

**For information  
on 20 April 2009**

**Legislative Council Panel on Health Services**

**Redevelopment of Caritas Medical Centre, Phase Two**

**Purpose**

This paper updates Members on the current status of the capital works project on the phase two redevelopment of the Caritas Medical Centre (the Project) and the revised procurement strategy to be adopted for its delivery.

**Background**

2. On 11 May 2007, the Finance Committee approved the upgrading of the Project to Category A at an estimated cost of \$1, 218.1 million in money-of-the-day (MOD) prices.
3. The approved project scope comprises -
  - (a) demolition of the existing Wai Ming Block for the construction of a new ambulatory/rehabilitation block on the same site, to accommodate 260 convalescent/rehabilitation beds, ambulatory care and clinical support facilities;
  - (b) site formation and excavation;
  - (c) piling works;
  - (d) refurbishment of Wai Oi Block to accommodate tele-health service, nurse specialist office, community nursing office, maintenance department, central domestic services, security and transport services, a training and conference centre, a library, Red Cross School and staff changing facilities reprovisioned from Wai Ming Block, Wai On Block and Wai Yan Block;
  - (e) construction of two link bridges connecting Wai Shun Block with the new ambulatory/rehabilitation block and Wai Oi Block

respectively and a walkway linking Wai Yee Block and Wai Shun Block;

- (f) demolition of Wai On Block, Wai Tak Block and Wai Yan Block for the construction of a rehabilitation garden, external landscaping, and improvement works of access road and hospital entrances; and
- (g) consultancy services for contract administration and site supervision of the main works.

4. The existing and future layout of Caritas Medical Centre upon completion of the redevelopment project are shown at **Enclosures 1 and 2** respectively. The original target was to complete the new ambulatory/rehabilitation block by August 2011 and the rehabilitation garden by March 2012.

### **Higher-than-expected Tender Outturn Price**

5. The Project was to be implemented under one single works contract, with the original construction programme developed on the basis that nine months would be required for decanting and associated works, 40 months for demolition of Wai Ming Block and construction of the new ambulatory/rehabilitation block, as well as seven months for the remaining demolition and external works, thus giving a total construction period of 56 months.

6. The Hospital Authority (HA) invited tenders for the works contract on 5 July 2007 and received eight tenders on 12 September 2007. There was a higher-than-expected tender outturn price for this contract. The actual tender prices of all the five conforming tenders were significantly higher than the original estimate for the works contract by between \$508 million and \$600 million (48% to 56% of the original estimate for the works contract). As the potential of lowering the tender price significantly was limited, HA cancelled the tender exercise on 20 November 2007.

7. We conducted a review and identified the higher-than-expected tender outturn price to be attributable to the following –

- (a) Rapid price inflation under a booming construction industry in 2007

Driven by sharp and unexpected increase in the prices of major construction materials, the costs of construction had been

escalating since early 2007. As reflected in the construction cost indices published by the Census and Statistics Department, the cost for steel reinforcement, galvanized mild steel, and sand as at September 2007 when the tenders were returned had risen by 50%, 27% and 40% respectively from the September 2006 prices as adopted for the project estimate. A chart showing the relevant trend of material costs increases is at **Enclosure 3**. The rapid rise in the cost of the above-mentioned raw materials, being the major elements of construction works, drove up the tender price significantly. Furthermore, the tender price index for government building works<sup>1</sup> compiled by the Architectural Services Department appended at **Enclosure 4** indicates that the average tender prices rose by about 21% from the third quarter in 2006 to the third quarter in 2007.

(b) Marking-up of tender price by bidders to provide safety cushions against the risks of a long construction period

Although payments to the contractor could be adjusted in response to changes in the construction material and labour costs through the operation of the contract price fluctuation system, there were extensive provisions of proprietary products/systems such as bedhead panels, wall protection rails, clinical washhand basins and sanitaryware, nurse call system, pneumatic tube system, etc. commonly required in a hospital which might not be fully covered in price fluctuation computations. Under a highly inflationary market situation at the time of tender, the tenderers considered that the price fluctuation allowance in the contract would be inadequate and it was necessary to exercise extra caution and build in additional premium in their tenders to cover inflation risks over a 56-month contract period.

(c) Under-estimation of the project cost by HA's consultants

HA's project consultants might not have adequately gauged the rapid upsurge in construction prices and fully reflected the prevailing market sentiments in its project cost estimate.

## **Actions Taken**

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<sup>1</sup> The tender price index is a quarterly index compiled by the Architectural Services Department based on data from accepted tenders.

8. Having identified the factors leading to the higher-than-expected tender outturn price, we have also conducted a critical review process of the original building design, material specifications and construction details. The design review process aims at updating the design to reflect the latest environmental and operational considerations, with opportunity taken to enhance the area efficiency of the new building while maintaining the scope of the project at the same time. The effectiveness of the updated design is ensured through an intensely interactive consultation process involving the hospital end-users who accepted it. As a result of this exercise, a number of adjustments to the original design have been made, including –

- (a) functional re-alignments to enhance space utilization;
- (b) change of the ward design from a triangular configuration on three levels to a rectangular configuration on two levels for enhanced design efficiency;
- (c) optimizing the provisions of circulation areas and plant rooms; and
- (d) use of alternative materials and systems.

Through this design review exercise, the construction floor area of the new ambulatory/rehabilitation block has been reduced from around 59 100m<sup>2</sup> to 54 000m<sup>2</sup> and the number of storeys from 15 to 12, resulting in a more compact building form.

9. We have also explored the possibility of dividing the Project into smaller contracts. We conclude that such an approach is expected to increase the competitiveness of the tenders on the one hand and minimize the likelihood of tenderers building in additional premium for extensive contract periods on the other. Moreover, such an approach will allow for participation of more small and medium-sized contractors. Accordingly, apart from the decanting and refurbishment works which will be carried out by HA's Term Contractor, we will split up the single works contract into the following three works packages to be tendered out separately –

- (a) Foundation contract which also covers the construction of the new lift tower, the demolition of Wai Ming Block and site formation works;
- (b) Main Building Works contract for the construction of the new ambulatory/rehabilitation block; and

- (c) Remaining Works contract for the provision of the rehabilitation garden and road improvements.

## **Financial Position**

10. Upon a review of the financial position of the Project and notwithstanding the actions that have been taken, we anticipate that the approved project estimate (APE) of the Project will not be sufficient to cover the cost of the works under the Project. However, given the global financial turmoil and the uncertainties about the duration of the impact on the market, we have found it difficult to accurately estimate the amount of additional funding required such that approval of an increase in APE might be sought from Finance Committee at this juncture.

11. The three works packages to be tendered in a sequential manner for Foundation, Main Building Works and Remaining Works are estimated to account for around 16%, 74% and 6% of the total construction cost respectively (The remaining 4% are for decanting and refurbishment works). Due to the exceptionally extensive scope of excavation and site formation works required to be carried out for the Project, the Main Building Works would only be tendered in around two years' time. Hence, it may be too early to come up with a realistic estimate for the Main Building Works, which accounts for 74% of the total construction cost.

12. For indication purposes, the revised project estimate is \$1,789.4 million in MOD prices which is based on a preliminary assessment using our best endeavours.

## **Way Forward**

13. In order to implement the Project without further delay, we have invited tenders for the Foundation contract on 16 March 2009, which are due to be returned on 27 April 2009. We intend to award the Foundation contract in May 2009. The tender price is expected to exceed the sum allowed in the APE by a wide margin.

14. In parallel, we intend to carry out necessary decanting works for demolition of Wai Ming Block to proceed using HA's Term Contractor. The cost estimate is expected to be lower than the sum allowed in the APE.

15. The estimated total amount of commitment for the Foundation contract and decanting works will be \$295.6 million in MOD prices, for which the APE of the Project is amply sufficient to cover and will result in an

uncommitted balance of the APE of \$922.5 million in MOD prices. Employment opportunities in the construction sector can be created as early as May 2009 through this project. We estimate that the Foundation contract will create some 105 jobs (25 for professional/technical staff and another 80 for labourers) providing a total of 3 380 man-months.

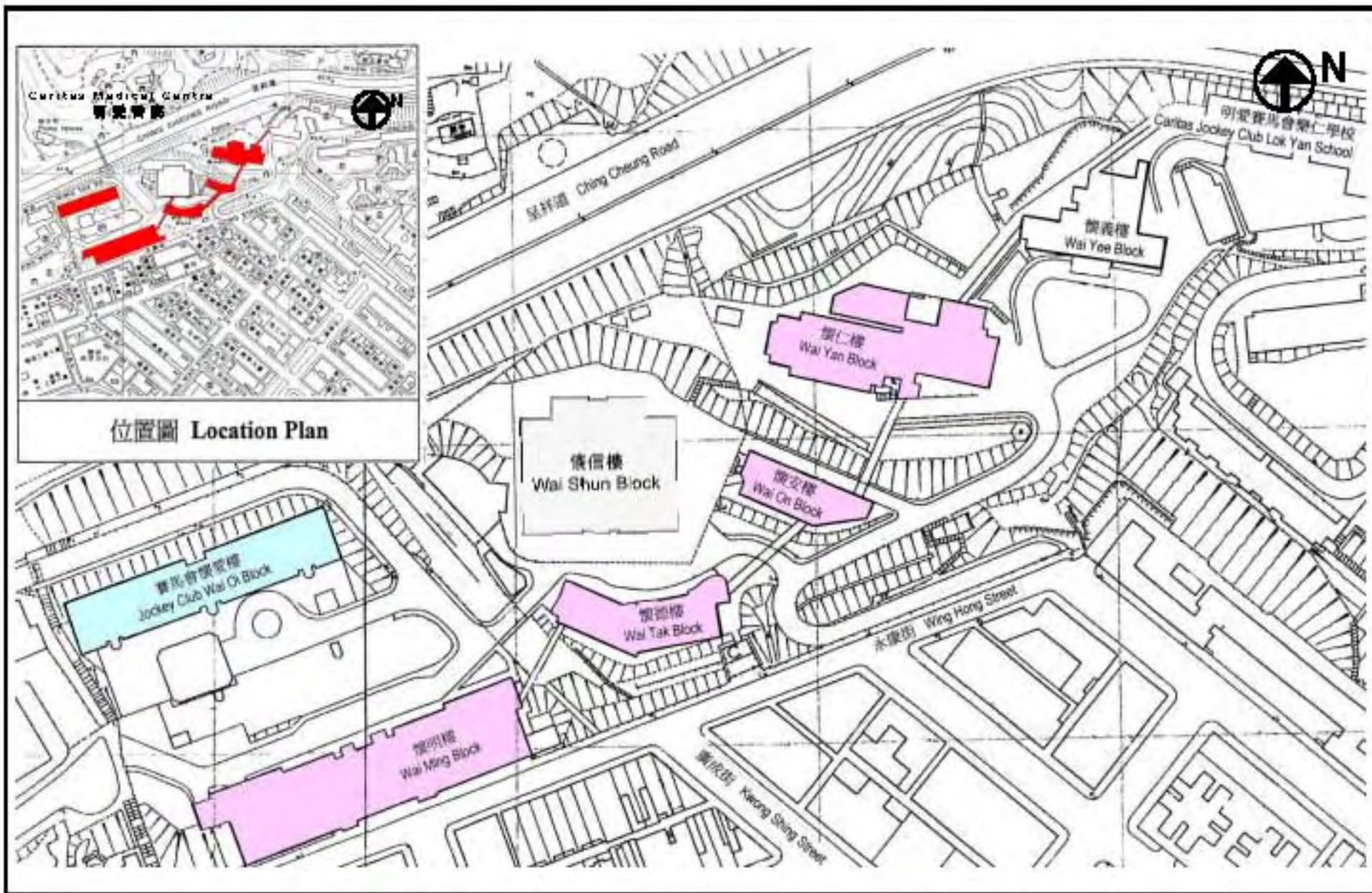
16. We will re-assess the financial position of the Project nearer the time when the Main Building Works are due to be tendered in around 2 years. If additional funding is found to be required then, we will not make further commitments until we have secured the approval of Finance Committee for an increase in the APE.

17. The revised completion dates for the new ambulatory/rehabilitation block and the rehabilitation garden are March 2013 and December 2013 respectively. The delay in completion is due to the unsuccessful tender in late 2007 and the time taken to update the design and revise the procurement strategy as explained in paragraphs 8 and 9 above. We will seek the approval of the Finance Committee for an increase in APE for the Main Building Works, if required, in good time to ensure adherence to these new completion dates.

### **Advice Sought**

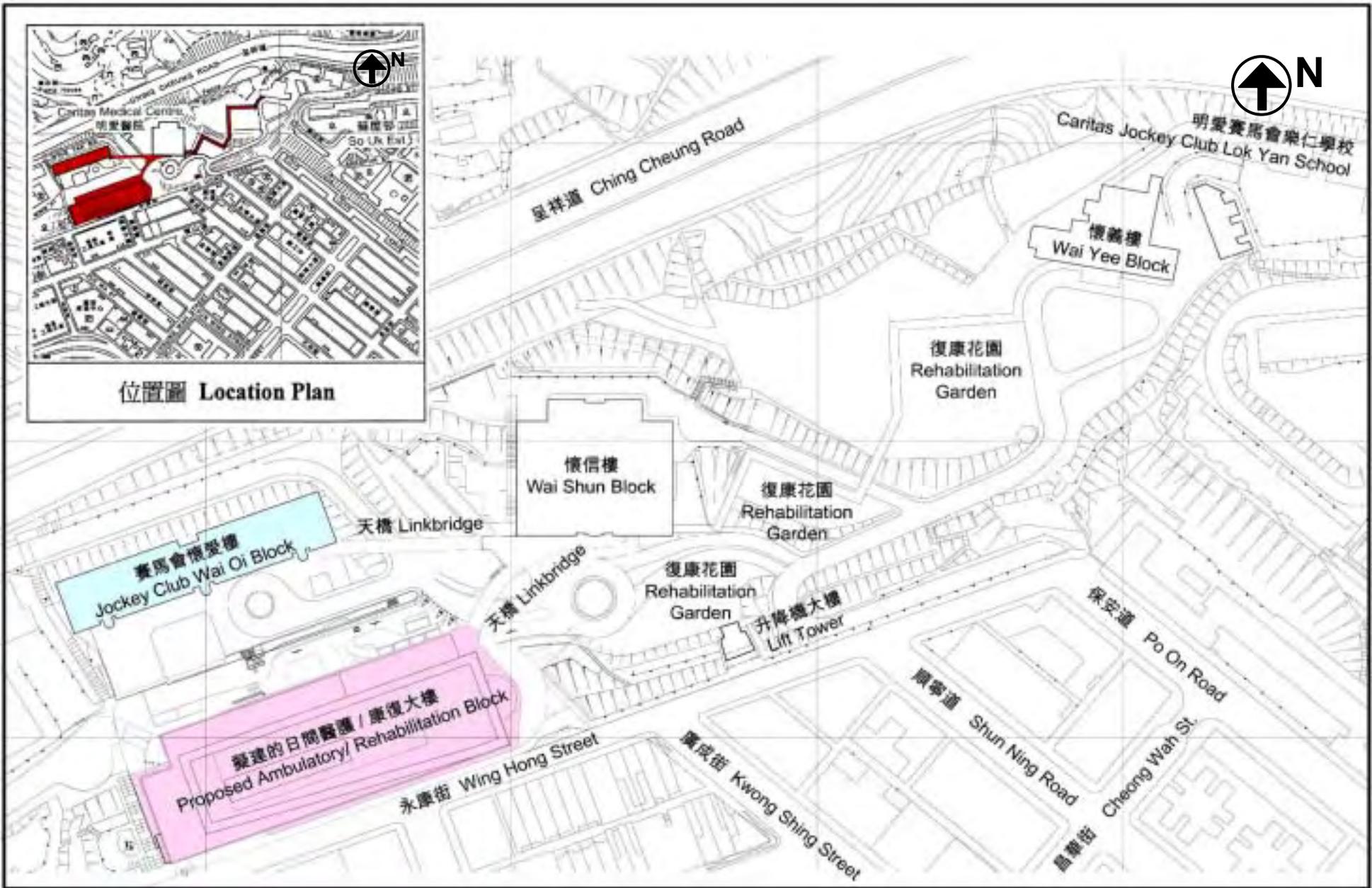
18. Members are invited to note the current status of the Project and the revised procurement strategy to be adopted for its delivery as reported in this paper.

Food and Health Bureau  
Hospital Authority  
April 2009



**Redevelopment of Caritas Medical Centre, Phase Two**  
**明愛醫院第二期重建計劃**

**Site Plan of Existing Caritas Medical Centre (N.T.S.) 明愛醫院現時平面圖(不按比例)**



- New Ambulatory / Rehabilitation Building
- Building refurbished

**Redevelopment of Caritas Medical Centre, Phase Two**

明愛醫院第二期重建計劃

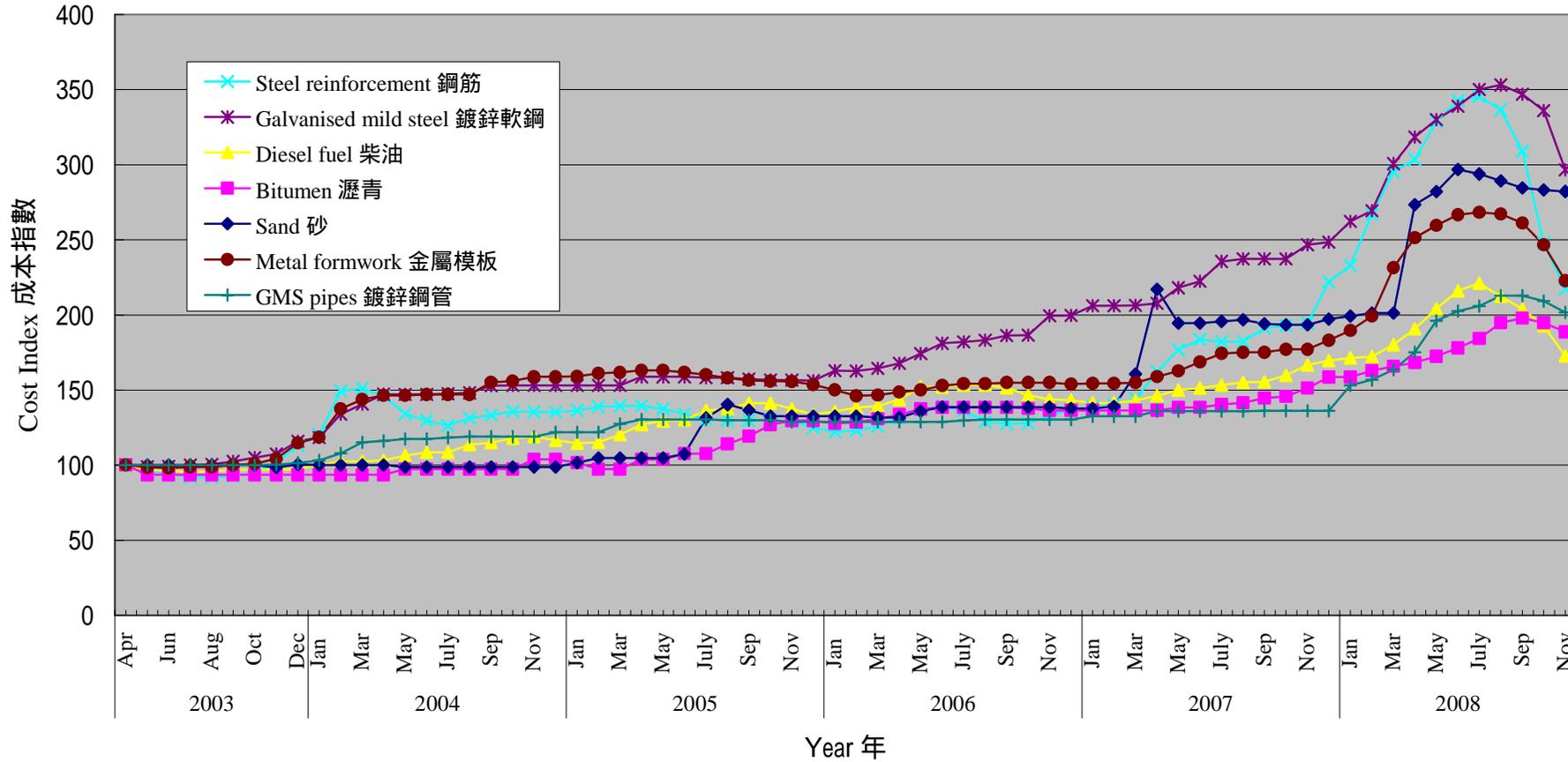
Site Plan of Caritas Medical Centre upon completion of Phase 2 Redevelopment (N.T.S.) 明愛醫院二期重建後平面圖(不按比例)

Index Numbers of Costs of Materials used in Public Sector Construction Projects (Apr 2003=100)

(Apr 2003 - Nov 2008)

公營建築工程的材料成本指數 (2003年4月=100)

(2003年4月至2008年11月)



## Architectural Services Department's Tender Price Index 建築工程投標價格指數

