

Memorandum for the Hong Kong Housing Authority

Updates on Issues Arising from the “Excess Lead in Drinking Water in Public Rental Housing Estates” Incident

PURPOSE

In Paper No. HA 24/2016 issued in October 2016, we reported on developments on various issues arising from the “excess lead in drinking water in public rental housing (PRH) estates” incident. This paper updates Members on the latest developments in respect of the following areas –

- (a) progress of the rectification works in the 11 PRH developments with excess lead in drinking water; and
- (b) enhancing the quality assurance mechanism.

RECTIFICATION WORKS IN AFFECTED PRH ESTATES

2. In order to rectify the problem of excess lead in water, we have asked the four contractors to replace the non-compliant pipes in the 11 affected PRH developments. Rectification works in the common areas of the 11 affected PRH developments started in March 2016. To date, works in the common areas of six of the affected PRH developments have been substantially completed. It is estimated that all the works in the common areas of the remaining affected PRH developments will be completed by Q2, 2017.

3. To minimise the inconvenience caused to tenants as far as practicable, we have asked the contractors to maintain close communication with tenants and address their issues or concerns. We have also monitored the progress of works through regular meetings with the contractors. The progress of works in the common areas has generally been satisfactory. Incidents of water leakage/pipe burst, which were caused by lack of experience and miscommunication among workers in the early stage, did not occur again after we had asked the contractors to improve their installation method, enhance training for workers and tighten up the procedures.

Trial for Works Inside Domestic Flats

4. As mentioned in Paper No. HA 24/2016, we considered that there were merits in conducting a trial for works inside domestic flats to test the contractors' method and the arrangements on a small scale first. For this purpose, the contractor conducted a trial for works inside flats at Kwai Yuet House of Lower Ngau Tau Kok Estate Phase 1 ^{Note 1} starting from 17 October 2016.

5. Since the commencement of the trial, works for about half of the flats have been completed. As the furnishings and pipe routings inside individual flats vary from one to another, the contractor has to resolve a number of technical issues before proceeding with the works. With the consolidated experiences of the trial works, the contractors will apply the following arrangements for works inside flats for the rest of the affected PRH developments –

(a) Preparatory work

- (i) **Household visits:** The contractors will conduct household visits to discuss and work out the detailed arrangements of the works with the tenants. After on-site examination and sorting out the technical issues, the contractors will confirm the date and time of works with the tenants. In case the tenants are not available at the scheduled time, they can inform the contractors' ambassadors beforehand to reschedule the appointment. During the trial works, tenants were mainly concerned about the date and time of the works, preparation before the commencement of works, and the effects on existing furnishings, etc.;
- (ii) **Communication with tenants:** In order to keep tenants informed of the detailed arrangements for works inside flats, newsletters providing details of works (including the flow, scope and date of works, water suspension time, samples of workers' identification badges and uniform, etc.) will be distributed into tenants' mailboxes and notices will be posted in the lobbies of the estates. We appreciate that the works will inevitably cause inconvenience to tenants (e.g. tenants will need to make arrangements to enable the contractors to carry out works inside flats, mounting of gondolas for works on external walls, use of passenger lifts by the contractors' workers to convey materials during non-peak hours, use of

Note 1 The trial works cover 439 flats from 1/F to 45/F of Blocks A and D of Kwai Yuet House.

some public space in the estate for workshops, etc.) and we would be grateful for tenants' tolerance and understanding. Before and during the works, the contractors will deploy ambassadors and set up a hotline (9am to 6pm, Monday to Saturday) to answer tenants' enquiries regarding the works inside flats.

- (iii) **Briefings for the Estate Management Advisory Committees (EMAC):** Before the commencement of works, we and the contractors will brief EMAC on the details of the method and arrangements for works inside flats to enable tenants to have a better understanding of the work details and answer their enquiries. During the works, we will also brief EMAC on the progress of works at suitable junctures.

(b) Arrangements during works

- (i) **Works procedures:** The new pipes to be installed will be disinfected at the contractor's workshop and water samples will be taken in accordance with the requirements of the Water Supplies Department (WSD). The pipes will only be delivered to site for installation upon compliant water test results. For the works inside each flat, two groups of workers will be arranged to replace the pipes inside the flat and on the external walls simultaneously. Gondolas will need to be mounted for the works on external walls. During the works, Housing Department (HD)'s site inspection staff will regularly monitor the quality and progress of works.
- (ii) **Duration of works:** The contractors' working time will be from 9 am to 6 pm, Monday to Saturday. The contractors will schedule a time which is convenient to the tenants as far as practicable to minimise the inconvenience caused to them. The actual time required for the works in each flat will depend on factors such as the furnishings, pipe routings and weather condition on the day of works, etc. During the trial, for flats where existing furnishings were not extensive (e.g. the pipe routings had not been altered or the pipes were not covered by storage cabinets), the works inside flats could generally be completed within one day. For cases where the furnishings were more extensive (e.g. the pipes were covered by storage cabinets that required alteration of the back panels, etc.), the works may take around two days. Moreover, as the works will involve some of the pipes on

external walls, the operation of the gondola would be affected at times of rainy or windy weather, and thus the works on external walls would need to be suspended, causing delay to the works schedule. In cases where the works cannot be completed within one day, the contractors will resume the water supply first and reschedule the appointment with the tenants at a time convenient to them to complete the works on another day.

- (iii) **Water suspension time:** The water supply to the flats where works are being carried out will be temporarily suspended. Other flats where works are not being carried out will not be affected. The water suspension will take about nine hours (from 9 am to 6 pm). Tenants can obtain drinking water from the temporary water points on each floor and the standpipes during water suspension. Water supply to the flats concerned will be resumed after the works.

(c) **Reinstatement of furnishings**

- (i) **Pipe routing:** To avoid or minimise damage to tenants' furnishings, the contractors will adopt the piping's existing routing as far as practicable provided that it is compliant with the relevant legal requirements. If part of the pipe routing is covered, subject to the tenants' consent, the contractors may adopt a new routing based on the conditions of the flat.
- (ii) **Complexity of the furnishings:** For flats with simple furnishings, the works are relatively easy and can usually be completed within one day. For cases with more complex furnishings (e.g. storage cabinets or false ceilings are installed in the kitchens or toilets), the works may take a longer time. During the household visits, the contractors will examine the areas concerned and discuss the work details with tenants. If the back panels have to be altered or the storage cabinets/false ceilings have to be temporarily removed, subject to the tenants' consent, the contractors will conduct the necessary alterations or temporary removal to facilitate the replacement of pipes. After completion of works, the contractors will reinstate the back panels or reinstall the storage cabinets/false ceilings that have been removed. The approach to handling the furnishings for different types of flats is generally the same. We have asked the contractors to make good any damage to the

furnishings and to handle any claims for compensation by tenants.

6. During the trial works, the contractor has encountered cases where the works inside flats could not be carried out. These included cases where the tenants could not be contacted, flats with complex furnishings, and tenants who expressed unwillingness in carrying out the works, etc. For tenants who could not be contacted, the contractor will continue to try to contact them to arrange for the works to be carried out. For flats with complex furnishings (e.g the pipe routings are altered or the pipes are covered by storage cabinets, etc.), the contractor is now exploring ways to minimise damage to the furnishings during works as far as practicable. As for tenants who expressed unwillingness in carrying out the works, we would continue to persuade them to allow the contractor to carry out the works at their convenience. This process would take time and we would monitor the progress. The Water Authority (WA) would follow up with these tenants at an appropriate juncture and consider whether, and if so, what actions to be taken on a case-by-case basis.

Rolling Out the Works Inside Flats for the 11 Estates

7. As mentioned in the past, in light of experience from the trial, the contractors will work out a more detailed work plan and timetable for works inside flats for the remaining affected PRH developments. Considering that the works in the common areas of the 11 PRH developments will be completed soon, and having consolidated experiences from the trial works at Kwai Yuet House of Lower Ngau Tau Kok Estate Phase 1, the works inside flats for the remaining affected PRH developments will be rolled out in Q2, 2017. Similar to the arrangements adopted during the trial, the contractors will conduct household visits to discuss and confirm the detailed arrangements with tenants before commencing works inside flats.

8. To assist tenants of the 11 affected PRH developments in gaining access to safe drinking water, we have provided temporary water points on each floor and standpipes, and the contractors have also installed water filters. As reported earlier, the contractors have been replacing or cleansing the filter cartridges regularly in accordance with the manufacturer's instructions ^{Note 2}. For households with whom we have had difficulty in getting in touch, the contractors have been trying to contact them outside working hours

Note 2 For the households with filters installed in Wing Cheong Estate and Tung Wui Estate, Paul Y. General Contractors Limited cleans the filter cartridges about once every three months, and replaces the filters once within 12 months' time. Paul Y. has substantially completed the replacement of filter cartridges for these households once, and the next round of cleaning will start in March 2017. The remaining three contractors replace the filter cartridges for the households in their affected PRH developments about once every six months. Since filters were installed in the affected PRH developments at different times, the timing for replacement of the filter cartridges varies from one estate to another. The latest round of filter cartridge replacement has started since February 2017.

including on Sundays, and will continue to do so. We and the contractors will also continue to encourage households which have not installed water filters (including those who have refused to install filters) to consider installing filters by posting notices at the lobbies and distributing newsletters to tenants' mailboxes.

9. These measures will continue to be in force until the rectification works for both the common areas and inside flats are completed. When the works inside flats are completed, water sampling tests (covering various parameters including lead) will be conducted in accordance with WSD's requirements. Subject to satisfactory water test results and the progress of works, water filters will be removed and temporary water supply will be withdrawn in stages.

10. We will continue to monitor the quality and progress of the rectification works and liaise with WA and the contractors in order to minimise the inconvenience caused to tenants during the works and to ensure that the works can be completed as soon as possible.

RISK ASSESSMENT OF BUILDING MATERIALS

11. As reported in Paper No. HA 24/2016, in response to the recommendations in the Report of the Commission of Inquiry into Excess Lead Found in Drinking Water (COI), we have implemented a series of enhancement measures to strengthen the Housing Authority (HA)'s quality assurance system for plumbing installation works, ranging from contract specifications, delivery and verification of materials, monitoring during construction to testing upon completion. These measures will strengthen the monitoring of contractors and sub-contractors as well as the control and checking of materials, including soldering materials. COI supports these enhancement measures.

12. In addition, the "excess-lead-in-water" incident has revealed that there is a need for us to enhance HA's risk identification and follow-up mechanism. Therefore, we mentioned in Paper No. HA 24/2016 that we had started an exercise to strengthen our risk assessment of some 2 300 building materials, by rating the risk level of each of the materials and enhancing the management and quality assurance mechanism.

Risk Assessment

13. We completed the risk assessment of about 2 300 building materials used in architectural, building services, structural, civil engineering, geotechnical engineering and landscaping works in December 2016. In accordance with the international standard ISO 31000 principles, we have identified the risk level of building materials and grouped them into categories according to the degree of risk. Materials that are assessed at the highest category may cause serious impact in case of non-compliance with specifications or failure in function. These materials generally involve the following circumstances –

- (a) affecting the safety of users and/or having adverse effect on health;
- (b) compliance with statutory requirements is necessary;
- (c) newly introduced or seldom used, hence HD/contractors have limited knowledge or understanding; or
- (d) requiring high level technique or special skills to work on.

14. We have engaged the building contractors and other stakeholders including government departments, trade associations, institutions, academia, professional service providers, suppliers, etc. on the risk assessment exercise. The stakeholders are generally supportive of our proposed systematic risk assessment system.

Risk Treatment

15. After completing the risk assessment of building materials, we have evaluated the risk assessment results and developed corresponding risk treatment measures based on the present known risk levels. These risk treatment measures will be implemented in phases with priority based on the degree of impact on construction quality. The first batch of risk treatment or enhancement measures was rolled out in January 2017. Major risk treatment measures for all materials will be rolled in the third quarter of 2017 for every works project. Some items which require further study/research and expert advice will be implemented in steps at appropriate time.

16. The proposed risk treatment measures will be applied to the five building construction work stages, namely, “Sample Submission”, “Purchasing”, “Delivery”, “Storage Control” and “Use (Installation)”, so as to ensure that effective control measures are in place for every stage. Such measures include increasing the number of materials for verification checks at delivery stage, the frequency of sampling test, the number of times of inspection during installation

and adding the requirements on random checking of materials at storage areas ^{Note 3}.

17. At the same time, with a view to developing a consistent approach on material control, we have consulted Hong Kong Construction Association Limited and jointly reviewed with the contractors on their current material checking and monitoring systems. For building and foundation contracts that have been awarded after January 2017 and will be awarded from April 2017 onwards respectively, the contractors will be required –

- (a) to develop a project specific material risk assessment system for their subcontractors and suppliers with reference to HA's system, and incorporate into their Quality Control System and Subcontractor Management Plan; and
- (b) to appoint a third party to conduct annual audit on the Quality Control System for every HA project, and increase the frequency of compliance audits on materials by the contractors' in-house audit teams.

Promotion and Training

18. We organised a series of promotion and training sessions in December 2016 and January 2017 with the participation of external stakeholders (contractors, subcontractors and suppliers) and HA's project teams.

19. We also organised a partnering workshop and charter signing with the contractors to secure their commitment on 1 March 2017.

Note 3 Meanwhile, we will further strengthen the inspection on building materials –

- (a) for building and foundation contracts that have been awarded after January 2017 and will be awarded from April 2017 onwards respectively, conduct a project specific material risk assessment to identify risk treatment measures for each project;
- (b) employ Material Monitoring Officers to assist HA's project teams in the checking and verification of all delivery notes of approved materials delivered to site in accordance with the information shown on the approved Sample Submission Forms; and
- (c) set up a Central Support Team (Material Risk Assessment) to equip HA's project teams with the basic principles and knowledge in the application of the project specific material risk assessment and be able to communicate on par with the contractor's risk assessment.

Continuous Improvement

20. Risk assessment is an on-going process and may evolve over time. We will keep on cooperating with relevant stakeholders and experts, and improve the quality control systems regularly to check and monitor whether the materials comply with the specifications, with a view to maintaining and improving the effectiveness of the system.

INFORMATION

21. This paper is issued for Members' information.

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c.c. Members of HA Committees/Sub-Committees