

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 703 - BUILDINGS

Support – Others

174GK – Veterinary laboratory at Tai Lung

Members are invited to recommend to Finance Committee the upgrading of **174GK** to Category A at an estimated cost of \$55.6 million in money-of-the-day prices for the construction of a new veterinary laboratory at Tai Lung.

PROBLEM

The existing veterinary laboratory (V-lab) at Castle Peak is planned to be cleared for a housing development by 2003. In addition, it no longer meets the present day requirements for surveillance and control of diseases and chemical residues in food animals and birds. It is necessary to provide an upgraded replacement laboratory including facilities to strengthen services on fish disease investigations.

PROPOSAL

2. The Director of Architectural Services (D Arch S), with the support of the Secretary for the Environment and Food, proposes to upgrade **174GK** to Category A at an estimated cost of \$55.6 million in money-of-the-day (MOD) prices for the construction of a new V-lab at Tai Lung, Sheung Shui. This will replace the existing facilities at Castle Peak and provide laboratory support for fish disease investigations.

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PROJECT SCOPE AND NATURE

3. The scope of the project comprises the demolition of an existing vacant single-storey structure and the construction of a 2-storey laboratory building, with a gross floor area of 1 110 square metres, within the existing Tai Lung Experimental Farm. The major facilities to be included in the new V-lab include -

- (a) nine laboratory rooms, a post-mortem room and a microscope room for conducting a wide range of veterinary tests;
- (b) ancillary facilities including a sterilization room, a media preparation room for preparing culture media for pathogen cultivation purpose, an equipment room and a store room; and
- (c) office accommodation of 72.7 square metres for the laboratory staff.

The site plan is at Enclosure 1. The existing structure was previously used for carrying out experiments in mushroom growing. D Arch S plans to demolish this building in June 2000 and start construction works for the new laboratory in September 2000 for completion by December 2001.

JUSTIFICATION

4. Agriculture, Fisheries and Conservation Department (AFCD) plays a key role in the surveillance, investigation, prevention and control of diseases and chemical residues in animals and birds. The provision of a well-equipped V-lab is therefore necessary to enable the Department to strengthen the above functions for the protection of animal and public health. At present, two laboratories conduct veterinary tests, a main laboratory at Castle Peak, Tuen Mun and a branch laboratory at the Sheung Shui Slaughter House (SSSH).

5. Most of the veterinary testing including veterinary diagnosis for diseases and follow-up tests of chemical residues are carried out at the Castle Peak Veterinary Laboratory (CPVL). The branch veterinary laboratory at SSSH is used mainly for conducting screening tests on pig urine for clenbuterol. The CPVL was

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built in the 1950s and has three laboratory rooms, namely bacteriology/parasitology/haematology, histopathology and virology rooms. Limited by the lack of modern facilities, the CPVL can no longer to keep up with the substantial increase in the number and variety of tests required.

6. Moreover, CPVL lacks proper facilities to conduct certain critical tests such as Intravenous Pathogenicity Index tests and Intracerebral Pathogenicity Index tests. These identify and characterise potentially infectious viruses (e.g. H5 influenza and Newcastle disease viruses which may affect poultry) and establish their virulence. As an interim measure, AFCD currently sends any influenza virus or suspected new virus isolated during regular monitoring to overseas laboratories for testing. In the past two years, over 1 000 such specimens were tested by overseas laboratories at a total cost of \$65,000. Although AFCD does not expect any significant cost difference in local and overseas testing, overseas testing has a longer turn around time, ranging from three days to three weeks per case (and up to three months in an isolated case), depending on the workload, competing priorities and goodwill of the overseas laboratories. This arrangement is not desirable since it can lead to a delay in diagnosis. Although no major problems have occurred thus far, it is necessary to provide local laboratory facilities up to international standard to enable AFCD to carry out testing for such viruses and to reduce the testing time to between one day and 10 days, depending on the types of testing required.

7. AFCD therefore proposes to build a new and modern V-lab at Tai Lung. This will enable AFCD to increase the number of tests by some 40%. The enhanced programme will include testing for a wider range of chemical/antibiotic residues in livestock, expansion of serological monitoring for significant livestock diseases and the introduction of new techniques for the rapid detection of pathogens. Moreover, with the operation of the new V-lab, the branch laboratory at SSSH can release resources currently used for serological testing for avian influenza to carry out additional screening tests on pig urine for clenbuterol and antibiotics residues. The new V-lab will also provide a fish necropsy room and fish bacteriology, parasitology and virology facilities, so that AFCD can expand investigations of fish disease investigative work with a view to reducing losses suffered by fish farmers.

8. A comparison on the different kinds of tests that can be conducted by AFCD before and after the operation of the new V-lab at Tai Lung is set out in Enclosure 2.

9. The proposed site at Tai Lung is considered appropriate for relocating the V-lab as it is relatively isolated from populated areas. The time for transportation of test samples to the laboratory will be reduced as the facility is conveniently located near the Government inspection station at Man Kam To control point and the livestock loading area in SSSH.

10. The new laboratory will be constructed to meet international biosecurity standards to prevent escape of pathogens and cross-contamination. Work on pathogens will be conducted inside biological safety cabinets. These cabinets will be housed in rooms designed and built to meet the physical containment requirements stipulated by the World Health Organization for such purposes. Exit air will be filtered to remove any pathogens before discharge. Both solid waste materials and liquid waste will be properly treated to destroy any pathogens before disposal or discharge.

FINANCIAL IMPLICATIONS

11. D Arch S estimates the capital cost of the project to be \$55.60 million in MOD prices (see paragraph 13 below), made up as follows –

	\$ million
(a) Site works and demolition	2.5
(b) Building	16.5
(c) Building services	13.9
(d) Drainage and external works	5.0
(e) Furniture and equipment	7.8
(f) Charges by Electrical and Mechanical Services Trading Fund (EMSTF) ¹	0.3

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¹ Since the establishment of the EMSTF on 1 August 1996 under the Trading Funds Ordinance, government departments are charged for design and technical consultancy services for electrical and mechanical installations provided by the EMSTF. Services rendered for this project cover the removal and relocation of existing equipment and the installation of new equipment at the new V-lab. The figures above are based on estimates prepared by the D Arch S. The actual cost for the service charges is subject to further discussion between the Government and the EMSTF.

(g) Contingencies	3.8	
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Sub-total	49.8	(at December 1998 prices)
(h) Provision for price adjustment	5.8	
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Total	55.6	(in MOD prices)
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12. The construction floor area (CFA) of **174GK** is 1 330 square metres. The construction unit cost, represented by building and building services costs, is \$22,857 per square metre at December 1998 prices. This unit cost is comparable to that for similar projects built by the Government.

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

Year	\$ million (Dec 1998)	Price Adjustment Factor	\$ million (MOD)
2000 - 01	7.0	1.05814	7.4
2001 - 02	34.0	1.11104	37.8
2002 - 03	6.0	1.16660	7.0
2003 - 04	2.8	1.22493	3.4
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	49.8		55.6
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14. 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 2004. We will use its existing minor building works term contractors to carry out the demolition works. Since the site is within dense woodland, we will require the contractor to protect and transplant as many existing trees as possible before the main construction works commence. We will tender the construction works under a fixed-price lump-sum contract because we can clearly define the scope of works in advance, leaving little room for uncertainty.

15. We estimate the additional annually recurrent expenditure for the project to be \$334,000.

PUBLIC CONSULTATION

16. We consulted the North District Council on this project in January 2000. Members were supportive. They were assured that the facility would not significantly increase traffic flow to the area, cause environmental nuisance to nearby residents or otherwise endanger the health of the public and animals in the vicinity.

17. We informed the LegCo Panel on Health Services of this project through a paper distributed to Panel Members in mid-February 2000. We have not received any comments from Members.

ENVIRONMENTAL IMPLICATIONS

18. The Environmental Protection Department vetted a Preliminary Environmental Review (PER) submitted by Arch SD in October 1998. The PER concluded that the project would have no long term environmental impact. During construction, we will control noise, dust and site run-off nuisances through the implementation of mitigation measures in the relevant works contracts. These include the use of silencers, mufflers, acoustic lining or shields for noisy construction activities, as well as frequent cleaning and watering of the site, etc. The cost of the mitigation measures has been included in the project estimate.

19. We estimate that about 800 cubic metres of construction and demolition waste will be generated under this project, including 550 cubic metres of construction and demolition waste to be disposed of at landfills and 250 cubic metres of public fill to be delivered to public filling areas. We have considered in the planning and design stages ways of minimizing the generation of construction and demolition materials as far as possible. We will require the contractor to submit a waste management plan for approval with incorporation of appropriate mitigation measures, including the allocation of an area for waste segregation. We will ensure that the day- to-day operations on site will comply with the waste management plan. We will also require the contractor to reuse the excavated material as filling materials, on site or at other sites. We will encourage the contractor to use non-timber formwork, hoarding and other temporary works

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through proper site supervision and relevant contract clauses. 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. We will control the disposal of construction and demolition materials to designated public filling facilities and/or landfills through a trip ticket system and record the disposal, reuse and recycling of construction and demolition materials for monitoring purposes.

LAND ACQUISITION

20. The project does not require land acquisition.

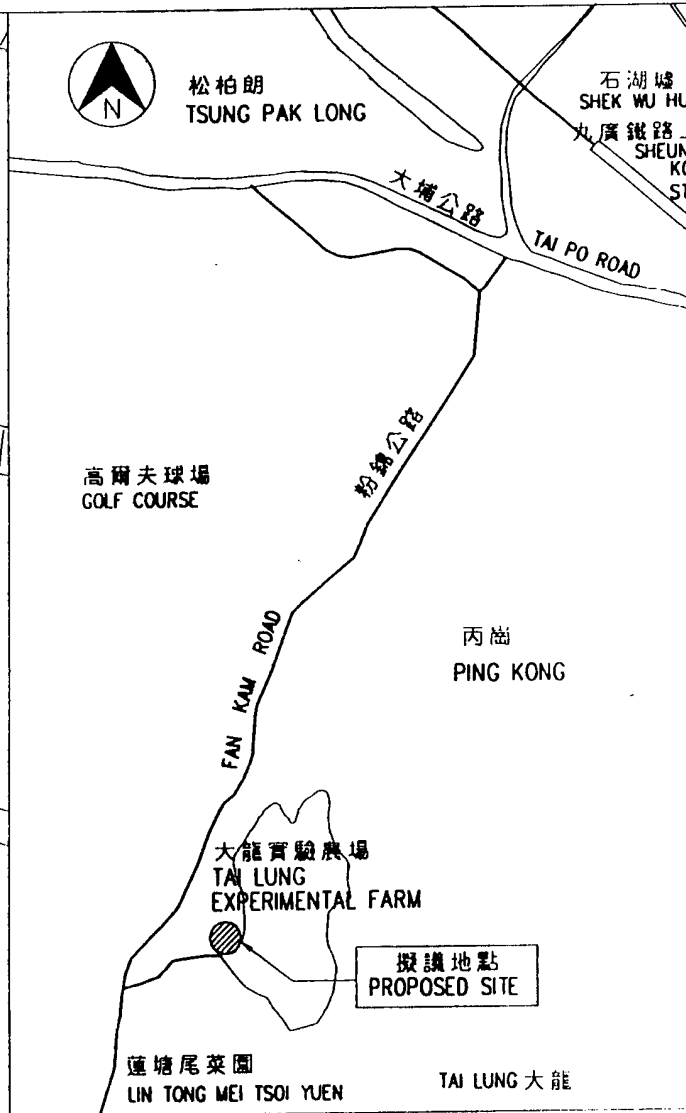
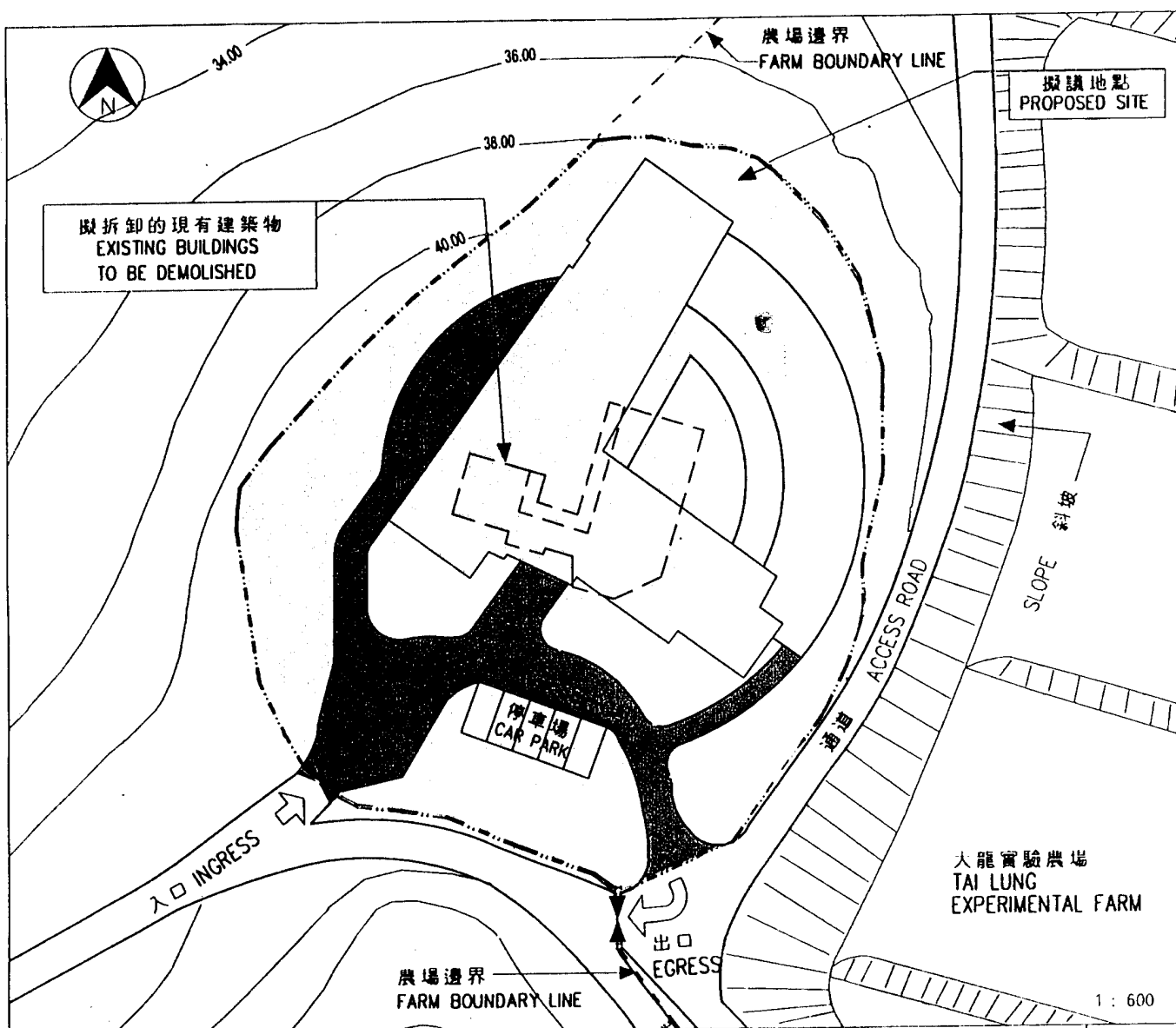
BACKGROUND INFORMATION

21. We upgraded **174GK** to Category B in June 1999. D Arch S has completed the site investigations and detailed design, and is finalising tender documents for the project using in-house staff resources.

22. We estimate that the proposed works will create some 60 new jobs for 1 professional staff, 2 technical staff and 57 labourers during the construction period.

Environment and Food Bureau
March 2000

(PWSC0246/WIN10)

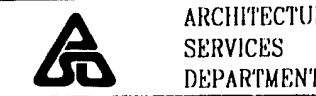


LOCATION PLAN 位置圖 1:20 0

Project title 174 GK
 大龍獸醫化驗所
 VETERINARY LABORATORY
 AT TAI LUNG

drawn by W.M. CHOY date 11/99
 approved O.Y. CHOW date 11/99
 office ARCHITECTURAL BRANCH

drawing no. AB/6157/XA01
 scale AS :



174GK – Veterinary laboratory at Tai Lung

The following table shows the comparison on the different kinds of tests that can be conducted by (Agriculture, Fisheries and Conservation Department) AFCD before and after the operation of the new veterinary laboratory (V-lab) at Tai Lung -

Type of test	Number of tests carried out by AFCD in existing laboratories in 1999	Anticipated number of tests to be carried out by AFCD in the new V-lab at Tai Lung and the branch laboratory in SSSH (increase in percentage)
Avian influenza testing	331 000	446 000 (+35%)
Disease investigations – pathology	550	850 (+55%)
Disease investigations – microbiology	1 200	3 100 (+158%)
Urine testing for clenbuterol	60 800	81 200 (+34%)
β -agonist testing using chromatography	0 (about 100 tests were carried out by Government Laboratory)	400 (not applicable)
Urine antibiotic testing – pigs (microbiological)	3 200	5 000 (+56%)
Urine antibiotic testing – pigs and poultry (chromatography)	0	1 000 (not applicable)
Fish disease investigations	30	200 (+567%)
Total	396 780	537 750 (+36%)

2. In addition, the new V-lab will enable more sophisticated tests to be carried out to enhance the accuracy of findings. Examples include virus neutralisation tests and polymerase chain reaction tests, which are the most accurate ways to confirm infections. These tests require dedicated laboratory rooms with appropriate facilities. AFCD presently cannot do these tests effectively due to inadequate space and facilities.