

Planning, Land and Infrastructure

The government invests in building new infrastructure to meet the wide-ranging needs of the community, amid fast-changing global competition and regional development, and is committed to enriching the living environment of Hong Kong through effective land use planning, urban renewal, greening and heritage conservation.

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 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, expediting urban renewal, harbourfront enhancement, and revitalising existing built-up areas.

The Works Branch formulates public works policies and coordinates and monitors public works projects. It also oversees policy on other matters, including increasing land supply through reclamation outside Victoria Harbour, and 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 Land Registry and the departments of Architectural Services, Buildings, Civil Engineering and Development, Drainage Services, Electrical and Mechanical Services, Lands, Planning, and Water Supplies.

Planning

Strategic Planning

The government promulgated the final report of the study 'Hong Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030' in October, setting out the territorial

development strategy for the city beyond 2030 and recommendations on sources of land supply. It projected that during the 30 years from 2019 to 2048 the overall demand for land would be about 6,200 hectares and the overall land supply would be about 7,300 hectares.

Land Supply Strategy

The government is pursuing the following studies to look into various development opportunities:

- studies on the Kau Yi Chau artificial islands, which total some 1,000 hectares;
- studies on development opportunities under the Northern Metropolis Development Strategy, released in October;
- studies on near-shore reclamation projects, including Lung Kwu Tan (together with replanning of the River Trade Terminal site and coastal areas of Tuen Mun), Sunny Bay and Road P1 (Tai Ho-Sunny Bay Section);
- a new round of review of green belt sites to identify more land mainly for residential development; and
- cavern and underground space development.

Major Land Supply Initiatives in Short to Medium Term

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

The Planning Department has identified more than 210 sites with housing development potential in the short to medium term. These 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, 142 potential housing sites had been zoned or rezoned for housing to provide about 155,600 public and 44,100 private housing flats. Statutory rezoning procedures are being carried out for another 28 sites estimated to provide about 81,400 public and 4,100 private housing flats upon successful rezoning.

About 800 of roughly 1,500 hectares of brownfield sites in the New Territories are covered by New Development Areas (NDAs) or known development projects. Of the remaining 700 hectares, the Planning Department has reviewed 450 hectares with higher possible development potential. Twelve clusters were shortlisted for public housing development, subject to technical feasibility studies.

The Land Sharing Pilot Scheme has been launched to boost public and private housing supply in the short and medium term. The development potential of private land would be unleashed through the provision or upgrading of infrastructure, and the successful applicants, in return, are required to hand over part of their land to the government for public housing or Starter

Home development. As at year end, the Land Sharing Office had received three applications involving about 28 hectares of land.

The government also facilitates development and redevelopment on existing land. The Planning and Lands Branch consolidates and rationalises standards and definitions adopted by its three departments, namely Buildings, Lands and Planning, in scrutinising development proposals, in order to streamline the approval process. In 2021, the government promulgated streamlined administrative measures on site coverage restriction, plot ratio/gross floor area restriction and the granting of approval or consent under lease.

The parallel processing of lease modification applications with rezoning applications approved by the Town Planning Board has also been implemented.

Major Land Supply Initiatives in Medium to Long Term

In the medium to long term, the government is taking forward large-scale 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

In June, the government began studies related to the artificial islands in the Central Waters with a total reclaimed area of about 1,000 hectares for completion in three and a half years. Several options will be explored for the provision of 150,000 to 260,000 housing units, 70 per cent of which would be public housing, on the Kau Yi Chau artificial islands to accommodate a population of 400,000 to 700,000. The islands will support the development of the third core business district (CBD3) with some 200,000 diversified employment opportunities.

The islands will be supported by road and railway links which will also help relieve the existing traffic pressure in the northwest New Territories.

The reclamation work for the islands is expected to commence in 2027 with the first population intake in 2034.

The government also started the engineering study on Road P1 (Tai Ho-Sunny Bay Section) in June, for completion in two and a half years.

New Territories North Development

Development of the New Territories North (NTN) will be implemented in two projects: San Tin/Lok Ma Chau Development Node (STLMC DN); and NTN New Town and Man Kam To. The government has released the initial land use plan for STLMC DN, and obtained funding approval from the Legislative Council for the investigation study for STLMC DN and the planning and engineering study for NTN New Town and Man Kam To. The two studies were commissioned in October.

The scope of the above studies will be adjusted to cover additional development areas recommended under the Northern Metropolis Development Strategy, announced in the 2021 Policy Address.

Cavern Development

A planning and engineering feasibility study on the development of selected caverns is under way. In 2021, construction continued in preparation for the relocation of Sha Tin Sewage Treatment Works to caverns and the main cavern construction works began in July. The detailed design for the relocation of Diamond Hill Service Reservoirs to caverns was completed and the construction works were due to start in 2022. Upon relocation of these facilities, 32 hectares of land can be released for other uses. In late 2021, the government began an investigation study for the relocation of the Public Works Central Laboratory to caverns and a feasibility study to relocate Tuen Mun Water Treatment Works to caverns.

Underground Space Development

The government continues its pilot study on underground space developments in Tsim Sha Tsui West, Causeway Bay, Happy Valley and Admiralty/Wan Chai.

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 other private development or redevelopment on existing private land.

Commercial and Industrial Land Supply

Measures to increase the supply of commercial/business sites include putting new commercial and industrial sites up for sale; converting government properties and government, institution or community (GIC) sites in CBDs for commercial use; transforming Kowloon East into CBD2; and earmarking land for commercial and industrial use in new development projects, including the development of CBD3 on the artificial islands proposed under Lantau Tomorrow Vision.

Review of Government, Institution or Community Sites

To take forward the 'single site, multiple use' initiative, the government has completed a review of GIC sites earmarked for standalone public facilities that are without a firm development plan. Some sites could be developed for residential, industrial or commercial use, others into multi-purpose GIC facility buildings.

Revitalisation of Industrial Buildings

In 2021, the Town Planning Board approved 13 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. The annual Land Sale Programme includes sites with potential for sale in that year. The government announces quarterly sites to be tendered to provide transparency and certainty for the market.

In 2021, eight residential sites, two commercial sites and one industrial site, totalling about 14.5 hectares, were sold for about \$108 billion. These sites were expected to provide about 3,600 private residential flats and up to about 298,500 square metres of gross floor area for commercial, industrial or other economic uses.

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 2021, the department concluded 89 such transactions, involving about 821.9 hectares and about \$47.6 billion in land premiums. These land transactions are expected to provide 18,530 residential flats and up to 704,433 sq m of gross floor area for commercial or other economic uses.

Harbourfront Enhancement

In 2021, the government continued to connect sections of promenade and provide public space along both sides of Victoria Harbour. Through collaboration with the Harbourfront Commission, 16 harbourfront sites were opened from October 2020 to end-2021, extending the promenade along Victoria Harbour to 25km. The longest continuous stretch was extended from 5.5km to 7.4km, from Shek Tong Tsui to Fortress Hill.

The government also worked to offer new and diverse user experiences at the harbourfront, including introducing the first 'harbour steps' at the Water Sports and Recreation Precinct (Phase 2) in Wan Chai, a fence-free stepped down water edge design which enables visitors to sit by the sea and enjoy an unobstructed view of the harbour, as well as facilitating water sports and other activities.

Kowloon East

Kowloon East, which covers the Kai Tak Development Area and the Kwun Tong and Kowloon Bay business areas, has a total area of about 488 hectares and a working population of about 280,000. It is being transformed into CBD2 to sustain Hong Kong's economic development. By converting existing industrial buildings as well as taking forward new development and redevelopment projects, commercial floor space in Kowloon East has increased by about 70 per cent from 1.7 million sq m in 2012 to 2.9 million sq m in 2021. Taking into account projects under construction or approved, it will further increase to about 3.9 million sq m in the next few years, representing a total increase of about 130 per cent.

Ongoing work includes enhancing the pedestrian environment, connectivity and walkability; developing a smart, green and resilient CBD; 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.

Island South

The Development Bureau set up the Invigorating Island South Office in February to take forward an initiative announced in the 2020 Policy Address. Between August and October, the office gauged stakeholders' views on proposals to enhance connectivity and walkability, improve public spaces, consolidate community facilities, and enliven the areas of Wong Chuk Hang, Aberdeen and Ap Lei Chau. A study was commissioned in December to formulate comprehensive proposals for the pedestrian environment and traffic improvements, and the office is working on various minor works projects to bring early improvements to the areas.

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. The NDA will provide about 71,800 new flats, with nearly 70 per cent being public housing, to accommodate an additional population of about 188,100. 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 2026 respectively.

Tung Chung New Town Extension

The Tung Chung New Town Extension will provide about 62,100 flats and a commercial hub with a gross floor area of about 877,000 sq m for office, retail and hotel use along with about 40,000 new jobs. Reclamation works are ongoing in Tung Chung East and the first phase of site formation and infrastructure works of the extension started in May. The first population intake is expected in 2024.

Hung Shui Kiu/Ha Tsuen New Development Area

The Hung Shui Kiu/Ha Tsuen NDA will provide about 61,500 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. First phase development works commenced in 2020. The first batch of sites earmarked for the development of multi-storey buildings accommodating logistics and other businesses are expected to be formed in 2023, while the first dedicated rehousing estate is expected to start population intake in 2024.

Yuen Long South

The Yuen Long South Development will 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 for stages 1 and 2 developments were completed in August. The first population intake is targeted for 2028.

Lok Ma Chau Loop

The 87-hectare Lok Ma Chau Loop will be developed into the Hong Kong-Shenzhen Innovation and Technology Park. Advance infrastructure works were completed in mid-2021. The first batch of land parcels was provided at end-2021 for superstructure development. The first main works package of site formation and infrastructure works also started in July.

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.

Tseung Kwan O

A study is examining the feasibility of replanning Tseung Kwan O Area 137, involving some 80 hectares of land primarily for housing, to establish a new community, supported by commercial and community facilities as well as infrastructure, in the long term. Relevant departments are conducting technical assessments, including transport and environmental impacts, on the preliminary recommended land use proposals.

Ngau Tam Mei

The government began a study into the land uses in Ngau Tam Mei, with a view to making better use of the existing brownfield cluster and unleashing the development potential of the area created by the proposed Ngau Tam Mei Station of the Northern Link.

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

The government has accepted a number of proposals by the Airport Authority Hong Kong for the development of the Hong Kong Boundary Crossing Facilities Island, including commissioning automated car parks for visitors using the Hong Kong-Zhuhai-Macao Bridge, connecting it to the airport's Skycity, and constructing the Hong Kong International Aviation Academy's campus.

Cycle Track Network in New Territories

A cycle track network is being developed that will eventually connect Ma On Shan in the east to Tuen Mun and Tsuen Wan in the west. The 60km section from Tuen Mun to Ma On Shan was fully opened in September 2020 and construction of its 1km extension to Sam Mun Tsai is under way. The 2km section at Tsuen Wan waterfront was opened in July 2021, while the remaining 20km section between Tsuen Wan and Tuen Mun is under design.

Urban Renewal

Urban renewal improves living conditions in old urban areas, primarily through redevelopment and rehabilitation of dilapidated buildings. The Development Bureau formulates policy on urban renewal and oversees the work of the Urban Renewal Authority (URA). The URA provides financial assistance and technical support to building owners for various aspects of building rehabilitation and repair.

In 2021, the URA completed a study into urban renewal in Yau Ma Tei and Mong Kok. The bureau is working with the URA to implement the study's recommendations in phases, and has invited the URA to conduct two new district planning studies on Tsuen Wan and Sham Shui Po.

The bureau is also researching into the compulsory sale regime under the Land (Compulsory Sale for Redevelopment) Ordinance with a view to expediting the redevelopment of aged buildings.

Building Development

Private Sector

In 2021, superstructural works started at 112 sites, covering a gross floor area of 2.26 million sq m. A total of 367 buildings, with a gross floor area of 1.44 million sq m, were completed at a cost of \$52.1 billion.

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. It applies innovative building solutions and inclusive and green building design to provide a more sustainable, resilient and high-quality built environment. In 2021, the department started construction on 42 projects and completed 31 projects.

Regional and international awards won by the department in 2021 included those from the European Healthcare Design Award, Hong Kong Institute of Engineers, Hong Kong Institute of Surveyors, Royal Institute of Chartered Surveyors (HK), Hong Kong Institute of Project Management, Hong Kong Institute of Landscape Architects and Hong Kong Institute of Urban Design.

Built Heritage Conservation

The government's heritage conservation policy is to protect, conserve and revitalise as appropriate historical and heritage sites and buildings through 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.

Ten projects under the Revitalising Historic Buildings Through Partnership Scheme of the bureau's Commissioner for Heritage's Office (CHO) are in operation, while works for three other projects were completed and scheduled to commence operation in mid-2022. The revitalisation works for another three projects will start in early 2022. Proposals in respect of a new batch of five historic buildings are being assessed and the results will be announced within 2022.

The Built Heritage Conservation Fund operates two funding schemes to support public engagement and research. Public engagement activities conducted under the fund in 2021

included an online forum, online workshops and online guided tours. By the year end, more than 16,100 participants had joined the fund's events since 2018.

In the private domain, the CHO and the Antiquities and Monuments Office monitor any works on, or development of, declared monuments and graded historic buildings and discuss preservation options with owners of historic buildings. The CHO approved grants for maintenance works at 11 historic buildings under the Financial Assistance for Maintenance Scheme on Built Heritage in 2021.

During the year, restoration and repair works were conducted at Liu Man Shek Tong Ancestral Hall in Sheung Shui, Kowloon Union Church in Yau Ma Tei and Tung Lin Kok Yuen in Happy Valley. Archaeological investigations were conducted in Tuen Mun, Lamma Island and Ma Wan.

The Antiquities Advisory Board advises the government on antiquities and monuments. As at end-2021, it had confirmed the grading of 1,592¹ historic buildings to provide an objective basis for guiding conservation efforts. During the year, Bonham Road Government Primary School in Sai Ying Pun, Hip Tin Temple in Sha Tau Kok and the Old Tai Po Police Station were declared monuments.

Development Framework

Town Planning Board

As a statutory body established under the Town Planning Ordinance, the Town Planning Board oversees the preparation and review of statutory plans and considers planning applications. In 2021, it amended 25 statutory Outline Zoning Plans and prepared four new Development Permission Area Plans which subsequently became Outline Zoning Plans. The board also promulgates guidelines for statutory planning. It has 32 sets of guidelines.

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 relevant bureaux and departments to take account of changes in government policies, demographic characteristics, and social and economic trends. In 2021, amendments were made to parking standards and guidelines.

Planning Control and Enforcement

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

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

In 2021, the Planning Authority discovered 418 new unauthorised developments, and issued 2,408 warning letters or reminders involving 555 cases, 2,272 enforcement notices involving 363 cases, 879 reinstatement notices involving 172 cases and 3,158 compliance notices involving 554 cases. A total of 179 defendants in 91 cases were convicted. The enforcement and prosecution actions resulted in the discontinuation of 387 unauthorised developments on 77 hectares of land, while another 35 occupying seven hectares of land later obtained planning permission.

Land Control and Lease Enforcement

The Lands Department carries out squatter control work. There are about 380,100 surveyed squatter structures throughout the territory, and they are tolerated until they cease to exist or are to be cleared for development, environmental improvement or safety reasons.

In 2021, the department demolished 292 illegal unauthorised squatter structures that were in breach of the squatter control policy, in addition to unauthorised structures cleared in the context of land control and lease enforcement. It also handled about 16,700 cases of reported unlawful occupation of government land and about 1,540 cases involving breaches of lease conditions.

The department keeps a register of man-made slopes which records their maintenance responsibility. It inspects and maintains about 17,500 registered man-made slopes regularly, and carried out maintenance works on about 7,200 of them in 2021.

During the year, the department provided advice for about 1,640 development control submissions relating to trees and landscape on leased land and about 1,630 cases of tree issues on unmanaged government land. The department also conducted ad hoc vegetation maintenance work in about 22,500 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. On 5 November, the Court of Final Appeal ruled against the judicial review of the small house policy, upholding its lawfulness and compatibility with the Basic Law. In 2021, the department approved 472 applications to build small houses and 294 applications to rebuild old village houses. The department also processes rent exemption requisitions for indigenous villagers' rural properties according to the 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 2021, it approved 29 applications for the sale of 14,659 housing flats under construction and approved 34 Deeds of Mutual Covenant in respect of residential development.

Land Acquisition

Private land may be acquired for public purposes through resumption under the ordinances which provide for compensation for the property's value and business losses. 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 2021, some 280,000 sq m of private land were acquired and about \$3.29 billion compensation was paid for acquisitions supporting public works projects, including public housing development; \$174.2 million compensation was paid to owners of 48 resumed properties affected by 14 urban renewal projects; and \$47.85 million compensation was paid in acquisitions supporting railway projects.

Optimising Use of Vacant Government Sites under Short-term Tenancy

The Development Bureau launched a scheme in 2019 to fund 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 by consultancy services to determine the technical feasibility of the proposed works may also be subsidised. As at end-2021, funding had been approved for NGOs to take forward community projects at 21 vacant sites or premises.

Land Registration

The Land Registry registers land-related documents and keeps land records in electronic format for public search. Major types of documents include sale and purchase agreements, assignments, and mortgages and legal charges. More than 3 million land registers and 25 million land-related documents can be retrieved electronically. In 2021, 534,284 land-related documents were lodged for registration. The registry also provides an email notification service, Property Alert, to help property owners monitor any documents delivered for registration against their properties.

Hong Kong adopts a deeds registration system. To enhance title certainty 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 amendment legislation is passed. The Land Registry has forged consensus with key stakeholders on first implementing title registration on newly granted land, meaning land granted by the government after the start of the ordinance, and is working with them to address outstanding issues required for the preparation of the amendment legislation.

Survey, Mapping and Geospatial Information Service

The Lands Department's Survey and Mapping Office provides geospatial information to promote the wider use of spatial data and locational information. It formulates and implements survey, mapping and geospatial data policies and standards; maintains a data bank of

geospatial and land cadastral data; supports the implementation of the Common Spatial Data Infrastructure (CSDI); and develops 3D digital maps and a Building Information Modelling-Geographic Information System Data Repository. In 2021, the office made about 290 open spatial datasets available for free download. It also carries out geodetic, mapping and land boundary surveys and provides cartographic and reprographic services to support land and building developments.

The office updates digital maps, maintains the Land Information System, integrates geospatial data and provides free web maps, map application programming interfaces, dashboards and mobile applications to the public. From April, most of the digital map products have been made available to the public free of charge.

The office also maintains the Satellite Positioning Reference Station Network System which forms the positioning infrastructure for Hong Kong, and is working on the relevant standards.

Development of Common Spatial Data Infrastructure

The government is developing a CSDI portal to support smart city development, targeted to be made available for free public use before end-2022. To demonstrate the potential of CSDI, the District-based Spatial Information Dashboard and the Geo-tagging Tool were rolled out to the public in June. The Geospatial Lab in Kwun Tong opened in July to harness the creation, analysis and applications of spatial data.

Building Safety and Maintenance

The Development Bureau works with the Architectural Services Department, the Buildings Department and partner organisations to enhance building safety.

Building inspections and maintenance of government buildings and public facilities (except public housing) are mainly the responsibilities of the Architectural Services Department. In 2021, the total expenditure on maintenance works and refurbishment and improvement works was \$1,078.4 million and \$3,705 million respectively, involving an aggregate building floor area of 33.34 million sq m.

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 2021, the department issued statutory notices to 601 buildings for building inspections and 707 buildings for window inspections under these schemes.

The government, in partnership with the URA, supports building owners in need to carry out repairs and maintenance. In 2021, subsidies and loans exceeding \$340 million were granted to eligible property owners. In addition to existing assistance schemes, such as Operation Building Bright 2.0 and the Building Maintenance Grant Scheme for Needy Owners, the Building Drainage System Repair Subsidy Scheme with a commitment of \$1 billion was launched in May. By end-December, some 300 buildings had started investigation or repair works under the scheme. As at the year end, some 2,000 applications had also been approved to join the 'Smart Tender' Building Rehabilitation Facilitating Services scheme at a concessionary rate, since the

scheme was launched in 2016 to provide technical support to building owners in procuring services for repair works.

On enforcement, the Buildings Department acts against unauthorised building works. It takes priority action against such works that are new or under construction, and those which constitute an obvious hazard or imminent danger to life and property. Unauthorised building works 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 2021, the department served 10,588 statutory removal orders and removed 27,917 unauthorised building works. It also instigated 3,517 prosecution cases and secured 2,086 convictions in court for failure to comply with the orders, resulting in fines totalling \$15.5 million. The department launched various publicity campaigns to promote a culture of building safety.

Lifts and Escalators

The Electrical and Mechanical Services Department carries out regular inspections and updates codes of practice relating to the design, construction and works of lifts and escalators. In 2021, the department continued its \$4.5 billion Lift Modernisation Subsidy Scheme with the URA to enhance the safety of old lifts. The scheme aims to subsidise the modernisation of about 8,000 old lifts.

Infrastructure

'Construction 2.0'

The government implements the 'Construction 2.0' initiative to lead the construction industry to reform and upgrade by advocating innovation, professionalisation and revitalisation. The government also promotes the application of innovation and technology, including modular integrated construction (MiC), digital works supervision systems and building information modelling, and coordinates works departments' efforts for promoting applied research and development in public works projects to raise productivity, strengthen works supervision and quality assurance, and improve site safety.

The adoption of MiC enabled the speedy completion of a large number of quarantine facilities and the North Lantau Hospital Hong Kong Infection Control Centre in 2021, facilitating the fight against COVID-19. Apart from mandating designated government buildings in capital works projects to adopt MiC, the government will further promote its adoption in private residential, public housing, social welfare and hospital projects.

In December, the bureau launched the Project Delivery Capability Programme to provide systematic training to mid-tier managers, enhancing their professional skills and project delivery capabilities to ensure more effective use of public resources.

Infrastructure Investment

The government builds new infrastructure and improves existing facilities to meet economic development needs and enhance the living environment. Annual capital works expenditure is expected to exceed \$100 billion in coming years.

Project Strategy and Governance

The bureau's Project Strategy and Governance Office has been devising and implementing 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.

Drainage Services

The Drainage Services Department manages about 2,790km of storm water drains and watercourses and 27 village flood 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 2021 totalled about \$35.8 billion.

The department began the third stage of rehabilitation of underground storm water drains in 2021, focusing on 19km of drains in various districts.

The department inspects, clears and repairs drainage systems regularly. In 2021, it inspected about 2,120km and cleared about 850km of drains and watercourses.

Slope Safety

The Civil Engineering and Development Department improves slope safety by adopting high standards and advanced 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 operates a landslip warning system 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 2021 to upgrade 176 substandard government man-made slopes and to mitigate the landslide risk of 36 natural hillside catchments. It also conducted safety screening studies for 100 private man-made slopes.

Drinking Water Safety

In April, the government revised some of the parameters in the Hong Kong Drinking Water Standards and established the Surveillance List, Watch List and Aesthetic Guidelines. The Water Supplies Department collects and tests water samples from the supply and distribution system, as well as the taps of randomly selected premises, to monitor the quality of drinking water over the territory.

The government's Water Safety Plan Subsidy Scheme encourages the implementation of the Water Safety Plan for Buildings to enhance drinking water safety through systematic management of internal plumbing systems. The government has launched a programme to implement the plan in targeted government buildings by 2027.

A public consultation on proposed amendments to the Waterworks Ordinance and Waterworks Regulations was completed in February and the government is reviewing the findings.

Water Supplies

Water from Guangdong

Since 1965, Hong Kong has been importing raw water from the Dongjiang River, 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 2021, the city imported about 811 million cubic metres of Dongjiang water.

Water Storage and Consumption

Full supply was maintained throughout the year, during which 2,307 millimetres of rainfall was recorded. Storage reservoirs held some 339 million cubic metres of water at the end of 2021.

There were over 3 million water customer accounts as at the year end. Some 1,055 million cubic metres of fresh water was consumed in 2021, with an average daily supply of about 2.89 million cubic metres. Another 321 million cubic metres of sea water was supplied in 2021 for toilet flushing.

Total Water Management

The government's Total Water Management Strategy focuses on containing the growth of fresh water demand and building resilience in fresh water supply to cater for the 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 uses. On building resilience in fresh water supply, the Water Supplies Department is constructing the first stage of the Tseung Kwan O Desalination Plant for commissioning in 2023. The government will monitor water demand and supply, review strategy and take appropriate action to ensure a reliable and sustainable water supply.

Water Works

The main works for the in-situ re-provisioning of Sha Tin Water Treatment Works (South Works) are being carried out for completion in 2026.

Pier Improvement Programme

Among the 10 public piers covered by the first phase of the Pier Improvement Programme, construction works for Kau Sai Village Pier in Sai Kung District and Lai Chi Chong Pier in Tai Po District started in September, and Pak Kok Pier on Lamma Island will be completed by end-2022. Of the 13 public piers covered by the second phase, engineering feasibility studies for six and detailed design for two started in May.

Construction Industry

Construction Industry Council

The Construction Industry Council supports the development of the construction industry, in particular by training construction workers. The council was allocated \$200 million in 2020 to strengthen training in trades in keen demand to upskill workers and attract young people.

Among about 584,000 registered construction workers, the number of registered semi-skilled or skilled workers is about 241,000. The government works with the council to monitor the construction industry's manpower supply and demand.

The government also works with the council to operate the \$1 billion Construction Innovation and Technology Fund. As at December, about \$570 million had been approved since the fund's launch in 2018, subsidising enterprises to adopt technologies and supporting over 11,000 technology training places.

The council collaborated with the government and the Hong Kong Construction Association to promote vaccination among the construction industry, and conducted over 140,000 COVID-19 tests for construction workers and site personnel via the voluntary COVID-19 testing arrangement.

The council promotes the Registered Specialist Trade Contractors Scheme to build up the capability of specialist trade contractors. In September, the scheme was enhanced to include a new registration requirement on integrity management in addition to those on safety, management, job experience, execution and finance to uplift professionalism of the industry. The government requires contractors of public works contracts to engage registered specialist trade contractors.

In relation to building information modelling, the council publishes standards and guidelines, provides training, and certifies managers and coordinators to facilitate wider adoption of this technology.

Promotion of Professional Services

In January, the 'Interim Guidelines for the Management of Hong Kong Engineering Construction Consultant Enterprises and Professionals Starting Business and Practising in the Guangdong-Hong Kong-Macao Greater Bay Area Cities' promulgated by the Department of Housing and Urban-Rural Development in Guangdong Province took effect. The guidelines cover four professional sectors of architecture, engineering, surveying and landscape architecture. Later in the year, the Department of Natural Resources of Guangdong Province expanded the scope of the guidelines to cover town planning professionals. Under these measures, consultant firms on two government lists² and their professional employees registered with the relevant registration boards in Hong Kong can obtain equivalent qualifications in the Mainland through a simple registration system and provide services in the nine Mainland cities 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,

² The two government lists are the List of Consultants of Architectural and Associated Consultants Selection Board and the List of Consultants of Engineering and Associated Consultants Selection Board.

advocating adequate space allocation for new planting, proper selection of plant species, good landscape design and planting practices, and proper tree maintenance, with public safety as a paramount consideration.

The Study Sponsorship Scheme and Trainee Programme under the Urban Forestry Support Fund, launched in 2020, encourages youngsters to join the arboriculture industry. By end-2021, sponsorship applications from about 430 students involving \$6.4 million had been approved under the scheme and 97 arborist and tree climber trainees had participated in the programme.

Since the launch of the Registration Scheme for Tree Management Personnel in December 2020, 426 applicants have registered as tree management personnel. The government has employed registered personnel in new construction and maintenance contracts to enhance the quality of tree management.

The Civil Engineering and Development Department started the greening master plans for the southwest and northeast New Territories in December 2020. About 1,850 trees and 830,000 shrubs will be planted in the Kwai Tsing, Tsuen Wan, Islands, North and Tai Po districts to enhance the overall quality of the environment.

Websites

Construction 2.0 – Time to Change: www.psgo.gov.hk/assets/pdf/Construction-2-0-en.pdf

Development Bureau: www.devb.gov.hk

Hong Kong GeoData Store: geodata.gov.hk