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**Panel on Housing**

**Meeting on 6 March 2017**

**Background brief on  
construction materials used for public rental housing  
prepared by the Legislative Council Secretariat**

**Purpose**

This paper provides background information regarding construction materials used for public rental housing ("PRH"), and gives a summary of the views and concerns expressed by members of the Panel on Housing ("the Panel") on the subject.

**Background**

2. Construction materials form an essential part of public housing development projects, and their quality is pivotal to building quality. From 2010 onwards, the Hong Kong Housing Authority ("HA") has been developing and specifying in its construction projects requirements for product certification for certain building materials/components used in its projects<sup>1</sup> to offer a better guarantee for their quality, safety and reliability. The function of product certification in the HA's quality assurance regime is shown in **Appendix I**.

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<sup>1</sup> The Administration briefed the Panel at a meeting in March 2011 on the progressive implementation of product certification by HA in its construction contracts. According to its [Annual Report 2015-2016](#), HA applies product certification to various building products including fire resistant timber doors, panel wall partitions, packed cement for architectural use, tile adhesives, ceramic tiles, repair mortars, aluminium windows, uPVC drainage pipes and fittings, close-coupled water closet suites, mesh reinforcement, and LED bulkheads. Multi-layer acrylic paint is the next building material targeted for product certification.

3. According to the Administration, product certification is a process whereby a product is certified to have achieved prescribed standards and quality requirements, through regular factory surveillance and periodic factory random sampling and testing of products by independent Certification Bodies ("CBs") accredited under the Hong Kong Accreditation Service. Upon passing the certification audit and sample testing, the CB concerned will issue the product certificate.

### **Deliberations by the Panel on Housing**

4. The Panel has discussed with the Administration matters relating to construction materials for use in HA's projects and building quality assurance for public housing. Issues relating to the design of PRH units' metal gatesets, and water seepage arising from prefabricated components for use in the construction of PRH blocks<sup>2</sup> were brought up at the Panel meetings in the last term of the Legislative Council<sup>3</sup>. The major views and concerns expressed by members are summarized in the ensuing paragraphs.

#### Quality assurance process

5. Panel members were concerned about the procedures involved in the checking of building products for use in HA's projects, including those manufactured outside Hong Kong. The Administration advised that checking of building materials/components were usually performed in factories. CBs would carry out certification audit and select product samples from the factories to the Hong Kong Laboratory Accreditation Scheme accredited laboratories for testing. Radio-frequency identification technology would be adopted in facilitating the identification and tracking of building materials/components.

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<sup>2</sup> HA has been adopting volumetric precasting technology since the early 2000s. The use of volumetric precast bathroom ("VPB") and volumetric precast kitchen ("VPK") were first tried out in small scale in Tseung Kwan O Area 73A in 2000 and later piloted in Kwai Chung Flatted Factory Redevelopment in 2005. VPB/VPK were then used at Kai Tak Sites 1A and 1B in 2009 (i.e. Kai Ching Estate and Tak Long Estate).

<sup>3</sup> Panel meetings on 2 July 2013, 9 December 2014, and 12 April 2016.

6. Some members considered that apart from construction materials, performance of works contractors might also affect building quality of public housing. They enquired about how HA would ensure that building products of good quality would not be wasted due to poor workmanship.

7. The Administration explained that building quality assurance for public housing comprised not only checking of quality of materials, but also the finishing and workmanship. To ensure contractors' service quality, HA would assess their performance regularly, and the assessment results would affect their future tendering opportunities. Surprise checks would be conducted on contractors' workmanship from time to time.

#### Use of prefabricated components

8. In view that HA had been adopting prefabricated technology in public housing construction, and prefabricated components might be made outside Hong Kong such as in the Mainland, members asked about the quality control in the manufacture of prefabricated components.

9. The Administration advised that there was stringent control on the quality of prefabricated components. The Housing Department ("HD") followed the Building Department's requirements on quality control and supervision of precast concrete construction in the Mainland as set out in "Practice Notes for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers" (i.e. PNAP-APP 143)<sup>4</sup>. Independent consultants were commissioned to provide inspection services, which included full time deployment of resident supervisors to inspect the production of precast concrete components in factories. HD also visited the factories regularly to audit the performance of resident personnel as well as the production process.

10. In response to a suggestion that consideration should be given to requiring the use of locally manufactured prefabricated components in public housing production in an attempt to create more job opportunities for the local workforce, the Administration explained that it could not impose a requirement that only locally manufactured prefabricated components were to be used in public housing production in Hong Kong as this would contravene the World Trade Organization Government Procurement Agreement.

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<sup>4</sup> <http://www.bd.gov.hk/english/documents/pnap/APP/APP143.pdf>

### Recycling of construction materials

11. Members were concerned about the durability of some building components provided in new PRH units such as wooden kitchen cabinets and bath tubs, as they had to be replaced after years of usage, and hence the waste generated. Some members enquired whether the construction materials used for public housing production were recyclable.

12. The Administration advised that construction materials to be used as well as the construction process to be applied were environment-friendly. Carbon audits would be performed to ensure compliance with environmental requirements in terms of energy efficiency and waste reduction, etc. Kitchen cabinets and bath tubs were no longer provided in new PRH developments to avoid the generation of unintended waste. With a view to further assuring and enhancing the energy performance of public housing blocks, HA adopted LED lighting certified by the local Product Certification Scheme as the standard lighting facilities in communal areas of the domestic blocks of new development projects.

13. In response to members' enquiry about the criteria adopted by HD officers in deciding whether to replace or repair a defective building product such as broken doors in PRH units, the Administration advised that HD officers exercised their professional judgment in determining whether replacement or repair would be more appropriate depending on the circumstances.

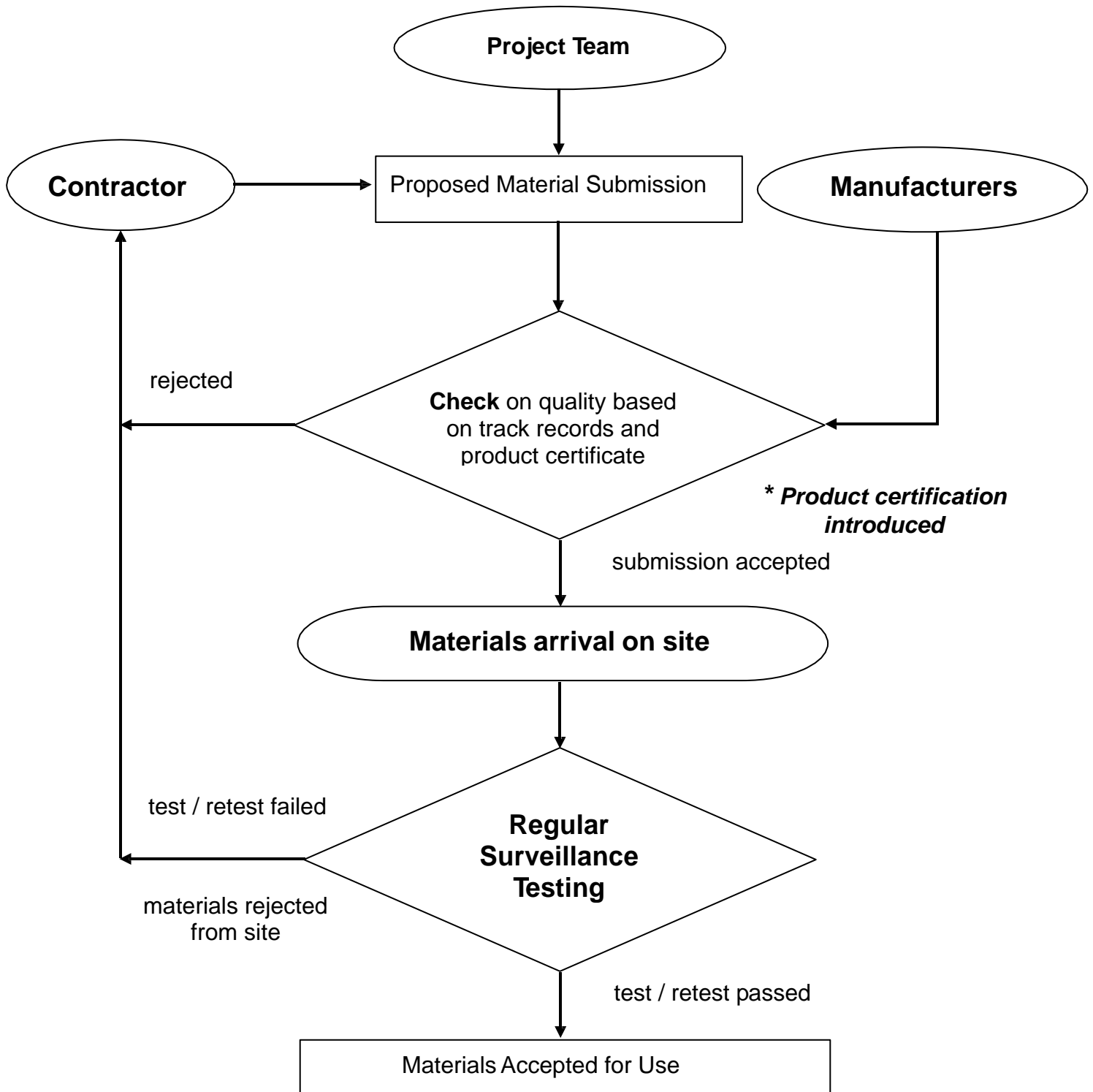
### **Latest development**

14. The Administration will brief the Panel on the subject at the Panel meeting on 6 March 2017.

### **Relevant papers**

15. A list of relevant papers is set out in the **Appendix II**.

**Hong Kong Housing Authority's Surveillance Check of Building Materials on Site**



**Construction materials used for public rental housing**

**List of relevant papers**

<b>Committee</b>	<b>Date of meeting</b>	<b>Paper</b>
Panel on Housing	7 March 2011	Administration's paper on "Implementation of Product Certification of Construction Materials in the Hong Kong Housing Authority's Projects" ( <a href="#">LC Paper No. CB(1)1447/10-11(05)</a> )  Minutes of meeting ( <a href="#">LC Paper No. CB(1)2397/10-11</a> )
Panel on Housing	2 July 2013	Administration's paper on "Modular Flat Design for public housing development of the Hong Kong Housing Authority " ( <a href="#">LC Paper No. CB(1)1391/12-13(01)</a> )  Minutes of meeting ( <a href="#">LC Paper No. CB(1)1766/12-13</a> )
Panel on Housing	9 December 2014	Administration's paper on "Enhanced measures to tackle water seepage problem in public rental housing flats" ( <a href="#">LC Paper No. CB(1)289/14-15(03)</a> )  Minutes of meeting ( <a href="#">LC Paper No. CB(1)392/14-15</a> )
Panel on Housing	12 April 2016	Administration's paper on "Security issues relating to metal gates of public rental housing units" ( <a href="#">LC Paper No. CB(1)749/15-16(05)</a> )  Minutes of meeting ( <a href="#">LC Paper No. CB(1)1002/15-16</a> )