

BBSE3009 Project Management and Engineering Economics

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Measurement and Valuation of Works (MVW)



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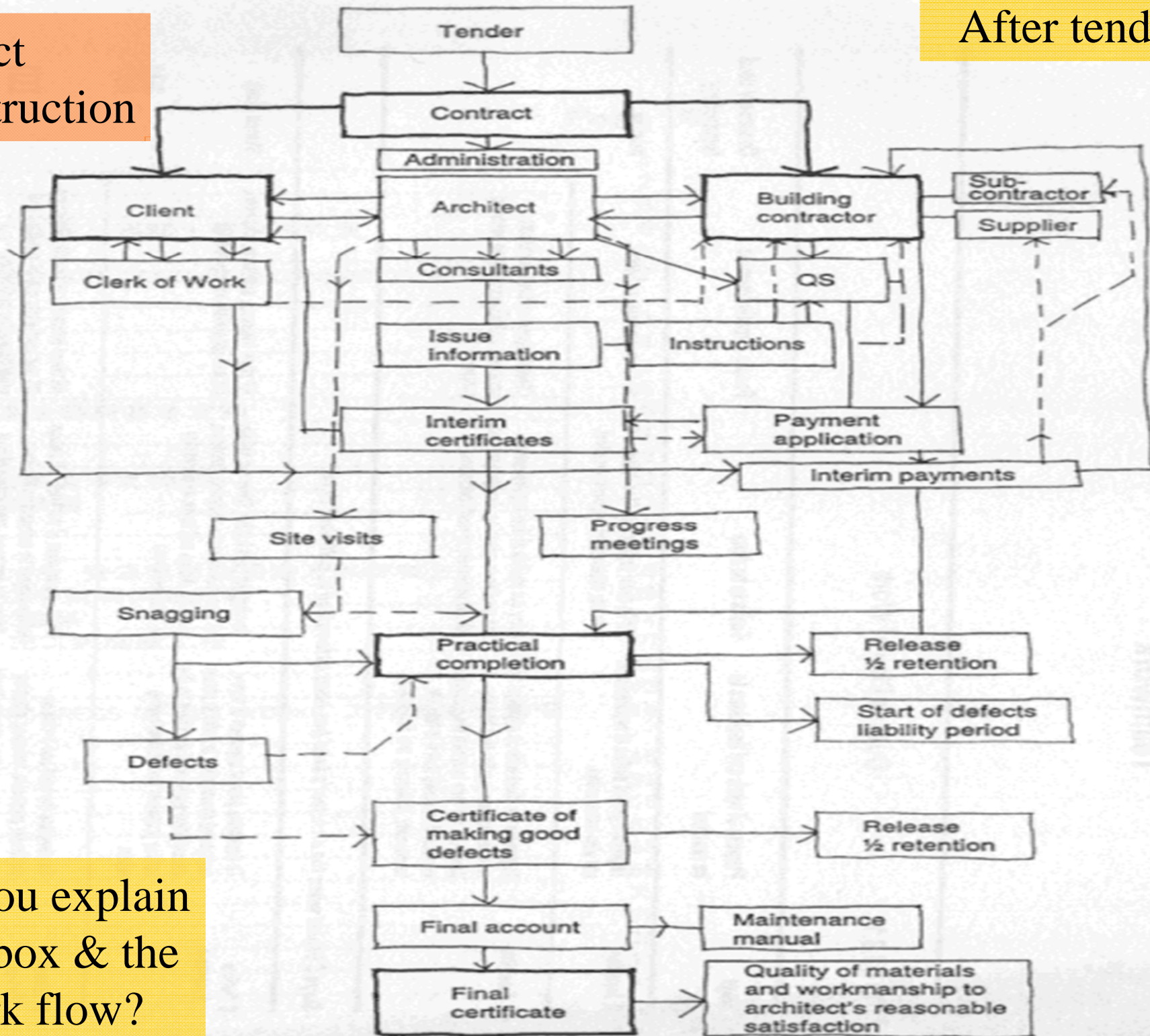
Contents



- Architect's Instructions
- Variations
- Measurement and Valuation of Variations
- Pro-Rata Rates
- Fair Valuation
- Provisional and Prime Cost Sums
- Certificates and Payments

Project Construction

After tendering



Can you explain each box & the work flow?



Architect's Instructions

- HK Standard Form
 - Clause 2 – Architect's Instructions (AI)
- Three ways:
 - 1. Written instructions
 - 2. Oral instructions
 - 3. Clerk of works directions
- Clauses which empower instructions
 - Situations where AI can be issued (see notes)
- Disputing an instruction (see also ADR notes)



Variations

- Doctrine of entirety (“entire” contracts)
 - No obligation to carry out or pay for variations
- Variations clause (Clause 11)
- Common reasons for variations:
 - Details are changed
 - Discrepancy between contract documents
 - Error or omission in contract bills
 - Provisional and prime cost sums
 - Restoration of damaged work



Measurement & Valuation

- Usually the job of quantity surveyor (QS)
 - Bills of variation
 - Rules for valuating variations
 - Work of similar character in similar conditions
 - Use prices in Contract Bills to determine pro-rata rates
 - Work of dissimilar nature
 - Use prices in Contract Bills or make a fair valuation
 - Work that cannot be properly measured or valued
 - Use dayworks and standard schedules



Measurement & Valuation

- Pro-rata rates
 - Three main methods (see examples in notes)
 - Derivation
 - Analogy
 - Reconciliation of analysis
- Fair valuation
 - Estimate of the cost including overheads & profit
 - Build up a unit rate from basic principles
 - Obtain prices from building price books
 - Extract unit rates from BQ on jobs of similar nature



Measurement & Valuation

- Provisional sums
 - A sum of money for costs which cannot be entirely foreseen, defined or detailed at tendering
 - Adjustments by replacing with actual expenses
- Prime cost (P.C.) sums
 - A sum of money for payment of nominated sub-contractors and suppliers
 - To be substituted by final accounts of the nominated sub-contractor and suppliers



Certificates and Payments

- Clause 30 of HK Standard Form
 - Interim Certificates
 - Stage payments & completion
 - Measurement of work done
 - Practical completion
 - Interim Valuations
 - Prepared by the QS
 - Retention
 - Not exceeding 10%



Certificates and Payments

- Retention fund
 - Employer may draw to reimburse himself for:
 - Work executed by another party where the main contractor has not complied with a valid AI
 - Premiums for insurance if main contractor has failed to insure
 - Payment of liquidated and ascertained damages
 - Example of legal proceed
 - Hsin Chong vs Yaton Realty (1986)



Certificates and Payments

- Certificate of Practical Completion
 - Contractual provisions for certain dates, such as
 - Beginning of Defect Liability Period (DLP)
 - Ending of insurance, liability for liquidated damages
 - End of regular Interim Certificates
 - Release of some retention fund
 - Beginning of the period of final measurement & valuation
 - Opening of arbitration matters



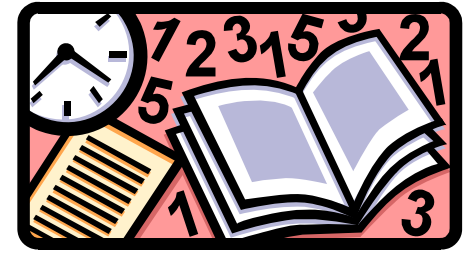
Certificates and Payments

- Certificate of Making Good Defects
 - Schedule of defects
 - Release of residue of retention fund
 - Clearance for the issue of final certificate
- Final account
 - Before Final Certificate is issued
 - Adjust the Contract Sum
 - e.g. for contingency sums, AI, provisional and prime cost sums, fluctuations



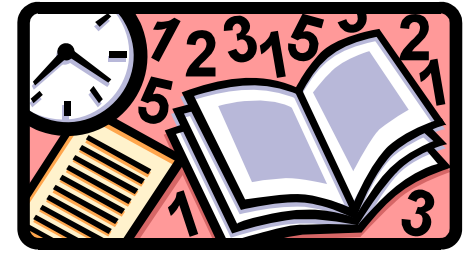
Certificates and Payments

- Final Certificate
 - Certify the works have been entirely completed
 - Include the sum of all amounts previously certified and the Contract Sum adjusted
- See examples of certificates & account at the end of the notes



Further Reading

- Architect's instruction,
 - www.designingbuildings.co.uk/wiki/Architect%27s_instruction
- Variations,
 - www.designingbuildings.co.uk/wiki/Variations
- Contract sum,
 - www.designingbuildings.co.uk/wiki/Contract_sum
- How to Survive during Construction,
 - http://www.ekjn.co.uk/Construction_phase.htm
 - How architects administer construction projects



Further Reading

- Practice Notes for Quantity Surveyors, Hong Kong Institute of Surveyors (HKIS):
www.hkis.org.hk/en/publication_sales.php
 - Cost Control and Financial Statements
 - Valuation of Variations
 - Valuation of Interim Payment Certificates
 - Final Accounts