

## ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

### HEAD 703 - BUILDINGS

#### Support - Others

#### 3GA - Science Park at Pak Shek Kok - phase 1

Members are invited to recommend to Finance Committee –

- (a) the upgrading of part of **3GA** to Category A as “Science Park at Pak Shek Kok – phases 1a and 1b” at an estimated cost of \$1,982.7 million in money-of-the-day prices for the construction of -
  - (i) a multi-purpose complex for lease to small/medium tenants, administrative and ancillary support facilities, carparking facilities, associated roads and landscaping in phase 1a; and
  - (ii) two complexes for larger tenants with associated carparking facilities, landscaping and ancillary support facilities in phase 1b; and

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- (b) the retention of the remaining portion of **3GA** in Category B.

## **PROBLEM**

We need to construct phase 1 of the Science Park now in order to meet the target opening for the first phase of the Park by end 2001.

## **PROPOSAL**

2. The Director of Architectural Services (D Arch S), with the support of the Secretary for Trade and Industry (STI), proposes to upgrade part of **3GA** to Category A at an estimated cost of \$1,982.7 million in money-of-the-day (MOD) prices to carry out works for Science Park phases 1a and 1b. These include the construction of the initial buildings, roads, carparking facilities, associated landscaping and ancillary support facilities for the initial stages of Science Park phase 1 at Pak Shek Kok.

## **PROJECT SCOPE AND NATURE**

3. The Science Park will occupy a total area of 22 hectares and will be developed in three phases over a period of 15 years (the exact time frame will depend on market conditions). The site will be developed to its optimal potential with a total gross floor area (GFA) of about 330 000 square metres of floor space for lease to technology-based companies to carry out research and development (R&D) activities. The Science Park will provide facilities for rent to technology-based companies and supporting facilities in a fully landscaped park-like environment. Should the need arise, some plots of land may be made available in latter phases of development for large corporations to purpose-build their own premises. The master layout plan (MLP) was approved by the Board of Directors of the Provisional Hong Kong Science Park Company Limited<sup>1</sup> (the Company) and is at Enclosure 1.

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<sup>1</sup> The Science Park will be managed by a statutory body. Pending the establishment of such a statutory body, the Provisional Hong Kong Science Park Company Limited was set up to run the Science Park in the interim.

4. The full scope of **3GA**, i.e. phase 1 development, will occupy an area of 8 hectares, and will provide –

- (a) the following lettable space and supporting facilities with a total GFA of 120 000 square metres -
  - (i) 109 400 square metres GFA (91.2% of the total GFA) for lease to technology-based companies to carry out R&D activities;
  - (ii) 6 600 square metres GFA (5.5% of the total GFA) for administrative (i.e. the Company's administration office) and ancillary facilities such as restaurants, conference rooms, and exhibition space to support tenants; and
  - (iii) 4 000 square metres GFA (3.3% of the total GFA) for residential accommodation for lease to visiting scientists and researchers;
- (b) carparking facilities (a multi-storey carpark building and some open or basement carparking spaces) for about 800 cars;
- (c) landscaped area and roads of about 53 800 square metres; and
- (d) associated external works such as drainage, services tunnels and sea-water pump house.

5. The scope of phase 1a (with a GFA of 20 550 square metres), which we now propose to upgrade to Category A and for which funding for engagement of consultants was approved under **4GA** (see paragraph 24 below), comprises –

- (a) the construction of a multi-tenant/multi-purpose complex including –
  - (i) 13 500 square metres GFA (65.7% of the total GFA) for R&D activities;
  - (ii) 3 050 square metres GFA (14.8% of the total GFA) for administrative and ancillary facilities to support tenants; and

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- (iii) 4 000 square metres GFA (19.5% of the total GFA) of residential accommodation for lease to visiting scientists and researchers;
- (b) provision of carparking spaces for approximately 190 cars in a multi-storey carpark building;
- (c) roads and minimum landscape cover for about 53 800 square metres; and
- (d) associated external works such as drainage, services tunnels and sea-water pump house.

6. In order to address the demand from potential anchor tenants for rental premises, we also propose to expand the original project scope by bringing forward phase 1b (with a total GFA of 37 680 square metres) to provide -

- (a) the following lettable space and supporting facilities -
  - (i) 25 000 square metres GFA (66.4% of the total GFA) for a facility for lease to large anchor tenant(s);
  - (ii) 10 000 square metres GFA (26.5% of the total GFA) for a multi-tenanted facility for lease to medium size tenant(s); and
  - (iii) ancillary facilities such as restaurants and, conference rooms, with a GFA of 2 680 square metres (7.1% of the total GFA)
- (b) carparking facilities for approximately 420 cars; and
- (c) landscaped area with amenities such as sitting out areas and outdoor spaces of about 11 000 square metres; and
- (d) associated external works such as drainage and services tunnels.

7. After completion of phases 1a and 1b, the scope for the remaining phase 1 will include the construction of –

- (a) the following lettable space and support facilities -
  - (i) 60 900 square metres GFA for R&D activities;  
and
  - (ii) ancillary facilities with GFA of 870 square metres to support tenants;
- (b) approximately 190 carparking spaces (the final number of carparking spaces is under review to take into account the needs of the tenants);
- (c) approximately 11 650 square metres of land for landscaped area and amenities; and
- (d) associated external works such as drainage and services tunnels.

8. D Arch S plans to start the works for phase 1a in February 2000 for completion by the end of 2001 to meet the target opening for Science Park phase 1. Due to the urgency of bringing forward phase 1b and the limitation of the original scope of consultancy funding, he has redeployed in-house resources to complete the schematic designs for phase 1b. Subject to approval, he plans to start phase 1b works in March 2001 for completion by 2003 to enable the moving in of the anchor tenants. The site plan of phase 1 is at Enclosure 2 for Members' reference.

## JUSTIFICATION

9. Hong Kong needs to become a knowledge and technology-based economy in order to maintain and enhance our global competitiveness in the next millennium. It has been established through various studies such as the Hong Kong Science Park Study Stage One and Stage Two that Hong Kong needs to develop a Science Park as part of the essential infrastructure provision to help Hong Kong industries move up the technological ladder and develop technology-intensive and higher value-added business activities.

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**Phase 1a development**

10. Phase 1a development will provide leased premises for technology-based companies, ancillary facilities such as conference rooms and exhibition space, and supporting facilities such as banks, shops and restaurants. The Company and its property consultant have been approaching potential tenants and consulting them on facilities that should be provided. One major feedback from potential tenants is that many of their employees are at researcher/engineer level or above and they prefer to drive to work. This is especially the case since researchers/engineers engaged in R&D activities tend to work at odd hours when public transport is not readily available. We have accordingly planned for a total of 800 car parks for phase 1, including 190 in phase 1(a). However, we may need to review whether additional car parks are required as we proceed.

**Phase 1b development**

11. It is of paramount importance for the Science Park to be developed to secure anchor tenants at its initial stage of development. The presence of respectable anchor tenants would be a signal of endorsement. It would also help in creating a clustering effect and attracting other tenants from similar fields. In the original planning, we expected that anchor tenants would prefer to lease land plots from the Company and construct their own premises in parallel with the phase 1a development. Based on this assumption, we have therefore reserved 1.6 hectares of land plots for such purpose in the phase 1 development. However, the majority of the potential anchor tenants who have expressed interest in the Science Park development so far indicate that they are not prepared to lease land from the Company and construct their own buildings as we originally planned. Rather, they prefer renting standard premises from the Company on a long-term basis. We understand that the preference for companies not to invest in capital construction has become the global trend nowadays. The solution adopted by governments/agencies world-wide is to offer a “build and lease” arrangement to these anchor tenants, in much the same way as they offer readily available rental space for small companies in multi-tenant buildings. The Science Park will need to be able to offer similar arrangement if it is to remain competitive.

12. The initial indication from potential anchor tenants is that the space requirements would be in the region of 35 000 square metres of GFA in total. However, available lettable space in the first multi-tenant complex, with a GFA of 20 550 square metres and which is basically designed for multi-purpose usage to house all essential facilities such as premises for rent to tenants, premises for ancillary support facilities and office space for the Company, would not be sufficient to meet these demands. Only about 13 500 square metres of GFA are

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lettable space for tenants. Although areas such as office space for the Company could be converted into lettable space if required, the total lettable space still falls short of the requirements of potential anchor tenants. Besides, apart from the needs of potential anchor tenants, the Science Park would also need to reserve readily available space for lease to small/medium tenants. Thus, lettable space in phase 1a would need to be substantially enlarged to cater for market demands. We now intend to make use of the 1.6 hectares of land plots, originally earmarked for lease to large corporations to purpose build their own premises to construct the additional 35 000 square metres GFA of rental premises as a matter of urgency.

13. The scenario described in paragraphs 11 and 12 above is based on the latest available information only. Should we eventually need to construct all the 120 000 square metres GFA permissible under phase 1, our estimation is that the total cost for phase 1 would need to increase correspondingly from \$2,359.1 million to \$3,313.7 million (at December 1998 prices). The additional amount is only a rough estimate and will need to be assessed critically in the light of actual market demand and other developments in the Science Park.

## FINANCIAL IMPLICATIONS

14. We estimate the total capital cost for phase 1a & 1b to be \$1,982.7 million in MOD prices (see paragraph 16 below) made up as follows -

	<b>Phase 1a</b>	<b>Phase 1b</b>	<b>Total</b>	
	<b>\$ million</b>			
(a) Piling	66.9	116.2	183.1	
(b) Building	250.6	482.3	732.9	
(c) Building services	154.8	272.6	427.4	
(d) Drainage and external works (including formation of tenant sites)	165.7	38.1	203.8	
(e) Furniture and equipment	15.0	5.0	20.0	
(f) Consultants' fees	14.5	1.5	16.0	
(g) Contingencies	63.8	90.9	154.7	
Sub-total	731.3	1,006.6	1,737.9	(at December 1998 prices)

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(h) Provisions for price adjustment	80.2	164.6	244.8	
	811.5	1,171.2	1,982.7	(in MOD prices)
Total	811.5	1,171.2	1,982.7	

A breakdown by man months of the cost estimate for consultants' fees for phase 1a and phase 1b are at Enclosures 3 and 4 respectively.

15. The construction floor area of this project is about 34 150 square metres for phase 1a and 64 720 square metres for phase 1b. The construction unit costs for phases 1a and 1b represented by building works and building services works are \$11,871 and \$11,664 per square metre at December 1998 prices respectively. We consider these unit costs reasonable.

16. Subject to approval, we will phase the expenditure as follows -

Year	\$ million (Dec 1998)	Price adjustment factor	\$ million (MOD)
1999 - 2000	10.6	1.01500	10.8
2000 - 2001	154.6	1.05814	163.6
2001 - 2002	686.5	1.11104	762.7
2002 - 2003	742.1	1.16660	865.7
2003 - 2004	89.0	1.22493	109.0
2004 - 2005	55.1	1.28617	70.9
	1,737.9		1,982.7

17. We derived the MOD estimates on the basis of the latest Government's forecast of trend labour and construction prices for the period 1999 to 2005. We will tender the piling and superstructure works under separate fixed-price lump-sum contracts for the phases 1a and 1b as we can define clearly the scope of the works in advance, leaving little room for uncertainty.

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## **PUBLIC CONSULTATION**

18. We briefed the Legislative Council Panel on Trade and Industry on the proposed scope of construction works as set out in this paper on 6 December 1999. Members were generally supportive of the proposal.

## **ENVIRONMENTAL IMPLICATIONS**

19. In May 1998, Director of Territory Development completed an Environmental Impact Assessment (EIA) report on the entire Pak Shek Kok Development including the Science Park to address planning, engineering and environmental constraints. The Advisory Council on the Environment endorsed the findings and recommendations of the EIA report in July 1998. We will implement mitigation measures recommended by the report to reduce the environmental impacts of the project to within the established standards and guidelines. We will also implement mitigation measures, environmental monitoring and auditing requirements in the relevant works contract according to the recommendation of the EIA report.

20 We estimate about 85 000 cubic metres of construction and demolition waste will be disposed of at landfills and 50 000 cubic metres of public fill will be delivered to public filling area. We have considered in the planning and design stages to reduce the generation of construction and demolition material as much as possible. We will require the contractor under the contract to submit a waste management plan to the Architectural Services Department for approval, with appropriate mitigation measures including allocation of an area for waste segregation. We will ensure that the day-to-day operations on site comply with the waste management plan submitted. We will also require the contractor to use the excavated material on site or on the other sites as filling material as far as possible to minimize the disposal of public fill to public filling area. To further minimize the generation of construction and demolition materials, we will encourage the contractor to use non-timber formwork, hoarding and other temporary works. We will require the contractor to separate public fill from construction and demolition waste for disposal at appropriate locations and to sort the construction and demolition waste by category on site to facilitate re-use/recycling in order to reduce the generation of such waste. We will control the disposal of construction and demolition materials to a designated public filling facility and/or landfill through a trip ticket system, and record the disposal, reuse and recycling of construction and demolition materials for monitoring purposes.

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## LAND ACQUISITION

21. The Executive Council gave an approval in principle on 20 January 1998 for a Private Treaty Grant with a nominal premium to the Hong Kong Science Park Corporation.

## BACKGROUND INFORMATION

22. Reclamation for different phases of the Science Park project is on-going. The Science Park will be a low-density development with an average plot ratio of 2.5 to create a pleasant park-like environment in line with the international norm in order to attract local as well as overseas high-tech firms and researchers. This plot ratio is in line with the Revised Hong Kong Planning Standards and Guidelines approved by the Town Planning Board.

23. Preparatory work has been carried out since early 1998 in parallel with site formation works in order to meet the target opening date of the Science Park by the end of 2001.

24. We upgraded **3GA** to Category B in January 1998. On 27 February 1998, the Finance Committee approved the upgrading of part of this project to Category A as **4GA** for carrying out site investigations and the engagement of consultancy services for the master layout plan and phase 1a development of the Science Park, at an estimated cost of \$54.8 million in MOD prices. The detailed design of phase 1a is near completion. Preliminary site investigations were carried out from July to November 1999. More detailed site investigations will be conducted in January 2000 when Civil Engineering Department's reclamation works are completed. All site investigation works are expected to be completed by February 2000.

25. The consultant engaged by the Director of Territory Development has also carried out a Drainage Impact Assessment for the Pak Shek Kok Development. The part covering the works for phase 1 of the Science Park was completed in September 1998. Recommended measures of a road drainage system will be provided both under Territory Development Department's contract and in this project for works within the Science Park Phase 1 area.

26. Phase 1 of the Science Park is developed as a public works project.

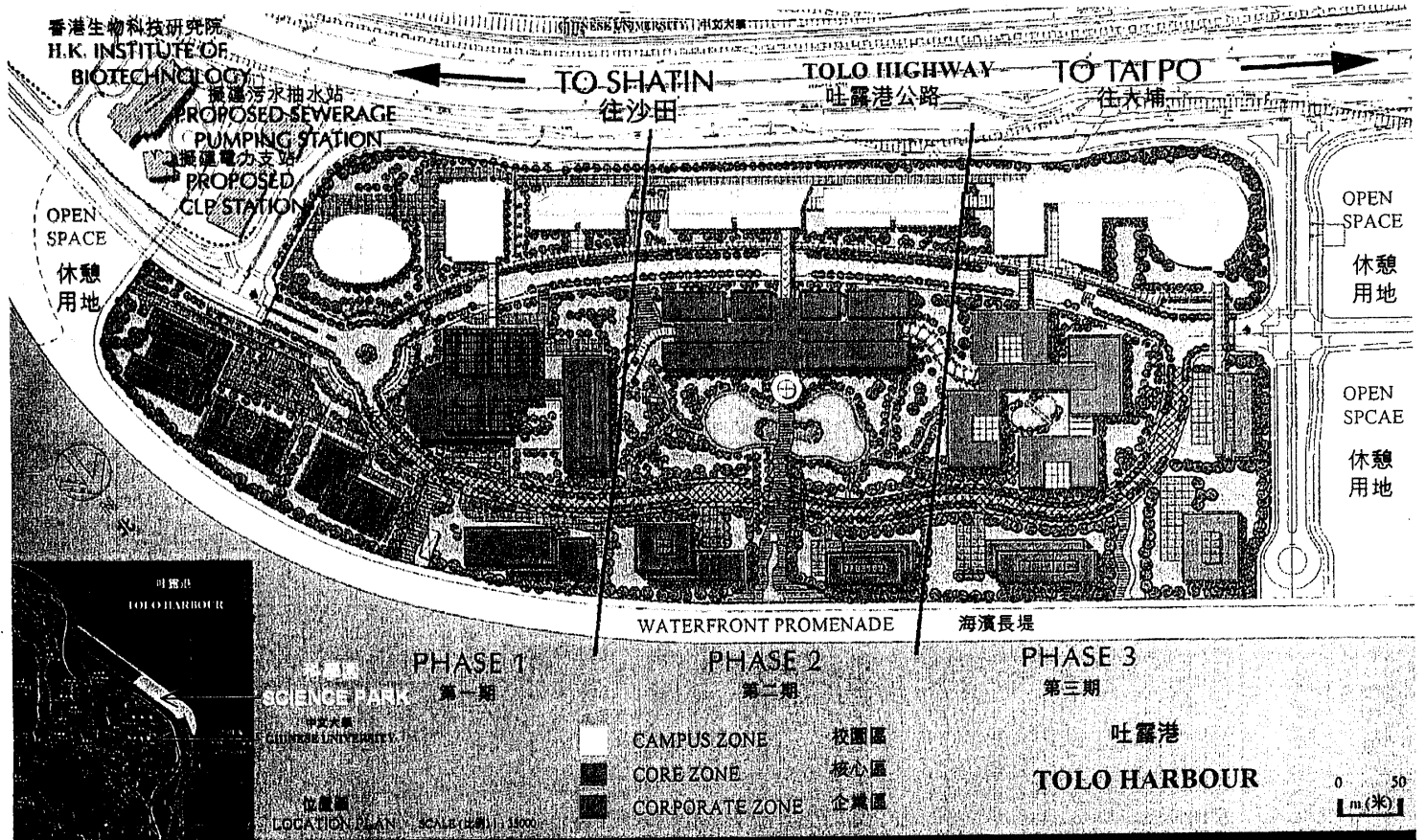
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Upon completion of works, all the buildings, infrastructure and other physical facilities in phase 1 would be handed over to the Company for management and maintenance.

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Trade and Industry Bureau  
December 1999

(PWSC0204/WIN8)

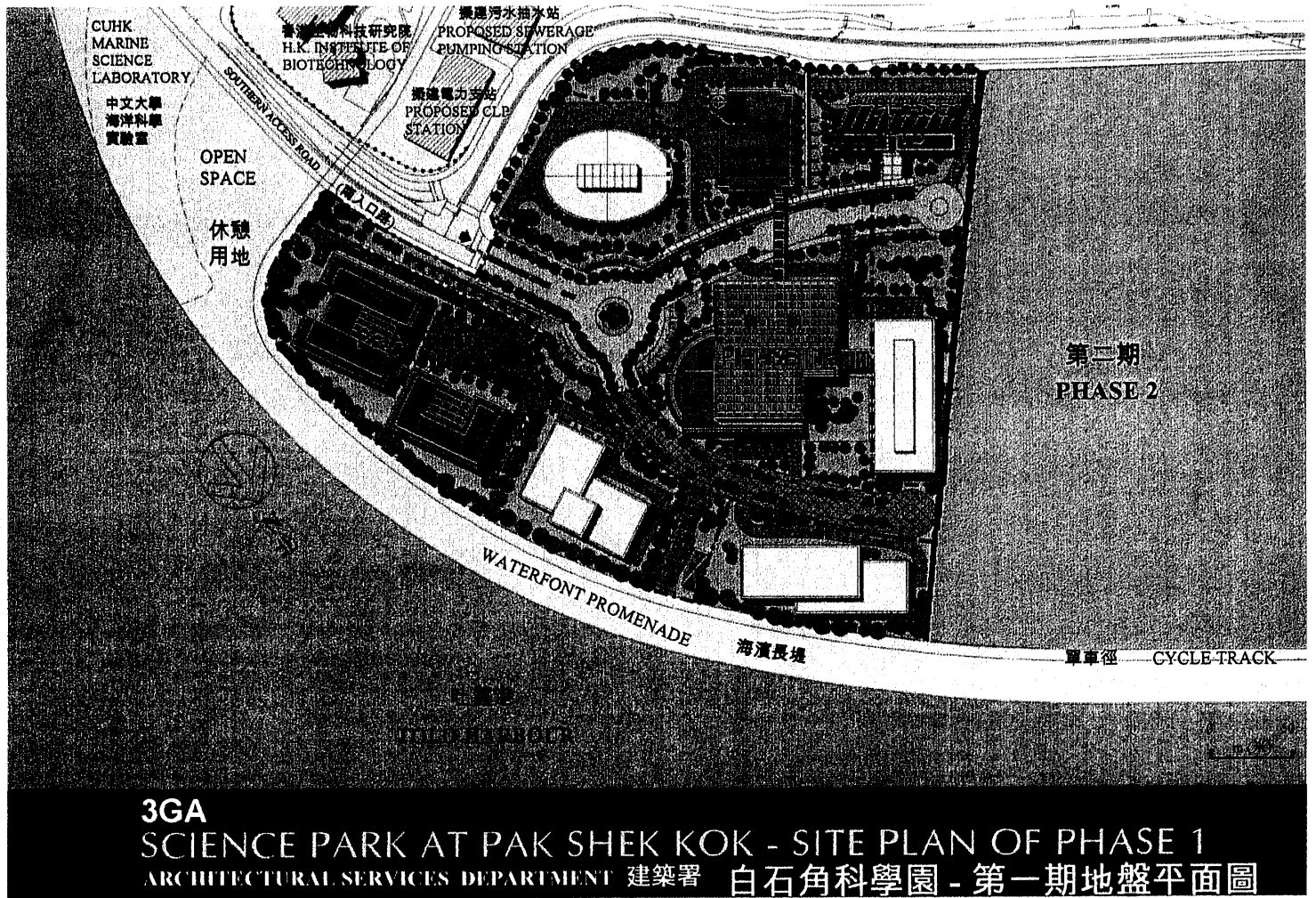


3GA

SCIENCE PARK AT PAK SHEK KOK - MASTER LAYOUT PLAN (MLP)

ARCHITECTURAL SERVICES DEPARTMENT 建築署

白石角科學園 - 總綱發展藍圖



## 3GA - Science Park at Pak Shek Kok - phase 1

## Phase 1a

## Breakdown of estimates for consultants' fees

Category of works/items			Estimated man months	Average MPS* salary point	Multiplier factor	Estimated fee (\$ million)
Contract administration						
(a)	Architectural discipline	Professional	30.5	40	2.4	4.6
		Technical	39.7	16	2.4	2.0
(b)	Civil and structural engineering discipline	Professional	13.3	40	2.4	2.0
		Technical	17.8	16	2.4	0.9
(c)	Building services engineering discipline	Professional	23.2	40	2.4	3.5
		Technical	29.7	16	2.4	1.5
					Total	14.5

\* MPS = Master Pay Scale

## Notes

1. A multiplier factor of 2.4 is applied to the average MPS point to arrive at the full staff costs including the consultant's overhead and profit, as the staff will be employed in the consultants' offices. (At 1.4.1998, MPS pt. 40 = \$62,780 p.m. and MPS pt. 16 = \$21,010 p.m.).
2. The figures given above are based on estimates prepared by the Director of Architectural Services. We will only know the actual man months and actual fees when we have selected the consultants through the usual competitive bidding system.

**3GA - Science Park at Pak Shek Kok - phase 1**

**Phase 1b**

**Breakdown of estimates for consultants' fees**

Category of works/items			Estimated man months	Average MPS* salary point	Multiplier factor	Estimated fee (\$ million)
(a)	Environmental	Professional	6.0	40	2.4	0.9
(b)	Traffic	Professional	4.0	40	2.4	0.6
					Total	1.5

\* MPS = Master Pay Scale

**Notes**

1. A multiplier factor of 2.4 is applied to the average MPS point to arrive at the full staff costs including the consultant's overhead and profit, as the staff will be employed in the consultants' offices. (At 1.4.1998, MPS pt. 40 = \$62,780 p.m. and MPS pt. 16 = \$21,010 p.m.).
2. The figures given above are based on estimates prepared by the Director of Architectural Services. We will only know the actual man months and actual fees when we have selected the consultants through the usual competitive bidding system.