

Chapter 13

Planning, Land and Infrastructure

The government invests in building new infrastructure, improving existing provisions and enriching the living environment of Hong Kong through effective land use planning, urban renewal, greening and heritage conservation to meet the needs of the community and enhance the city's position as a competitive cosmopolitan city in Asia.

The Development Bureau consists of two policy branches: the Planning and Lands Branch and the Works Branch.

The Planning and Lands Branch draws up policies governing planning, development, land use and supply, urban renewal, building safety and land registration. Its policy objectives are to facilitate Hong Kong's continual development through effective planning and use of land, a steady and sufficient supply of land, a facilitative building plan approval system, efficient registration of land, promotion and regulation of building safety and timely maintenance, and expedition of urban renewal.

The Works Branch formulates public works policies and coordinates and monitors public works projects. It also takes charge of policy matters concerning the increase of land supply through reclamation outside Victoria Harbour, rock cavern and underground space development, the development of Lantau and a second core business district (CBD2) in Kowloon East, greening and tree management, water supply, slope safety, lift and escalator safety, flood prevention, the promotion of professional services, the construction industry, and heritage conservation.

The bureau oversees the departments of Architectural Services, Buildings, Civil Engineering and Development, Drainage Services, Electrical and Mechanical Services, Lands, Planning and Water Supplies and the Land Registry.

Planning

Strategic Planning

The government is updating the territorial development strategy under the study titled 'Hong Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030'. Hong Kong 2030+

guides planning, land and infrastructure development and the shaping of the built and natural environment beyond 2030.

The government is finalising Hong Kong 2030+, taking into account public views received during a public engagement exercise, the findings of technical assessments, recommendations of the Task Force on Land Supply, the Lantau Tomorrow Vision and other major development projects.

Land Supply Strategy and Priority Options

In February, the government announced its full acceptance of the recommendations of the Task Force on Land Supply. Since then, it has been adopting the refined land supply strategy and pursuing vigorously the eight land supply options as recommended by the task force. The multi-pronged and vision-driven land supply strategy aims to ensure a sustained and sufficient supply of land supporting Hong Kong's long-term housing, economic and social development.

The eight priority land supply options are:

- expediting brownfield development;
- unleashing the development potential of private agricultural land;
- developing 32 hectares of land east of Fan Kam Road of the Fanling Golf Course for housing development and starting a detailed technical study;
- expediting studies on the Kau Yi Chau artificial islands, which total some 1,000 hectares;
- expediting studies on near-shore reclamation projects, including Lung Kwu Tan, Sunny Bay and Road P1 (Tai Ho-Sunny Bay Section)¹;
- continuing cavern and underground space development and studies;
- pressing ahead with New Development Area (NDA) projects; and
- commencing studies on replanning the River Trade Terminal site and coastal areas of Tuen Mun.

Major Land Supply Initiatives in Short to Medium Term

In the short to medium term, the most immediate and effective way of augmenting land supply is to make more optimal use of developed areas in urban areas and new towns, and land in the vicinity of infrastructure, by increasing development intensity, changing land use and facilitating development.

Through ongoing land use reviews in the last few years, the Planning Department has identified more than 210 sites with housing development potential in the short to medium term. These

¹ Involving a small-scale, near-shore reclamation at Siu Ho Wan.

sites are capable of providing over 310,000 flats in total, some 70 per cent of which will be public housing.

As at the year end, 132 potential housing sites had been zoned or rezoned for housing to provide about 141,400 public and 43,600 private housing flats. Statutory rezoning procedures are being carried out for another 15 sites estimated to provide about 16,300 public and 900 private housing flats upon successful rezoning.

In November, the department published a consultancy report which provided a comprehensive profile of brownfield sites in the New Territories. The report identifies 1,414 hectares of brownfield sites with active economic operations, and another 165 hectares without such operations. Over 800 hectares of these identified sites are under development or replanning through NDA and Potential Development Area projects, or are covered by other development projects initiated by the government or the private sector. Of the remaining 700 hectares, the department started a review of some 450 hectares that were closer to major infrastructure to assess the sites' suitability for public housing development.

During the Policy Address in October, a proposed Land Sharing Pilot Scheme was announced. This scheme aims to tap market forces in planning and construction, with a view to releasing as soon as possible the development potential of private lots with consolidated ownership but falling outside areas covered by the government's development studies, in order to speed up short to medium-term housing supply. The government will finalise details of the scheme and targets to start receiving applications in the first half of 2020.

The government also facilitates development and redevelopment on existing land. The Planning and Lands Branch is undertaking a streamlining exercise to consolidate and rationalise standards and definitions adopted by its departments, namely Buildings, Lands and Planning, in scrutinising development proposals, such that the approval process can be streamlined without prejudicing statutory procedures and technical requirements. In 2019, streamlined measures on requirements in building height, greenery and landscaping, building setback and building separation were promulgated. As the exercise continues, more streamlined measures will be promulgated as and when they are ready.

Major Land Supply Initiatives in Medium to Long Term

In the medium to long term, the government is taking forward land supply projects including the Kwu Tung North/Fanling North NDA, Tung Chung New Town Extension, Hung Shui Kiu/Ha Tsuen NDA and Yuen Long South Development. These involve releasing large tracts of brownfield sites and deserted agricultural land as well as reclamation in environmentally less sensitive waters.

Lantau Tomorrow Vision

The Lantau Tomorrow Vision, announced in the 2018 Policy Address, aims at providing more land over the longer term for the continuing development of Hong Kong. The vision covers various projects, including artificial islands in the central waters, developments along North Lantau and the western coastal areas of Tuen Mun, including the River Trade Terminal and Lung

Kwu Tan. The vision also entails a new strategic transport network connecting the various development areas.

The first phase of the development in the central waters will focus on the artificial islands near Kau Yi Chau, expected to yield a total reclaimed area of about 1,000 hectares capable of providing 150,000 to 260,000 flats, 70 per cent of which will be public housing. Plans are for CBD3 to be established on these artificial islands, providing some 200,000 jobs and promoting Hong Kong's long-term economic growth. The government will pursue a study on the artificial islands in the central waters. Discussions involving mainly young professionals were held in 2019 to tap their views on this meaningful project and will continue in 2020.

Reclamation Outside Victoria Harbour

The government will carry out detailed studies as soon as possible on projects at Lung Kwu Tan, Sunny Bay and Road P1 (Tai Ho-Sunny Bay Section). A combined study on the development potential of the Tuen Mun West coastal areas and the near-shore reclamation at Lung Kwu Tan will also be conducted in 2020.

Cavern Development

The government began a pilot planning and engineering feasibility study on suitable strategic cavern areas in the territory-wide Cavern Master Plan, with a view to promoting the development of caverns in future. In addition, cavern-related works were taken forward. First-stage construction in the relocation of Sha Tin Sewage Treatment Works to caverns started in February as planned, while a detailed investigation and design study on the planned relocation of Diamond Hill Service Reservoirs to caverns proceeded on schedule. Upon relocation of these facilities, 32 hectares of land, comprising 28 hectares in Sha Tin and four hectares in Diamond Hill, can be released for other beneficial uses. Feasibility studies were also under way to move other government facilities in the New Territories and Kowloon, including the Public Works Central Laboratory in Kowloon Bay, to caverns.

Underground Space Development

The government is undertaking a pilot study on underground space developments in four strategic urban areas in Tsim Sha Tsui West, Causeway Bay, Happy Valley and Admiralty/Wan Chai. It is formulating conceptual schemes on the underground space developments for implementation, having regard to the findings of technical assessments conducted under the study and views collected from a public engagement exercise carried out between May and August.

New Territories North New Development Area

The government is studying the first-phase development of the New Territories North NDA, covering San Tin/Lok Ma Chau.

Housing Land Supply

Public housing land supply comes from new government housing sites and redevelopment of existing public housing estates. Private housing land supply comes from various sources, including the disposal of government sites for private residential development through the

Land Sale Programme, railway property development, urban renewal and private development or redevelopment projects.

Commercial and Industrial Land Supply

Measures to increase the supply of commercial/business sites include putting up new commercial and industrial sites for sale, converting government properties and government, institution or community sites in CBDs for commercial use, providing commercial space at the Central Harbourfront upon completion of works, energising Kowloon East as CBD2, and earmarking land for commercial and industrial use in new development projects, including the development of CBD3 on the Kau Yi Chau artificial islands proposed under the Lantau Tomorrow Vision.

In 2019-20, the government sold the commercial site atop the Hong Kong West Kowloon Station of the Guangzhou-Shenzhen-Hong Kong Express Rail Link and a commercial/hotel site at the Kai Tak Development Area.

Review on Government, Institution or Community Sites

The government undertook in the 2019 Policy Address to review over 300 sites with a total land area of some 300 hectares currently earmarked for standalone public facilities, with a view to putting them into more optimal uses. Proposals may include developing multipurpose public facility buildings under the 'single site, multiple use' model, developing residential projects and public facilities under a mixed development model, or retaining individual sites for standalone government facilities.

Revitalisation of Industrial Buildings

During the year, the Town Planning Board (TPB) approved 11 applications for the redevelopment of industrial buildings. It allowed the plot ratios of most of these applications to increase by up to 20 per cent to optimise the use of land resources, having confirmed the technical feasibility of the proposed increases in development density.

Land Disposal

Government land is usually disposed of through public sale for private residential, commercial and other developments. Included in the annual Land Sale Programme are sites with potential for sale in the year. The government announces quarterly sites to be tendered to provide transparency and certainty for the market, and may add sites for sale in the course of a quarter in response to changing market conditions.

In August, the government revised requirements for the payment of the initial deposit and the balance of the tendered sum in government land sales by public tender. The maximum initial deposit payable by each tenderer upon tender submission was increased from \$25 million to \$50 million. A further deposit is also required from the successful tenderer within seven working days of the date of the tender award to top up the total deposit to 10 per cent of the tendered sum.

During the year, 11 residential sites, one commercial site, one commercial/hotel site and eight sites for petrol stations, totalling about 21.1 hectares, were sold for about \$135.4 billion. These sites were expected to provide about 7,300 private residential flats and up to 333,800 square metres of gross floor area for commercial or other economic uses.

Lessees of leased land, commonly known as private landowners, may apply to the Lands Department for a lease modification or land exchange so as to, for instance, redevelop the site based on the town plan. The department acts as a private landlord in considering such applications. Approvals are subject to terms and conditions that may include the payment of premiums and administrative fees. In 2019, the department concluded 65 such transactions, involving about 207.1 hectares and about \$15.1 billion in land premiums, expected to provide 2,202 private housing flats and up to 123,092 sq m of gross floor area for commercial or other economic uses.

The Pilot Scheme for Arbitration on Land Premium, launched in 2014, seeks to facilitate early agreement on land premiums payable for lease modifications and land exchange transactions. It has been extended until October 2020 while the government continues to explore refinements to the scheme, taking account of stakeholders' views.

Harbourfront Enhancement

The government strives to link up waterfront areas on both sides of Victoria Harbour to provide quality public space for all to enjoy the harbour views. Specifically, it was announced in the 2019-20 Budget that \$6 billion would be earmarked for developing new harbourfront promenades and open space, which would lengthen the promenades by 13km to 34km in about 10 years.

During the year, new promenades totalling about 2km were opened while existing promenades were enhanced. These promenades are located in Kennedy Town, Sai Ying Pun, Wan Chai, North Point, Aldrich Bay, West Kowloon and Tsuen Wan. The longest continuous stretch along Victoria Harbour by far, spanning about 4.5km, was connected from Shek Tong Tsui to the Hong Kong Convention and Exhibition Centre in Wan Chai in October.

The government conducted stage 3 of a community engagement exercise on a boardwalk underneath the Island Eastern Corridor, and received general agreement from stakeholders on the proposed alignment and width and supporting facilities. An urban design study for the Wan Chai North and North Point harbourfront areas also ended, with interesting enhancement proposals put forth for a 3.8km harbourfront comprising 15 hectares of parkland and 22 hectares of water space.

Kowloon East

Kowloon East covers the Kai Tak Development Area and the Kwun Tong and Kowloon Bay business areas, and is being transformed into CBD2. It has the potential to provide about 4.2 million sq m of commercial and office floor space in addition to its existing supply of over 2.8 million sq m.

Ongoing work includes improving the pedestrian environment and traffic conditions in the areas, enhancing the environment, increasing commercial land supply, and promoting vibrancy in the district through a 'place-making' approach. Kowloon East is also the pilot area for smart city development in Hong Kong. Similar strategies have been applied to the adjoining San Po Kong Business Area.

Major Planning Studies and Development Projects

Kwu Tung North/Fanling North New Development Area

The Kwu Tung North/Fanling North outline zoning plans provide the land use framework for the NDA to meet the city's medium to long-term housing, social and economic needs. Through a TPB-approved planning application under the Town Planning Ordinance to increase development intensity and the adoption of other site utilisation enhancement measures, the NDA will provide about 71,800 new flats, with nearly 70 per cent being public housing, to accommodate an additional population of about 188,300. It will also generate about 40,100 new jobs. Development works started in 2019 for phased completion by 2031, with the first batch of residents expected to move in to private and public housing starting from 2023 and 2027 respectively.

Tung Chung New Town Extension

The Tung Chung New Town Extension will provide about 49,600 flats and a commercial hub with a gross floor area of about 877,000 sq m for office, retail and hotel uses along with about 40,000 new jobs. Tung Chung East is undergoing reclamation works, with a view to receiving the earliest population intake in 2024.

Hung Shui Kiu/Ha Tsuen New Development Area

The Hung Shui Kiu/Ha Tsuen NDA will provide about 61,000 new flats to accommodate an additional population of about 176,000, most of whom will begin moving in around 2030. It will produce about 150,000 new jobs. The government plans to start first-phase works in the latter half of 2020, subject to funding approval.

Yuen Long South

The Yuen Long South Development, upon review, is set to provide about 32,900 new flats to house an additional population of about 98,700 and will produce about 13,600 jobs. Statutory planning procedures are expected to start in 2020. The first population intake is targeted for 2028.

Lok Ma Chau Loop

The 87-hectare Lok Ma Chau Loop Area will be developed into the Hong Kong-Shenzhen Innovation and Technology Park. Advance infrastructural works are ongoing, so that the first batch of land parcels can be provided not later than 2021 for superstructural development of the park. Detailed design of the main infrastructural works is also in progress.

Kai Tak

The government is providing essential infrastructure to serve the phased implementation of the Kai Tak Development, which covers the former airport precinct and the adjoining areas and has a footprint of about 320 hectares.

Under the approved Kai Tak Outline Zoning Plan, the planned sites in the Kai Tak Development can provide about 50,000 flats and 2.28 million sq m of commercial floor space.

The government is finalising a detailed feasibility study on a proposed environment-friendly linkage system for Kowloon East to enhance the transport connectivity of the area and facilitate its transformation into CBD2. In the course of the study, the government has made reference to the latest developments and experiences in environment-friendly transport technology both at home and abroad, and conducted technical and financial assessments. Upon completion of the study, the government will formulate the way forward for the proposed linkage system.

Wan Chai

The Wan Chai Development phase two project seeks to provide land for essential transport infrastructure, including the Central-Wan Chai Bypass. The reclaimed land will also allow for a harbourfront promenade running from Central to North Point. The land formation works and road works needed to enable the commissioning of the Central-Wan Chai Bypass were generally completed during the year.

Tseung Kwan O

A study is examining the feasibility of replanning Tseung Kwan O area 137. Preliminary development options are being formulated.

Hong Kong Boundary Crossing Facilities Island of Hong Kong-Zhuhai-Macao Bridge

The Airport Authority Hong Kong is studying the development of airport-related business on the Hong Kong Boundary Crossing Facilities Island. It will submit a proposal to the government, which will consider the suggestions thoroughly with a view to formulating the planning and land uses of the island.

Cycle Track Network in New Territories

A vast cycle track network is under development to connect local cycle tracks from Ma On Shan in the east to Tuen Mun and Tsuen Wan in the west. Two main sections, spanning 30km from Ma On Shan to Sheung Shui and 18.5km from Yuen Long to Tuen Mun, are open to the public. Construction of the remaining cycle track section from Sheung Shui to Yuen Long is anticipated to be completed in 2020. The Tuen Mun-Tsuen Wan section is under design, with advance works for the Tsing Tsuen Bridge-Bayview Garden section in progress.

Cross-boundary Planning Studies and Surveys

The government carries out cross-boundary travel surveys regularly on the composition and characteristics of cross-boundary passengers and vehicles and their travel purposes and transport modes to provide references in planning cross-boundary infrastructure and

formulating development strategies. Results of the Cross-boundary Travel Survey 2017 were published in February 2019.

Urban Renewal

Urban renewal improves living conditions in old urban areas, primarily through redevelopment and rehabilitation of dilapidated buildings. The bureau formulates policy on urban renewal and oversees the work of the Urban Renewal Authority (URA).

The URA is taking forward district-based projects in Kowloon City and conducting a district planning study on Yau Ma Tei and Mong Kok. It is also identifying suitable clusters of buildings under the Civil Servants' Cooperative Building Society Scheme for redevelopment on a pilot basis.

Building Development

Private Sector

In 2019, superstructural works covering a gross floor area of 2.14 million sq m in 94 sites started. Altogether 665 such buildings, with a gross floor area of 2.03 million sq m, were completed at a cost of \$72.9 billion, compared with 732 buildings with a gross floor area of 2.6 million sq m built at a cost of \$99 billion in 2018.

Public Sector

The Architectural Services Department provides architectural and associated professional and project management services for the design, construction and upkeep of government buildings and public facilities, except public housing. The department incorporates inclusive and green building designs to improve the accessibility and sustainability of government facilities, and promotes and adopts innovative construction methods to achieve better quality in design, construction and maintenance. In 2019, the department started the construction of 32 projects, including a multi-welfare services complex in Kwu Tung North using the modular integrated construction method. Thirty-one projects were completed, including schools, open spaces, a sports centre, a columbarium, a government complex, and government offices and quarters.

Regional and international awards won by the department during the year included the Hong Kong Green Building Award, Construction Industry Council Construction Innovation Award, A' Design Award and Global Most Innovative Knowledge Enterprise Award.

Built Heritage Conservation

The government's heritage conservation policy is to protect, conserve and revitalise as appropriate historical and heritage sites and buildings through relevant and sustainable approaches for the benefit of present and future generations. Due regard is given to development needs in the public interest, respect for private property rights, budget considerations, cross-sectoral collaboration and the engagement of stakeholders and the public.

Twelve projects launched under the Revitalising Historic Buildings Through Partnership Scheme of the bureau's Commissioner for Heritage's Office (CHO) are up and running, while works for three other revitalisation projects are in progress, scheduled for completion by early 2021. Preparatory works, including detailed design, for another four projects are under way. Applications for a new batch of four historic buildings opened in December 2019 and the assessment results will be announced by late 2021.

The Built Heritage Conservation Fund operates two funding schemes to support public engagement and research. Public engagement activities conducted under the fund in 2019, including an exhibition, lectures, guided tours to historic buildings and workshops, recorded more than 15,000 participants.

In the private domain, the CHO and the Antiquities and Monuments Office monitor any works or development of declared monuments and graded historic buildings and engage owners of historic buildings to discuss preservation options. The CHO approved grants for maintenance works at 12 historic buildings under the Financial Assistance for Maintenance Scheme on Built Heritage in 2019.

Restoration and repair works were carried out at Fan Sin Temple and Man Mo Temple in Tai Po and Tung Wah Museum in Yau Ma Tei. Archaeological investigations were conducted in Tuen Mun, North District, Yuen Long, Lantau Island and Cheung Chau.

The Antiquities Advisory Board advises the government on antiquities and monuments. As at end-2019, it had confirmed the gradings of 1,536² historic buildings to provide an objective basis for guiding conservation efforts. A rock carving at Cape Collinson in Eastern District, Yuk Hui Temple in Wan Chai and Hau Mei Fung Ancestral Hall in Sheung Shui were declared monuments during the year in accordance with the Antiquities and Monuments Ordinance.

Development Framework

Town Planning Board

As a statutory body established under the Town Planning Ordinance, the TPB oversees the preparation and review of statutory plans and considers planning applications. In 2019, it amended nine statutory plans. The board also promulgates guidelines for statutory planning. It has 32 sets of guidelines.

Anyone may submit views on draft statutory plans to the TPB. In 2019, the board examined 1,128 such submissions. It also considered 70 applications for amendments to statutory plans, 1,124 for planning permission, 1,410 for amendments to the approved schemes and 67 to review the decisions of its planning committees.

Applicants aggrieved by the TPB's decisions may lodge appeals with the independent Town Planning Appeal Board. In 2019, the appeal board heard two cases.

² This figure comprises items on the list of 1,444 historic buildings and new items proposed for grading.

Hong Kong Planning Standards and Guidelines

The Hong Kong Planning Standards and Guidelines provide criteria for determining the scale, location and site requirements of various land uses and facilities applicable to planning studies, town plans and development control. These are reviewed from time to time by policy bureaux and government departments to take account of changes in government policies, demographic characteristics, and social and economic trends. In 2019, amendments to the standards and guidelines covered service terminal points and bus terminals and the provision of a district cooling system.

Planning Control and Enforcement

The Planning Authority is empowered under the Town Planning Ordinance to tackle unauthorised developments (UDs) in development permission areas. It may serve statutory notices on landowners, occupiers or responsible persons requiring them to stop or discontinue a UD within a specified time. A further statutory notice may be served to require reinstatement of the land. Non-compliance is a statutory offence.

In 2019, the Planning Authority discovered 594 new UD, including unauthorised open storage, workshops, car parks and land or pond fillings, and issued 3,975 warning letters or reminders involving 821 cases, 2,916 enforcement notices involving 534 cases, 23 stop notices involving two cases, 1,185 reinstatement notices involving 206 cases and 3,375 compliance notices involving 511 cases. A total of 210 defendants in 87 cases were convicted. The enforcement and prosecution actions resulted in the discontinuation of 470 UD on 102 hectares of land, while another 31 UD occupying six hectares of land later obtained planning permission.

Land Control and Lease Enforcement

The Lands Department carries out squatter control work. There are 382,933 surveyed squatter structures throughout the territory. These structures are tolerated until they cease to exist or are to be cleared for development, environmental improvement or safety reasons.

In 2019, the department demolished 130 illegal structures and extensions, in addition to unauthorised structures cleared in the context of land control and lease enforcement. It also handled about 16,500 cases of reported unlawful occupation of government land and about 1,800 cases involving breaches of lease conditions.

The department keeps a register of man-made slopes that records maintenance responsibility. It inspects and maintains about 18,000 registered man-made slopes regularly, carrying out maintenance works on about 7,000 of them in 2019.

During the year, the department's Tree Unit provided in-house advice in about 3,640 cases of tree and landscape issues on leased land and unmanaged government land. The Land and Vegetation Contract Management Section of the department conducted ad hoc vegetation maintenance work in about 23,140 cases.

Small House Policy Administration

The Lands Department administers the small house policy for indigenous villagers in the New Territories and the rebuilding of old village houses. In 2019, it approved 565 applications to build small houses and 312 applications to rebuild old village houses. The department processes rent exemption requisitions for indigenous villagers' rural properties according to exemption criteria listed in the Government Rent (Assessment and Collection) Ordinance.

Land Conveyancing

The Lands Department's Legal Advisory and Conveyancing Office provides legal advice and conveyancing services for government land transactions. It drafts all government land disposal and lease modification documents, checks titles in land acquisitions, administers the Lands Department Consent Scheme, approves Deeds of Mutual Covenant, processes apportionments of premiums and government rents and recovers arrears of government rents by taking re-entry or vesting action. In 2019, it approved 30 applications for the sale of 14,137 units under construction and approved 45 Deeds of Mutual Covenant.

Land Acquisition

Private land may be acquired for public use through resumption under ordinances which provide for compensation for the property's value and the loss of business. If the payment amount cannot be agreed, either party may seek adjudication at the Lands Tribunal. The Lands Department is involved in resuming land for public works, urban renewal and railway development projects under the Lands Resumption Ordinance and other legislation. In 2019, some 680,400 sq m of private land were acquired and \$275.4 million compensation was paid for acquisitions supporting public works projects, \$243.2 million compensation was paid to owners of 36 resumed properties affected by 16 urban renewal projects, and \$35 million compensation was paid in acquisitions supporting railway projects.

Optimising Use of Vacant Government Sites under Short-term Tenancy

The bureau launched a funding scheme in February to support non-governmental organisations (NGOs) to carry out one-off, basic and essential restoration works on vacant government sites and school premises fit for community, institutional or other non-profit-making use. Such works may include slope upgrading, site formation, installation of temporary structures such as those using modular integrated construction methods, provision of sewerage and drainage access or pedestrian and vehicular access, renovation of dilapidated premises, and installation of fire safety equipment or barrier-free facilities. Costs incurred in relation to consultancy services commissioned to determine the technical feasibility or parameters of the proposed works may also be subsidised. During the year, seven NGOs were granted funding.

Land Registration

The Land Registry registers land-related documents and keeps land records in electronic format for public search. Major types of documents include agreements for the sale and purchase of building units and land, assignments of building units and land, and mortgages and legal charges. More than three million land registers and 24 million land-related documents can be retrieved electronically. During the year, 486,753 land-related documents were lodged for

registration. The registry also provides an email notification service named Property Alert to help property owners monitor any instruments delivered for registration against their properties.

Hong Kong adopts a deeds registration system. To enhance certainty of title and simplify conveyancing procedures, the Land Titles Ordinance has been enacted to provide for a title registration system which will come into effect after a comprehensive review is completed and the necessary amending legislation is passed. To speed up the process, the registry is seeking to implement title registration for newly granted land first, meaning land granted by the government after the start of the ordinance, and is working with key stakeholders to forge consensus.

Survey, Mapping and Geospatial Information Service

The Lands Department's Survey and Mapping Office provides survey and mapping services to support land administration and infrastructure development, and develops maps in digital and printed formats with different themes to meet the public's needs, such as topographic maps, countryside maps and guide books. The office carries out land boundary surveys and provides photogrammetric and aerial survey services. It maintains a geodetic survey network and the Satellite Positioning Reference Station Network System, which form the essential positioning infrastructure in Hong Kong for applications in mapping, construction, navigation, land use planning and scientific research. The office operates the Land Information System to maintain updated digital maps and databases containing land information and geospatial data. It also provides support to the Land Survey Authority to administer the Land Survey Ordinance, which governs the registration and conduct of authorised land surveyors and land boundary survey standards.

The office provides web map services to the public through the internet and mobile applications, including free maps with integrated information on government facilities. During the year, it carried out a soft launch of Map Application Programming Interface (API) services so that software developers can use government map services directly in their map-related applications.

The Hong Kong GeoData Store, as the alpha version of the Common Spatial Data Infrastructure portal, opened up 157 open spatial datasets in machine-readable formats together with an API to facilitate free download and use by the public. In December, 3D visualisation maps were published of Tsuen Wan, Kwai Tsing, Tai Po and North districts, providing photorealistic 3D models of the built environment.

The office participated in the government's Multifunctional Smart Lamp-post Pilot Scheme, installing smart positioning devices on smart lamp-posts to extend the existing positioning infrastructure to street level, particularly in urban canyon areas, to allow public access to accurate and reliable location-based applications.

Building Safety and Maintenance

Ensuring the safety of Hong Kong's ageing building stock is one of the bureau's key duties. It works with the Buildings Department and partner organisations to enhance building safety.

Applying the principle that prevention is better than cure, the Buildings Department enforces the Mandatory Building Inspection Scheme and Mandatory Window Inspection Scheme to tackle building decay at its root by requiring owners of target buildings to inspect and repair their buildings and windows. In 2019, the department issued statutory notices to 823 buildings under these schemes.

The Buildings Department, URA and Hong Kong Housing Society support building owners in carrying out repairs and maintenance. In 2019, subsidies and loans exceeding \$180 million were granted to eligible property owners under schemes including Operation Building Bright 2.0 and the Building Maintenance Grant Scheme for Elderly Owners, which will be renamed the Building Maintenance Grant Scheme for Needy Owners. In October, the government announced injecting an additional \$3 billion and \$2 billion into the two schemes respectively.

The URA's 'Smart Tender' Building Rehabilitation Facilitating Services scheme, launched in 2016, provides technical support to building owners in carrying out repairs and maintenance, to reduce the risk of bid rigging during procurement. Eligible building owners may participate at a concessionary rate. As at end-2019, some 1,000 applications had been approved.

On enforcement, the Buildings Department acts against unauthorised building works (UBWs). It takes priority enforcement against UBWs that are new or under construction, and those which constitute an obvious hazard or imminent danger to life and property. UBWs are to be removed according to the department's enforcement policy if they have been erected on building exteriors, including rooftops, podiums and yards; are associated with subdivided units; are found in New Territories exempted houses; or are signboards. In 2019, the department served 12,186 statutory removal orders and removed 28,374 UBWs. It also instigated 3,642 prosecution cases and secured 2,159 convictions in court for failure to comply with the orders, resulting in fines totalling \$14.91 million. A publicity campaign by the department encourages a culture of building safety.

Lifts and Escalators

The government enhances the safety of lifts and escalators by strengthening inspections and revising the Code of Practice on the Design and Constructions of Lifts and Escalators. The Lift Modernisation Subsidy Scheme, a joint initiative between the government and the URA launched in 2018, aimed to subsidise the modernisation of about 5,000 aged lifts. In view of the response to the first round of applications, the government announced in the 2019 Policy Address to expand the scheme to subsidise the works of about 3,000 more aged lifts.

Infrastructure

Construction 2.0

To cope with high construction costs, an ageing construction workforce and rising public aspirations for better performance of public works projects, the government is pursuing Construction 2.0 – Time to Change to reform and upgrade the construction industry. Under the three pillars of innovation, professionalisation and revitalisation, the government aims to raise the capacity and sustainability of the industry, increase productivity, enhance regulation and quality assurance, improve site safety and reduce environmental impact.

In July, the bureau established a Centre of Excellence for Major Project Leaders and engaged a renowned university to deliver a project management programme for senior directorate government officers overseeing public works projects. A number of public works projects were selected to pilot new initiatives, in particular modular integrated construction and the digital works supervision system, under Construction 2.0.

Infrastructure Investment

The government builds new infrastructure and improves existing facilities to meet economic development needs and enhance the living environment. Capital works expenditure was about \$78 billion in 2018-19. The annual expenditure is expected to stay at a high level in the next few years.

Project Strategy and Governance

The Project Cost Management Office under the bureau was upgraded in April to the Project Strategy and Governance Office. The new office aims to devise and implement initiatives to strengthen the gateway process for cost management, enhance project delivery capability, lead strategic developments to improve cost-effectiveness and enhance collaboration with international counterparts and local industry stakeholders.

In July, the Development Bureau of the HKSAR Government signed a Memorandum of Understanding (MoU) with the Ministry of Finance of the Government of Singapore to enhance collaboration in exchanging expertise and experience in infrastructure project management and delivery, following the signing of a similar international MoU with the Infrastructure and Projects Authority of the United Kingdom in 2018.

Drainage Services

The Drainage Services Department manages about 2,790km of drains and watercourses and 27 village floodwater pumping schemes. It carries out drainage improvement works to cater for local developments and address probable effects of climate change. The estimated cost of drainage improvement works in the planning, design and construction stages in 2019 totalled about \$35.6 billion.

In February, the department started on the West Kowloon Drainage Improvement – Inter-reservoirs Transfer Scheme to build a water tunnel of about 2.8km from Kowloon Byewash Reservoir to Lower Shing Mun Reservoir to achieve the dual purpose of flood protection and water conservation.

The department inspects, clears and repairs drainage systems regularly. In 2019, it inspected about 2,300km and cleared about 780km of drains and watercourses at a cost of about \$197 million.

Slope Safety

The Civil Engineering and Development Department improves slope safety by adopting better standards and technology, ensuring all new man-made slopes meet safety standards, improving the safety of existing man-made slopes, and mitigating natural terrain landslide risks. The

department also issues landslip warnings and provides information, education and community advisory services on slope safety.

Under the Landslip Prevention and Mitigation Programme, the department spent \$1.14 billion in 2019 to upgrade 165 substandard government man-made slopes and to mitigate the landslide risk of 33 natural hillside catchments. It also conducted safety screening studies for 100 private man-made slopes.

Drinking Water Safety

The Water Supplies Department collects and tests water samples from the taps of randomly selected premises to monitor the quality of drinking water. In 2019, the test results indicated the drinking water quality of the selected premises complied with Hong Kong Drinking Water Standards.

The department's performance in respect of drinking water quality is monitored by a Drinking Water Safety Unit set up under the bureau. The unit examines the results of the department's water quality monitoring and engages external auditors to audit the department's Drinking Water Quality Management System.

Water Supplies

Water from Guangdong

Since 1965, Hong Kong has been receiving raw water from the Dongjiang, now the city's major source of raw water. The Dongjiang water supply agreement maintains flexibility in the daily supply rate, ensuring a reliable source of supply and avoiding wastage of precious water resources. In 2019, the city imported 718 million cubic metres of Dongjiang water.

Water Storage and Consumption

Full supply was maintained throughout the year, during which 2,369mm of rainfall was recorded. Storage reservoirs held some 403 million cubic metres of water at the end of 2019.

There were about three million water customer accounts as at the year end. Some 996 million cubic metres of fresh water was consumed in 2019, with an average daily supply of about 2.73 million cubic metres. Another 307 million cubic metres of sea water was supplied for toilet flushing.

Total Water Management

In August, the government launched an updated Total Water Management Strategy, which emphasises containing the growth of fresh water demand and building resilience in fresh water supply to cater for extreme effects of climate change with diversified water resources. The key initiatives of containing fresh water demand growth include further promoting water conservation, managing water loss and expanding the use of lower-grade water for non-potable purposes.

Constructing the first stage of Tseung Kwan O Desalination Plant is one of the measures to build resilience in fresh water supply. In December, a 'design, build and operate' contract was

awarded for the desalination plant. Infrastructural works to supply reclaimed water to the north-eastern New Territories for non-potable uses and preparations for the associated legislation are also in progress. The government will monitor water demand and supply and take necessary action to ensure a steady, sustainable water supply in Hong Kong.

Water Works

The main works for the in-situ reprovisioning of Sha Tin Water Treatment Works (South Works) are targeted to begin in early 2020 for completion in end-2025.

Liantang/Heung Yuen Wai Boundary Control Point

The Liantang/Heung Yuen Wai Boundary Control Point is a cross-boundary infrastructural project carried out jointly by the HKSAR Government and the Shenzhen Municipal People's Government. It is designed to offer direct access by passengers and vehicles. The Heung Yuen Wai Highway, which connects to the new control point, was opened in May, facilitating the commuting of local residents and relieving traffic congestion around Sha Tau Kok Road. By end-2019, construction of the control point was substantially completed and the installation and testing of equipment was in the final stage.

Construction Industry

Construction Industry Council

The Construction Industry Council supports the development of the construction industry, in particular by training construction workers. In 2019, it introduced an Approved Technical Talents Training Programme to provide systematic training and clear career advancement pathways. The government encourages contractors to employ these trainees through public works contracts to attract more young people to join the industry.

On its website, the council provides monthly updates of the number of registered skilled workers in the various construction trades and their attendance rate at construction sites. This helps the industry monitor its manpower and plan for its manpower needs.

The government works with the council to promote the \$1 billion Construction Innovation and Technology Fund, launched in October 2018, to encourage wider adoption of innovative technologies and nurture an innovative mindset to transform the industry. As at December 2019, more than 700 applications amounting to over \$160 million were approved.

In April, the council launched a Registered Specialist Trade Contractors Scheme to enhance five core elements – safety, management, job experience, execution and finance – in seven specialist trades, namely demolition, scaffolding, concreting formwork, reinforcement bar fixing, concreting, erection of concrete precast components and installation of curtain walls.

The council also published new building information modelling standards and provided training and certified managers to help the industry adopt this technology in their construction projects.

Promotion of Professional Services

The Agreement on Trade in Services under the Agreement Concerning Amendment to the Mainland and Hong Kong Closer Economic Partnership Arrangement (CEPA) was signed in November. Preferential measures will be introduced for services related to construction and engineering. One of the key measures is to allow Hong Kong construction professionals who have obtained relevant qualifications in the Mainland to extend their services from Guangdong, Guangxi and Fujian to all provinces of the Mainland.

In September, the HKSAR Government signed a cooperation agreement with the Administrative Committee of the Nansha Area of Guangzhou of China (Guangdong) Pilot Free Trade Zone. A cooperation mechanism will be established to enhance information exchange and promote collaboration among enterprises and professionals of the construction and related sectors in Hong Kong and Nansha, in order to benefit both Hong Kong and Guangzhou's economic development in the long run and promote the development of the Guangdong-Hong Kong-Macao Greater Bay Area.

Greening, Landscape and Tree Management

The bureau's Greening, Landscape and Tree Management Section is the central authority with overall policy responsibility in formulating and coordinating landscape and tree management strategies and initiatives. It promotes a holistic approach to landscape and tree management, advocating adequate space allocation for new planting, proper selection of plant species, quality landscape design and planting practices in the upstream, and proper tree maintenance in the downstream, with public safety as a paramount consideration.

The section, together with departments that also look after trees, manages trees in areas with high traffic and pedestrian flow according to the Guidelines for Tree Risk Assessment and Management Arrangement, promotes the *Handbook on Tree Management* to private property owners, helps develop an adequate and quality workforce for the arboriculture and horticulture industry, and raises awareness of proper tree management.

In November, the section published an update of the guidelines to enhance the qualification requirements of inspection officers who conduct tree risk assessments, and to adjust the risk assessment methodologies with reference to the latest international standards. In December, a set of Specification of Competency Standards for the arboriculture and horticulture industry was promulgated.

Websites

Construction 2.0 – Time to Change: www.hkc2.hk/en/index.php

Development Bureau: www.devb.gov.hk

Hong Kong GeoData Store: geodata.gov.hk