

Legislative Council Panel on Housing

Report on the findings of the Comprehensive Structural Investigation on Ping Shek Estate

Purpose

This paper informs Members of the outcome of the comprehensive structural investigation on Ping Shek Estate and the recommended repair and improvement works.

Background

2. In September 2005, the Housing Department (HD) launched a Comprehensive Structural Investigation Programme (CSIP), covering 10 Public Rental Housing (PRH) estates aged about 40 years or more. The objectives were to ascertain whether these aged housing blocks were structurally safe and whether it would be more cost-effective to keep these buildings or to demolish them. The investigation would also identify the extent and costs of the repair/strengthening works required to sustain these buildings for at least 15 years. The investigation is thorough and comprehensive, covering desktop studies on the repair history and findings of previous assessments, site surveys, inspections, sampling and testing. On the basis of the findings, technical assessments of the concrete strength and extent of steel reinforcement corrosion will be made. Members of this Panel have been briefed on the outcome of the findings on So Uk, Sai Wan, Choi Hung, Model Housing, Wo Lok, Ma Tau Wai, Tung Tau Block 22, Fuk Loi and Wah Fu Estates, as well as the proposal to expand the programme to cover other aged PRH estates¹.

3. The comprehensive structural investigation on Ping Shek Estate commenced in May 2008 and was completed in September 2008. The structural investigation findings and the recommended repair/improvement works in Ping Shek Estate are set out in the following paragraphs.

¹ Members were briefed on the outcome of the investigations on So Uk and Sai Wan Estates at the Panel meetings in May 2006 vide LC Paper No. CB(1)1396/05-06(03), Choi Hung and Model Housing Estates in January 2007 vide LC Paper No. CB(1)562/06-07(06), Wo Lok and Ma Tau Wai Estates in May 2007 vide LC Paper No. CB(1)1478/06-07(05), Tung Tau Estate Block 22 and Fuk Loi Estate in February 2008 vide LC Paper No. CB(1)712/07-08(03), and Wah Fu Estate in July 2008 vide LC Paper No. CB(1)2057/07-08(01). Besides, Members were briefed on the proposal to expand the CSIP to cover other aged PRH estates in February 2008 vide LC Paper No. CB(1)712/07-08(04).

Estate Details

4. Ping Shek Estate was completed between 1970 and 1971, providing 4 575 flats in seven domestic blocks, of which two low blocks (Tsuen Shek and Yuk Shek) are of eight-storey high and five blocks are of 28-storey high. There is a large podium with a one-storey carpark underneath which extends as the lowest floor of the two low blocks. An estate layout plan is at Annex.

Structural Investigation Findings and Way Forward

5. The investigation reveals that all the buildings are structurally safe, though they have been deteriorated to varying degrees due to ageing and environmental conditions². To sustain the buildings for at least 15 years, structural repair and improvement works are required in various parts of the buildings³. The required structural repair and improvement works include:

- (a) replacing defective movement joints at the podium with more robust systems;
- (b) relocating planters away from the movement joints;
- (c) relaying waterproofing to the podium floor,
- (d) repairing defective columns in the carpark;
- (e) demolishing the defective upper roof slabs at the low blocks;
- (f) replacing deteriorated reinforced concrete flushing water tanks with glass reinforced plastic water tanks;
- (g) repairing concrete defects at external walls, columns, coping beams, façades, cantilever beams at corridors and other water tanks;
- (h) strengthening some slabs, columns and walls in the low blocks; and
- (i) conducting normal concrete repair.

6. Besides, in order to further enhance the living environment of the estate, the HD will conduct other improvement works in the estate including the installation of green roofs, construction of lifts and installation of additional lift floor openings to facilitate access. Currently, no lift is provided at the two low blocks. The lifts at the high blocks give access to only alternate floors on and above 6/F. The HD

² The Estate is subject to environmental attack which causes some corrosion of steel bars in the concrete of the buildings. Building deterioration is more pronounced at some structural elements in the low blocks and the carpark under the podium.

³ The estimated average repair cost for Ping Shek Estate is about \$9 900 per flat. This is much lower than the cost of repair works for So Uk Estate (\$48 000) and Tung Tau Estate Block 22 (\$46 000), which were recommended for clearance. For the other investigated estates which were to be sustained, the estimated repair costs for Choi Hung, Wo Lok, Sai Wan, Model Housing, Ma Tau Wai, Fuk Loi Estates are below \$12 000 per flat, while that for Wah Fu Estate is around \$20 000 per flat.

plans to install lifts for the two low blocks and provide additional floor accesses for the existing lifts at the high blocks to all floors. Consultation with the estate residents on estate improvement items will be conducted in due course.

7. The HD will introduce safety measures and adopt less disturbing repair methods⁴ to minimise nuisance arising from the repair/improvement works.

8. Members are invited to note the findings of the comprehensive structural investigation on Ping Shek Estate.

**Transport and Housing Bureau
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⁴ The safety measures and less disturbing repair methods include concrete removal of roof slabs using wire cutting tools, temporary working platforms, protective barriers and safety nets, dust screens to prevent dust from entering tenants' flats and rapidly demountable noise absorbing panels as noise screens.

**Ping Shek Estate
Layout Plan**

