

# Contract Documentation and Post-contract Administration for Quantity Surveyors in E&M Contracts

## VO for E&M Works

- change in Builder's works – change in arch dwg
  - BSE may not prepare drawings at the same time
  - cost implication may differ if E&M related variation works are considered
- VO for E&M
  - Lowering/ Heightening of suspended ceiling
    - e.g. false ceiling, depth varied
    - ceiling depth > 800 => double layer of sprinklers => double the no. => huge cost involved
    - add false ceiling – VO for light fittings
  - repartitioning
    - sprinkler layout change – + or - of sprinklers
    - lighting fittings layout change
    - redrawing of electric wire
    - rezoning of lighting
    - redo the conduit
    - if the wire has already done => all abortive !
    - ↑ no. of switch
    - ↑ no. of FR door
  - change of function of building
    - revision of fire compartmentation, say 30 => 32 zones
    - fire alarm panel may not be able to take account of the change
    - addition of fire shutter, fire door, sprinkler, subsidiary router
  - change of use of room
    - pantry to kitchen
    - FS regulation: add heat detector, fire extinguishers, sprinklers, fire door
  - change of swing of door from left to right
    - magnetic door reader installed
    - change of conduit layout esp after completion of brick wall and conduit
    - may need to drill hole and cut chase for conduit
  - change of indoor unit to outdoor A/C unit
    - bonding required and if no nearby bonding point => ↑↑cost
  - Additional requirement imposed by FS inspection
    - E.g. add sprinklers during inspection
    - Entitlement for payment?
      - ⇒ Missing work by E&M Contractor?
      - ⇒ Design problem of Consultant's drawings?
      - ⇒ if by contractor, no claim entitlement

## VO assessment

- measurement – **always measured as shown on the design drawings and AI**
  - never use/ follow shop drawing or as-built dwgs by Contractor for valuation
- contractual requirement – base on design (intent) drawing
- trouble when some Architects endorse these as-built drawings, shop drawings through AIs

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## Assessment of Unit Rates

- Understand build up of unit rates – conduits, junction boxes, draw wires, trunkings
- Relocation of conduit – breakdown
  - 1<sup>st</sup> fix
  - 2<sup>nd</sup> fix
  - T&C
  - Final fix
  - Depend on which stage the VO is issued and pay a % of the total cost of conduit
- Final circuit (\$250/no.) vs conduit (\$4/m)

## Pro-rata rates

- rare on E&M esp. equipment
- difference in dia./ jump to higher capacity may be price difference in multiple times
  - s.s. water pipe
  - e.g. pipe with flange – big increase
    - K9 (ductile iron pipe without flange connection), K12 (with flange cast to it)
    - same dia – big difference in the rate

## Star rates

- Major Equipment
  - Material cost - check Purchase Order and receipt
  - labour cost – ask Contractor to provide labour cost breakdown for other equipment
  - add mark up \* T&C
  - not entitled to Consumables and rigger etc.
  - seek advise from BSE
- Distribution Items – rate should be readily available

## Abortive Works

- common for **concealed conduit** becomes redundant
- because of layout/ partition change, hose reel location
- **consider cost breakdown to 1<sup>st</sup> fix, 2<sup>nd</sup> fix, final fix and T&C**
- check the stage of completion
- pay for completed part ONLY

## Miscellaneous Works

- T&C: claim for engineering hours?
  - Esp for restaurant, claim \$3000 for submitting form
- Cleaning of works – compressed air, medical gas – air purging, leakage - expensive
- Chemical treatment to chilled water pipe
  - priced very low in BQ, say \$1000 as it is left at the rear of the project
  - SMM stated as lump sum
- Under general works in SMM – lump sum – with regard to reasonableness spent for the same
- Filling of fuel tank for emergency generator testing
- Spare parts – unit rate includes or follow SMM then not include

E&M works