
QUANTITY SURVEYING ASPECTS IN COST MANAGEMENT OF CONSERVATION PROJECTS / BUILDING - ROLE OF CONSULTANT QUANTITY SURVEYOR

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Abstract

Being involved in various Building conservation and Cost Management consultancy service with Government and private sector, the writer wish to share the challenges faced by Consultant Quantity Surveying in relate to End user expectation from Consultant Quantity Surveyor such as approach in providing initial cost estimation, selecting the most viable option and tender procurement, format of documentation, selecting the right contractor and post contract cost management in order to accomplish the intended investment within the reasonable cost and getting the building with restored heritage element and fulfilling the Heritage management plan.

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INTRODUCTION

Government and private sectors place greater emphasis on the conservation of heritage places as a result of the expending interest and appreciation in the events, declaration of particular enclaves as cultural heritage such as Penang and Melaka as UNESCO world Heritage site.

CLIENTS EXPECTATION FROM A CONSULTANT QUANTITY SURVEYOR

Before we progress to the clients expectation, the Consultant Quantity Surveyor need to understand the type of client and their involved in Building restoration work.

Generally, there are two type of end user in Heritage building or conservation projects, namely, Government agency and Private sector end users. The manner and client requirement for both sector's is slightly difference in the method of tender procurement.

i. Category 1 : Government agencies

The nature of project shall mainly evolve in preserve and restore the national monument and heritage building for future generation reference, educational and non profit base.

Among the additional features foreseen in government related project tender documentation and procurement shall be as follow;

- a) Emphasize on proper construction process and progress documentation for future references (e.g. : HABS1, HABS2, HABS3 as per "Garis Panduan Pemuliharaan Bangunan Warisan" by Jabatan Warisan Negara, Julai 2012).
- b) Video recordings and records of Construction Methodology for academic reason.
- c) Archeological Surveys and excavation.
- d) Green Building Index compliance (Majlis Bandaraya Pulau Pinang)
- e) Classification on the Category of Building (e.g. MP Pulau Pinang).
- f) The tender Procurement method shall abide with Treasury guideline.
 - i) For project less than RM 500k :-
 - Tatacara Perolehan Sebut Harga (Bil 5 - Tahun 2009 Kementerian Kewangan) shall be applied.
 - Registered with PKK / LIPM Kelas F and CIDB under sub-head of B-03 (Pemulihan dan Pemuliharaan).
 - ii) For project more than RM 500k
 - Tender Document shall be prepared according to Latest JKR guidelines and formats.
 - Open tender concept with limitation on tenderer or registered under Sub-head of B-03 (pemulihan dan pemuliharaan).

ii. Category 2 : Private sector

Generally the private sector end user orientation shall evolve on Commercial value. In Penang Island and Melaka Heritage enclave area, the end user tend to capitalize on the declaration of UNESCO world Heritage gazetted area for their personal gain and commercial purpose.

The End user's main objective is obtaining UNESCO Heritage branding for business and commercial premises (e.g. hotel, office etc).

This category of end user is less concern on process of restoration and documentation and more interested on end product and value for money invested.

The tender Procurement method shall be;

- Normally on selective tender basis.
- Few industry player in the market will be shortlisted for tenders.
- Use of PAM Contract to adminter the contract.
- Selective tenderer invited.
- Many round of tender clarification meeting with tenderer prior to the award.

Main component of expectation by Client.

The anticipated client's expectation (but not limited) from Consultant Quantity Surveyor (CQS) can be itemized as follows;

- i. The CQS should able to provide **"Right Cost Estimate"** based on reasonable assumptions and options.
- ii. Advising the client on most appropriate tender documentation format, content, supplement items to Standard preliminaries, adopting the relevant guidelines from governing bodies.
- iii. Assist in Appointment of Right Contractors by adopting suitable tender procurement system, which may include the "Pre Qualification" on qualified Heritage Building contractor.
- iv. Minimizing the Variation Order.
- v. Contract Document as "SOP" for the Project Implementation
- vi. Project completed within the stipulated time period.

i. Right Cost Estimate

This expectation is common in all the building projects. However, the conservation refurbishment work was perceived by design professional to be inherently more risky than new-build project.

Hence, the approach to the preparation of "Right cost estimate" for conservation project need to be strategies and detailed based on information available. The practice of superficial method estimating may not be suitable.

NORTHERN

Restoration of Sia Boey Market (Phase 1 & Phase 2) for
Perbadanan Pembangunan Pulau Pinang.



ii. Advising the Client on the most appropriate tender documentation format and supplement attachment.

Preparation of Bill of Quantities is major part of the Tender documentation process and question also arise on what the format of BQ. Whether elemental cost breakdown method as per Standard Method of Measurement for Building work or “top down” format.

Proposed Oasis Hotel, Love Lane, Penang for Hartanah Sanjung Sdn Bhd.



In my case, we had adopted “need basis” format. The approach to this format are as follows;

Need basis format

- Based on “sick building” treatment principle
- Start from most deteriorated element (priority on curing the chronic side of building) and followed by restoration and conservation of remaining building element.
- In order to prevent further damage to building, the priority shall be repairing the damaged/decayed building element which contribute to further building deterioration.
- If initial building indicates that the Roof Tiles/covering is not in order and window/opening of building is being vandalized; then the first element shall start from roof repair/temporary roofing and seal off the building opening.

The following recommended “additional” information to be included in the tender document;

- Dilapidation Report
- Method Statement
- Dilapidation Survey
- Conservation Methodology
- Measured Drawing

The following project is writer’s experience in Restoration and Relocation of Rumah Bugis Tradisional Timber house from Kuala Selangor to Shah Alam, Selangor, Malaysia.

Original Conditions at Kuala Selangor

After relocation at Shah Alam



iii. Assist in Appointment of Right Contractors

The following are the expected quality in the competent contractor;

- a. Contractors that are capable and understand the conservation principles.
- b. Clearly understood the BQ description prepared by QS and requirement by Conservator.
- c. In private sector, regardless the size of project; qualified and experienced contractor shall be invited to participate on “selective tender” basis.
- d. However, in government sector, ensure appropriate registration by Contractor in CIDB category and sub-head for conservation work (e.g. B03 – Pemulihan dan Pemuliharaan) is complied.

Among the practical issues faced during tenderer selection stage;

- a. For government related procurement, one of main criteria is registration with CIDB under sub-head of “B03 – pemulihan dan pemuliharaan” which the primary intention to provide accreditation to the Employer that the contractor is possessed with relevant technical skill, management and understanding the scope of work under those registered sub-head.

This requirement is compulsive basic criteria for the contractor to participate and purchase the tender document and attending site briefing.

However, sometime the practice of issuing “kebenaran khas” for specific sub-head for their contractor whom have “zero” experience in conservation work had allowed unexperienced contractor to participate in the tender exercise.

- b. However, in private sector projects, there are few contractor generally monopolized the industry and controlling the construction activity of heritage / conservation project in the particular project territory. Usually the same set of Builder is seen to be major player in the industry.

iv. Minimizing the Variation Order

Based on my experience, how best the QS had drafted the Bill of Quantities and implementation of necessary tender pre requisites; the Variation work in Building conservation project cannot be avoided. A good Quantity Surveyor may put his effort to minimize it by capturing the uncertainties in the Bill of Quantities, by allowing provisional quantity item or “unit rate” only. It is very helpful in the event any variation work initiated by designer / Employer.

Restoration of Shop Houses, Kimberly Street Penang for
Majlis Berbandaraya Pulau Pinang (MPPP).



- a. Employer change of mind during the construction stage. In Kimberly Street shop house restoration project, toward the end of contract duration Employer change the function use of the Building in order to allow “Craftsman” exhibition area which resulting extended completion period and additional cost.
- b. Local Authority requirement (ie. each dilapidated Building have their own sickness and need to be rectified on “Ad hoc” basis (Case study : Love Lane Hotel; fire rated ceiling).
- c. Unexperienced design Consultant with conservation project experience team in the project.
- d. Unavailability of Material specification as stated in the Tender Drawing or Bill of Quantities during construction stage (Case study : Sia Boey Market restoration).

While compiling the Contract Document, greater emphasize should be given to following matters;

v. Contract Document as “SOP” to The Project Implementation.

- i) Contract Document as a tool for Architect, Clerk of Work and Employer’s Representative to monitor, understand and supervise the conservation work carried out by contractor on site.
- ii) In lieu of Standard specification for Heritage Building; the Contract Document shall be a single reference point on the methodology of conservation, quality control, intended end product quality, indication on the constraints surrounding the projects and able to signal the contractor on potential risk foreseen in particular conservation projects.

vi. Project Completed within the Stipulated Time Period

It is always nice to hear that Building to be completed within the stipulated time. However, in practical, I never seen any of conservation projects completed within the prescribed time period.

Refurbishment of Suffolk House Penang
(Phase 2) for JKR Pulau Pinang.



Refurbishment of Shop House, Lebuh
Pantai, Penang for OCBC Bank (M) Berhad.



The reason for Extension of Time is majorly due to the following issues;

- a) Failure of Design consultant to equip themselves with Local Authority requirement
- b) Shallow input on existing site condition during design stage such as;
 - i) Authority requirement on “Fine resistant” matter and planning.
 - ii) Failure to investigate the stability of soil beneath the existing ground and floor slab.
 - iii) Tendency of Design Consultant, especially structural Engineer providing “Standard detail drawing” without site visit and investigation.
 - iv) Failure of M&E Engineer and Civil Engineer to investigate the relocation and diverting of existing services on site during design stage.
 - v) Failure of Design Consultant to investigate the impact into adjoining Building.
 - vi) Employer / Architect giving unrealistic completion period in the “Form of Tender”.

(E.g. Sia Boey Market Restoration should be completed within 4 months, however in actual fact with very experience and capable contractor the project took 8 months to complete). Hence, a Consultant Quantity Surveyor role is **not** only compiling and translate the design information to priceable Bill of Quantities, but more important is that the abovesaid identified risk factor is efficiently discussed and resolved during the design and tender procurement stage.

ISSUE AND CHALLENGES FOR CONSULTANT QUANTITY SURVEYOR

The following are the anticipated issue and challenges faced by the writer for past 15 years;

1. Smaller Scale

Most of the Heritage Conservation project is on smaller scale (less than RM 5.00 million).

2. Fees Structure

Unreasonable QS Consultant Quantity Surveyor may hesitate to explore and embark in this field as compared to new construction, which amounted to bigger Contract Sum and related fee percentage.

The scale of fees for QS service under Category 3 of Building work may not commensurate with the effort been put. The revision on scale of fee for conservation project need to be initiated.

3. Time Spent by Senior QS is Proportionately higher

The time spent by Senior QS / Principal of the firm is proportionally high as compared to other new building project of same value

4. Application of Historical Cost Data is Not Practical

Each conservation project have their own sick and diagnosis by Conservator. The practice of applying the previous project format / historical cost data of previous conservation job may not workable.

5. Learning Curve of PQS

The project QS: Learning curve is high and while he / she complete a conservation job and learn the knowledge, the continuation of similar job is in question: (ie Surveyor been trained but not having an opportunity to implement in next opportunities). Delegation of any technical work to junior QS may not resulting the expected output.

6. Only A Few Contractor

Procuring the experienced conservation Building Contractor. Only a few Contractor involve in the market and tender price received may not be competitive as compared to other new Building project.

7. Consultant Without Heritage Experience

The other design consultant appointed by Employer (Architect & Engineer) may not experience in Building Conservation technology and procedures. End up QS to spent more time and Architect/Engineer resources to educate and to prepare appropriate design drawing related to conservation technique.

8. Involvement of Other Stakeholder During Post Contract

Interference to progress of project and cost management.