Legislative Council Panel on Health Services

INFORMATION NOTE ON VETERINARY LABORATORY AT TAI LUNG, SHEUNG SHUI

INTRODUCTION

This paper informs Members of the proposed construction of a veterinary laboratory at Tai Lung. The Administration intends to seek the support of the Public Works Subcommittee of the Finance Committee to upgrade this project to Category A at an estimated cost of $55.6 million in money-of-the-day (MOD) prices at the meeting on 12 April 2000.

PROBLEM

2. The existing veterinary laboratory at Castle Peak is overloaded and out-of-date. It no longer meets the present day requirements of surveillance and control of diseases and chemical residues in food animals and birds. Moreover, it is necessary to provide laboratory facilities to strengthen services on fish disease investigations.

PROPOSAL

3. The Agriculture, Fisheries and Conservation Department (AFCD), with the support of the Environment and Food Bureau, proposes to construct a new veterinary laboratory at Tai Lung to replace the existing one at Castle Peak and to provide laboratory support for fish disease investigations.

PROJECT SCOPE AND NATURE

4. The scope of the project involves the demolition of an existing vacant single-storey structure and the construction of a 2-storey laboratory, 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 veterinary laboratory 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.

The site plan is at the Enclosure**.** The existing structure was used for carrying out

experiments on mushroom growing. Subject to the approval of the Finance Committee, Architectural Services Department (Arch SD), being the works agent for AFCD, plans to demolish the existing structure in June 2000 and to start the construction works in September 2000 for completion by December 2001.

JUSTIFICATION

5. 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 veterinary laboratory is necessary to enable it to strengthen the above functions for the protection of animal and public health. At present, there are two laboratories for conducting veterinary tests. The main laboratory is located at Castle Peak, Tuen Mun and the branch laboratory is at the Sheung Shui Slaughter House (SSSH).

6. 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 for conducting rapid pig urine tests for Clenbuterol. The CPVL was built in the 1950s and has three laboratory rooms only (namely bacteriology/ parasitology/haematology, histopathology and virology rooms). Limited by the lack of modern facilities, the CPVL will no longer be able to keep up with the substantial increase in the number and variety of tests required.

7. Moreover, CPVL lacks proper facilities for AFCD to conduct certain critical tests including the Intravenous Pathogenicity Index tests and the Intracerebral Pathogenicity Index tests to identify and characterise potentially infectious viruses (e.g. H5 influenza and Newcastle disease viruses which may affect poultry) and to establish their virulence. As an interim measure, AFCD sends an influenza virus or a suspected new virus isolated in its regular monitoring programme to overseas laboratories for testing. In the past two years, AFCD sent over 1 000 specimens to 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 longer turn around time, ranging from 3 days to 3 weeks per case (and up to 3 months in an isolated case), depending on the workload, competing priorities and goodwill of the overseas laboratories. This arrangement is not desirable since it might lead to delay in diagnosis. Although no major problems have occurred so far, it is necessary to equip AFCD with local laboratory facilities of international standards to enable it to carry out testing for such viruses and to reduce the testing time to 1 day to 10 days, depending on the types of testing required.

8. Due to the limitations of CPVL, AFCD proposes to build a new and modern veterinary laboratory at Tai Lung to replace CPVL. It expects that the new veterinary laboratory will enable it to increase the number of tests by some 40%. This will include increased tests for a wider range of chemicals/antibiotic

residues in livestock, expansion of serological monitoring for significant livestock diseases, and introduction of new techniques for rapid detection of pathogens. Moreover, with the operation of the new veterinary laboratory, the branch laboratory at SSSH can release its resources which are currently used for serological testing for avian influenza to carry out more screening tests on pig urine for Clenbuterol. Furthermore, the new veterinary laboratory will provide a fish necropsy room and fish bacteriology, parasitology and virology facilities, so that AFCD has the necessary laboratory support to expand fish disease investigative work with a view to reducing losses suffered by fish farmers.

9. The following table shows the comparison on the different kinds of tests that can be conducted by AFCD before and after the operation of the new veterinary laboratory 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 veterinary laboratory 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)

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 veterinary laboratory at Tai Lung and the branch laboratory in SSSH (increase in percentage)
Urine antibiotic testing – pigs (microbiology)	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%)**

10. In addition, the new veterinary laboratory will enable more sophisticated tests to be carried out to enhance the accuracy of findings. Examples of such tests 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 accurately due to inadequate space and facilities.

11. The site of CPVL at Castle Peak has been earmarked for housing development. The CPVL is part of the AFCD Castle Peak Poultry Breeding Farm site, which will be incorporated into the Area 54 Tuen Mun Housing Development Site and is planned to be cleared for development by 2003. The proposed site at Tai Lung is considered appropriate as it is relatively isolated from populated areas. The location would also reduce the time for transportation of test samples to the laboratory as it is quite close to the Government inspection station at Man Kam To border and the livestock loading area in SSSH. It also enjoys adequate access for vehicles delivering samples or carcasses for examination and subsequent disposal.

PRECAUTIONARY SAFETY MEASURES

12. 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

13. ArchSD estimates the capital cost of the project to be $55.6 million in MOD prices. The construction unit cost, represented by building and building services costs, is $22,860 per square metre at December 1998 prices. ArchSD considers this unit cost reasonable compared with similar projects built by the Government. AFCD estimates that the additional recurrent expenditure of the new veterinary laboratory would be $340,000 a year.

PUBLIC CONSULTATION

14. AFCD consulted the North District Council on this project in January 2000. Members were supportive of the project. 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.

ENVIRONMENTAL IMPLICATIONS

15. The Environmental Protection Department endorsed a Preliminary Environmental Review (PER) submitted by ArchSD in October 1998. The PER concluded that the project would have no long-term environmental impact. During construction, ArchSD will control noise, dust and site run-off nuisances through the implementation of mitigation measures, such as acoustic screens, water spraying and desilting tanks, etc., in the relevant works contracts to minimise such nuisances to meet stipulated environmental protection standards. The cost to implement mitigation measures has been covered in the project estimate.

16. ArchSD estimates 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. ArchSD has considered in the planning and design stages of minimising the generation of construction and demolition materials as far as possible. It 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. It will ensure that the day-to-day operations on site will comply with the waste management plan. It will also require the contractor to reuse the excavated materials, on site or on other sites, as filling materials as far as possible. It will encourage the contractor to use non-timber formwork, hoarding and other

temporary works to further reduce the generation of construction and demolition materials. It 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. It 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.

Environment and Food Bureau /
Agriculture, Fisheries and Conservation Department
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