

**For discussion  
on 26 May 2009**

**LEGISLATIVE COUNCIL  
PANEL ON DEVELOPMENT**

**Management of Maintenance and Repair Works  
in Government Premises**

**PURPOSE**

The fatal incident of the fallen metal gate which happened on 5 May 2009 at the Social Welfare Department (SWD)'s Hang Ngai Manufacturing & Hostel in Hung Hom, a Government facility maintained by the Architectural Services Department (ArchSD) has raised public concern about maintenance and repair works in Government buildings and facilities administered by ArchSD. We appreciate fully the public concern as many services to the public are provided from these premises. This paper provides an overview of the current minor works delivery system administered by ArchSD and discusses problems and challenges encountered in order to ensure their efficient and cost-effective delivery. While a factual account of the above-mentioned incident, based on reports compiled by ArchSD and SWD, is provided at the **Annex**, we hope Members would appreciate that as the incident is now under Police investigation and a Coroner's enquiry is likely, we should refrain from discussing about the case in public.

**BACKGROUND**

2. "Minor works" on government premises generally refer to works with a cost estimate not exceeding \$21 million. These can broadly be classified into the following categories :

- (a) maintenance and repair works;
- (b) refurbishment and improvement works;
- (c) minor building or engineering works; and
- (d) feasibility studies, minor site investigations and design.

3. Maintenance and repair works (paragraph 2(a)) are funded from ArchSD's recurrent vote as part of its departmental recurrent expenditure. In

the 2009-10 Estimates, such recurrent maintenance accounts for some \$505 million of ArchSD's operational expenses totalling \$1,521 million. Other minor works (paragraphs 2(b) to 2(d)) are funded from block allocations under the Capital Works Reserve Fund (CWRF) for which a provision for each will be approved by the Finance Committee on an annual basis. ArchSD's block vote for refurbishment of government buildings has an approved provision of \$2,321 million in 2009-10. As can be seen, this accounts for a significant proportion of the total estimated expenditure of \$8,562 million in 2009-10 for all works-related block allocations.

4. In general, around half of the minor works under the CWRF by value are delivered via term contracts (generally of duration from 1.5 to 8 years). The others are delivered by invitation of tenders or quotations. Maintenance and repair works are normally carried out by term contractors using the Works Orders (W.O.) approach. Maintenance/repair W.O.s are typically small in value but large in volume. The following table shows the approximate value of maintenance and repair works undertaken by works departments<sup>1</sup> in 2008-09 –

<b>Departments</b>	<b>Expenditure on maintenance/repair works in 2008-09 (\$M)</b>
Architectural Services Department	480 <sup>2</sup>
Civil Engineering and Development Department	80
Drainage Services Department	440
Highways Department	860
Water Supplies Department	580
<b>TOTAL</b>	<b>2,440</b>

5. The repairs to the metal gate in question were subject to the W.O.

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<sup>1</sup> Excludes the Electrical and Mechanical Services Department in which maintenance and repair works are carried out for its clients as part of the operation of the Electrical and Mechanical Services Trading Fund established in August 1996.

<sup>2</sup> Some of the maintenance and repair works under this expenditure are outsourced (such as to the Electrical and Mechanical Services Trading Fund) and not carried out directly by ArchSD

approach under the maintenance and repairs arrangement.

## **DELIVERY OF MAINTENANCE AND REPAIR WORKS**

6. ArchSD provides professional and project management services for the maintenance and repair works of over 8,000 government buildings and facilities, including subvented schools outside housing estates, covering a total floor area of about 28.6 million m<sup>2</sup> and about 5,800 slopes under its regime.

7. In 2008-09, ArchSD issued about 368,000 W.O.s for maintenance and repair works with a total estimated value of about \$389 million. Over 90% of the maintenance and repair W.O.s issued by ArchSD are of value less than \$1,000. In 2008-09, the approximate proportion of W.O.s for maintenance and repair works issued by ArchSD chargeable to its departmental recurrent expenditure in comparison with all other W.O.s issued by ArchSD is as follows -

<b>Types of W.O.s</b>	<b>W.O.s by ArchSD issued in 2008-09</b>			
	<b>No.</b>	<b>%</b>	<b>Estimated Value (\$M)</b>	<b>%</b>
Maintenance and repair works chargeable to ArchSD's departmental recurrent expenditure	368,000	96%	389	13%
Other minor works	16,600	4%	2,555	87%
<b>Total</b>	<b>384,600</b>	<b>100%</b>	<b>2,944</b>	<b>100%</b>

8. In administering the minor works regime, ArchSD is uniquely different. Unlike other works departments which are normally both the works agent and the client department (e.g. WSD's block vote on minor works is administered by WSD to do works in waterworks installations), ArchSD has to service a large number of client departments as well as subvented schools

(as end users) in providing professional and project management services for the maintenance and refurbishment of buildings and facilities, generally grouped under the Programme on Facilities Upkeep under the Secretary for Financial Services and Treasury. This naturally requires a lot of co-ordination and liaison with client departments.

9. ArchSD's building maintenance work is undertaken by its Property Services Branch and is subject to key performance indicators which are reproduced below –

	Target	2007 (Actual)	2008 (Actual)	2009 (Plan)
• Attending to emergency repairs e.g. a burst water pipe, within one hour of notification in Hong Kong, Kowloon and new towns in the New Territories (%)§ .....	99	99	99	<b>99</b>
• Attending to urgent repairs e.g. a broken window, within one day of notification (%)§ .....	99	99	99	<b>99</b>
• Completing minor repairs within the agreed time scale (%).....	99	99	99	<b>99</b>
• Completing major maintenance and refurbishment work within the agreed time scale (%) .....	99¶	98	99	<b>99</b>
• Carrying out scheduled maintenance inspections of all buildings (%) .....	99	99	100	<b>99</b>
• Achieving satisfactory performance in client satisfaction survey for minor repairs (%) .....	98Ψ	94	98	<b>98</b>
• Completing technical checking of contractors' submitted accounts within 14 days (%).....	95#	90	95	<b>95</b>

§ These include inspection and assessment on site, as well as immediate remedial actions taken as appropriate.

¶ Target revised upwards from 97 per cent to 98 per cent in 2008 and to 99 per cent in 2009.

Ψ Target revised upwards from 90 per cent to 94 per cent in 2008 and to 98 per cent in 2009.

# Target revised upwards from 90 per cent with effect from 2009.

10. With over 8,000 buildings and 93 user departments to serve, some form of prioritisation or system to differentiate the urgent from the routine orders is necessary. The effectiveness of prioritizing maintenance and repair works, to a certain extent, depends on the quality of report provided by the clients/users (i.e. whether the maintenance problems, severity and requirements can be precisely defined). Furthermore, as maintenance and repairs are carried out within existing premises with users in occupation, any constraints imposed by the clients/users (including site availability, accessibility, restricted working hours, and operational requirements etc.) will

have a direct impact on the timely completion of the works.

### **Types of Maintenance and Repair Works**

11. Maintenance and repair works undertaken by ArchSD on an outsourced basis can broadly be classified into the following categories :

- (a) Minor Repairs – individual small repairs with estimated value not exceeding \$1,000 initiated by end users via telephone or in writing or by ArchSD staff as a result of routine inspections of properties.
- (b) General Repairs – repairs of similar nature to Minor Repairs but with estimated value exceeding \$1,000.

12. The approximate number and estimated value of W.O.s issued by ArchSD to contractors in 2008-09 are summarized below :

<b>Types of Repairs</b>	<b>W.O.s by ArchSD issued in 2008/09</b>			
	<b>No.</b>	<b>%</b>	<b>Estimated Value (\$M)</b>	<b>%</b>
Minor Repairs	354,000	96%	99	25%
General Repairs	14,000	4%	290	75%
<b>Total</b>	<b>368,000</b>	<b>100%</b>	<b>389</b>	<b>100%</b>

### **Workflow and Procurement Arrangement**

13. Given the extensive geographical coverage of government premises, ArchSD's maintenance and repairs services is arranged on a district basis. At present, there are 12 maintenance term contracts under ArchSD's administration with contract periods ranging from 36 to 48 months covering various districts and areas of the territory.

14. ArchSD established the Repair Call Centre (RCC) in 1999 with the aim of providing prompt responses to requests for Minor Repairs. The Centre

is equipped with an automated communication system and manned by personnel seconded from the term contractors under the supervision of ArchSD staff. Users of government facilities maintained by ArchSD requiring Minor Repair services can make direct telephone calls to RCC. Upon receipt of a call request, the operator of the RCC will issue a Minor Works Order (MWO) to the relevant term contractor, who will liaise directly with the user to carry out the works generally without involving ArchSD's staff. Upon completion of the works, certification will be made by the user department. ArchSD will carry out random audits on the works to monitor the performance of the contractors and quality of works.

15. If the repairs required are beyond a Minor Works Order, the client department/ end user will have to raise a specific request. Upon receipt of such a request for maintenance or repairs, ArchSD will examine the nature of works involved and if necessary prepare details of the works and cost estimate. ArchSD will issue a W.O. to the term contractor for implementation. The W.O. will set out the scope of works involved, the target dates for commencement and completion, as well as other details such as operational or site constraints as appropriate. ArchSD will monitor the progress and quality of the works, control the budget and co-ordinate with the contractor and other parties.

16. As a means to enhance service quality, ArchSD introduced on a trial basis over two term contracts in 2008 the enhanced term contract arrangement. This is similar to conventional term contract except that the responsibility for managing the routine maintenance of the facilities is entrusted to the contractor. The contractor is responsible for up-keeping the facilities specified in the contract and is required to carry out regular inspections, produce relevant reports, undertake maintenance and repair works and report upon completion of the works, all in accordance with specified service standards. Staff of ArchSD conduct surprise site checks and audit inspections on the contractor's works. The contractor is paid on a lump sum basis regularly. Payment will be deducted if the services provided by the contractor cannot comply with the required standards. Contractors in this mode of delivery are more proactive and there is no need for ArchSD to issue W.O.s for each maintenance job, thus relieving the pressure of ArchSD's limited staff resources. The effectiveness of this scheme has yet to be fully evaluated.

## **Devolution of Minor Maintenance Works to User Departments**

17. To enable ArchSD to focus more on the management of major and technically oriented maintenance works, a pilot scheme was put on trial in 2003 to devolve small-value simple maintenance works to a number of client departments/bureaux. The arrangement was intended to provide more flexibility to the user departments in procuring maintenance services from the private sector. To assist the client departments to take over the responsibility, ArchSD provided supporting services to these departments both before and during the course of devolution. As regards emergency and major maintenance works, ArchSD undertook to continue providing such services.

18. Despite the assistance and support rendered by ArchSD, the client departments still found it difficult to take over the responsibility for minor maintenance. In 2006, a review was conducted and it was concluded that due to a number of reasons, including the lack of technical knowledge to assess contractors' repair proposals/quotations; lack of technical knowledge to supervise contractors; lack of staff resources to handle the minor maintenance works; and lack of economies of scale, the pilot scheme was terminated and ArchSD took back from the client departments the minor maintenance responsibility.

## **ENHANCEMENT OF THE SERVICE DELIVERY SYSTEM**

19. While past efforts made by ArchSD have addressed some of the problems, we believe there is room for improvement, particularly in view of the growing size of the government premises requiring maintenance. This may warrant a holistic approach to enhance the overall efficiency and effectiveness of ArchSD's services delivery capability in maintenance and repair works taking into account the following strategic issues.

### **(a) Service Delivery**

20. For minor and routine repair works with minimal need for technical inputs, the RCC has proved to be a viable solution by decentralizing part of the maintenance responsibilities to user departments. Further decentralization through such strategies as devolution of maintenance responsibility to user departments and extending the Enhanced Term Contract

mode of operation can be carefully considered.

**(b) Use of Information Technology**

21. More advanced use of information technology can help ArchSD to enhance its asset management capability and enable it to carry out more effective preventive maintenance work based on analysis of the past and present performance of the buildings/facilities and the associated building components, equipment and systems.

**(c) Client Relation Management**

22. Close liaison with the client/user departments is important not only for the purpose of defining maintenance requirements and arranging site facilitation measures, but more importantly to instill a sense of ownership into clients/users so that they will accept taking up the responsibility for maintaining buildings/facilities in which they operate. This will include publishing maintenance handbook (housekeeping manual) and conduct briefing and training sessions to help and educate user departments to identify, oversee and report building defects.

**(d) Contractor Management**

23. The current workflow and administration procedures for term contractors can be reviewed with a view to streamlining the processes and strengthening the monitoring of their performance, particularly with respect to works that have safety and health implications. Audit by ArchSD staff on Minor Repairs will also be stepped up to enhance the monitoring of the contractors' performance.

**ADVICE SOUGHT**

24. Members are invited to note the above situation and proposed measures to enhance the delivery of ArchSD's maintenance and repair services.

**Development Bureau  
May 2009**

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**Annex**

At 7:20 a.m. on 5 May 2009, a metal gate at Social Welfare Department (SWD)'s Hang Ngai Manufacturing & Hostel (Hostel) in Hung Hom collapsed, leading to the death of a female cleaning worker of the cleaning contractor. The following is a summary of the incident.

**Summary of Incident**

1) February 2002

The SWD took over the Hostel premises and the Architectural Services Department (ArchSD) took up its maintenance responsibility.

2) February 2002 – November 2008

According to the records of the ArchSD, the Hostel had undergone about 800 minor maintenance works during the above period. Of the repairs, 4 involving the metal gate at the main entrance of the Hostel, were carried out in April 2004, September 2006, January 2008 and November 2008 respectively. The first repair was completed within three days upon receipt of notification from the SWD, while the other three repairs were completed on the same day of the notifications.

3) 9 December 2008

When the SWD, ArchSD and the contractor of the maintenance term contract (contractor) examined a water seepage problem at the site, they also inspected the metal gate because the gate had been

repaired in November 2008. Though no malfunctioning of the metal gate was noticed, it was agreed that the metal gate should be replaced by a lighter one because it was rather heavy and the replacement should improve the operation of the gate.

4) 10 December 2008

The SWD made a written request to the ArchSD to have the gate replaced, the railing painted and the water seepage repairs carried out.

5) January – February 2009

On 2 January, the ArchSD issued a works order regarding the above-mentioned works to the contractor. According to the works order, the works were originally required to be completed by 10 February. However, in view of the Lunar New Year and the non-urgent nature of the work items, parties concerned subsequently agreed that the work items included in the works order would be further arranged after the Lunar New Year Holidays.

6) February – late March 2009

The SWD and ArchSD had followed up with the contractor on several occasions to arrange the date for the commencement of the works. In late March, the SWD, ArchSD and the contractor inspected the Hostel in connection with the clogging of the grease trap. When staff of the ArchSD entered the Hostel for inspection, they had opened and closed the gate and found it to be working properly.

7) Late March – May 2009

The SWD and ArchSD continued to arrange with the contractor the commencement date of the works. During the period, the gate was working properly. Since the metal gate was installed at the main entrance of the Hostel, and bearing in mind the noise and disturbance that would be caused by the works, the safety aspect, the

need to avoid affecting the normal operation of the Hostel and the need to coordinate other repairs at the Hostel, parties concerned agreed that it was necessary to choose a suitable date to carry out the works. It was eventually fixed on 16 May.

- 8) 7:20 a.m. on 5 May 2009

The gate collapsed leading to the death of a female.

- 9) 6 May 2009

The new gate was installed on the day following the incident.

Remarks:

This summary of incident was compiled on the basis of the records of the ArchSD and SWD. Its contents are made subject to and without prejudice to any findings of facts to be made by the Coroner should the Coroner decide to conduct an inquest into the incident.