

## Budgeting and Cost Control for Historic Buildings

### A. Introduction

It is the Government's heritage conservation policy to protect, conserve, and revitalise historical and heritage sites and buildings through relevant and sustainable approaches for the benefit and enjoyment of present and future generations<sup>1</sup>. Apart from providing economic incentives and financial assistance for the preservation of privately owned historic buildings, the Commissioner for Heritage's Office (CHO) implements the Revitalising Historic Buildings Through Partnership Scheme (Revitalisation Scheme) for Government-owned historic buildings. Batch I of Revitalization Scheme started in 2008 with seven buildings, and Batch III, inclusive of King Yin Lei, Haw Par Mansion, Bridges Street Market, and Former Fanling Magistracy, is now underway for the selection of proposals submitted by non-profit-making organizations (NPOs). The purpose of this article is to share experience in the budgeting and cost control of historic buildings.

### B. Application and Funding for Government-Owned Historic Buildings

NPOs with charitable status under Section 88 of the Inland Revenue Ordinance (Cap 112) are eligible to apply for using Government-owned historic buildings identified under the Revitalisation Scheme to provide services or run businesses in the form of social enterprise<sup>2</sup>. In their applications, NPOs are required to provide detailed plans showing how the historic buildings will be preserved. The Advisory Committee on Revitalization of Historic Buildings, comprising Government and non-Government experts, is responsible for assessing the applications and advising the Government on related matters. In the applications, NPOs are also required to explain in detail their financial viability, including self-finance (if any), and how the local community will benefit from their proposal, such as the number of job opportunities that will be created. NPOs, if selected in the first round of assessment, would then be interviewed by the Advisory Committee to further explain their proposal.

CHO provides one-stop advisory services for successful applicants to implement their proposals in the areas of heritage conservation, land use and planning, building architecture, and compliance with the Buildings Ordinance (Cap 123). When an NPO's application is justified and accepted, CHO will provide financial support including the following:

- a) a one-off grant to cover the cost of major renovation to the buildings, in part or in full;
- b) nominal rental for the buildings; and
- c) a one-off grant to cover the starting costs and operating deficits (if any) of the social enterprises for a maximum of the first 2 years of operation at a ceiling of \$5 million, on the prerequisite that the social enterprise proposal is projected to become self-sustainable after this initial period<sup>3</sup>.

For details regarding the application for and financial support of Government-owned historic buildings through the Revitalisation Scheme, please visit official website [www.heritage.gov.hk](http://www.heritage.gov.hk).

In order to make their applications technically and financially viable, NPOs always enlist consultants, including heritage specialists, to support their application. The NPO's budget obtained from Government will eventually be capped by the estimated cost as stated in the Public Works Subcommittee (PWSC) paper and approved by the LegCo Finance Committee. In case of the tender sum exceeding the approved estimated cost allowed in the Approved Project Estimated, re-tendering with a reduced scope of works is one of the ways for moving the project forward. However, it is time consuming and inevitably deferring the operation of the historic building by the NPO. Therefore, it is of paramount importance for the selected NPO and consultants to ascertain all the special features of the historic buildings and its site constraints, operation and technical requirements, uncertainties, etc., in setting out a realistic budget for the application of funding from the Government.



## C. Special Features of Historic Buildings in Respect of Budgeting and Cost Control

When compared with new construction projects and A&A works, budgeting and cost control for historic buildings has certain difficulties due to the following circumstances:

- 1) Historic buildings were constructed a very long time ago and in very basic standards and workmanship. Many of them are prewar buildings. Many structural elements have been deteriorating and require structural repairs, such as the addition of structural supports, so as to preserve the existing building façade and internal layout for future use. These deteriorated structural elements are always hidden and only discovered after the removal of surface finishes.
- 2) There is a lack of building records for the historic buildings including foundation systems and underground services. Underground utilities services have often been abandoned and fully blocked. The historic building may contain many internal and external fixtures and fittings (e.g., cabinets or drying racks) that are not shown on architectural drawings or visible on site. Even when there are building records, the actual dimensions of the building elements may substantially deviate from the actual site dimensions. Some historic buildings may even contain unauthorized building structures.
- 3) Some portions of the historic building possessing higher historic value (e.g. the building façade or heritage items) need to be preserved, and the renovation should be carried out by heritage contractors for Specialist Sub-Contract Works for Repair and Restoration of Historic Building. Certain heritage items, such as wooden fittings and fixtures, need to be stored off-site with special protection and treatment before their relocation to the site during the construction stage.
- 4) Many historic buildings, especially pre-war buildings, are located in very congested areas and are often low-rise buildings. Getting access to the site and the establishment of plant and equipment during the construction stage are very difficult. Some historic buildings may still have some public areas (e.g. staircases) that have to be shared by neighbour during construction. It will have a significant cost implication if the renovation involves the reconstruction of the majority of the existing building and its foundation system.
- 5) There may not be sufficient space to accommodate new E&M services for the NPO's future operations due to site constraints. Substantial costs may be incurred for forming openings, pipe ducts, dog houses, fire-rated enclosures, etc., to accommodate and conceal E&M services.
- 6) Certain areas of the existing historic buildings should be reserved for exhibition areas or as a museum to display heritage items to the public for collective memory. For example, Mei Ho House will have a museum showing the lifestyle of residents of the Shek Kip Mei Estate, which was built in 1954.
- 7) Many historic buildings are partially converted into business that attract tourists such as cafés, restaurants, and hotels, which can serve as a major source of income to sustain the NPO's daily operation. In this situation, substantial fire-rated protection works need to be constructed to address the relevant license requirements and statutory requirements.
- 8) Revitalisation for historic buildings usually requires a longer construction period, the cost of which is reflected by a higher portion of preliminaries allowed in the tender sum.
- 9) A large portion of costs are allowed for the fulfilment of the latest building and statutory requirements, such as fire-rated requirements or the addition of facilities to create barrier-free access to the buildings.
- 10) There is a lack of cost information for budgeting for the renovation of historic buildings. The cost data are rather unique and not applicable to other historic buildings.

## D. Cost Control during the Design and Construction Stage

As an NPO's financial support will be eventually capped by the budget approved by the financial committee, more details on the design and cost plan in budgeting would definitely help secure sufficient funding from the Government and avoid over-budget during the tender stage.

Demolition works, structural strengthening works, and building services installations are the three main areas of cost that are vulnerable to overrun during the design and construction stage. This is because there are many unforeseeable building conditions and site constraints that will only be discovered after the removal of surface finishes. For example, the actual extent of concrete spalling and water leakage may only be discovered after the removal of surface finishes and carrying out of testing. Abandoned underground service pipes and manholes not shown on the architectural drawings or building records can only be found on site during excavation, which requires additional time liaising with various government departments concerned for identification and relocation.

The other reason contributing to the many variations is that designers due to lack of experience in heritage buildings may adopt their typical construction details in their heritage projects, taking no account of the special affixing details between the new structure and the existing building. For example, a typical detail for external wall plastering may not technically applicable to the external walls of a historic building where the base concrete wall has deteriorated or it was originally built of loose bricks after the removal of surface finishes. If there are many unforeseeable events, then the contract contingencies will soon become exhaustive.

Here are some suggestions and recommendations to minimize going over the budget during the design and construction stage:

- 1) Conduct a more comprehensive site investigation for the historic buildings and their vicinities. Generally, the extent and scope of site investigation are determined by the NPO's consultancy team. It is advisable to extend certain surveys (e.g., utilities mapping surveys) to beyond the site boundaries. Reliance on the Contractor to carry out additional site investigation after the award of the contract is not advisable and may incur many variation works.
- 2) In addition to providing combined building services drawings, construct a mock-up for building services pipeworks at the existing historic building, especially for those congested points, before tender.
- 3) Instead of using lump sum allowance or cost per m<sup>2</sup> for budgeting for building services installations, a detailed design should form the basis for budgeting.
- 4) Special affixing construction details (instead of typical details) need to be provided and priced for constructing new structures in the existing building at the tender design stage. For example, the addition of metal railings, curbs, or concrete plinths on the existing roof slabs will require special structural details for drilling holes, inserting steel bars, etc.
- 5) Minimize design-and-build items in the tender as the tenderer may not fully understand the existing conditions of the building at the tender stage. The tenderer may allow for additional costs to cater for the risks associated with these items.
- 6) The design team should have a license consultant to provide advice and liaise with relevant authorities on the license requirements, and all these requirements should be properly addressed and allowed for in the design and budgeting.
- 7) Allow more than 5% for contingency or a separate contingency sum in the contract to cater for additional structural strengthening works or unforeseeable events that may occur during the construction period.



- 8) When provisional quantities are added to the contract for structural repair works and related tests, the measurement methods and quantities should be carefully examined to avoid erratic pricing by tenderers at the tender submission and to avoid over-budgeting due to the appearing of large quantities after removal of surface finishes. A more comprehensive building condition and structural survey are definitely helpful to estimate the quantities.
- 9) As there may be many composite items in the tender for demolition and strengthening works, the preamble and item description should be precisely stated as to the coverage and inclusion of other related items for tenderer's attention and pricing.
- 10) Demolition works may be separately awarded and carried out before the main contract works. It is advisable to include certain site investigations and removal of as many surface finishes as possible during the demolition process to provide the project team with a clearer understanding of the existing conditions of the historic building.

### E. Alternative Procurement Strategies for Earlier Involvement of Contractor at the Design Stage

Traditional procurement strategy is commonly adopted in heritage projects with the separation of design and construction and without involvement by the contractor. For those heritage projects involving complicated and sophisticated designs, alternative procurement strategies such as design-and-build or management contracting could be adopted so as to allow the overlap of design and construction as well as the input of design and experience from specialist contractor at the design stage.

### F. Conclusion

Historic buildings have special features, causing difficulties in budgeting and cost control during the design and construction stage. It is important for the project team to acquaint themselves with the existing condition of the historic building and its site constraints to minimize the impact on their budget when encountering unexpected and unforeseeable events during the construction stage.

[www.heritage.gov.hk/en/heritage/statement.htm](http://www.heritage.gov.hk/en/heritage/statement.htm) "Heritage Conservation Policy"

[www.heritage.gov.hk/en/rhbt/about.htm](http://www.heritage.gov.hk/en/rhbt/about.htm) "Mode of Operation"

[www.heritage.gov.hk/en/rhbt/about.htm](http://www.heritage.gov.hk/en/rhbt/about.htm) "Eligibility"

### Biography



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Peter is the Chairman and Director of the Board of Beria Consultants Ltd. He has extensive experience in cost management, advising on procurement strategy, commercial/ contractual issues and property development with the risk management approach. Peter is also the President of Hong Kong Institute of Construction Managers. He provided advices to non-profit-making organizations and private owners for the conservation of historic building.



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