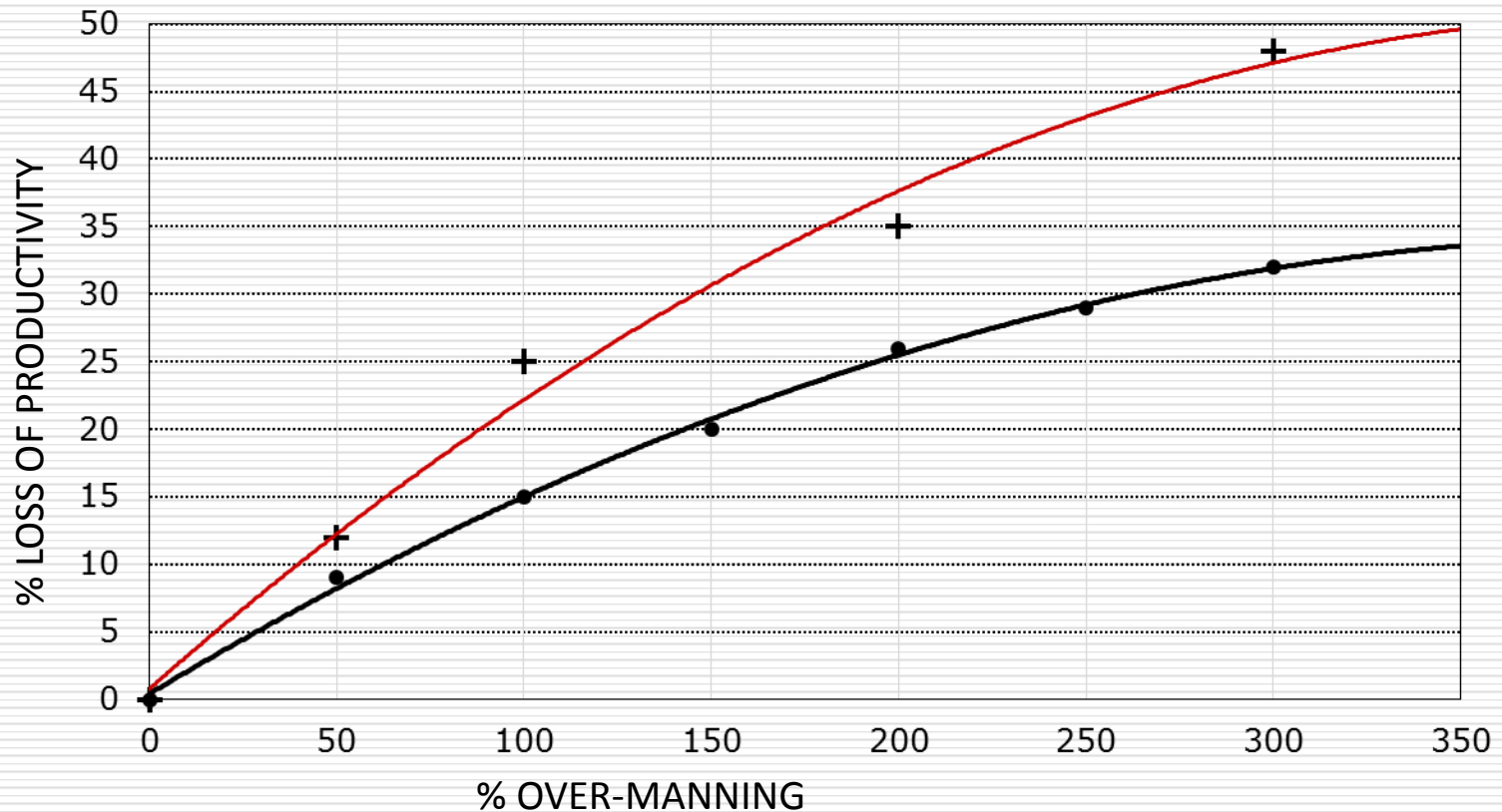
Statistical Studies

Overtime working cumulative effect:



Statistical Studies

Over-manning

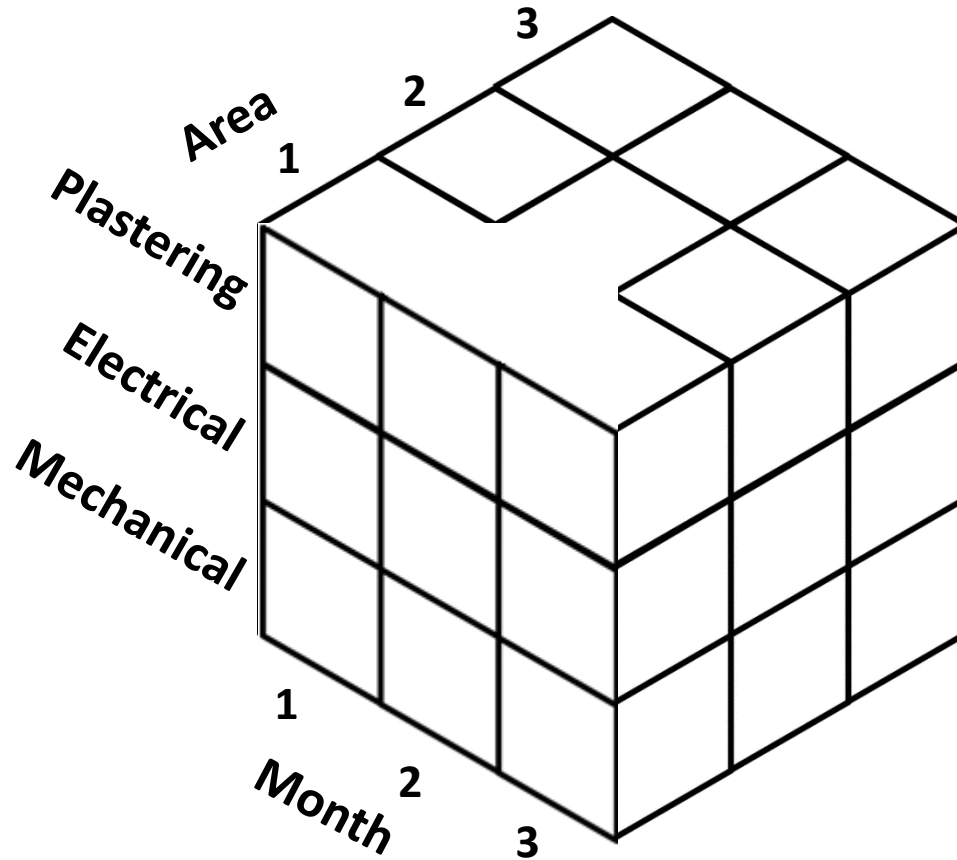


Strategy

Consider grouping changes by:

- Discipline i.e. mechanical/electrical
- Area i.e. floor/block/building
- Period i.e. week/month/section

Strategy



Strategy

- If you are planning to change or circumvent the contract procedure, this must be agreed in writing by:
 - The other party(s)
 - Persons with sufficient authority
 - Any affected members of the supply chain

- Are you using the right form of contract for the volume and value of change anticipated?

Issue 2 - Sequential Change

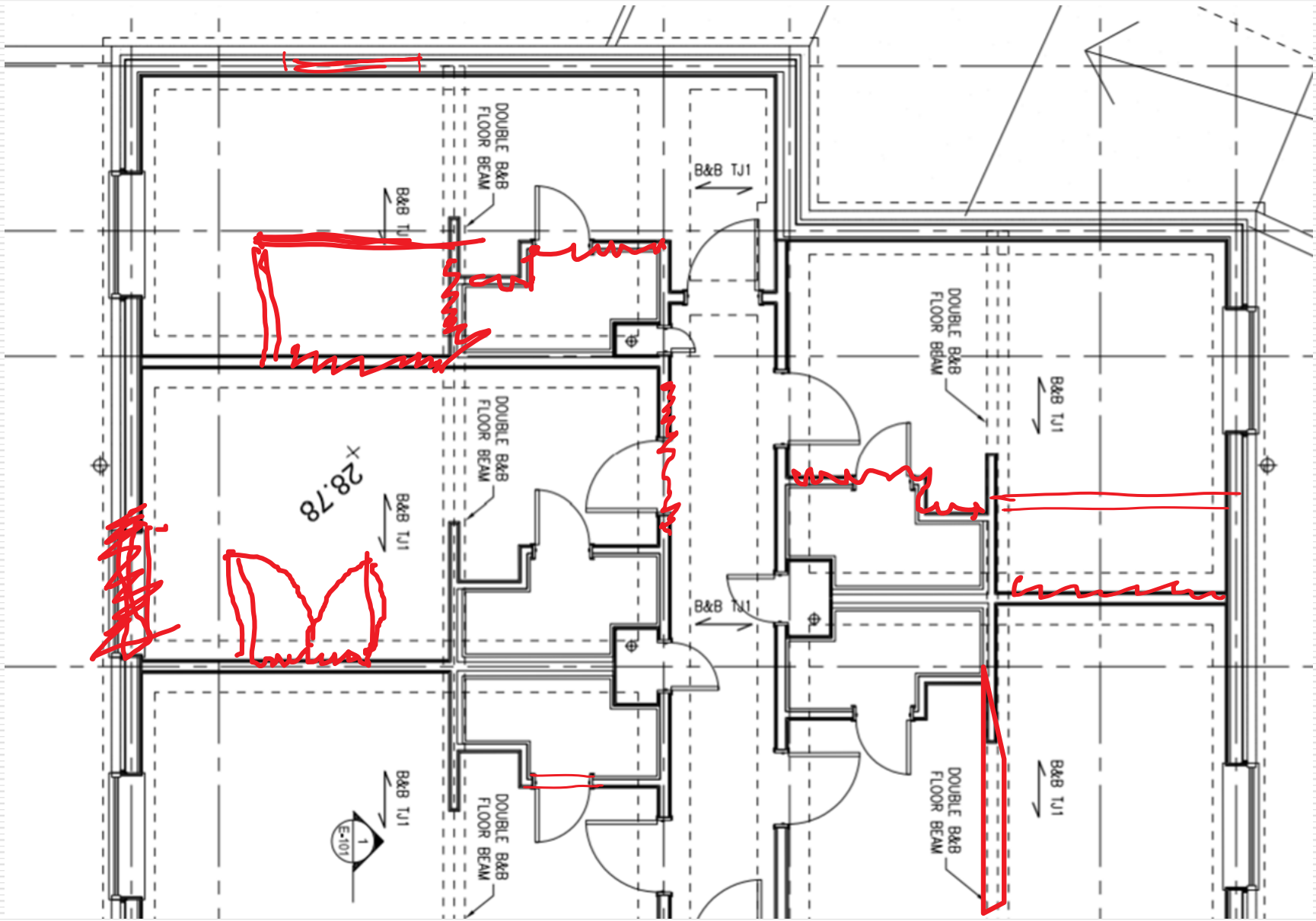
- Scenario - A new office development is under way and the ground floor slab is reaching completion, bricklayers are due to start the internal partitions in two weeks time.

Progress on site



Scenario

- After a meeting on site, it becomes clear to the Contractor that the Architect is considering making some changes to the layout of the walls on the ground floor.

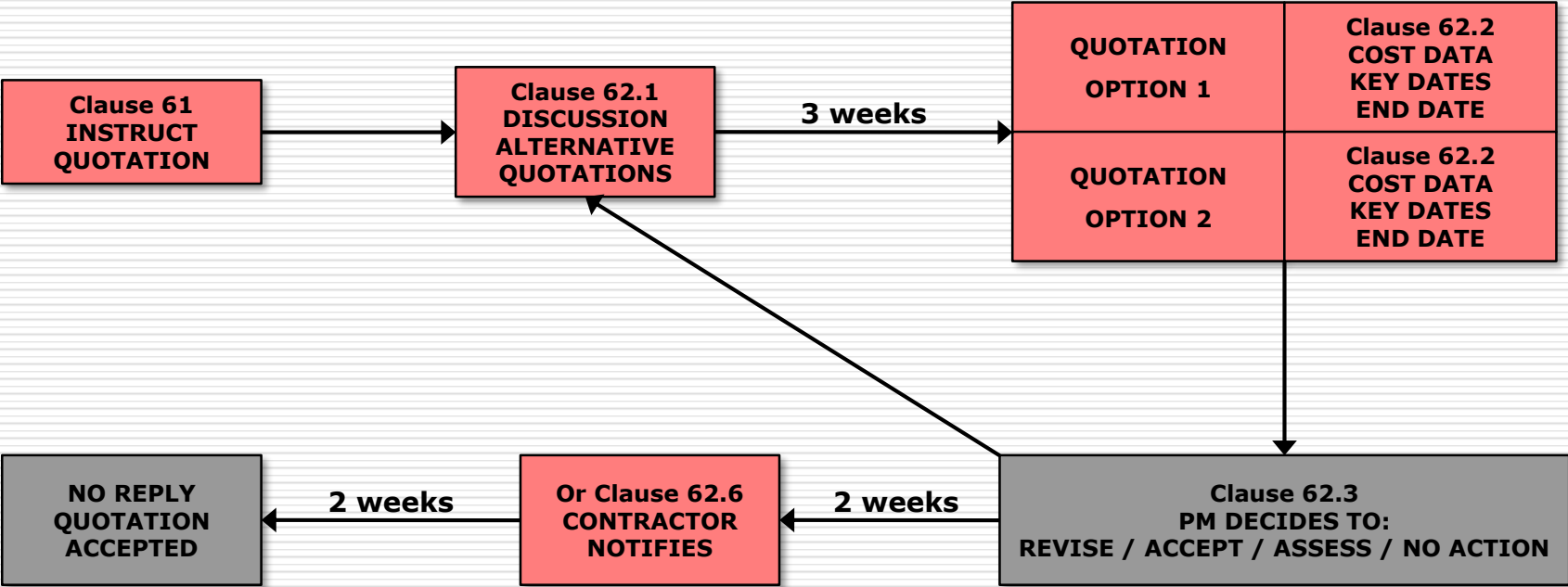


Contract Process

- Assuming an NEC 3 contract, next steps are:
- Issue an early warning notice;
- Project Manager instructs work to stop or not to start and/or;
- Requests a quotation.
- How long does this process take?

Change under NEC3

FLOW DIAGRAM – COMPENSATION EVENT QUOTATION



Challenges?

- Where will progress be in 5 weeks' time?
- Should the Contractor start to erect the block work, possibly to knock it down in few weeks?
- Should the Contractor stop and wait?
- Or build walls that may get knocked down again?
- Order lintols, that may not be needed?

Challenges?

- Always follow the contract.
- Progress works in accordance with the programme.
- Assume timing of instruction as per contract.
- Allow costs of demolition to perform to programme.
- Allow costs of new build .
- Agree any deviations from the contract in writing.

How many changes?



Hold

Preparation

Work

Finishes

Conclusions

- Considering the likely type and volume of change upfront will inform the process.
- Don't be afraid to suggest change to a process that is not working.
- Processes in the contract can be changed, by agreement.
- Ensure you use the right form of contract.

Questions?
