

## LCQ5: Modular Integrated Construction method

Following is a question by the Hon Eunice Yung and a written reply by the Secretary for Development, Ms Bernadette Linn, in the Legislative Council today (February 26):

Question:

There are views pointing out that in recent years, the Government has been actively promoting the construction of buildings by adopting the Modular Integrated Construction method (MiC), but the buildings constructed by adopting MiC vary in quality (e.g. more serious water leakage or seepage), and there are more design constraints (e.g. thicker walls and standardised flat layouts). In this connection, will the Government inform this Council:

(1) whether it has compiled statistics on the following information on buildings constructed by adopting MiC:

(i) the number of buildings (set out by types of buildings);

(ii) the respective numbers of buildings and units provided under transitional housing, public rental housing, Home Ownership Scheme and private developments constructed by adopting MiC in each of the past five years; and

(iii) the number of complaints about building quality problems received by the Government in the past five years and, among them, the respective numbers of cases which were successfully handled and could not be handled, with a breakdown by the contents of the complaints (including (a) water leakage, (b) water seepage and (c) others);

(2) of the following information on buildings constructed by adopting MiC and involved alteration of layouts in the past five years:

(i) the number of applications for change of layout plans received by the Government, as well as the number of applications approved and the reasons for unsuccessful applications; and

(ii) the number of cases in which the Government found that the buildings concerned involved unauthorised alterations to the layouts, and the details of the follow-up actions taken;

(3) as there are views that more buildings problems have occurred in buildings constructed by adopting MiC, whether the Government has conducted studies in this regard and whether it has plans to further enhance regulation so as to improve the quality of such buildings; if so, of the details; if not, the reasons for that; and

(4) whether the Government has plans to further promote the adoption of MiC; if so, how the Government will ameliorate the problems related to building quality and design arising from the adoption of MiC, and how it will encourage the industry to adopt MiC; if not, of the reasons for that?

Reply:

President,

â€‹Hong Kong construction industry has been facing challenges, including declining productivity, relatively high construction costs, and site safety issues. In recent years, the industry has been encouraged to adopt innovative construction technologies, new construction materials, and new construction methodologies to address these challenges comprehensively. Modular Integrated Construction (MiC) is one of the key initiatives promoted by the Development Bureau (DEVB) since 2017. MiC is based on the "factory assembly followed by on-site installation" concept, which transfers the traditional on-site construction processes to factories. Freestanding MiC modules, including structure, interior fitting-outs and mechanical and electrical installations, are pre-fabricated off-site in factories and then transported to the site for assembly into buildings.

My reply in response to various parts of the question raised by the Hon Eunice Yung is as follows:

(1) Completed MiC Projects in the past five years (2020-2024) (excluding emergency anti-epidemic facilities established in past years):

MiC Project	Completed Projects (MiC Units)
A. Public Works Programme	
• Schools	4 (approx. 120)
• Elderly Care Homes	1 (approx. 290)
• Hostels	5 (approx. 4 300)
• Government Offices	1 (approx. 20)
B. Public Housing	
• Transitional Housing	32 (approx. 15 900)
• Elderly Housing	1 (approx. 60)
• Subsidised Sale Housing	1 (approx. 300)
C. Private Housing	1 (approx. 200)
D. Others (Single-unit building)	5 (approx. 5)

Among the above completed MiC projects, according to records maintained by the relevant management parties, approximately one per cent of the units experienced cases of water leakage or water seepage. This percentage is lower

than that of traditional construction methods, and there is no evidence to suggest that the water leakage or water seepage was related to the use of MiC. Most of these cases have been resolved, with only a few remaining under processing.

(2) For MiC projects that are planned, under construction, or already completed as aforementioned, government departments have not received any applications for modifications to MiC partitions.

(3) In terms of quality, MiC modules are assembled in factories using advanced automation and process management technologies. This allows manufacturers and supervisors to accurately and effectively monitor every detail of the assembly process, including material quality and deployment, assembly procedures, and product testing, ensuring that all completed MiC modules meet quality requirements. Taking product testing as an example, each MiC module undergoes a series of tests related to structure, finishes, and electrical and mechanical installations before leaving the factory, including comprehensive water leakage and water seepage tests. If any quality issues arise, the causes can be easily and accurately identified and rectified. Additionally, each MiC module is equipped with an identification code to facilitate future maintenance. In terms of design, MiC is suitable for various layouts and building types, including housing, hostels, elderly care homes, schools, office buildings, data centres, and medical buildings. Large rooms such as classrooms and medical wards can be formed by combining multiple MiC modules. Currently, MiC construction technologies can minimise wall thickness and avoid double partition between modules, thereby enhancing the usability of indoor space. Besides its high quality and versatility, MiC also helps reduce on-site labour demand and shorten construction time, improving construction efficiency, reducing material waste, and enhancing site safety.

The University of Hong Kong conducted research on MiC pilot projects and found that the construction time for MiC is shortened by approximately 30 per cent to 50 per cent compared to traditional construction methods, on-site productivity increased by 100 per cent to 400 per cent, and construction costs are reduced by at least 10 per cent. In addition, the research confirmed that MiC outperforms traditional construction methods in terms of quality, environmental protection, and safety.

To enhance industry confidence in MiC quality, the DEVB has commissioned the Building Technology Research Institute (BTRi) to implement the MiC Manufacturer Accreditation Scheme, which started accepting applications in November last year. This scheme ensures that certified MiC manufacturers meet project requirements in management, production, and transportation, while also complying with relevant laws and regulations.

(4) The Government leads by example through pilot projects and public works projects that adopt MiC, gaining experience and sharing it with the industry to promote wider use of MiC. To improve project design, the DEVB has established a MiC Dedicated Section that provides advice, technical support, and shares past project experiences during the MiC project design phase to

optimise MiC design and fully leverage its advantages.

To encourage wider use of MiC by developers, the Government has introduced several measures, including a 10 per cent concession on MiC gross floor area and site coverage, a four per cent storey height concession for MiC floors, subsidies under the Construction Innovation and Technology Fund, and enhanced communication and collaboration with relevant departments to facilitate project approvals.

Additionally, the Hong Kong Construction Industry Council, Hong Kong Institute of Construction, and related associations are collaborating to enhance MiC site personnel training, including workers, supervisors, technicians, and project managers. They are also encouraging construction professionals to engage in more technological innovation and high-quality design to promote the development of the MiC industry.

In March of last year, the DEVB and the Department of Housing and Urban-Rural Development of Guangdong Province signed the Letter of Intent on Strengthening Guangdong-Hong Kong Cooperation in Construction and Related Engineering Sectors, deepening co-operation between Guangdong and Hong Kong in construction and engineering sectors. This includes developing MiC as a quality productive force to contribute to the high-quality national development. The goal is to make the Greater Bay Area a centre of MiC technology centre, turning MiC into a strategic industry that facilitates the exploration of overseas markets.