LCQ4: Using smart technologies for land identification and housing production

Following is a question by the Hon Elizabeth Quat and a reply by the Secretary for Development, Mr Michael Wong, in the Legislative Council today (January 26):

Question:

Quite a number of members of the public have relayed that there is a long-standing serious imbalance in housing supply and demand in Hong Kong, with housing production targets unmet. As a result, people live in more and more expensive while smaller and smaller units. They urge the Government to use smart technologies as far as possible in planning new development areas (NDAs) and implementing redevelopment projects for old districts, so as to shorten the time needed for planning, land identification and housing production. In this connection, will the Government inform this Council:

(1) as the Government launched the Geospatial Lab (GeoLab) last year, and it is learnt that the related Common Spatial Data Infrastructure (CSDI) will soon be in full operation, how the Government makes use of the GeoLab and CSDI to speed up the search for idle land, as well as to develop and make proper planning for land in NDAs;

(2) as it is learnt that the use of smart technologies such as Building Information Modelling, the geographic information system, Internet of Things, big data, Design for Manufacture and Assembly, Modular Integrated Construction as well as Multi-trade Integrated Mechanical, Electrical and Plumbing for housing production can expedite the completion of building construction and improve worksite safety, how the Government makes good use of these technologies to enhance the efficiency in building construction and management, increase energy efficiency and improve air quality, so as to provide residents with a quality and safe living environment; and

(3) as the use of smart technologies for land identification and housing production requires cooperation among government departments, but it is learnt that the relevant policy bureaux currently have no command over one another and barriers exist among departments, thus slowing down the development progress, how the Government integrates the databases among relevant departments and breaks down its compartmentalized structure within which different bureaux and departments work in their own silos, so as to speed up the progress of digitalisation?

Reply:

President,

The Government has been encouraging policy bureaux and departments to introduce innovation and technology to enhance the quality of public services and support policy-making.

After consulting the Innovation and Technology Bureau (ITB), I reply to the Hon Elizabeth Quat's question as follows:

(1) Government departments and public organisations have been producing, collecting and using various data, many of which contain spatial components, such as road network, slopes, population statistics, etc. These "spatial data", used in combination with the geographic information system (GIS) technology, facilitates various tasks of the Government, including urban planning, land management, construction works, urban renewal.

For example, the Lands Department makes use of GIS technology to manage land administration-related data and provides spatial data, such as topographic map, land boundary, aerial photo, etc, to different departments through different platforms to support their work.

Another example is the Planning Department (PlanD). The PlanD also uses GIS to integrate and analyse planning and development related information from different departments, such as planning information, terrain, population projections, heritage, etc. for formulating development parameters and layout, and conducting a variety of urban design analyses such as visual line, ridgeline, sunlight and landscape analysis.

The Urban Renewal Information System, developed by the Urban Renewal Authority (URA) in 2019, strengthens its ability in processing and analysing spatial data, enhancing its efficiency in planning, rehousing, finance and technological research work, thereby expediting the formulation of urban renewal plans.

The Development Bureau (DEVB), with support from the ITB, is spearheading the development of the Common Spatial Data Infrastructure (CSDI) and its portal, providing a one-stop data platform to open up and share spatial data, minimising the possible duplication of efforts among departments in maintaining and processing data, thereby supporting decision-making and enhancing the efficiency of work. The CSDI portal is targeted to be made available by phases for government and public use free of charge by the end of this year, by then over 500 spatial datasets from different departments, covering different aspects such as planning, lands, buildings, works, population, transport, etc. will be released. The Hong Kong GeoData Store, the alpha version of CSDI portal, has been launched and released over 200 spatial datasets for initial exploration by users.

The development of CSDI will further expand the possibilities of the use of spatial data. For instance, the PlanD is developing an application for "Government, Institution and Community Facilities and Open Space Analysis", which will make use of spatial data of CSDI portal, to facilitate the analysis of future demands for these facilities based on population

projection. The application is expected to be made available for use by relevant departments by the end of this year.

As for the Geospatial Lab (GeoLab) established by the DEVB in mid-2021 – thanks to Hon Quat for attending the opening ceremony – its aim is to provide a platform to encourage the younger generation, startups and creative minds to explore and exchange ideas, develop new applications, thereby promoting business opportunities and improving quality of life. The DEVB will continuously review the operation of the GeoLab, with a view to promoting the CSDI and its applications.

(2) Government departments and public organisations have been encouraging industries to use technologies to enhance works efficiency and improve living environment. For example, the Government has been vigorously promoting the digitisation of public works. We have specified in new capital works contracts with value exceeding $300 million the requirement to adopt a Digital Works Supervision System (DWSS) to strengthen project supervision. So far, over 100 active public works contracts have adopted the DWSS. We are also exploring the use of remote monitoring, wireless sensors technology, Internet of Things and other technologies to further enhance site safety, workmanship and the efficiency in contract management.

Starting from 2018, the Building Information Modelling (BIM) technology has been adopted in major government capital works projects. The Government has also been collaborating with the Construction Industry Council to support and promote the adoption of BIM technology and innovative construction technologies.

The Buildings Department is also pushing ahead with the development of an Electronic Submission Hub (ESH), allowing the industry to submit building plans and applications required under the Buildings Ordinance electronically and allowing departments to process through the ESH. The ESH can streamline the approval process and encourage wider and greater use of the BIM technology by the industry.

The Government encourages the use of innovative technologies in various aspects, including smart, remote and information technology, architectural design, promoting sustainable development, green buildings, energy conservation, waste reduction, and indoor environment and air quality, to achieve a better quality of life for our society.

In addition, the Government will continue to promote innovative construction methodologies, including the Multi-trade Integrated Mechanical, Electrical and Plumbing and the Modular Integrated Construction (MiC). At present, the MiC has been adopted in the construction works of over 70 projects.

(3) The Government is developing the CSDI portal in order to facilitate the integration, exchange and sharing of spatial data. We require all departments to submit on a yearly basis annual spatial data plans to set out the datasets they plan to release in the coming three years. The first set of annual

spatial data plans was published on government websites at the end of last year. All datasets to be released must comply with certain standards. DEVB will provide assistance during the data standardisation process.

In addition, the Government is committed to integrating and opening up different categories of data to promote data sharing among departments. This helps the Government and the industry to develop more digital applications that bring convenience to the public and promote smart city development. Currently, over 4 800 datasets are available on the Public Sector Information Portal for free public access.

Mr President, we will review the above measures continuously to facilitate the opening up of data by departments in a timely manner and enhance data integration, with a view to supporting the Government's work and meeting the needs of society.