

LCQ12: Use of modular integrated construction method in building projects by Government

Following is a question by the Hon Chan Hak-kan and a written reply by the Secretary for Development, Mr Michael Wong, in the Legislative Council today (May 6):

Question:

The first residential project developed in Hong Kong by using the modular integrated construction (MiC) method is the Disciplined Services Quarters for the Fire Services Department at Pak Shing Kok, Tseung Kwan O. Regarding the use of the MiC method in building projects by the Government, will the Government inform this Council:

- (1) of the following latest information of the aforesaid quarters project: (i) the expected completion date, (ii) the total internal floor area, (iii) the number of domestic units, (iv) the average area of the domestic units and (v) the estimated construction cost;
- (2) of the place(s) of origin of the main modules for the aforesaid quarters project and the means adopted for transporting them from the factory to the construction site; the total number of tenders received by the Architectural Services Department (ArchSD) in respect of the project;
- (3) whether, upon the completion of the aforesaid quarters project, an occupation permit issued by the Buildings Department and/or a certificate issued by the Hong Kong Fire Services Department is/are required before the intake of residents;
- (4) given that the Hong Kong Housing Authority (HA) has decided to pilot the use of the MiC method in the construction of a 12-storey public housing block in Tung Chung, whether HA conducted any exchanges with ArchSD on the technology and experience in the application of the MiC method before making the decision; of the estimated construction cost of the project and the expected construction period from the commencement of foundation works to the completion of superstructure works; and
- (5) according to the information available to ArchSD, of the maximum height of a building that can be constructed by using the MiC method and the minimum site area needed for this construction method to be applied?

Reply:

President,

The Development Bureau is proactively taking forward the modular integrated construction (MiC) method, which adopts the concept of "factory assembly followed by on-site installation", to transform as far as practicable the conventional on-site construction method in the construction industry into modern industrial production under which the structural frames of buildings, interior fitting-outs, building services installations, etc. are pre-fabricated in factories and delivered to the construction sites for installation. According to the overseas experience, this innovative construction method has effectively shortened the construction period on site, enhanced productivity, improved quality, better site safety and environmental performance as well as higher cost-effectiveness.

My reply to the five parts of the question raised by the Hon Chan Hak-kan is as follows:

(1) The scope of the project of the Disciplined Services Quarters for the Fire Services Department at Pak Shing Kok, Tseung Kwan O includes the construction of five quarters blocks with 16 to 17 storeys, with eight units on each floor, producing a total of 648 three-bedroom units of 50 square metres, together with the provision of ancillary facilities such as covered walkway, amenity and communal areas. The total construction floor area reaches 47 000 square metres. The project, at an estimated cost of about \$1.625 billion in money-of-the-day prices, commenced in August 2018 and is expected for completion in the second quarter of 2021.

(2) The MiC modules adopted in the project are manufactured in Huizhou, Guangdong Province, and delivered to the construction site by land transport. The Architectural Services Department (ArchSD) had received a total of four tenders in respect of the project.

(3) Similar to other building projects undertaken by the ArchSD, the quarters have to obtain approvals from the relevant departments before occupation, such as fire services certificates, water supply certificates and lift use permits.

(4) According to the Hong Kong Housing Authority (HA), the HA has been exchanging views with various stakeholders in the industry, including the ArchSD, on the technologies and applications of the MiC method. A 12-storey domestic block in the "Public Housing Development at Tung Chung Area 99" (TC99) project has been selected as the MiC pilot project. The whole TC99 project includes five residential blocks, shops and kindergarten, etc. The total project estimate is about \$5 billion. As the project is still in the preliminary design stage, the project estimate will be further adjusted in the process of the detailed design. The foundation works of the TC99 project commenced in March this year, and the building works on the superstructure is expected to be completed in early 2024.

(5) The MiC method has been widely adopted in the construction projects of hotels, student dormitories, residences, etc. in the United Kingdom, Singapore and Australia. A 44-storey residential building in Croydon, London, is currently the tallest building constructed by MiC method.

Nevertheless, the Avenue South Residence, a 56-storey residential development in Singapore, will become the tallest building constructed using the MiC method upon its completion.

The application of the MiC method is site-specific. Various factors including the type and nature of the building to be constructed, the site environment, the traffic condition in the vicinity, etc. have to be duly considered. Whether the MiC method is applicable to a certain project cannot be determined merely by the area of the site.