



## Site Organisation and Supervision (SOS)

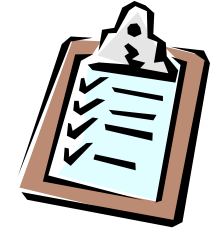


*Ir. Dr. Sam C. M. Hui*

Faculty of Science and Technology

E-mail: [cmhui@vtc.edu.hk](mailto:cmhui@vtc.edu.hk)

# Contents



- Contractor's Preparation
- Site Production
- Contractor's Control Process
- Practical Examples



# Contractor's Preparation



- Construction project planning
  - Working method
  - Resources planning
  - Schedule and programming
- Techniques & tools
  - Method statement
  - Contract programme



Table 1. Example of a method statement

<b>Description of items</b>	<b>Quantity</b>	<b>Details of method</b>	<b>Plant</b>	<b>Output per week</b>	<b>Plant labour involved</b>	<b>Period required</b>
Excavate pipe trench	500 m	Excavate backfill plant	Backacter	500 m	4 labourers	1 week
PVC pipe	500 m	Lower by hand	Nil	250 m	6 labourers	2 weeks
Basement excavation	4,000 m <sup>3</sup>	Excavate direct load to lorry	Backactor and lorry	2,000 m <sup>3</sup>	2 labourers	2 weeks
Basement reinforcement	5,000 kg	Supplier cut and bent	Nil	1,666 kg	2 steel fixers	3 weeks
Basement concrete	400 m <sup>3</sup>	Site mixed	14/10 mixer	100 m <sup>3</sup>	6 concretors	4 weeks



# Contractor's Preparation



- Site layout
  - Study, plan and organise the unused areas of site to accommodate construction equipment, materials and buildings for use in the works
  - What are the influencing factors?
  - How to work out the site plan?
  - What are the primary considerations?



# Contractor's Preparation



- Site layout (cont'd)
  - Major items to consider:
    - Temporary buildings (offices, welfare building, drying rooms, sanitary conveniences)
    - Material storage areas
    - Location of plant
    - Temporary roads, hardstanding and access
    - Sundry points (e.g. stand pipes, site name boards, vehicle wash areas)

# Contractor's Preparation



- Schedule of resources
  - Plant schedule
  - Staff schedule
  - Labour requirement schedule
  - Materials schedule
  - Schedule of sub-contractor's work
- Sundry arrangements
  - Temporary site services, insurance, licences, etc.



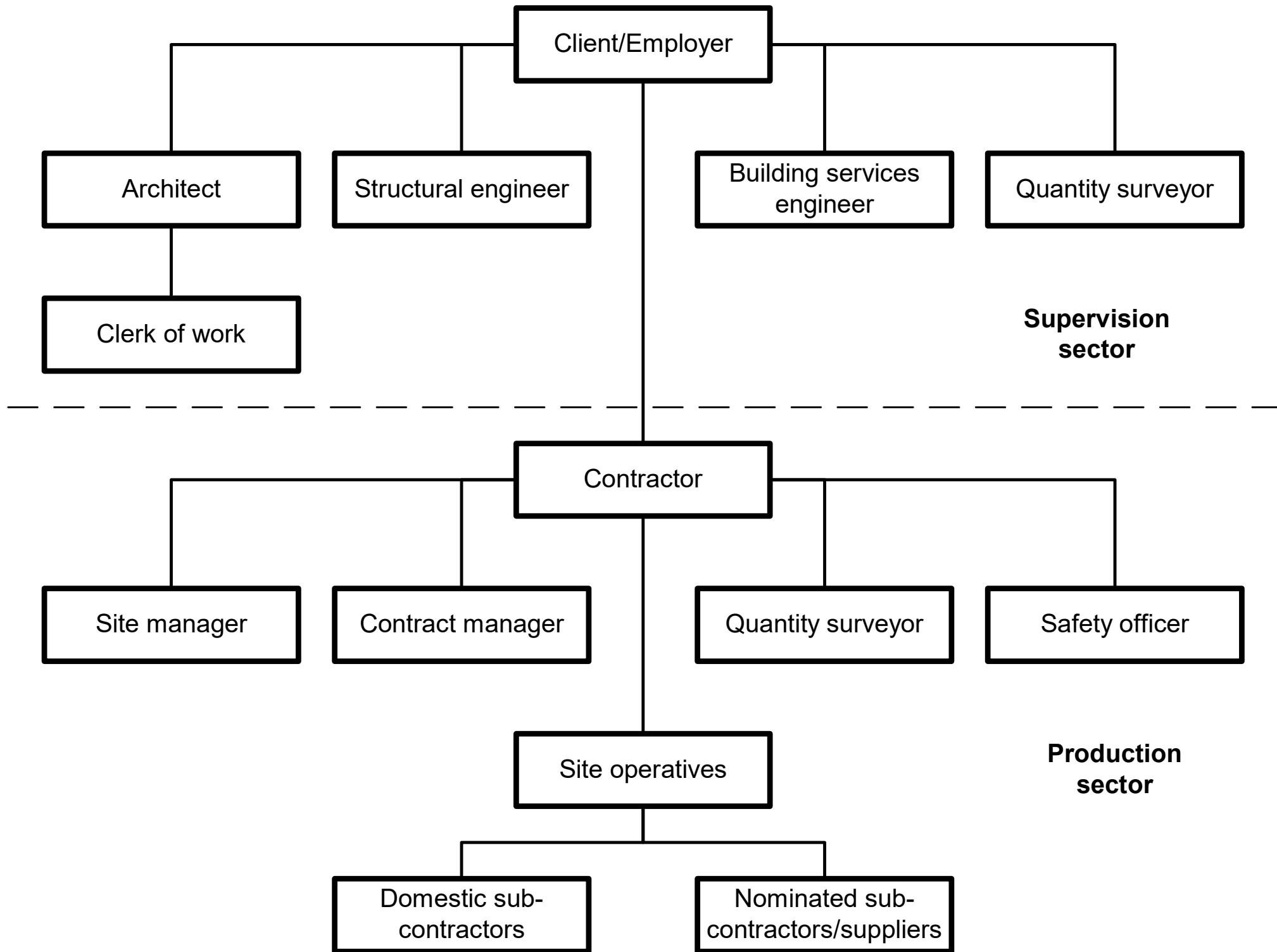


# Site Production



- Setting up the site
  - Site grid, site levels, site boundaries
  - Temporary buildings & facilities
- Project administration
  - Project team and site personnel
  - Their responsibilities and roles





# Site Production



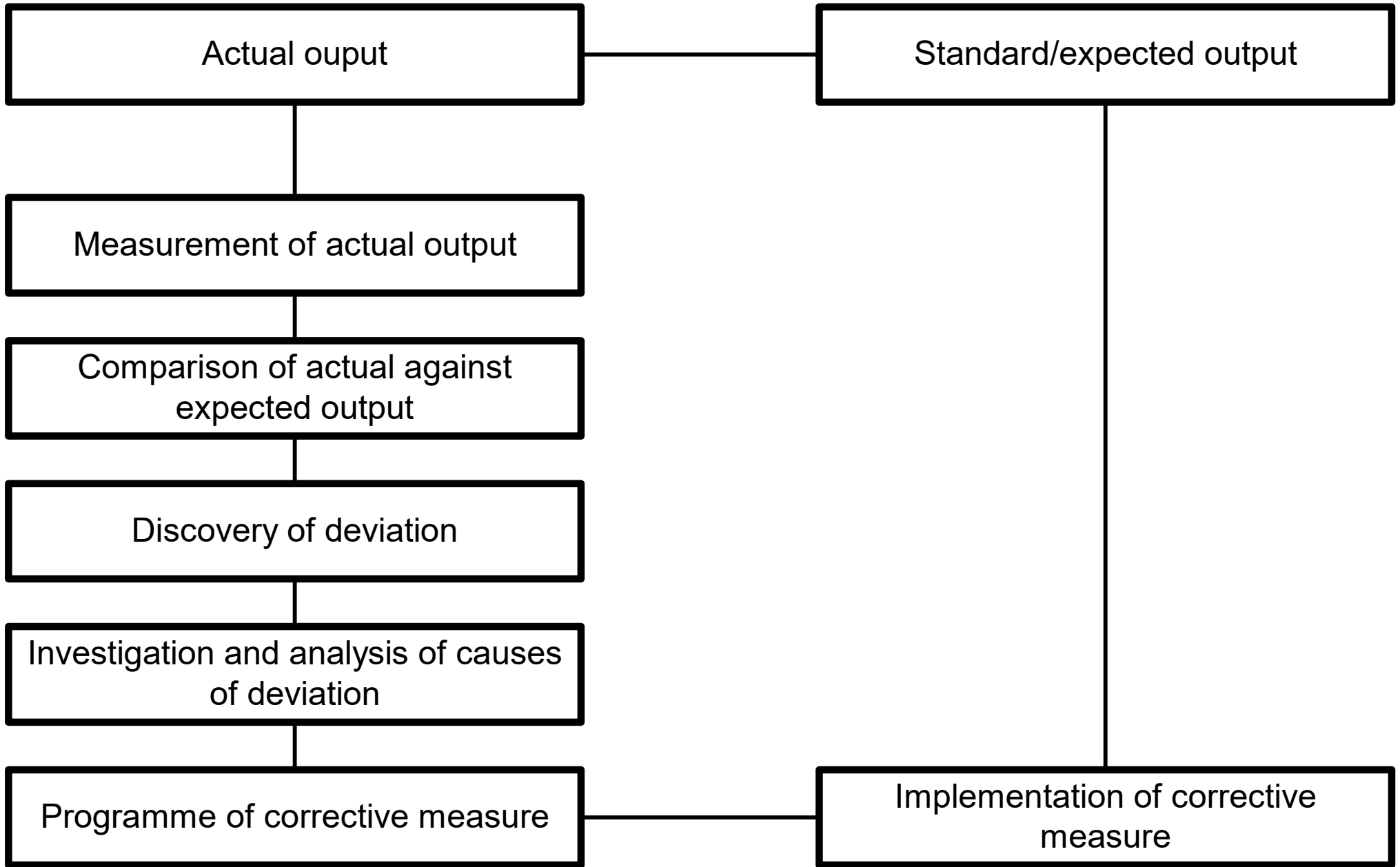
- Site personnel (see notes for details)
  - Clerk of works
  - Contract manager
  - Site agent/manager
  - Safety officer
  - Quantity surveyors
  - Engineers



# Control Process



- Control over the execution of the projects
  - Measure progress or result against a standard (established by the planning & programming)
- Monitoring cycle
  - Measure actual output, compare against planned
  - Analyse the cause of deviation, propose corrective measures, the process is then repeated



The control process

# Control Process



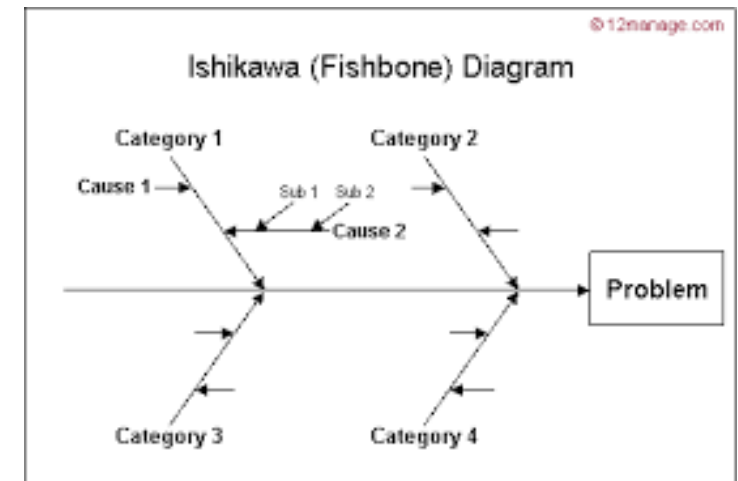
- Areas of control (see notes for details)
  - Labour
  - Sub-contractors
  - Productivity
  - Materials
  - Plant
- Aims: quality, safety, efficiency



# Control Process



- Examples of factors that affect M&E site productivity (see the figures in handout)
  - Ishikawa (or fishbone) diagrams\*:
    - How to read it?
    - How to use it?
  - Pre-construction stage factors
  - Construction stage factors



\*Ishikawa diagram - Wikipedia, [http://en.wikipedia.org/wiki/Ishikawa\\_diagram](http://en.wikipedia.org/wiki/Ishikawa_diagram)  
(How to Construct a Fishbone Diagram (9:21) <http://youtu.be/AT4hdB3UcMk>)

# Practical Examples



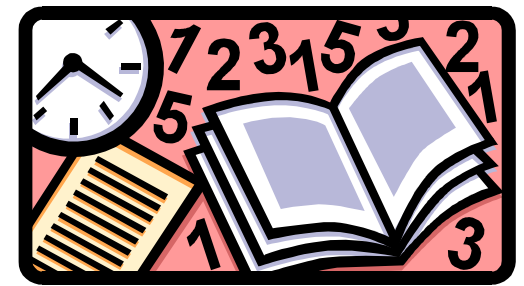
- Leading questions to discuss
  - What are the key issues for site organisation?
  - Ans:
- Who are involved in the planning process?
- Ans:
- How could we ensure quality, safety, efficiency?
- Ans:



# Practical Examples



- Case Study: HKU Kadoorie Biological Sciences Building (the section on Site Planning)
  - <http://civcal.media.hku.hk/biosci/default.htm>
- Case Study: HKU Medical Complex (the section on Site Planning)
  - <http://civcal.media.hku.hk/medical/default.htm>
- Case Study: 2-storey Prefabricated Building at HKU (the section on Site Planning)
  - <http://civcal.media.hku.hk/prefab/default.htm>



# Further Reading

- Site layout plan for construction - Design Buildings Wiki  
[https://www.designingbuildings.co.uk/wiki/Site\\_layout\\_plan\\_for\\_construction](https://www.designingbuildings.co.uk/wiki/Site_layout_plan_for_construction)
- Site organisation  
<http://www.hse.gov.uk/construction/safetytopics/siteorg.htm>
- Site organization and management  
<http://www.ekt.bme.hu/ArchEng/Site%20organisation%20and%20management%202015.pdf>
- Site Organisation for Construction  
<https://www.esedirect.co.uk/articles/post/site-organisation-for-construction.aspx>