

## **ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE**

### **HEAD 708 – CAPITAL SUBVENTIONS AND MAJOR SYSTEM AND EQUIPMENT**

#### **Universities**

#### **The Chinese University of Hong Kong**

#### **40EF - Stabilisation of slopes within the university campus, phase 6**

Members are invited to recommend to the Finance Committee to approve a new commitment of \$53.17 million in money-of-the-day prices for repairs to sub-standard slopes within the campus of the Chinese University of Hong Kong.

### **PROBLEM**

The Chinese University of Hong Kong (CUHK) requires funding support to carry out stabilisation works to sub-standard slopes within its campus.

### **PROPOSAL**

2. On the advice of the Director of Architectural Services (D Arch S), and with the support of the Secretary for Education and Manpower, the Secretary-General, University Grants Committee (SG, UGC) proposes to create a new commitment of \$53.17 million in money-of-the-day (MOD) prices for CUHK to carry out stabilisation works to sub-standard slopes under CUHK's maintenance responsibility.

**/PROJECT .....**

## **PROJECT SCOPE AND NATURE**

3. The proposed project comprises stabilisation works to 21 sub-standard slopes. Eighteen of these 21 slopes are the subject of Dangerous Hillside Orders (DHOs) from the Building Authority (BA) under the Buildings Ordinance (BO). The geotechnical consultants also recommended stabilisation works to the remaining three slopes showing signs of possible instability.

4. For the 18 slopes which are the subject of a DHO, CUHK will appoint an Authorised Person registered under the BO and a qualified geotechnical consultant to prepare proposals for the required stabilisation works, including an investigation report and landslide preventive work plans. Once the proposals are approved by the BA, CUHK will submit draft consultancy agreements, tender documents and tender recommendations for the topographical survey, ground investigation and stabilisation works required to D Arch S who will carry out technical vetting and make recommendations to the UGC. Subject to UGC's approval, CUHK will engage contractors to carry out the stabilisation works as soon as practicable. The same procedures will be followed for the three slopes which are not the subject of a DHO.

5. CUHK will also carry out landscaping and other environmental improvement works to the 21 slopes to soften the visual impact of the hard surface resulted from slope stabilisation works.

6. Site plans are at Enclosure 1 for Members' reference. The CUHK plans to commence stabilisation works for the 21 slopes in March/April 2000 for completion in December 2001.

## **JUSTIFICATION**

7. Non-government institutions are responsible for carrying out remedial works on sub-standard slopes under their maintenance responsibility. Under existing arrangements, UGC-funded institutions may seek capital grants from Government for such works.

8. To ensure the safety of students and staff, it is important that the necessary remedial works are carried out in a timely manner. The approval of this proposal will ensure that financial resources are available for CUHK to undertake the necessary works as soon as practicable.

**/FINANCIAL .....**

**FINANCIAL IMPLICATIONS**

9. We estimate the capital cost of the project to be \$53.17 million in MOD prices (see paragraph 11 below), made up as follows -

	<b>\$ million</b>	
(a) Stabilisation works	36.56	
(b) Consultants' fees for	4.66	
(i) tendering and assessment of tenders	0.25	
(ii) contract administration	1.39	
(iii) site supervision	3.02	
(c) Landscaping works	3.06	
(d) Contingencies	3.85	
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Sub-total	48.13	(at December 1998 prices)
(e) Provisions for price adjustment	5.04	
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Total	53.17	(in MOD prices)
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10. A detailed breakdown by man months of the estimates for the consultants' fees is at Enclosure 2.

11. Subject to approval, CUHK will phase the expenditure as follows -

<b>Year</b>	<b>\$million (Dec 1998)</b>	<b>Price Adjustment Factor</b>	<b>\$million (MOD)</b>
2000 - 2001	10.00	1.05814	10.58
			/2001 - 2002 .....

2001 - 2002	34.10	1.11104	37.89
2002 - 2003	4.03	1.16660	4.70
	<hr/>		<hr/>
	48.13		53.17
	<hr/>		<hr/>

12. We derived the MOD estimates on the basis of the Government's latest forecast of trend labour and construction prices for the period 2000 to 2003. CUHK will tender the works under a fixed-price lump-sum contract as the scope of works is clearly defined and leaves little room for uncertainty.

13. The proposed project has no additional annually recurrent financial implications.

## **PUBLIC CONSULTATION**

14. We consider public consultation unnecessary as the proposal concerns public safety.

## **ENVIRONMENTAL IMPLICATIONS**

15. CUHK completed a Preliminary Environmental Review (PER) for the project in October 1998. The Director of Environmental Protection vetted the PER, which concluded that the project would not have any long-term adverse environmental impact.

16. During construction, CUHK will control noise, dust and site run-off nuisances within the established standards and guidelines through the implementation of mitigation measures in the relevant works contracts.

17. CUHK has considered in the planning and design stages ways of minimising the generation of construction and demolition material (C&DM). Where practicable, CUHK shall reuse the public fill generated from the project either on site or in other construction sites on the campus. We expect that some 14 500 cubic meters of public fill will be delivered to public filling areas. No more

/than .....

than 1 000 cubic metres of construction and demolition waste will be disposed of at landfills. CUHK shall require the contractor to submit a waste management plan for approval and shall ensure that day-to-day operations on site comply with the approved plan. The waste management plan shall include appropriate mitigation measures including the allocation of an area for waste segregation and to sort the C&DM by category on-site to facilitate reuse/recycling in order to reduce the generation of waste. The reused/recycled materials shall include paper/cardboard, timber and metal. CUHK shall also require the contractor to use non-timber hoarding and other temporary works. CUHK shall control the disposal of C&DM at the designated public filling facility and/or landfill through a trip-ticket system and shall record the disposal, reuse and recycling of C&DM for monitoring purpose.

## **LAND ACQUISITION**

18. The project does not require land acquisition.

## **BACKGROUND INFORMATION**

19. Under existing procedures, UGC-funded institutions submit capital works proposals to the UGC on an annual basis. The UGC examines these proposals carefully, with professional advice provided by D Arch S who acts as UGC's Technical Adviser. The UGC refers those proposals it supports to the Government for funding support.

20. Under the Accelerated Landslip Preventive Measures Programme, the Geotechnical Engineering Office (GEO) of Civil Engineering Department conducts preliminary studies for pre-1977 man-made slopes to select sub-standard slopes which will require further studies. On the recommendation of the GEO, and in accordance with the Buildings Ordinance, the Building Authority (BA) will issue a Dangerous Hillside Order for a private sub-standard slope to the person or institution who is responsible for slope maintenance. The BA has the statutory power to take prosecution action against the institution if it fails to comply with the requirements of the Dangerous Hillside Order. In case of emergency, the BA is also empowered to carry out works deemed necessary to obviate any imminent danger of slope failure, and seek recovery of the full costs from the institution responsible.

21. There are over 250 slopes within the campus of CUHK. Since 1996,

/CUHK .....

CUHK has been carrying out the required stabilisation works in phases. Minor repairs and temporary works as well as the provision of access stairways, safety loops, lockable gates, etc. to some steep slopes have been completed under the phase 1 and 2 projects<sup>1</sup>. In December 1997, Finance Committee approved the phase 3 slope stabilisation works for CUHK under project **8036EF** with an approved project estimate of \$75.3 million in MOD prices for investigation, assessment, design and construction of 16 sub-standard slopes. The phase 3 works are nearing completion.

22. Consultants employed by CUHK have completed the stability assessment and the detailed design under phases 4 and 5 for stabilisation works for a total of 21 sub-standard slopes at estimated costs of \$12 million and \$15 million respectively funded under block allocation **Subhead 8100EX**. Funding for the corresponding stabilisation works for these 21 slopes (the phase 6 project) is the subject of this submission.

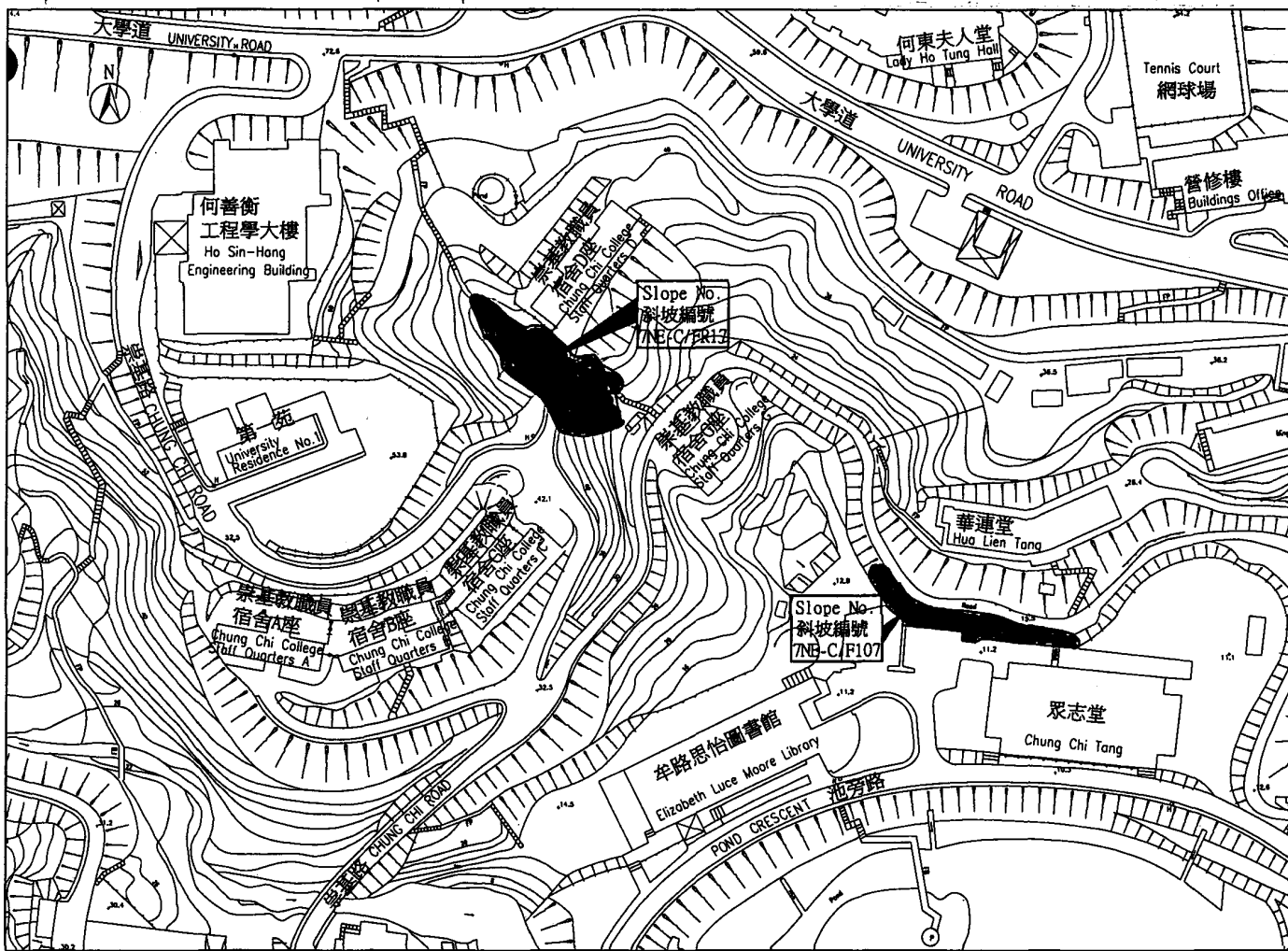
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Education and Manpower Bureau  
December 1999

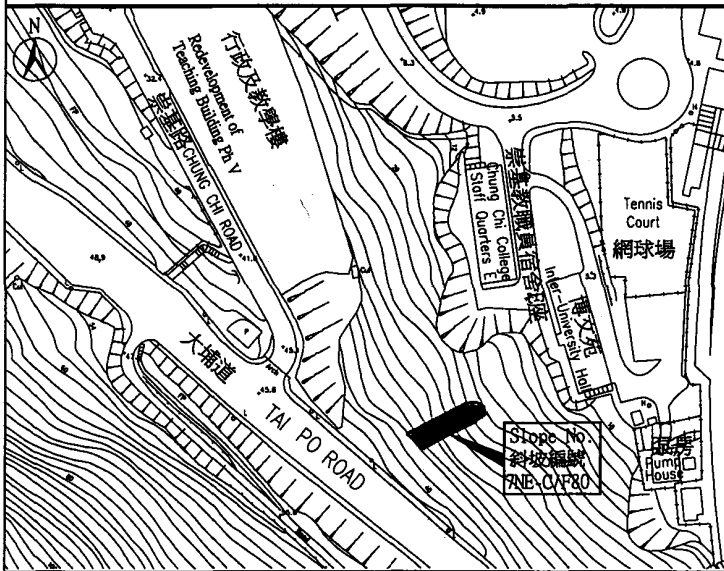
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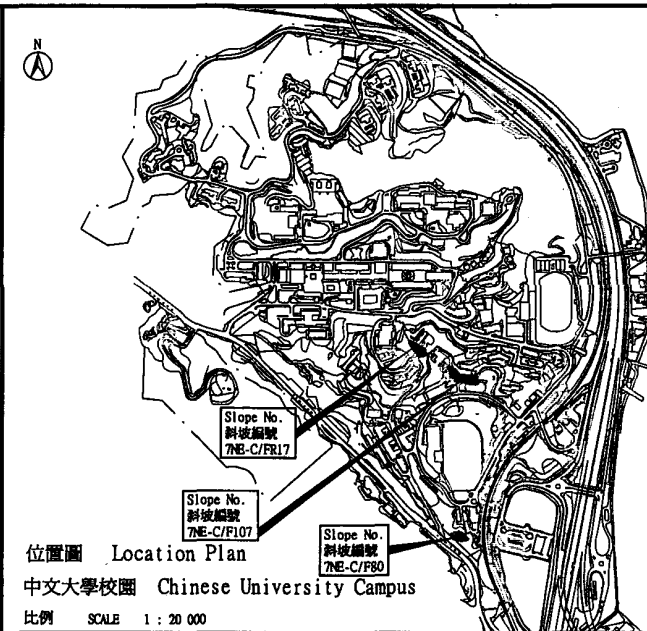
<sup>1</sup> Phases 1 and 2 works, with estimated costs of \$5.29 million and \$14.4 million respectively, were funded under block allocation **Subhead 8100EX**.



LAYOUT PLAN 規劃平面圖 比例 SCALE 1 : 2 000



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位置圖 Location Plan  
中文大學校園 Chinese University Campus  
比例 SCALE 1 : 20 000

DRAWING TITLE 圖則名稱

Slope Stabilization Works  
in Campus Phase 6

斜坡鞏固工程第六期

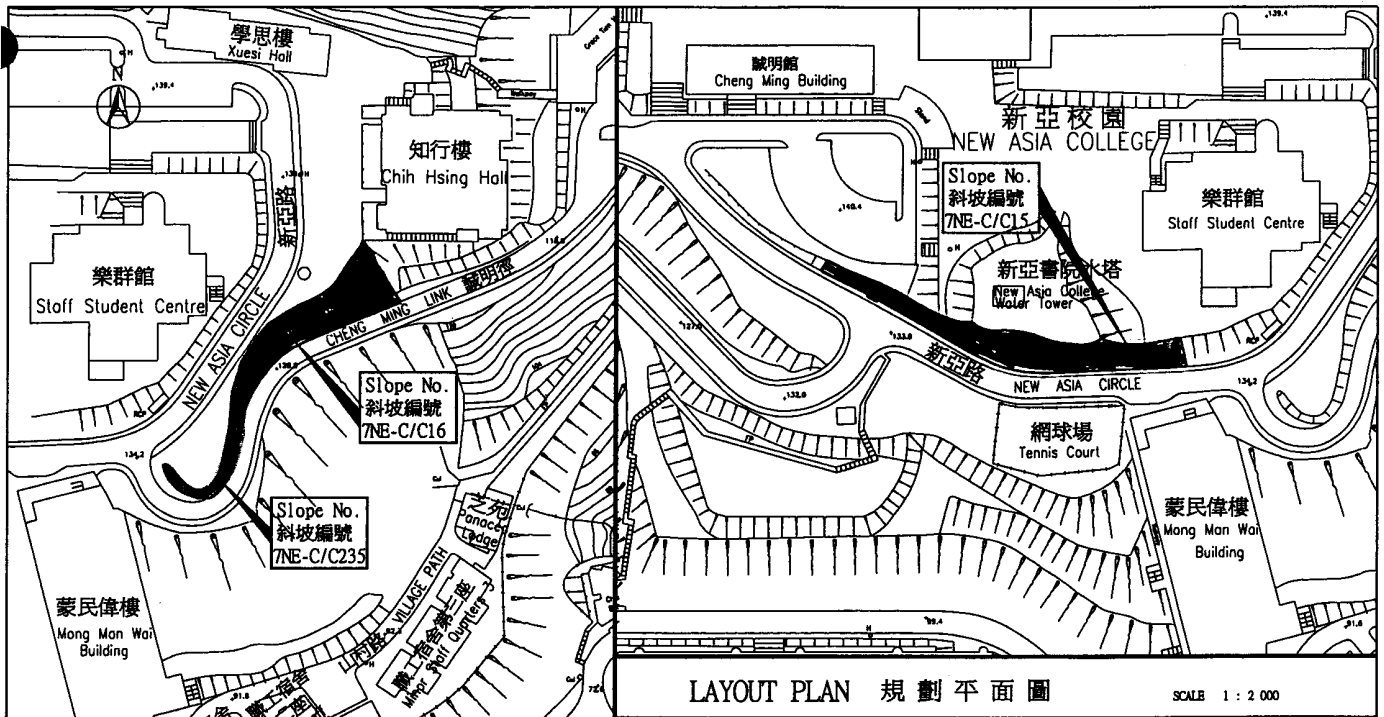
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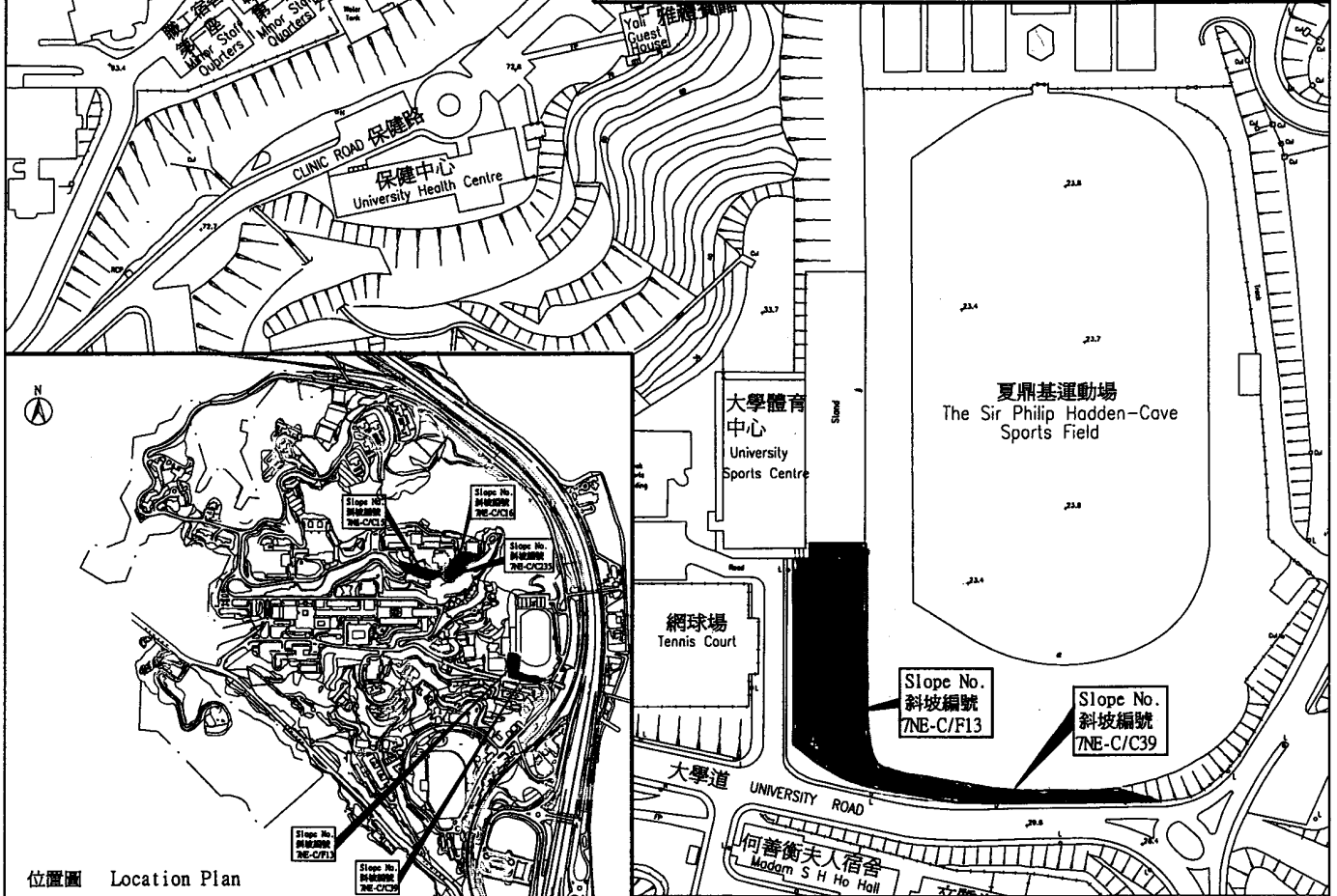


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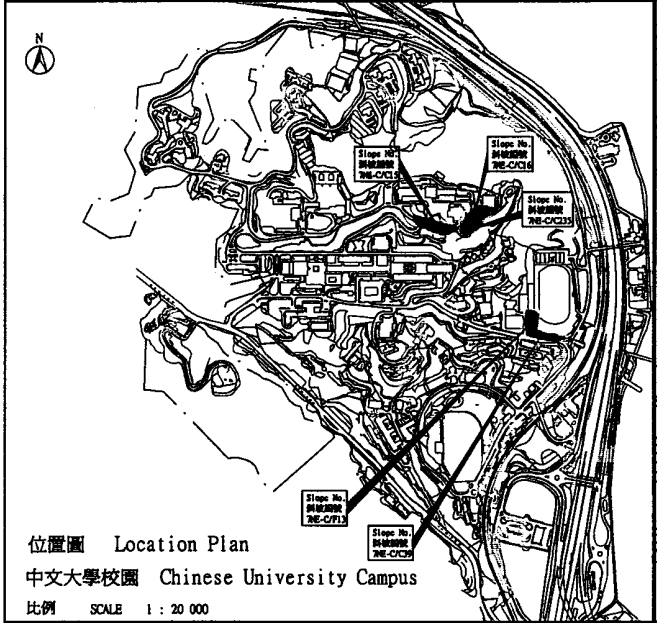
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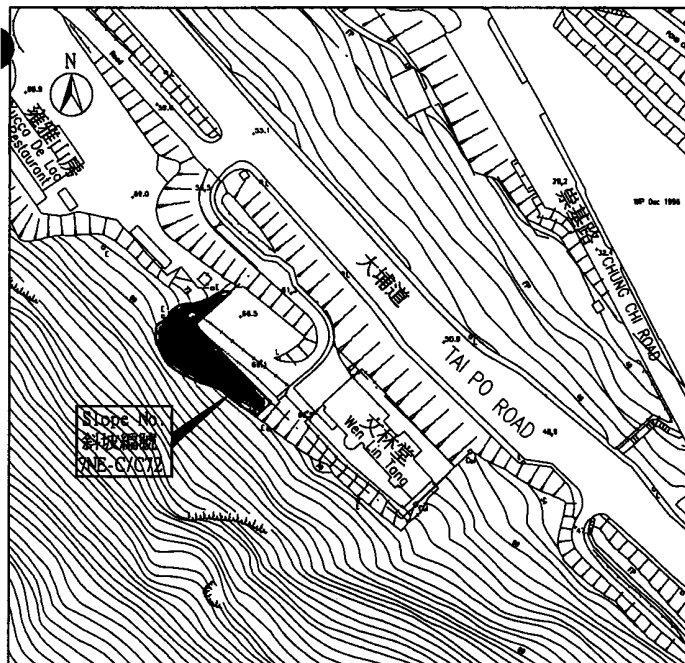
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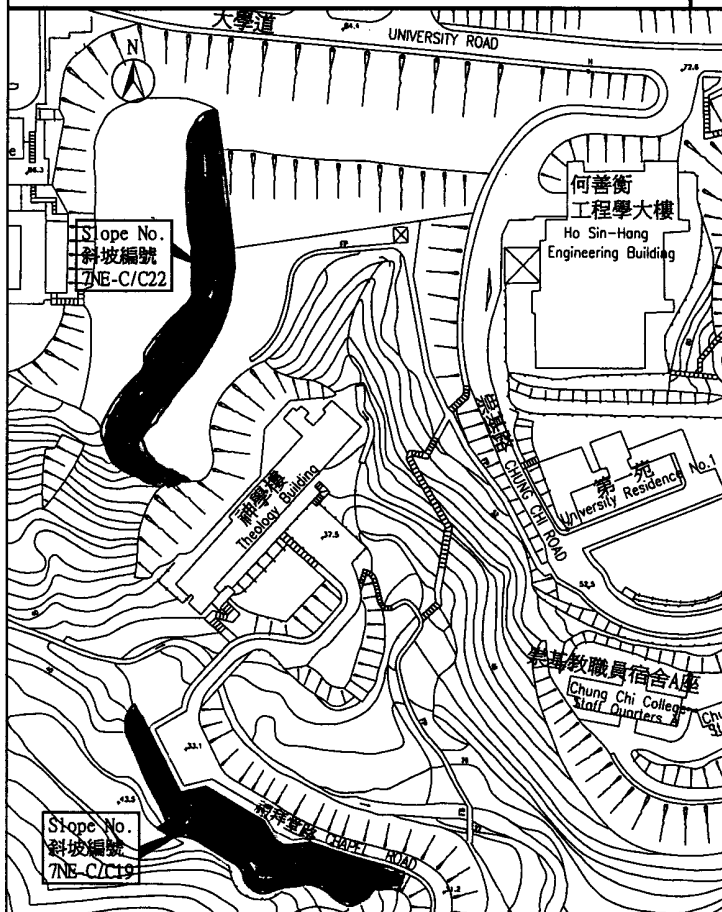




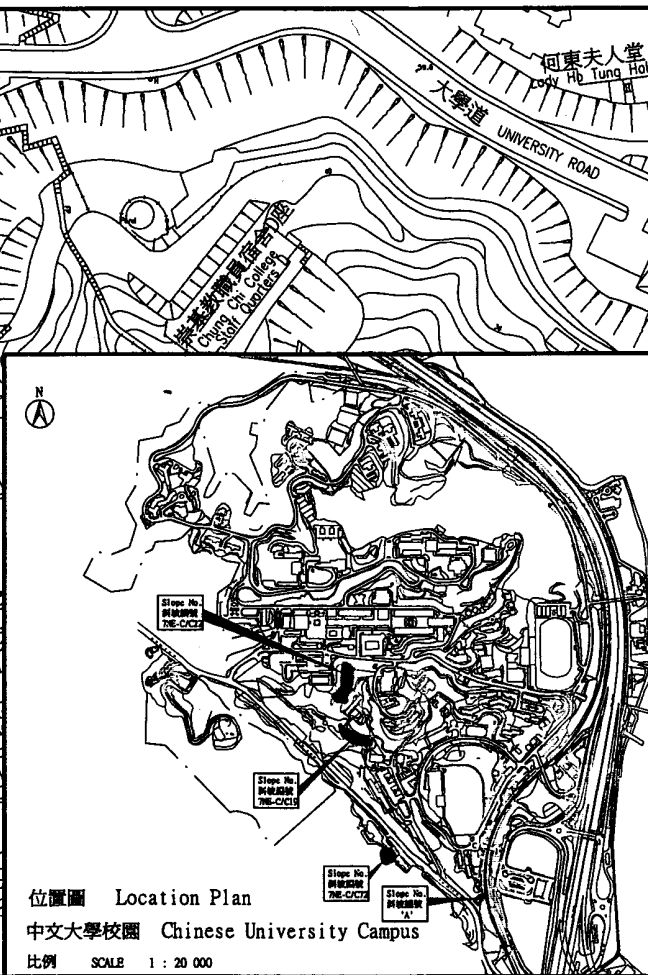
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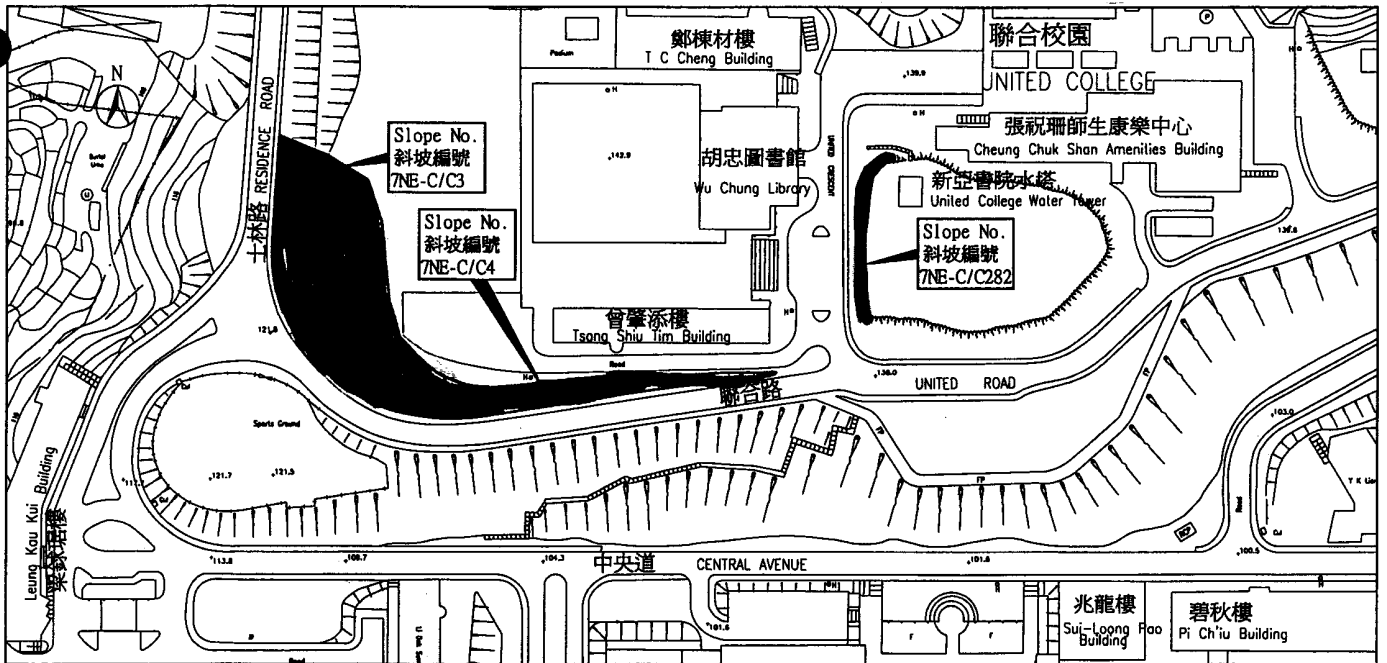
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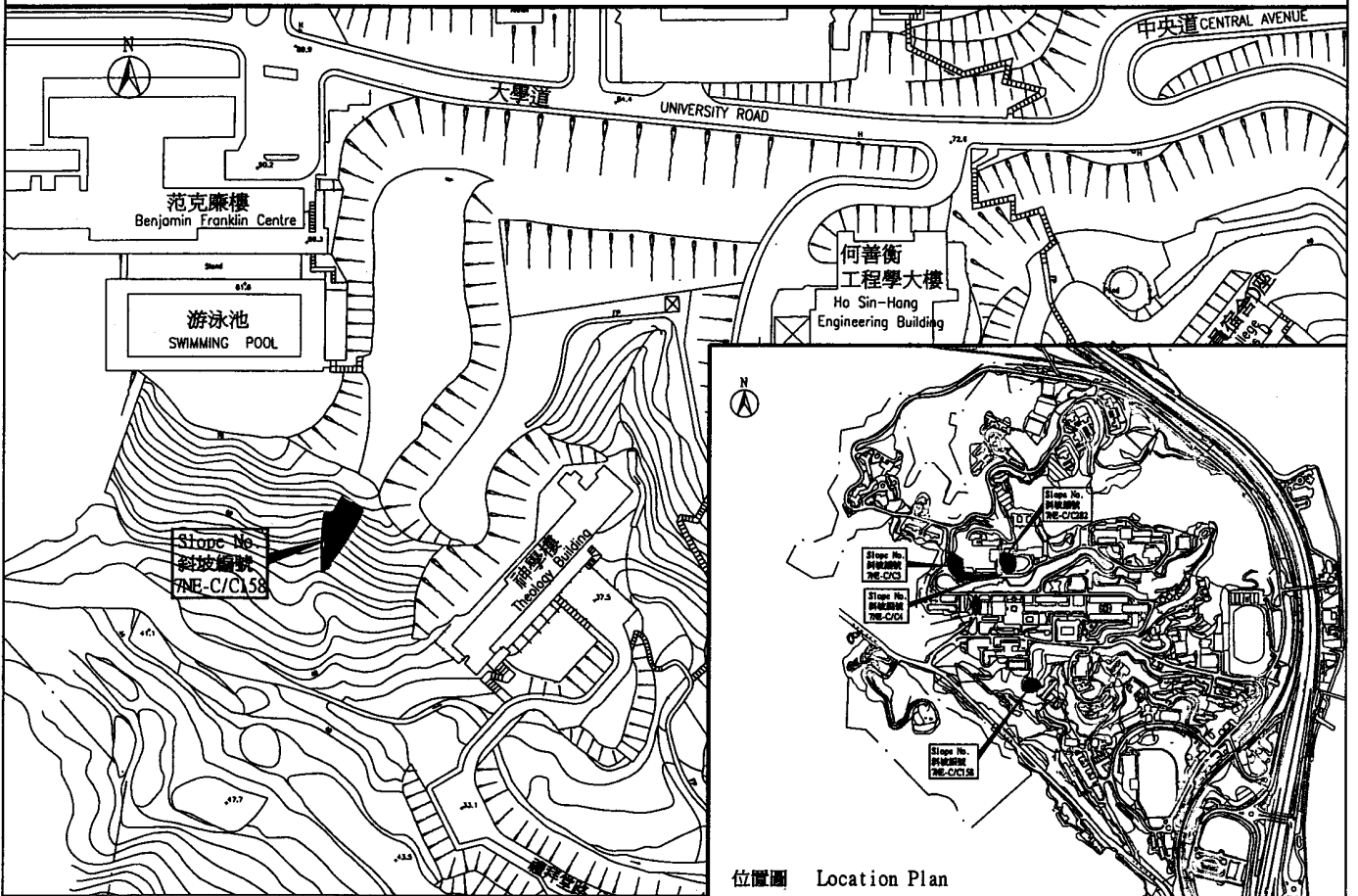


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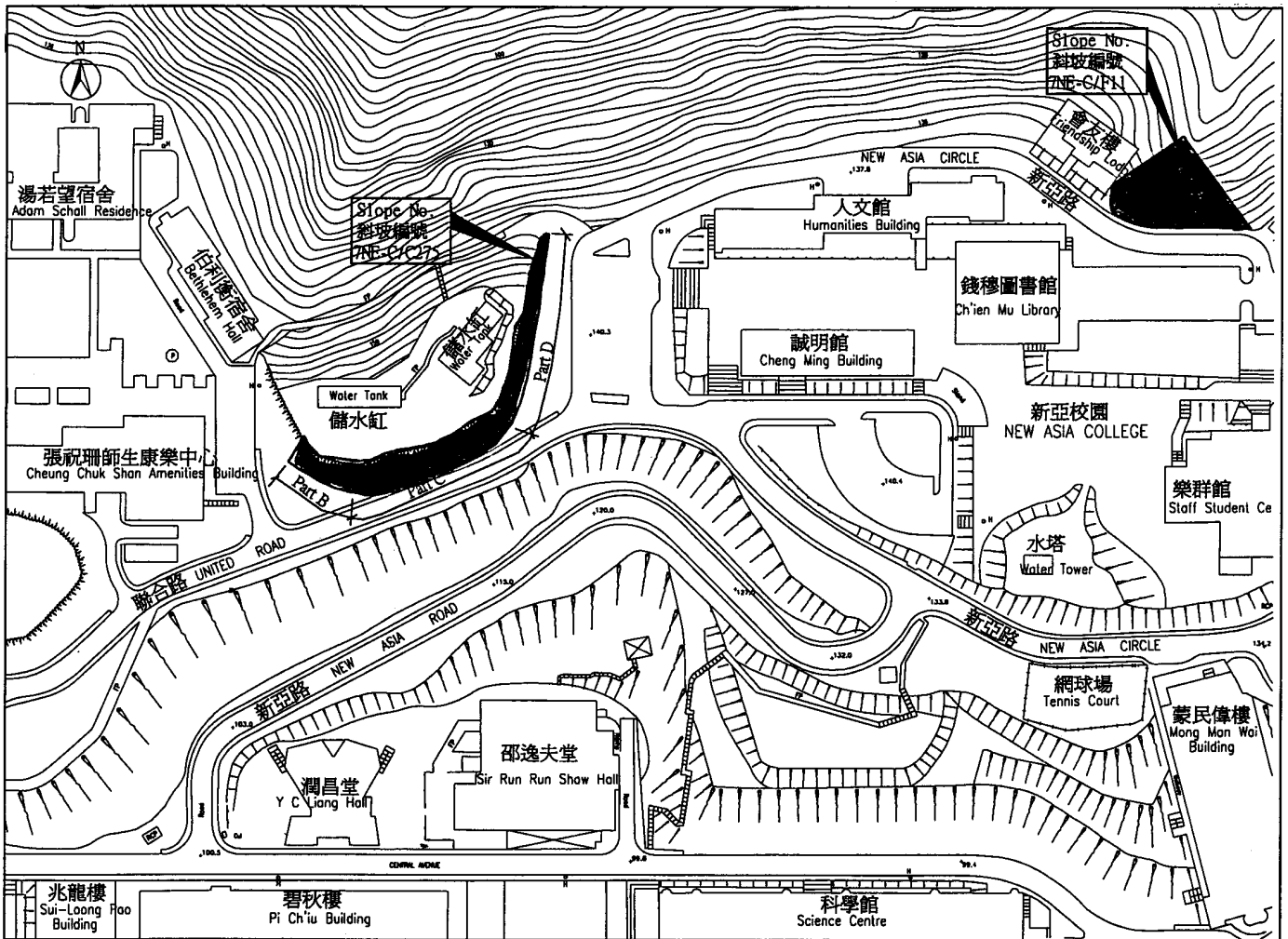
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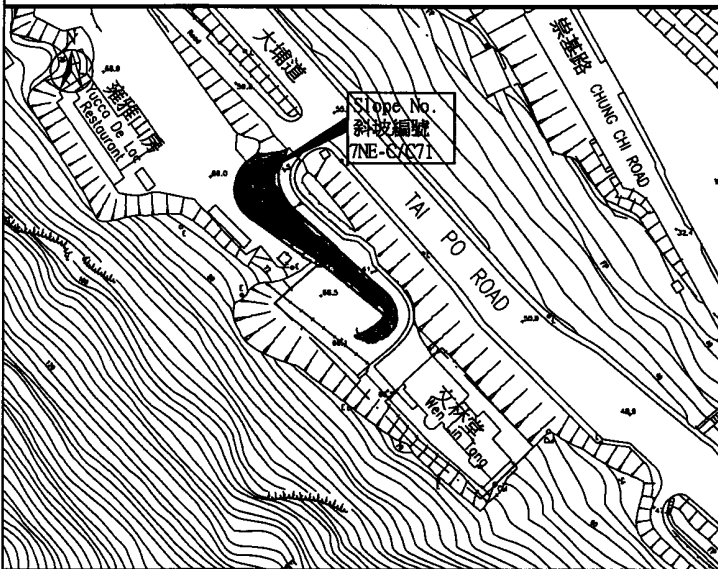


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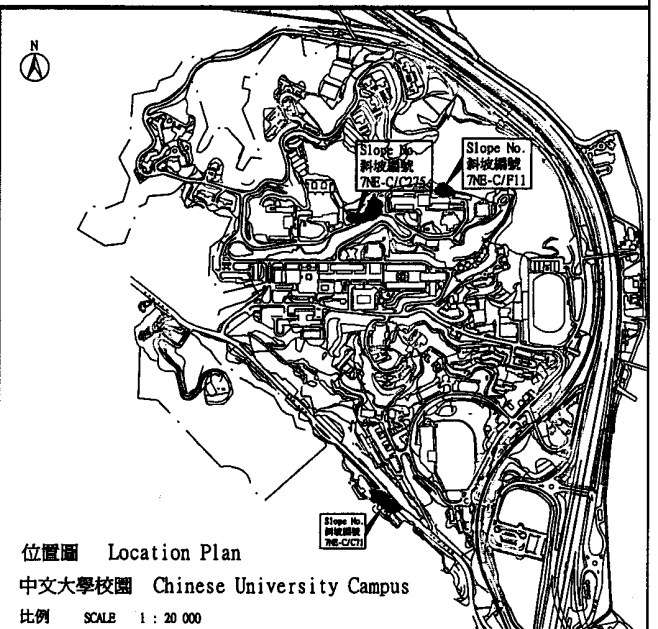
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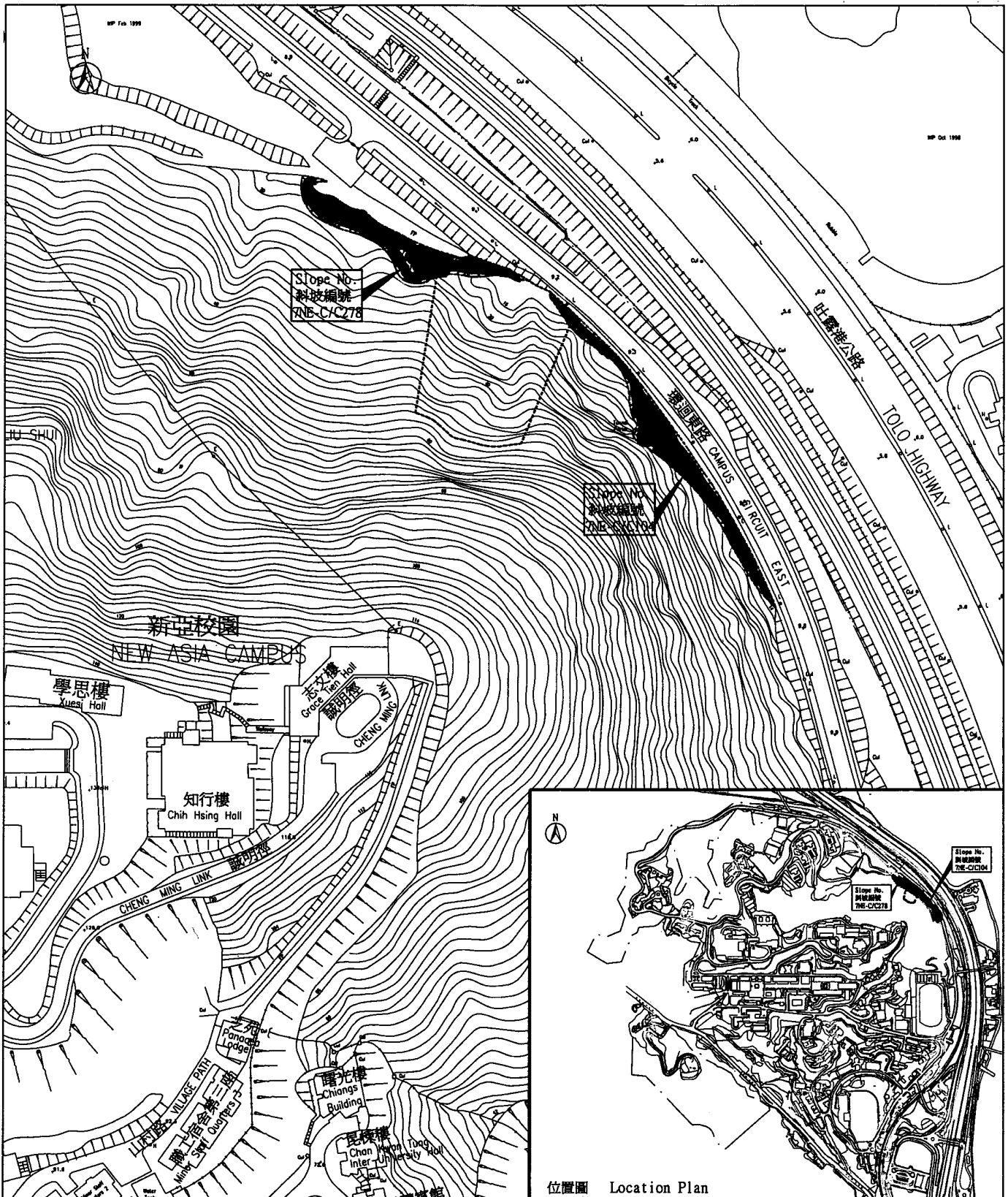


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**The Chinese University of Hong Kong**  
**40EF - Stabilisation of slopes within the university campus, phase 6**

**Breakdown of estimates for consultants' fees**

Consultants' staff costs			Estimated man months	Average MPS* salary point	Multiplier factor	Estimated fee (\$ million)
(a)	Tendering and assessment of tenders	Professional	1	40	2.4	0.15
		Technical	2	16	2.4	0.10
(b)	Contract administration including works and statutory processing, AP service, and commissioning of completed works	Professional	8	40	2.4	1.21
		Technical	3.5	16	2.4	0.18
(c)	Site supervision	Professional	12	40	1.7	1.28
		Assistant	48.8	16	1.7	1.74
		Professional /Technical				
					Total	4.66

\* MPS = Master Pay Scale

**Notes**

1. Regarding the staff employed in the consultants' offices, a multiplier factor of 2.4 is applied to the average MPS point to arrive at the full staff costs including the consultants' overheads and profit (as at 1.4.1998, MPS point 40 is \$62,780 per month, and MPS point 16 is \$21,010 per month). A multiplier factor of 1.7 is applied in the case of site staff supplied by the consultants.
2. The figures given above are based on estimates prepared by the UGC and have been examined and accepted by the Director of Architectural Services.