水務署
WATER SUPPLIES DEPARTMENT

年報 Annual Report 2022/23

固本拓源 水澤永延

SCALING UP WATER RESILIENCE FOR FUTURE LIVELIHOODS

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固本拓源　水澤永延

水務署為改善市民未來的福祉、供水保障及客戶體驗，不斷提升水資源應變力及持續創新。我們利用先進技術及可持續的資產管理，實現水資源多元化並擴展智慧水務及增加使用可再生能源，協助建設智慧用水城市；為優化水務管理，建設穩健的水務設施、管網及能力；透過傳承知識和發展合作，推廣精明及安全運用水資源，以應對氣候變化、需求上升及碳中和所帶來的嚴峻挑戰。

SCALING UP WATER RESILIENCE FOR FUTURE LIVELIHOODS

At the Water Supplies Department, we advance water resilience and sustain innovations for enhancing future livelihoods, water security and customer experience. Leveraging advanced technologies and sustainable asset management, we diversify water resources and expand smart waterworks and renewable energies for a water-smart city; build robust infrastructure, networks and capacity for optimised waterworks management; as well as foster knowledge and collaborative actions for the wise and safety use of water resources against the acute challenges of climate change, increasing demand and carbon neutrality.

抱負
Vision

在滿足客戶對優質供水服務的需求時，務求有卓越之表現。

To excel in satisfying customers' needs for the provision of quality water services.

信念
Values

以客為本 Customer satisfaction

確保質量 Reliability

重視環保 Environmental awareness

竭盡所能 Dedication

精益求精 Improvement

同心協力 Teamwork

使命
Mission

- 以最符合成本效益的方式為客戶提供可靠充足的優質食水及海水。
  To provide a reliable and adequate supply of wholesome potable water and sea water to our customers in the most cost-effective way.
- 提供以客戶為本的服務。
  To adopt a customer-oriented approach in our services.
- 維持及激勵一隊能幹、高效率及完全投入的工作隊伍，以服務社群。
  To maintain and motivate an effective, efficient and committed workforce to serve the community.
- 時刻關注對保護環境方面須負的責任。
  To remain conscious of our responsibilities towards the environment.
- 善用資源和科技，力求不斷改善服務。
  To make the best use of resources and technology in our striving for continuous improvement in services.

透過應變力、創新及可持續發展，
將香港打造成為智慧用水都市

Transforming Hong Kong into a
water-smart city with resilience,
innovation and sustainability

持續進步。

SUSTAIN

從積極開拓新水源、將智慧解決方案融入策略規劃和資產管理，到致力逐步擴展智慧水務，在水塘安裝浮動太陽能發電場，以及凝聚各界力量和透過不同方案，應對未來的各項供水挑戰。

From pioneering new approaches to diversify water resources and integrating smart solutions holistically into strategy planning and asset management; to our endeavours in progressively expanding smart waterworks, implementing floating solar farms on reservoirs as well as inspiring collaborative actions and solutions to address future water challenges.

署長的話
DIRECTOR'S STATEMENT

「憑藉培育創新文化，逐步採以先進技術，香港的供水應變能力已顯著提升，配合未來的生活方式，實現智慧用水的願景。透過落實「全面水資源管理策略」，不斷改進政策、基礎設施、供水網絡、能力提升及技術，我們正引領供水行業踏上轉型之路，以確保應變能力、創新及可持續性。」

"By fostering a culture of innovation and progressively adopting of advanced technologies, we have significantly enhanced water resilience to support future livelihoods and realise our vision of a water-smart Hong Kong. Through our holistic "Total Water Management Strategy" and ongoing enhancements in policies, infrastructure, networks, capacity building and technologies, we are leading the transformation of the water supply sector to ensure resilience, innovation and sustainability."

***邱國鼎工程師**太平紳士*
水務署署長

***Ir YAU Kwok-ting, Tony,** JP*
Director of Water Supplies

世界各地城市均竭力應對氣候變化的影響，大灣區城市亦不例外。氣候變化的影響包括氣溫上升、乾旱、洪水及極端風暴頻發，繼而對水量及水質造成影響。氣候變化影響加速來襲，加上市民的用水習慣在二零一九冠狀病毒病疫情後發生變化、人口增長、北部都會區及交椅洲人工島等新發展項目動工，用水需求節節攀升，香港極需一套兼具可持續與創新的綜合水務管理方法。

憑藉培育創新文化，逐步採以先進技術，香港的供水應變能力已顯著提升，配合未來的生活方式，實現智慧用水的願景。透過落實「全面水資源管理策略」，不斷改進政策、基礎設施、供水網絡、能力提升及技術，我們正引領供水行業踏上轉型之路，以確保應變能力、創新及可持續性。

Cities worldwide, including those in the Greater Bay Area, are grappling with the effects of climate change, such as rising temperatures, droughts, flooding, and more frequent extreme storms are impacting water quantity and water quality. These accelerating impacts of climate change, coupled with increased water demand resulting from the change of water-using habits after the COVID-19 pandemic, increasing population, as well as the new developments like the Northern Metropolis and Kau Yi Chau Artificial Islands, have highlighted the urgent need for sustainable, innovative and integrated water management approaches.

By fostering a culture of innovation and progressively adopting advanced technologies, we have significantly enhanced water resilience to support future livelihoods and realise our vision of a water-smart Hong Kong. Through our holistic "Total Water Management Strategy" and ongoing enhancements in policies, infrastructure, networks, capacity building and technologies, we are leading the transformation of the water supply sector to ensure resilience, innovation and sustainability.

創新水資源管理，護航未來生活

近年，受氣候變化影響，香港和東江流域的集水量愈來愈難預測。此外，二零一九冠狀病毒病疫情促使市民更注重個人及公共衞生，改變用水習慣，導致全年食水用量由疫情前二零一九年的 9.96 億立方米，增至二零二二年的 10.66 億立方米，短短三年間增加了 7 000 萬立方米。為滿足用水量上升的需求，我們輸入了 8.10 億立方米東江水，此供水量已接近現行《東江供水協議》規定的每年供水 8.2 億立方米的上限。為遏制用水需求增長趨勢，實現分別在二零三零年前及二零四零年前將食水用量減少 10% 及約 11% 的目標，我們正在推行各種需求管理措施。

INNOVATIVE WATER RESOURCES MANAGEMENT FOR FUTURE LIVELIHOODS

In recent years, the impact of climate change have made water yield in both Hong Kong and the Dongjiang River Basin increasingly unpredictable. Additionally, the COVID-19 pandemic has changed people's water-using behaviour in strengthening personal and public hygiene, resulting in a significant increase in the annual fresh water consumption from 996 million m^3 in 2019 before the pandemic to 1 066 million m^3 in 2022, a rise of 70 million m^3 in just three years. To meet this increased demand, we have imported 810 million m^3 of Dongjiang water which is approaching the annual supply ceiling of 820 million m^3 in the current Dongjiang Water Supply Agreement. To curb the water demand growth and achieve our goal of reducing fresh water consumption by 10% by 2030 and approximately 11% by 2040, we are implementing various demand management measures.

除了控制需求增長外，我們亦透過利用多元化的水資源，包括淡化海水作飲用用途和循環再用水（即再造水、重用中水和回收雨水）作非飲用用途，在提升供水應變能力方面取得良好進展。二零二三年十二月，將軍澳海水化淡廠第一期將會投入運作，全力為香港市民提供不受氣候變化影響的新食水資源。該廠採用最新的逆滲透技術，年產量可達 5 000 萬立方米，佔香港總食水供應量的百分之五，是能夠抵禦氣候變化的頂級基礎設施。我們亦正規劃項目的第二期，並已展開設計工作，力求日後可令產量倍增，達到每年 1 億立方米。

與此同時，我們正在發展基礎設施，供應循環再用水作沖廁及清潔街道等非飲用用途。我們正興建石湖墟再造水廠及香港首個再造水配水系統，該項目每年生產的再造水將高達 2 200 萬立方米。自二零二四年起，將分階段向上水、粉嶺、古洞北和粉嶺北等新發展區供應再造水。此外，安達臣道石礦場用地發展項目率先採用獲獎的可持續中水重用系統，並將自二零二四年底開始分階段供應經處理的中水。這項區域性舉措促進當區中水重用，減少廢水排放及可將能耗減至最低，為香港日後擴大中水重用奠下基礎。在技術可行的情況下，我們計劃進一步擴大循環再用水的應用範圍至所有新發展區或遠離海傍的內陸地區。為實現具成本和能源效益的非食水應用，我們正計劃擴大循環再用水的應用範圍至新發展區的區域供冷系統。

我們將海水供應網絡的範圍擴大至東涌新市鎮及其擴展區，增加使用海水沖廁的覆蓋範圍。我們將利用先進技術，力求提升海水和循環再用水的供應網絡覆蓋率，由目前佔香港總人口的 85% 至長遠目標 90%。隨著上述的重要基礎設施項目於二零二三年至二零二四年逐步竣工，我們將進入對氣候影響具抗禦力和提升供水保障的新時代。

In addition to managing demand growth, we have made good progress in enhancing water supply resilience through the diversified portfolio of water resources and the utilisation of various applications, including desalinated water for potable use and recycled water (viz reclaimed water, treated grey water and harvested rainwater) for non-potable uses. We are pressing ahead in full steam with the commissioning of the First Stage of Tseung Kwan O Desalination Plant in December 2023 to provide Hong Kong people with an extra potable water resource which is not susceptible to climate change impact. Utilising state-of-the-art reverse osmosis technology, the new Desalination Plant will be a top-class, climate-proof infrastructure with an annual production capacity of 50 million m^3, accounting for five per cent of total fresh water supply in Hong Kong. We are now planning the second stage and have commenced the design works, which aims to double its capacity to 100 million m^3 per annum in the future.

In conjunction with desalinated water, we are developing infrastructure to supply recycled water for non-potable uses such as toilet flushing and street cleansing. We are currently constructing the Shek Wu Hui Water Reclamation Plant, along with Hong Kong's first-ever reclaimed water distribution system, which will have a production capacity of up to 22 million m^3 of reclaimed water each year. The supply of reclaimed water in Sheung Shui, Fanling and new development areas (NDAs) such as Kwu Tung North and Fanling North will commence in phases starting from 2024. Furthermore, grey water treated through our award-winning sustainable recycling system will be reused in the Development of Anderson Road Quarry site starting in phases from the end of 2024. This pioneering district-based grey water recycling initiative promotes localised water reuse, reduces sewage discharge and minimises energy consumption. It serves as a cornerstone for expanding the reuse of grey water in Hong Kong in the future. Where technically feasible, we plan to further extend the use of recycled water in all NDAs or inland areas that are distant from the seafront. As part of our cost-effective and energy-efficient non-potable water applications, we are planning to expand the application of recycled water to district cooling systems in NDAs.

To expand the coverage of the seawater supply networks, we are extending them to Tung Chung New Town and its extension for toilet flushing purpose. Leveraging cutting-edge technologies, we aim to increase the coverage of the salt water and recycled water supply networks from the current 85% of the total population to 90% in the long run. With the phased completion of the above milestone infrastructure projects from 2023 to 2024, we are entering into a new era of climate-resilient water supplies with enhanced water security.

融合智能方案，實現高效可持續資產管理

我們仍致力投資水務設施和網絡，促進技術創新，增強氣候適應能力，提高運作效率和可靠性，實現智慧水務管理，同時為碳中和作出貢獻。

我們努力提高供水系統各個方面的運作效率。隨著「數碼分身」先導計劃順利實施，我們能實時監測和模擬系統運作情景，在此基礎上，我們將部署範圍由系統運作和服務提升擴大至產品開發和事故管理。我們亦逐步建立「智管網」，進一步優化智能水務系統的表現。

年內，我們開展多項策略性規劃及改善工程，確保供水品質及可靠性。其中一個值得注意的項目是上水及粉嶺東江水水管 P4 改善工程。該工程涉及更換大型、老化的地下水管，反映水務署採用創新技術和建立合作夥伴關係的決心。透過種種努力，在充滿挑戰的疫情期間，仍能達至提高管理效率，節省成本，及加快恢復水管服務的目標。

為配合北部都會區的策略性發展，我們正研究在新界北的新市鎮增建一座濾水廠，以滿足日益增長的食水需求。此外，我們正計劃興建一條策略性幹管，利用大埔濾水廠的部分供水能力，滿足北區的食水需求。

INTEGRATING SMART SOLUTIONS FOR EFFICIENT AND SUSTAINABLE ASSET MANGEMENT

We remain committed to investing in our waterworks infrastructure and networks to foster technology innovation, enhance climate adaptation and improve operational efficiency and reliability for smart water management while contributing to carbon neutrality.

We are dedicated to enhance operational efficiency across various aspects of our water supply systems. Building upon the successful pilot of digital twins for real-time monitoring and operation scenario simulation, we have increased the deployment from system operations and service enhancements to product development and incident management. We are also progressing with the establishment of Water Intelligent Network to further optimise the performance of our smart water systems.

During the year, several strategic planning and enhancement works were carried out to ensure the provision of high-quality and reliable water supplies. One notable project is the improvement of Dongjiang water mains P4 at Sheung Shui and Fanling. This project involves the replacement of large, ageing underground water pipes, showcasing the Water Supplies Department's commitment to adopting innovative technologies and fostering collaborative partnerships. These efforts aim to enhance management efficiency, achieve cost-saving and expedite the resumption of water mains services during the challenging times of pandemic period.

To support the strategic growth of the Northern Metropolis, we are currently exploring the construction of a new Water Treatment Works within New Territories North New Town to meet the growing demand of fresh water. Additionally, we are planning the construction of a strategic trunk main to utilise a portion of the water supply capacity of the Tai Po Water Treatment Works to address the fresh water needs in the North District.

我們亦透過發展可再生能源及優化資產，積極推行減碳措施。隨著在石壁水塘、船灣淡水湖和大欖涌水塘成功落實浮動太陽能板發電系統先導計劃，我們正逐步計劃在香港各個水塘建造大型浮動太陽能板發電場。這些發電場將運用約 10% 的塘面面積。未來數年，我們計劃分別在船灣淡水湖及新界東南堆填區建造兩座大型太陽能發電場，預定於二零二六年投入運作，預計每年產電量分別可達 6 百萬度電和 1 千萬度電，不但可抵銷本署的耗電量，更有助政府達致碳中和目標。我們長遠計劃提升可再生能源產能，目標是在二零三五年開始年產量達 1 億 6 千萬度電。

We are also actively pursuing decarbonisation measures by developing renewable energy sources and optimising our assets. Building upon the successful pilots of implementing floating photovoltaic systems at the Shek Pik Reservoir, Plover Cove Reservoir and Tai Lam Chung Reservoir, we are now progressively planning to establish large-scale floating solar farms at impounding reservoirs in Hong Kong. These solar farms will utilise approximately 10% of the reservoir water surface area. In coming years, we have set out plans for installing two large-scale solar farms: one at the Plover Cove Reservoir and the other at the South East New Territories (SENT) Landfill. Scheduled to be commissioned in 2026, these solar farms are expected to generate about 6 and 10 gigawatt-hours per year (GWh/year) of renewable energy respectively, which will not only offset the Department's energy consumption but also contribute to the Government's target of achieving carbon neutrality. Our long-term plan is to increase the renewable energy generation capacity to approximately 160 GWh/year starting from 2035.

透過改善服務提升客戶體驗

為了向客戶提供更方便、適時和靈活的服務，我們利用創新科技，加快完善多項服務，包括將現有的電子平台升級為一個綜合數碼化申請供水管理系統，以處理公眾服務申請和業界的供水申請；開發具有語音識別和工作流程自動化系統的對話式語音機器人，提升客戶諮詢熱線服務；引入人工智能聊天機器人至水務署網頁，迅速為客戶提供資訊和支援；以及將向受影響的大型屋苑管理處提供的「暫停供水自動通知系統」的通知服務範圍由食水擴展至沖廁水。

為配合客戶對智慧生活及節約成本的追求，我們在新發展項目中引入便捷的有線智能水錶。客戶可透過手機應用程式遙距監察用水量。展望前路，當安裝相關無線智能水錶完成，我們會擴展應用智能水錶至現有建築物的客戶。

ENHANCING CUSTOMER EXPERIENCE THROUGH IMPROVED SERVICES

Through the integration of emerging technologies, we are expediting several enhancements to provide our customers with more convenient, responsive and flexible services. These include upgrading our current electronic platform to an integrated Digital Water Supply Application Management System, which will process service requests from the public and various water supply applications from the trade; developing conversational voice bot with speech recognition and workflow automation systems for enhancing our enquiry hotline services; introducing artificial intelligence chatbot to the WSD website for providing customers with fast access to information and support; as well as extending the scope of the notification service of the Water Supply Suspension Notification System from fresh water to flushing water to the management offices of the affected large housing estates.

To support customers in their pursuit of smart living and cost saving, we are providing an easy access to wired Advanced Metering Infrastructure (AMI) for customers in new developments. This will enable them to remotely monitor their water consumption through the mobile app of the smart meter. Looking ahead, we will extend this service to customers in existing buildings once the installation of wireless smart meters is completed.

同心協力，共創智慧用水未來

人才培育及夥伴關係對構建具應變能力的供水系統至關重要。我們致力創造有利環境，促進在資源、資產和服務提升方面的創新，倡導攜手共進，令香港成為智慧用水城市。

我們鼓勵社會各界同心協力，為水資源的可持續發展作出正面影響：由開展公眾教育活動和「惜水學堂」教育計劃推廣節約用水；在校園培育「惜水大使」；提升地下水管測漏中心「Q-Leak」智能水務管理的專業技能，與業界和教育機構合作，推動持續專業發展；以至透過 ECH_2O -「商約」惜水運動，為工商機構提供協作平台；與本地和國際組織進行研發合作；加強社區層面的溝通；與大灣區的同業進行可持續水務和創新方面的交流；以及分享見解及解決方案，與海外其他領先水務行業優勢互補。

我們欣然看到 ECH_2O -「商約」惜水運動取得驕人成果，短短一年間令用水量減少百分之五。我們連續兩年榮獲「全球最具創新力知識型機構大獎」及「香港最具創新力知識型機構大獎」，我們的表現備受獎項肯定及深受鼓舞。

藉此機會，我衷心感謝所有同事在過去一年緊守崗位，堅毅不屈發揮專業精神，克服種種挑戰，提供卓越服務。我堅信，憑藉持續創新及在本地和國際建立的合作關係，我們定能克服面前的各種挑戰，令香港轉化成一個能夠智慧用水及擁有食水安全的城市。

邱國鼎工程師*太平紳士*
水務署署長

INSPIRING COLLABORATIVE ACTIONS FOR A WATER-SMART FUTURE

Capacity building and partnership are crucial for building a resilient water system. We strive to create an enabling environment that fosters innovation in resource, asset, and service enhancements and inspires collaborative actions to transform Hong Kong into a water-smart city.

We encourage concerted efforts to make a positive impact on water sustainability: from promoting water conservation through public education campaigns and the "Cherish Water Campus" Integrated Education Programme; nurturing "Cherish Water Ambassadors" in schools; enhancing professional skills in smart water management at the Q-Leak underground water mains leak detection centre, and enabling continuing professional development in collaboration with industry and educational institutes; to our endeavours in building collaborative platform for enterprise commitment via the ECH_2O - Enterprises Cherish Water Campaign; developing Research & Development (R&D) collaborations with local and international organisations; enhancing communications at community level; exchanging sustainable water practices and innovations with our counterparts in the Greater Bay Area; and contributing insights and solutions that add value to the work of other leading water utilities abroad.

We are delighted to witness the remarkable success of ECH_2O - Enterprises in achieving a significant five per cent reduction in water consumption just within a year and that we are empowered and recognised with prestigious awards such as the "Global Most Innovative Knowledge Enterprise (MIKE) Award" and the "Hong Kong MIKE Award" for two consecutive years.

Taking this opportunity, I would like to express my heartfelt gratitude to all our colleagues for their resilience, dedication and professionalism in delivering an outstanding service during this challenging year. With our ongoing water innovations and the collaborative partnerships we have established both locally and internationally, I firmly believe that we can overcome all the challenges ahead and transform Hong Kong into a water-smart and water-secure city.

Ir YAU Kwok-ting, Tony, *JP*
Director of Water Supplies

部門總覽
Corporate Profile

穩定而優質的供水，對本港居民的生活不可或缺，同時亦是支持本港可持續發展的關鍵要素。香港特別行政區政府水務署的職責是維持供水可靠優質。

本港 17 個水塘集水區收集的本地雨水約佔香港總食水用量 20% 至 30%，餘下部分的原水由廣東省的東江輸入，兩者均會經過嚴格處理及監測，確保食水水質符合香港食水標準。此外，自一九五零年代以來，我們充分利用香港近海的地理優勢，將海水用作沖廁用途。食水及海水由兩個完全獨立的供水系統供應，透過龐大的配水庫和水管網絡，配送至各家各戶及商用物業。

為確保香港供水穩健及具應變能力，我們繼續妥善管理水務資產以維持其健康狀況，以及透過海水化淡及循環再用水等技術開拓新水源，進一步提升香港的供水保障及應對氣候變化的能力。

作為香港最大的能源用戶之一，我們已實施相關措施，透過應用創新科技、開發可再生能源及提升能源效益，致力減少碳足跡。我們亦是香港特區政府首個獲得 ISO 50001:2011 能源管理系統認證的部門。

我們的抱負是滿足客戶對優質供水服務的需求。為此，我們的人員致力與持份者合作及提供以客為本的服務，確保客戶獲得最具效率及優質的服務。

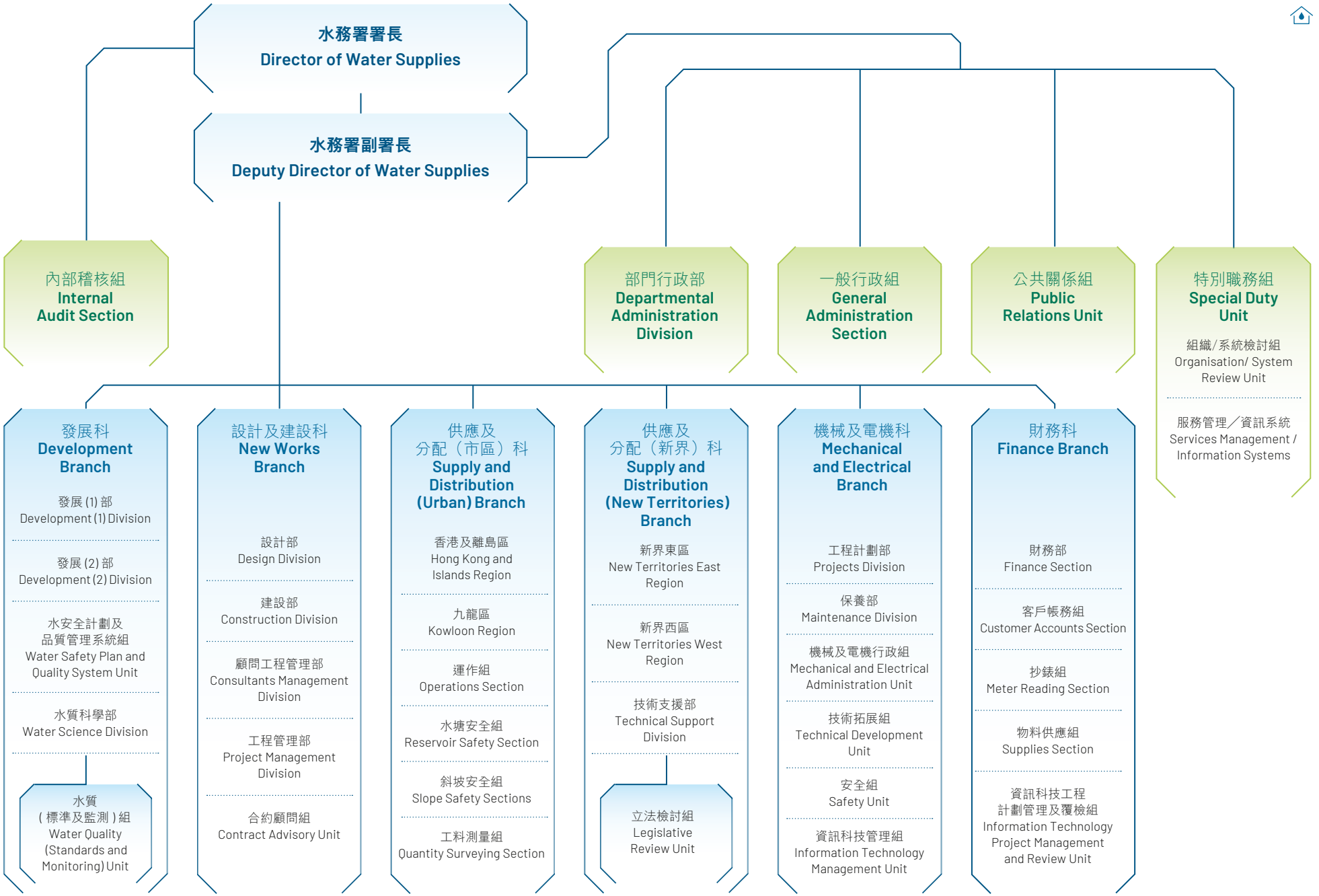
Reliable and quality water supplies are indispensable to the lives and livelihoods of the people in Hong Kong, and are critical for supporting the territory's sustainable development. The Water Supplies Department (WSD) of the Hong Kong SAR Government is charged with the responsibility of maintaining reliable and quality water supplies.

Approximately 20% to 30% of Hong Kong's fresh water supply comes from the local yield collected in catchment areas of the territory's 17 impounding reservoirs while the remaining raw water comes from Dongjiang in the Guangdong Province. Both the local yield and imported Dongjiang water are subject to stringent treatment and monitoring to ensure that the quality of treated water meets the Hong Kong Drinking Water Standards. Moreover, since the 1950s, we have taken full advantage of Hong Kong's geographic proximity to the ocean to adopt salt water for flushing purposes. Fresh water and salt water are supplied through two entirely separate supply systems. Our extensive array of service reservoirs and water mains provide these supplies for distribution to homes and commercial developments.

To ensure the sustainability and resilience of Hong Kong's water supplies, we continue to manage our asset to sustain their health and develop new sources of water including desalination and recycled water. These additional sources of water will give Hong Kong enhanced water security and the ability to adapt to climate change.

As one of the city's largest energy consumers, we have implemented measures to reduce our carbon footprint as much as possible by adopting innovation and technology, developing renewable energy and enhancing energy efficiency. We are the first Hong Kong SAR Government department to obtain the ISO 50001:2011 Energy Management System certification.

Our vision is to excel in meeting our customers' needs for quality water services. With this in mind, our committed workforce has collaborated with stakeholders and adopted a customer-oriented approach to ensure that our customers receive the most efficient and high-quality services.


水務署署長
Director of Water Supplies
水務署副署長
Deputy Director of Water Supplies
內部稽核組
Internal Audit Section
部門行政部
Departmental Administration Division
一般行政組
General Administration Section
公共關係組
Public Relations Unit
特別職務組
Special Duty Unit
組織/系統檢討組
Organisation/ System Review Unit
服務管理／資訊系統
Services Management / Information Systems
發展科
Development Branch
發展 (1) 部
Development (1) Division
發展 (2) 部
Development (2) Division
水安全計劃及品質管理系統組
Water Safety Plan and Quality System Unit
水質科學部
Water Science Division
水質（標準及監測）組
Water Quality (Standards and Monitoring) Unit
設計及建設科
New Works Branch
設計部
Design Division
建設部
Construction Division
顧問工程管理部
Consultants Management Division
工程管理部
Project Management Division
合約顧問組
Contract Advisory Unit
供應及分配（市區）科
Supply and Distribution (Urban) Branch
香港及離島區
Hong Kong and Islands Region
九龍區
Kowloon Region
運作組
Operations Section
水塘安全組
Reservoir Safety Section
斜坡安全組
Slope Safety Sections
工料測量組
Quantity Surveying Section
供應及分配（新界）科
Supply and Distribution (New Territories) Branch
新界東區
New Territories East Region
新界西區
New Territories West Region
技術支援部
Technical Support Division
立法檢討組
Legislative Review Unit
機械及電機科
Mechanical and Electrical Branch
工程計劃部
Projects Division
保養部
Maintenance Division
機械及電機行政組
Mechanical and Electrical Administration Unit
技術拓展組
Technical Development Unit
安全組
Safety Unit
資訊科技管理組
Information Technology Management Unit
財務科
Finance Branch
財務部
Finance Section
客戶帳務組
Customer Accounts Section
抄錶組
Meter Reading Section
物料供應組
Supplies Section
資訊科技工程計劃管理及覆檢組
Information Technology Project Management and Review Unit

即使面對社會逐漸演變的用水需要和氣候變化加劇帶來的挑戰，水務署多年來一直堅守使命，為香港提供優質可靠的供水服務。從過去到現在，我們一直致力將香港打造成為智慧用水城市。我們促進完善的水務管理及技術發展，把握每個機會推陳出新，提升水資源應變力及支持本地及海外的水務行業，從而改善市民未來的福祉、供水保障和客戶服務。

Over the years, the WSD has steadfastly upheld its mission to provide reliable and quality water services in Hong Kong amidst the challenges of evolving society's needs and accelerating impacts of climate change. From the past to the present, we are committed to building Hong Kong into a water-smart city. Through fostering robust water governance and technological prowess, we have capitalised every opportunity in sustaining water innovations, scaling up resilience and supporting the water sector in Hong Kong and abroad for enhancing future livelihoods, water security and customer services.

彭愛玲工程師
Ir PANG Oi-ling, Irene
助理署長 / 設計及建設
Assistant Director/New Works

馬巔琣先生[2]
Mr MA Tin-po, Martin[2]
助理署長 / 財務
Assistant Director/ Finance

鍾永基工程師
Ir CHUNG Wing-kee, Philip
助理署長 / 市區
Assistant Director/Urban

曹炳豪工程師
Ir CHO Ping ho
助理署長 / 機械及電機
Assistant Director / Mechanical & Electrical

邱國鼎工程師，太平紳士[1]
Ir YAU Kwok-ting, Tony, JP[1]
水務署署長
Director of Water Supplies

周世威工程師，太平紳士
Ir CHAU Sai-wai, JP
水務署副署長
Deputy Director of Water Supplies

尤孝賢工程師
Ir YAU Hau-yin
助理署長 / 新界
Assistant Director/ New Territories

馬漢榮工程師
Ir MA Hon-wing, Wilson
助理署長 / 發展
Assistant Director/ Development

勞淑儀女士
Ms LO Shuk-yi
部門秘書
Departmental Secretary

1 邱工程師自二零二三年一月四日起出任水務署署長。
2 馬先生自二零二二年十一月十四日起出任助理署長／財務。

1 Ir YAU was appointed Director of Water Supplies on 4 January 2023.
2 Mr MA was appointed Assistant Director/Finance on 14 November 2022.

主要統計數字
Principal Statistics

（截至二零二三年三月三十一日）

(as of 31 March 2023)

17 個水塘
No. of Impounding Reservoirs

586 百萬立方米 million m^3 總容量
Total Storage Capacity

149 個食水抽水站（包括食水和原水抽水站及泵房）
No. of Fresh Water Pumping Stations (includes fresh & raw water pumping stations and pump houses)

32.1 百萬立方米 / 日 million m^3/day 總抽水量
Total Pumping Capacity

120 公里 km 引水道長度
Length of Catchwater

199 公里 km 輸水隧道長度
Length of Water Tunnel

7 個食水及海水抽水站
No. of Combined Fresh Water & Salt Water Pumping Stations

0.3 百萬立方米 / 日 million m^3/day 總抽水量
Total Pumping Capacity

179 個食水配水庫
No. of Fresh Water Service Reservoirs

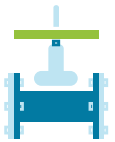
4.4 百萬立方米 million m^3 總容量
Total Storage Capacity

20 個濾水廠
No. of Water Treatment Works

4.6 百萬立方米 / 日 million m^3/day 總濾水量
Total Water Treatment Capacity

35 個海水抽水站（包括泵房）
No. of Salt Water Pumping Stations (includes pump houses)

2.1 百萬立方米 / 日 million m^3/day 總抽水量
Total Pumping Capacity



6 744 公里 km 食水水管長度（直徑 20 毫米至 2 400 毫米）
Length of Fresh Water Mains (20 mm to 2 400 mm diameter)

1 683 公里 km 海水水管長度（直徑 20 毫米至 1200 毫米）
Length of Salt Water Mains (20 mm to 1200 mm diameter)

55 個海水配水庫
No. of Salt Water Service Reservoirs

0.3 百萬立方米 million m^3 總容量
Total Storage Capacity

主要工作表現指標
Key Performance Indicators

指標 Indicators	財政年度 Financial Year 2020/21	2021/22	2022/23
食水水質 100%符合香港食水標準* Fresh Water Quality 100% compliance with the Hong Kong Drinking Water Standards*	達到指標 Target achieved	達到指標 Target achieved	**達到指標 Target achieved**
海水水質 97%符合水務署所定的水質指標** Salt Water Quality 97% compliance with WSD Water Quality Objectives**	達到指標 Target achieved	達到指標 Target achieved	**達到指標 Target achieved**
食水供水水壓（15至30米）^ Fresh Water Supply Pressure (15 - 30 metres)^	100%	100%	**100%**
海水供水水壓（15米）^ Salt Water Supply Pressure (15 metres)^	100%	100%	**100%**
因預先計劃進行的工程而暫停供水的時間長度 (98%於八小時內) Water Supply Suspension Duration for Planned Work (98% within 8 hours)	達到指標 Target achieved	達到指標 Target achieved	**達到指標 Target achieved**
準確水錶的比率98%的偏差程度不超過± 3% *** Proportion of accurate water meters 98% with inaccuracy not exceeding ±3%***	97.3%	98.4%	**98.6%**

* 水務署自二零一七年九月起開始採用香港食水標準為指標，而在此之前，則一直採用世界衛生組織制訂的《飲用水水質準則》為指標。
The Hong Kong Drinking Water Standards have been adopted by the WSD in the target since September 2017. Before that, the World Health Organization's Guidelines for Drinking-water Quality were adopted in the target.

** 此指標於二零一九至二零年度經修訂為「海水水質— 97% 符合水務署所定的水質指標」，二零一八至一九年度則為「海水水質— 96% 符合水務署所定的水質指標」，而二零一七至一八年度所採用的指標為「海水水質（供水接駁位置）— 96% 符合水務署所定的水質指標」。
The target for 2019/20 has been revised as "Salt water quality - 97% compliance with WSD Water Quality Objectives". The target for 2018/19 was "Salt water quality - 96% compliance with WSD Water Quality Objectives". The target in 2017/18 was "Salt water quality (at connection points) - 96% compliance with WSD Water Quality Objectives".

*** 此指標將於二零二二至二三年度修訂為「準確水錶的比率— 98% 的偏差程度不超過 ± 3%」，二零二一至二二年度則為「水錶的準確程度— 100% 的偏差程度不超過 ± 3%」。
The target for 2022/23 is to be revised as "Proportion of accurate water meters-98% with inaccuracy not exceeding ±3%". The target for 2021/22 was "Accuracy of water meters-100% with inaccuracy not exceeding ±3%".

^ 配水系統內（不包括系統盡頭）最低的剩餘水壓。
Minimum residual pressure in the distribution systems except at their extremities.

以具前瞻性和全面的方式推動水資源、水質及設施管理，發展應變能力。

Advancing resilience with a forward-looking and holistic approach to water resources, quality and infrastructure management.

升級開拓

SCALE UP

我們善用科技發展和智慧創新，致力不斷改善供水保障和供水安全，優化水務資產並增加可持續性，以及為社會和客戶的不同需要提供高效的增值服務。

We leverage technological advancements and smart innovations to strive for continuous enhancements in water security and safety, more optimised and sustainable waterworks assets, as well as efficient and value-added services for the diverse needs of our society and customers.

全面水資源管理
Total Water Management

水資源於本港的未來擔當著關鍵促成的角色，它不僅滋養生命萬物，更為家庭和社會經濟提供動力。然而，隨著社會與經濟急速發展，用水需求日增、氣候變化影響加劇及實現碳中和的承諾，管理和增加水資源和基礎設施的挑戰性亦與日俱增。為確保本港長遠享有穩健及具應變力的供水，水務署制定全面的水資源管理策略，務求以智慧和策略性的方式來管理我們的水資源。

Water plays a key enabling role in our city of the future. It powers homes, economies and nourishes all life. However, with the rapid social and economic development, growing water demand, accelerating impacts of climate change and the commitment to achieving carbon neutrality, managing and expanding water sources and infrastructure have become increasingly challenging. To ensure sustainability and resilience of Hong Kong's water supplies in the long run, the WSD has formulated a holistic water management strategy for smart and strategic management of our water resources.

全面水資源管理策略

自二零零八年推行以來，「全面水資源管理策略」（「策略」）已成為促進香港社會和經濟發展的可持續用水藍圖。水務署與國際專家和顧問公司於二零一九年進行「策略」檢討及修訂，修訂後的「策略」（「策略 2019」）採用雙管齊下的方式，著重控制食水需求增長，以及利用多元化的水資源提升食水供應的應變能力，以應對氣候變化的極端影響。

「策略 2019」亦更新了至二零四零年用水需求和供應的推算方法及預測。根據政府統計處的預期人口增長情景，並考慮氣候變化導致每年雨量減少，如在實施用水需求管理措施的前提下，令每年食水需求量減至 10 億立方米內，目前的食水供應將能應付二零四零年的預測用水需求。

TOTAL WATER MANAGEMENT

Implemented since 2008, the Total Water Management Strategy has served as the road map for the sustainable use of water supporting the social and economic development in Hong Kong. Following the review of the Strategy in 2019 conducted with international experts and consultants, the WSD has updated it to adopt a two-pronged approach which focuses on containing water demands and building resilience in the fresh water supply with diversified water resources with a view to addressing the extreme effects of climate change.

The 2019 Strategy Review also updated the forecast of water demand and supply methodologies and projections up to 2040. Under the expected population growth scenario provided by the Census and Statistics Department and taken into consideration the annual rainfall reduction due to climate change, the current fresh water supply arrangements will be able to meet the forecast demand up to 2040, provided that the demand management measures are implemented to reduce the annual fresh water demand to within 990 million m^3.

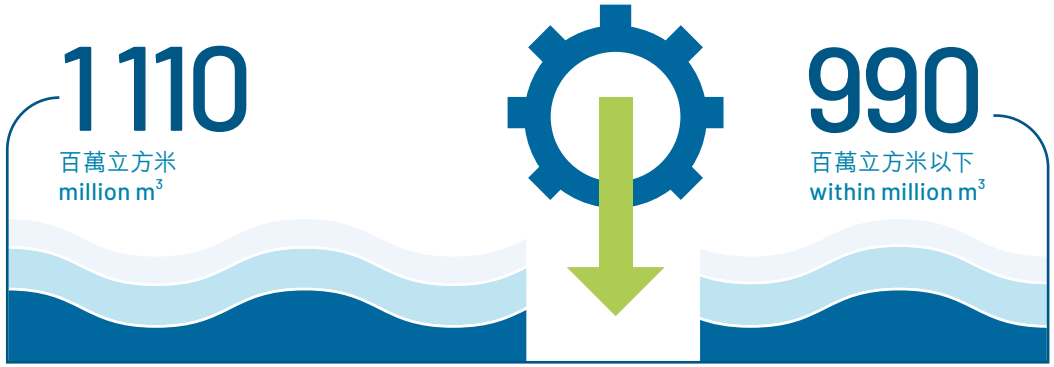
至二零四零年之全年食水需求推算
Annual Fresh Water Demand Projection by 2040

沒有用水需求管理措施的情況下：
Without demand management measures:

1 110
百萬立方米
million m^3

實施用水需求管理措施的情況下：
With demand management measures:

990
百萬立方米以下
within million m^3



持續監測和檢討

我們修訂「全面水資源管理策略」時，不僅以應變能力、經濟因素及可持續性等多項準則作為基礎來評估用水需求和供水管理方案，同時亦參考水務諮詢委員會和其他持份者的意見。為確保我們能夠應對比預期更嚴峻的情況，我們制定了一系列後備方案。其中包括興建更多海水化淡設施、擴大水塘容量和集水區、重啟已停用的濾水廠，以及增加東江水供應。若未來情況與目前的估算有偏差，我們可以按需要執行合適的後備方案。

我們亦會定期檢討並修訂「策略 2019」，以適時應對用水需求變化、氣候變化對本地集水的影響，及各種水資源的成本效益、相關科技發展、可靠性及對環境的影響等。

Continuous Monitoring and Review

The Total Water Management Strategy was updated taking into account the evaluation of water demand and water supply management options based on the multiple criteria of resilience, economics and sustainability, as well as the views from the Advisory Committee on Water Supplies and other stakeholders. To ensure our ability to adapt to the worse-than-expected scenarios, a host of backup measures have been formulated. These include building up more desalination capacities, expanding our reservoir capacity and catchment, reactivating mothballed water treatment works and increasing Dongjiang water supply. If the future conditions deviate from our present projections, we can implement appropriate backup measures as necessary.

We will conduct regular review of the "Strategy 2019" and update it as needed to make appropriate and timely responses to changes arising from water demand, the effect of climate change on the local yield, as well as the cost-effectiveness, technological development, reliability and environmental impact of various water resources.

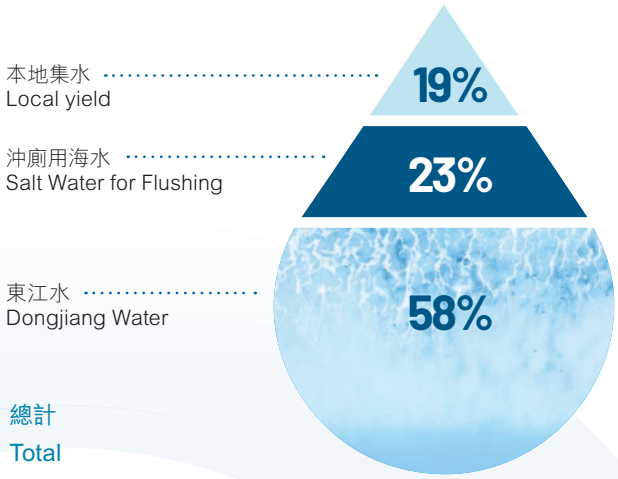
水資源

多年來，香港一直享有穩定的供水。香港水資源的三大來源為本地集水區的雨水、由廣東輸入的東江水及沖廁用海水。

WATER RESOURCES

Over the years, Hong Kong has enjoyed a reliable water supply. Hong Kong's water resources comprise three sources: rainwater from local catchments, imported water from Dongjiang in the Guangdong Province, and salt water for toilet flushing.

二零二二年全港總用水量
Total Water Consumption of Hong Kong in 2022



總計
Total
1385
百萬立方米
million m^3

二零二二年按用水類別劃分的食水用量
Annual Fresh Water Consumption by Sector 2022

用水類別 Sector	食水用量 Fresh Water Consumption 百萬立方米及佔總用量百分比 million m^3 and percent of total
住宅用水 Domestic	628 (58.9%)
工業用水 Industrial	57 (5.3%)
服務業及商業用水 Service Trades	246 (23.1%)
政府用水 Government Establishments	51 (4.8%)
建築及船舶用水 Construction & Shipping	22 (2.1%)
臨時淡水沖廁 Flushing	62 (5.8%)
食水總用量 Total Fresh Water Consumption	1066 (100%)

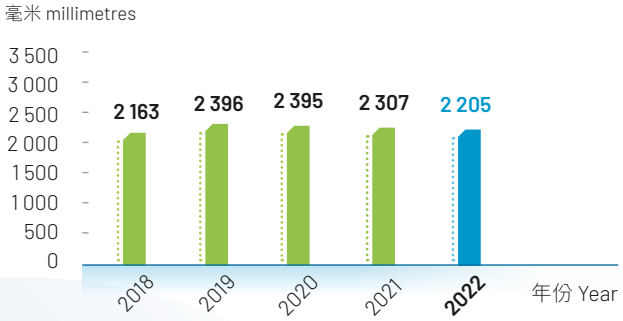
本地集水

儘管香港地勢起伏，但雨水收集和儲存系統完備且覆蓋廣泛。本地集水從集水區收集而來，大部分集水區均位於受嚴格規管保護，免受污染的郊野公園內。我們採用多重屏障的原則，在各集水區監控發展、定期巡查及監測水質的情況，以確保水質安全。在集水量方面，每年的本地集水量並不穩定，有可能出現劇烈波動，加上氣候變化的影響，我們預計未來本地集水量的變動將會更大。

Local Yield

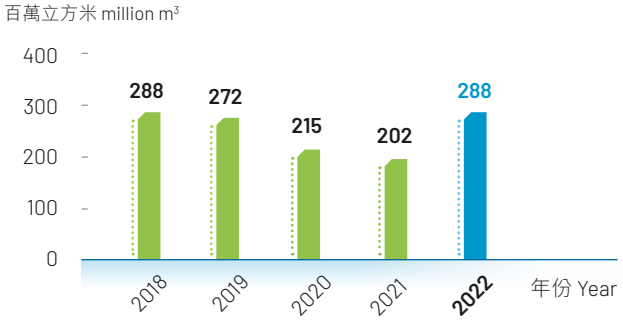
Despite the undulating terrain, Hong Kong has developed an extensive rainwater collection and storage system. The local yield is collected in catchment areas, most of which fall within country parks that are well regulated and protected from contamination. We adopt a multiple barrier approach to control development, regularly conduct inspections and monitor water quality in these areas to ensure water safety. In terms of quantity, the local yield is not stable every year, and can be subject to drastic fluctuations. Coupled with the effect of climate change, we foresee even greater fluctuations in the future.

二零一八至二零二二年全年降雨量
Annual Rainfall 2018 – 2022



註：長期平均降雨量為 2 431 毫米
Note : Long-term mean rainfall is 2 431 mm

二零一八至二零二二年全年淨集水量
Annual Net Yield 2018 – 2022



東江水

為填補香港本地集水量和用水需求的缺口，我們在粵港供水協議以統包方式訂明每年供水量上限，並按需要輸入東江水，確保香港供水穩定而靈活，滿足香港的實際需要。

為回應市民對東江供水按量收費的訴求，於二零二零年十二月簽訂的現行東江水協議已採用「統包扣減」收費方式，取代以往協議採用的「統包總額」方式計算，此新收費方式可至少維持至二零二九年。按二零二一年價格水平，估計在現行協議的機制下，這九年期間最高節省金額可達 3.24 億港元。

現行協議內的每年基本水價調整增幅為每年 1.33%，普遍地反映粵港兩地相關消費物價指數和人民幣兌港元匯率的變動。二零二二年，香港在東江水方面的支出為 49.47 億港元，而二零二一年的支出為 48.21 億港元。

Dongjiang Water

To fill the gap between Hong Kong's local yield and water demand, Dongjiang water is imported as needed with a package deal approach, up to the annual supply ceiling stipulated in the supply agreement between Guangdong and Hong Kong to ensure a stable but flexible supply for meeting the city's actual needs.

In response to the public request for payment based on the quantity of Dongjiang water supplied, the current agreement 2021-2023 signed in December 2020 has adopted a "package deal deductible sum" approach which will be maintained at least up to 2029 and replaced the previous "package deal lump sum" approach. Based on the 2021 price level, it is estimated that the mechanism of the current agreement will bring a maximum saving of HK$324 million under this nine-year period.

The annual ceiling water prices in the current agreement will be increased by 1.33% each year, which generally reflects the changes of the relevant consumer price indices of Guangdong and Hong Kong and the exchange rate between the Renminbi and the Hong Kong dollar. In 2022, Hong Kong's expenditure on Dongjiang water was HK$4,947 million, compared to HK$4,821 million paid in 2021.

沖廁用海水

自一九五零年代，香港引入海水沖廁，至今仍是全球少數廣泛應用這種可持續資源的地方之一，在我們的水資源管理中發揮著舉足輕重的作用。目前，我們的海水供應網絡覆蓋全港約 85% 的人口，每年供應約 3.2 億立方米海水，節省了同等分量的食水，約佔香港總用水量的 23%。

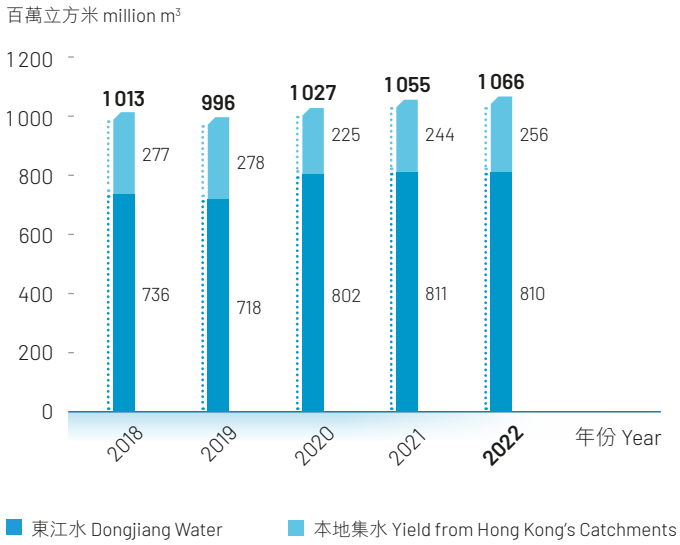
使用海水沖廁有助節省珍貴淡水資源，加上供應海水的耗電量較供應食水的為低，因而可降低生產成本，亦能減少碳排放量。

Salt Water for Flushing

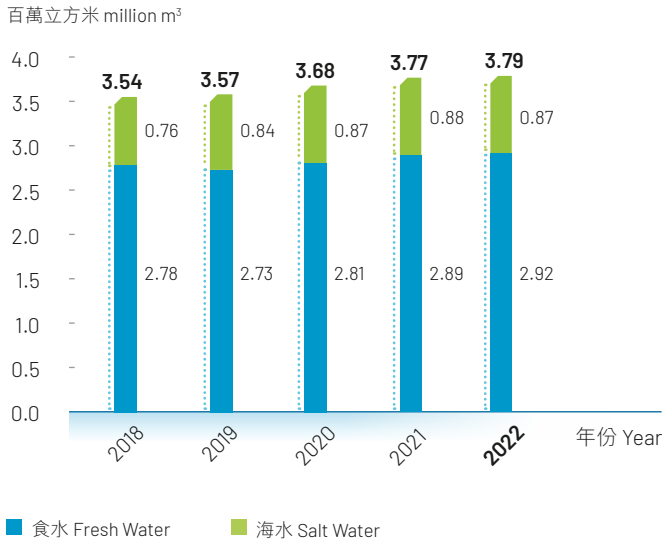
Since 1950s, salt water has been introduced in Hong Kong for toilet flushing. Hong Kong is one of the few places in the world extensively applying this sustainable resource which forms an important role in our water management. Currently, our salt water supply network covers about 85% of the Hong Kong population. Every year, about 320 million m^3 of seawater is supplied for flushing, conserving an equivalent amount of fresh water which is about 23% of the total water consumption in Hong Kong.

Using salt water for flushing not only conserves precious fresh water resources, but also reduces production costs and carbon dioxide emissions arising from lower electricity consumption for supplying salt water than fresh water.

二零一八至二零二二年全年食水供應
Annual Quantity of Fresh Water Supply 2018 - 2022



二零一八至二零二二年全年日均用量（食水及海水）
Total Average Daily Water Consumption (Fresh Water and Salt Water) 2018 - 2022



水資源未來的展望

氣候變化、人口和經濟持續增長令食水需求增加，加上大灣區內對水資源的需求殷切等，皆為我們帶來挑戰。為了讓香港就迎接這些挑戰做好準備，我們持續開發一些不受氣候變化影響的新水源，包括淡化海水和循環再用水（即再造水、重用中水及回收雨水）。

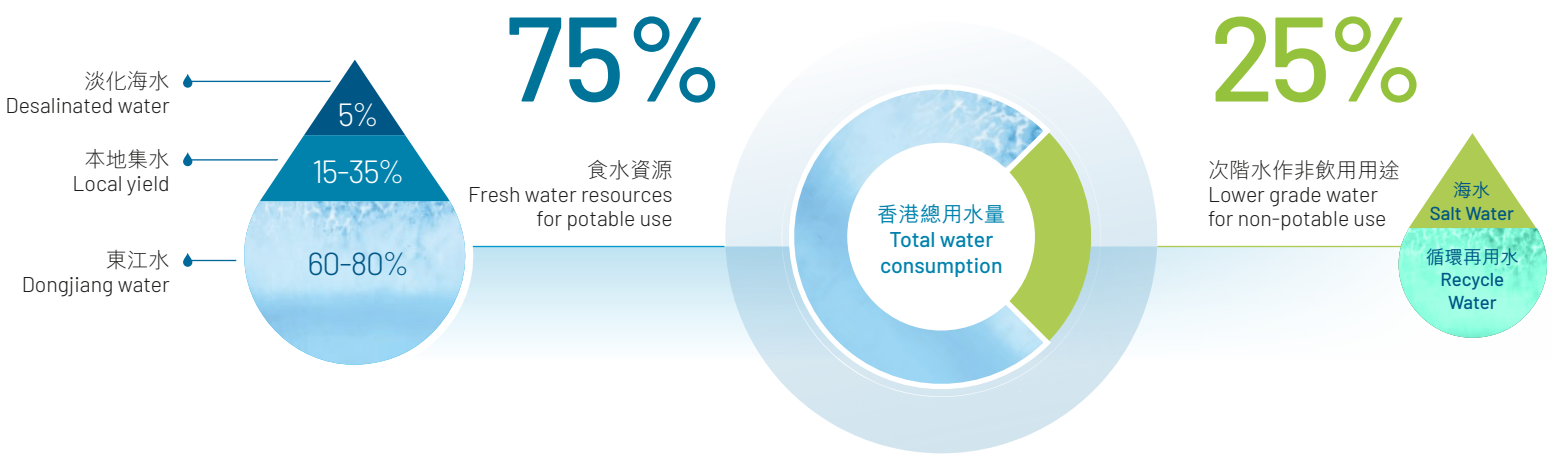
我們將繼續按照經修訂「全面水資源管理策略」的建議，採取雙管齊下方式，為未來建立多元化的水資源組合。食水資源將約佔香港總用水量 75%，而非飲用的次階水將佔其餘用水量 25%。

Outlook of Future Water Resources

To better prepare Hong Kong for the challenges of climate change, the increasing demand for fresh water due to its continuous population and economic growth, as well as the competition for water resources in the Greater Bay Area, we have been developing new water sources that are not susceptible to climate change, including desalinated water and recycled water (viz reclaimed water, treated grey water and harvested rainwater).

Following the recommended two-pronged approach under the updated Total Water Management Strategy, we seek to build a diversified portfolio of water resources in future. Fresh water resources will account for about 75% of the total water consumption in Hong Kong while the lower grade water for non-potable uses will account for the remaining 25% consumption.

根據「全面水資源管理策略」預計的香港水資源組合
Estimated Composition of Hong Kong's Water Resources under the Total Water Management Strategy



控制食水需求增長

根據「全面水資源管理策略」，控制食水需求增長在水資源需求管理中是非常重要的一環。為配合本港的可持續發展，政府的目標是於二零三零年之前將人均食水用量減少 10%（以二零一六年為基準年），及於二零四零年之前將全年食水需求控制在 990 百萬立方米以下。

為了達致在二零三零年之前人均食水用量減少 10% 的目標，我們正推行三項主要用水需求管理措施，包括節約用水、管理政府和私人水管的用水流失，以及擴大使用海水和循環再用水等次階水作非飲用用途。

CONTAINING FRESH WATER DEMAND GROWTH

Under the Total Water Management Strategy, containing the growth of fresh water demand plays a pivotal role in water demand management. In line with the territory's sustainable development, the Government targets to reduce the average fresh water per capita consumption by 10% by 2030, using 2016 as the base year, and contain the annual fresh water demand within 990 million m^3 by 2040.

To achieve the goal of reducing the average fresh water per capita consumption by 10% by 2030, we are taking forward three major water demand management initiatives, namely water conservation, water loss management in both government and private water mains, and expansion of the use of lower grade water (viz seawater and recycled water) for non-potable purposes.

節約用水

推廣高效和精明用水，有助保障長遠供水。其成功的關鍵在於業界和社會大眾的共同努力和貢獻。有見及此，我們與相關持份者緊密合作，推出多項用水效益措施、宣傳活動、學校教育計劃，以及用水效益最佳實務指引，致力推動文化和行為的改變，共同應對水資源的挑戰。

Water Conservation

Promoting efficient and smart use of water helps secure our water supply for the long term. The success of such lies in the collaborative efforts and contributions from both industries and the wider community. With this in mind, we are working closely with relevant stakeholders and have launched various water-efficiency measures, promotional campaigns, school education programmes, as well as best practice guidelines aiming to inspire cultural and behaviour changes to address our water challenges together.

透過水知園教育中心增強節約用水的意識

為提高公眾人士對節約用水的認識並促進有關行動，位於天水圍辦公大樓的水知園教育中心就全球水資源議題舉辦展覽。當中設有五十多個展品、互動遊戲和現場示範，開放予公眾免費入場參與。這些與水有關的教育資源，與學校課程和教育活動扣連，讓參觀人士可寓習於樂，在愉快的學習環境中增進有關水的知識，並激發他們身體力行，響應行動，共同應對水資源短缺問題。截至二零二三年三月，「水知園」已接待約 83 000 名訪客。公眾可以預約參觀或在網上參加虛擬展覽，以獲取這些與水相關的教育資源。

Raising Conservation Awareness through H_2OPE Centre

To promote community-wide awareness and action on water conservation, the H_2OPE Centre at our Tin Shui Wai Office Building holds exhibitions regarding global issues on water resources, and features over 50 exhibits, interactive games and live demonstrations which are made available for free admission. These water education resources are linked to school curriculums and educational activities while providing visitors with an enjoyable learning environment for raising their water knowledge and inspiring concerted actions against water scarcity. As of March 2023, H_2OPE Centre has received about 83 000 visitors. Members of the general public can book the visit or arrange a virtual tour for access to these water education resources.

水知園為公眾教育中心，旨在提高公眾對節約用水的認識。當中設有五十多個展品、互動遊戲和現場示範，供學校和公眾人士免費入場參與。

The H_2OPE Centre is a public education centre aimed at enhancing knowledge of water conservation. It features over 50 exhibits, interactive games and live demonstrations which are made available to schools and members of the general public for free admission.

專題展覽

水知園的教育內容包羅萬有，從水資源、食水水質、節約用水、循環再用水、水務工程、用水效益，以至可持續發展措施，均應有盡有。

隨著全球暖化加劇，氣候變化在全球各地已造成日益嚴重的影響，包括不同程度和頻次的乾旱風險，部分地區更面對水資源嚴重短缺危機。香港亦須應對降雨減少及食水需求上升的挑戰。為提升節約用水意識及增進市民對氣候危機的認識，二零二二年七月至十二月期間，我們舉辦了題為「氣候變化：『涸』有其事 乾旱蔓延」的展覽，幫助市民大眾精明用水，並鼓勵大家同心協力節約珍貴的水資源。

Themed Exhibition

The education contents of the H_2OPE Centre range from water resources, drinking water quality, water conservation and recycling, waterworks projects, water efficiency to sustainability initiatives.

As global warming accelerates, climate change has increasingly brought profound impacts on many parts of the world including risks of droughts of different intensity and frequency, with some areas facing the crisis of severe water shortage. Hong Kong has also faced the water challenge in declining rainfall and growing demand for fresh water. To raise conservation awareness and knowledge of climate crisis, we held an exhibition themed "Climate Change: The Drought is Spreading" from July to December 2022 to help members of the public for using water wisely and appeal for their concerted support for conserving our precious water resources.

水知園的展品

Attractions@ H_2OPE Centre

https://www.h2opecentre.gov.hk/tc/attractions-h2ope-centre/zone-view/index.html

在家庭、企業和學校推廣用水效益的實踐方法

用水效益標籤計劃

高用水效益的設備、裝置和器具，可增加節約用水的成效。二零零九年推出的「自願參與用水效益標籤計劃」，現已擴展至六類型水喉裝置及用水器具，包括沐浴花灑、水龍頭、洗衣機、小便器用具、節流器和水廁，能幫助用戶作出明智的購買選擇。

此外，自二零一八年二月起規定新建樓宇、住宅處所的廚房，以及所有處所的浴室和洗手間的訂明水管工程，均必須使用在「用水效益標籤計劃」下登記及符合指定用水效益級別的產品。

Promoting Water Efficiency Practices for Homes, Businesses and Schools

Water Efficiency Labelling Scheme

Water-efficient appliances, fixtures and devices are effective in strengthening conservation efforts. To help shrewd water users in making informed choices of purchase, the voluntary "Water Efficiency Labelling Scheme" (WELS) launched in 2009 has been extended to six types of plumbing fixtures and water-consuming devices, which cover showers for bathing, water taps, washing machines, urinal equipment, flow controllers and water closets.

In addition, since February 2018, the mandatory use of WELS products of prescribed water efficiency grade has been in force for new buildings and prescribed plumbing works of existing buildings for kitchens of domestic premises, and bathrooms and toilets in all premises.

「用水效益標籤計劃」說明六種類型的水喉裝置及用水器具的用水量和用水效益，幫助消費者作出明智的購買選擇。

The Water Efficiency Labelling Scheme shows the level of water consumption and water efficiency of the six types of plumbing fixtures and water-consuming devices helping consumers to make informed choices of purchase.

免費安裝節流器計劃

住宅用水量佔全港用水量超過一半，因此減少住宅用水是控制食水需求增長的長期措施之一。安裝節流器能有效減少水龍頭或沐浴花灑的用水量以及培養節約用水的習慣。自二零一四年起，我們便已為公共租住屋邨免費安裝節流器，藉此提升用水裝置的效益，並改變客戶的用水習慣。這個自願性計劃將於二零二三年第二季完成。

我們於二零一九年把免費安裝節流器計劃擴展至私人屋苑和私立學校（包括幼稚園、小學及中學），並將其納入社區節約用水運動「齊來慳水十公升 2.0」，從而促進大眾參與，發揮更大的成效。有關詳情，請參閱「全力支持」章節中「推廣智慧用水文化」一節。

為了促進年輕一代節約用水，我們繼續為私立學校安排安裝節流器，同時亦繼續為公共和私人屋苑提供安裝服務。我們亦透過水務署網站向公眾免費提供節流器來自行安裝。

Free Installation of Flow Controllers Programme

One of the long-term measures to contain the growth of fresh water demand is reducing domestic consumption, which accounts for over half of the total water consumption in Hong Kong. The installation of flow controllers is an effective way to reduce water consumption from taps or showers and cultivate water conservation habits. Since 2014, we have offered free installation of flow controllers in public rental housing estates to increase efficiency of water devices and change usage habits. The programme is on voluntary basis and is scheduled to complete by the second quarter of 2023.

Leveraging the effectiveness of water conservation, the free installation scheme was extended in 2019 to private housing estates and private schools (including kindergartens, primary schools and secondary schools) to inspire their contributions as part of our community water conservation campaign titled "Let's Save 10L Water 2.0". See Promoting Water-Wise Culture in the Support section for more details.

While we continue to arrange the installation of flow controllers in private schools to promote water conservation among the young generation; we also proceed the installation services at public and private housing estates. Furthermore, we have enabled the public to apply for the flow controllers free of charge through the WSD website and perform self-installation.

203 000
個住戶來自
households in

188
個公共租住屋邨
public rental housing estates

6 000
個住戶來自私人屋苑
private estate households

672
間幼稚園
kindergartens

44
間私立小學
private primary schools

10
間私立中學
private secondary schools

[截至 2023 年 3 月已安裝節流器　Flow controllers have installed as at March 2023.]

用水效益最佳實務指引

為了提高各行各業的用水效益，我們制訂了用水效益最佳實務指引，以供業界參考國際最佳實踐經驗。我們正與酒店和餐飲業的協會合作，力求在營運的不同方面提升用水效益，包括設施保養、酒店服務、廚房和樓面運作、泳池和園景管理。

此外，我們鼓勵酒店業和餐飲業界從業員定期以「節水核對清單」展開用水評核，在核查器具的用水效益、業務運作常規和維修保養要求的同時，提高員工和客戶的節水意識，以期匯聚多方持份者的努力，使節約用水的成效更大。

推動精明的用水文化

我們相信，要展開大規模的節約用水工作，必須以針對性的方法與持份者緊密合作來向社區宣傳用水效益和精明用水生活，才能在控制食水需求增長方面產生積極變化。有關水務署與業界和社區合作的詳情，請參閱「全力支持」章節。

管理用水流失

香港的山丘地形，加上對地下水管的各樣頻密干擾，導致水管滲漏的風險提高。為此，水務署實施一系列措施，管理逾 8 400 公里的水管，務求優化供水系統網絡的運作表現、減少水管爆裂和用水流失，同時協助客戶追蹤和管理其用水流失。

Best Practice Industry Guidelines

To enhance water use efficiency across industries, we have developed a set of Best Practice Guidelines to the industry practitioners taking into account the experiences of international best practices. We are collaborating with hotel and catering associations to promote water use efficiency in different aspects of their daily operations, including facilities maintenance, hospitality service, kitchen and dining area operations, swimming pools and landscape management.

In addition, we encourage the hotel and restaurant practitioners to conduct water audits regularly using the Water Efficiency Checklist to evaluate the water use performance of equipment and operational practices, identify maintenance requirements, as well as raise awareness and participation from their employees and customers on water conservation with a view to gathering greater contributions from various stakeholders.

Promoting Water-Wise Culture

To advance water conservation efforts at scale, we believe a targeted approach in close collaboration with stakeholders to promote water efficiency and smart living in the community is the key to effecting positive changes in containing the growth of fresh water demand. The details of the WSD's collaborative efforts with the industries and communities are covered in the Support Section.

Water Loss Management

The hilly terrain as well as various disturbances to the underground water mains in Hong Kong have caused higher risk of leakage from water mains. At the WSD, we implement a host of measures to manage our water mains of over 8 400 km long and to optimise the operational performance of the water supply network, reducing pipe bursts and water loss while helping consumers track and manage their water loss.

「智管網」

在「智管網」計劃下，我們在全港食水分配管網內逐步設立約 2 400 個監測區域，以監察用水流失的情況，其中部份監測區域亦用作水壓管理區域，配有減壓裝置，將水壓調節到合適水平，以減少滲漏引致的用水流失。截至二零二二年底，我們已設立約 1 750 個監測區域，並訂立於二零二五年設立 2 400 個監測區域的目標。每個監測區域均裝有監測設備和感應器，持續監測用水流失。

我們亦已建立「智能管網管理電腦系統」來收集各監測區域大量的管網數據，從中識別異常情況，從而決定最合適和最有效的管網管理措施。這些措施包括：

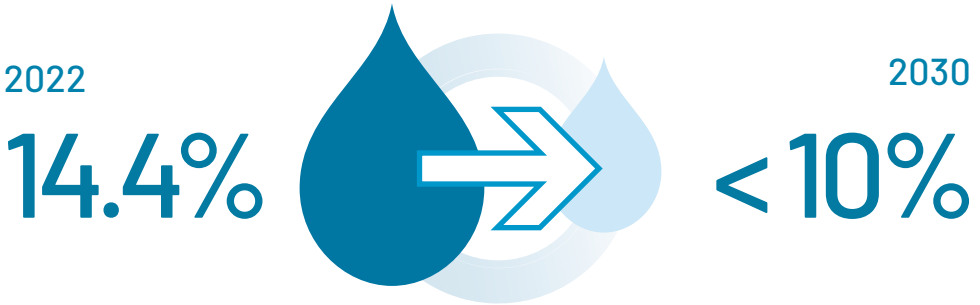
Water Intelligent Network

Under the project "Water Intelligent Network" (WIN), we have progressively established about 2 400 District Metering Areas (DMAs) in our fresh water distribution network across the territory to monitor water loss. Some of these DMAs are also designated as Pressure Management Areas (PMAs) and equipped with pressure reduction devices that can modulate water pressure to a suitable level to reduce the quantity of water loss due to leakage. As at end 2022, we have set up about 1 750 DMAs and we aim to establish 2 400 DMAs by 2025. Monitoring and sensing equipment installed in each DMA allows continuous monitoring of water loss therein.

An "Water Intelligent Network Management System" has also been established to collect vast amount of data from these DMAs and, identify anomalies for follow-up actions with the objective to determining the most suitable and effective network management measures. These measures include:

目標在二零三零年前，利用先進技術及風險為本的資產管理策略，將政府水管的滲漏率從現時二零二二年底的約 14.4% 降低至 10% 以下。

By 2030, we aim to reduce the leakage rate of public water mains from the current 14.4% at end 2022 to below 10% by adopting advanced technologies and strategic risk-based asset management.



主動探測滲漏
Active Leakage Detection

水壓管理
Pressure Management

快速維修滲漏水管
Speedy Repair of Water Main Leaks

更換及修復水管
Replacement and Rehabilitation of Water Mains

管理私人水管滲漏

除了管理公共水管的用水流失外，我們亦採用一系列措施，例如為私人發展項目安裝總水錶，以監察私人水管用水流失的情況。我們亦透過編制合約條款及規格範本，以及提供測漏服務供應商參考名單，為業主、物業管理人和服務供應商提供建議和支援，以便他們安排測漏調查。

正在逐步推行的「智管網」亦讓我們能發現隱藏於私人水管的滲漏點。當「智管網」在某監測區域發現用水量異常，我們的團隊便會到場進行滲漏調查，包括目視和聽音檢查、滲漏噪聲相關測試和滲漏分段測試。若私人水管出現懷疑用水流失，我們會向相關業主和物業管理人提供建議和支援，助其採取進一步行動。

地下水管測漏中心

為配合「智管網」逐步擴展智能供水網絡，位於青衣的地下水管測漏中心「Q-Leak」於二零二一成立，讓從業人員在安全的環境下進行各種滲漏檢測技術的培訓和技能評估，提高他們在智能水務管理方面的專業技能。

Managing leakage of private water mains

In addition to managing water loss from public mains, a series of measures, for example, installing master meters, have been put in place to monitor water loss at private developments. We also provide advice and support to property owners, management agents and service providers to facilitate leak investigations through publishing sample contract clauses and specifications, and providing a reference list of local leak detection service providers.

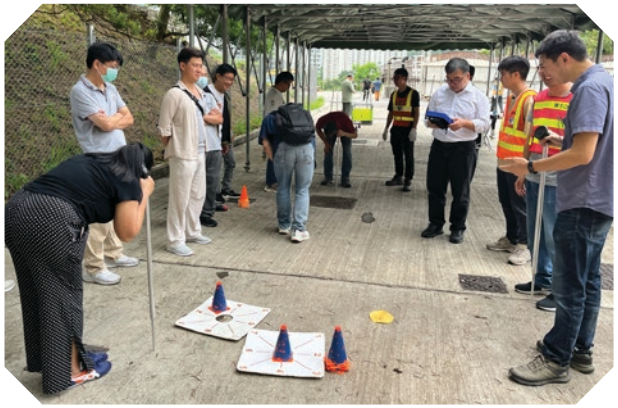
The progressive implementation of WIN also allows us to identify hidden leaks in private water mains. Once the intelligent network detects an unusual amount of water consumption in certain DMAs, our water loss management teams will assist in onsite visual and sounding inspections, leak noise correlation surveys and leak detection step tests. In the event of suspected water loss in the private water mains, advice and support would be provided to the concerned property owners and management agents for taking follow-up actions.

Q-Leak

To cater for the extension of the smart water network under the WIN initiative, the Q-Leak underground water mains leak detection training centre was established in Tsing Yi in 2021 providing a safe environment for practitioners to conduct training and skills assessments on various leak detection technologies and enhance their professional skills in smart water management.

地下水管測漏中心的設施模擬香港複雜的供水管網及在不同情況下出現的地下水管滲漏，如不同的水管大小和物料，以及不同水流和水壓。Q-Leak 作為首個用於判斷地下水管滲漏的培訓、研究和開發中心，讓學員能在現實世界中檢測「看不見的」網絡的滲漏位置，亦提高香港建築物的水管規劃和管理質素。Q-Leak 亦將成為與專家、研究人員、業界及香港專上院校在水管測漏技術方面的教研合作平台，為加強測漏培訓工作和技術研究提供更佳設施和更堅實的支持。

The Centre covers facilities simulating the complex water supply network of Hong Kong and its underground water main leakage under various conditions and scenarios, including different pipe sizes and materials, as well as different water flow and pressure. First of its kind for training, research and development of diagnosing underground water main leakage, the Q-Leak enables learners to detect and locate leakage in the "invisible" network in the real world while enhancing the quality of water mains planning and management in Hong Kong buildings. The Q-Leak will also serve as a teaching and research cooperation platform with specialists, researchers, industry practitioners as well as post-secondary education institutions in Hong Kong to provide better facilities and robust support for strengthening the industry with training and research capabilities on leak detection.



從大型輸水管及幹管，以至鄉村的小型水管，Q-Leak 利用各種的地下水管網絡滲漏情況，提升香港測漏技術，及支持從業人員的持續專業進修。

Leveraging a variety of leakage scenarios of buried water main networks ranging from large distribution and trunk mains to small village water pipes, the Q-Leak has elevated Hong Kong's leak detection technical excellence and enabled practitioners to pursue continuing professional development.

智能水錶系統

為向公眾推廣節約用水和智慧生活，我們自二零一八年起於新建公營及私人發展項目中引入了有線智能水錶系統（前稱自動讀錶系統）。智能水錶系統的客戶能透過智能水錶流動應用程式遙距監察用水量。鑑於安裝有線智能水錶系統需要較大的空間和網絡設備，無線智能水錶系統因而被視為在本地大部分現有建築物中更為可行和效率較高。

為使現有樓宇客戶能夠使用智能水錶系統，二零二二年我們已於大澳順利完成試點計劃，將漁村棚屋、村屋、公共屋邨及政府設施的傳統機械水錶更換成無線智能水錶。我們目前正進行為各類現有樓宇安裝無線智能水錶的可行性研究，以制定日後的推行策略。

Advanced Metering Infrastructure

To promote water saving and smart living in the community, we have introduced wired Advanced Metering Infrastructure (formerly known as Automatic Meter Reading) system in new public and private developments since 2018. Customers of AMI can remotely monitor their water consumption by using the mobile app of the smart meter. As the installation of wired AMI involves the provision of more space and network facilities, wireless AMI systems are therefore considered to be more feasible and efficient in most existing buildings in Hong Kong.

With a view to extending the use of AMI to existing premises, a pilot trial was successfully conducted in 2022 at Tai O comprising fishermen's huts, villages houses, public housing estates and government facilities to convert traditional mechanical water meters into wireless smart water meters. We are currently conducting feasibility studies on the installation of wireless smart meters in existing buildings for formulating future implementation strategy.

次階水

我們利用創新技術，致力擴大使用次階水，包括海水及循環再用水（即再造水、重用中水及回收雨水），用於沖廁、園景灌溉和清潔街道等非飲用用途，務求節省食水資源。

長遠而言，我們的目標是擴展次階水用於沖廁和其他非飲用用途的供應網絡覆蓋範圍，由香港總人口的 85% 增加至 90%，並著重在新發展區和現時使用淡水沖廁的地區推展。

海水供應網絡

為進一步降低食水用量，我們繼續擴大使用海水沖廁的範圍。我們現正為東涌新市鎮建造海水供應系統，以取代區內目前以淡水沖廁的安排。有關工程預計於二零二三年竣工，供應海水至東涌新市鎮及其擴展區。

在技術可行和具成本效益的情況下，我們將繼續尋求擴展海水供應網絡或利用新的水資源（例如循環再用水），務求減少使用淡水沖廁。

Lower Grade Water

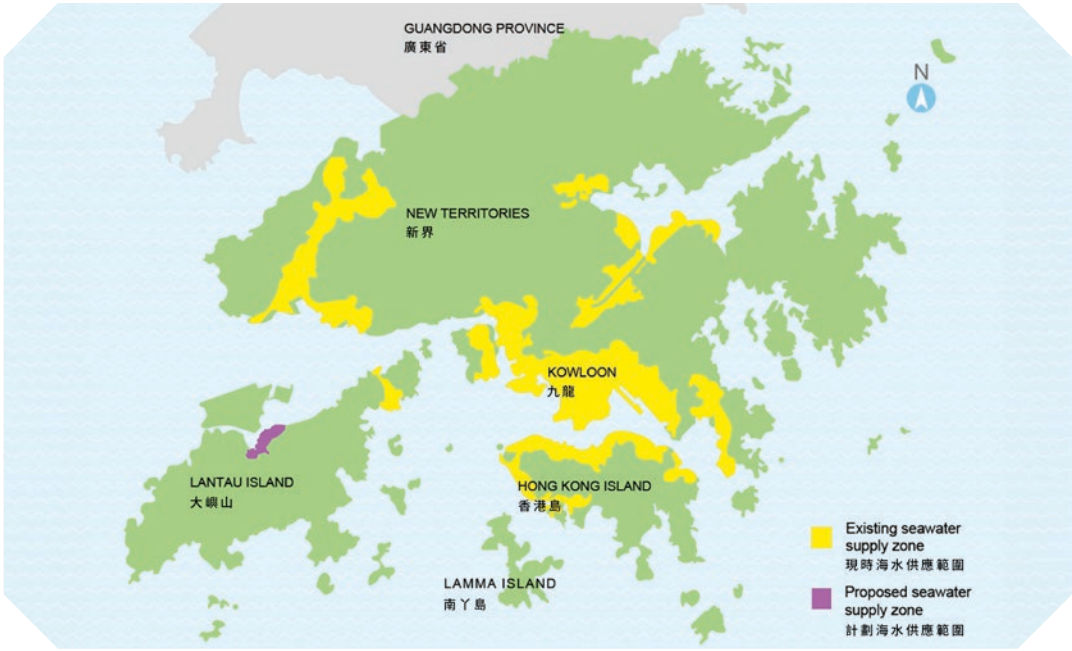
Leveraging innovative technologies, we have been actively expanding the use of lower grade water, which includes salt water and recycled water (i.e. reclaimed water, treated grey water and harvested rainwater) for non-potable uses, for example, toilet flushing, landscape irrigation and street cleansing to help conserve fresh water resources.

We aim to expand the network coverage for supplying lower grade water from 85% to 90% of Hong Kong's total population for flushing and other non-potable uses in the long run with the focus on the new development areas and those areas currently being supplied with fresh water for flushing.

Salt Water Supply Network

To further reduce the fresh water consumption, we continue to expand the use of salt water for flushing. The Tung Chung New Town is currently being supplied with fresh water for flushing. We are building a replacement salt water supply system that will be completed in 2023 to supply salt water to the Tung Chung New Town and its extension for flushing.

With a view to reducing the use of fresh water for flushing, where technically feasible and cost-effective, we will continue to explore ways to expand our salt water supply network or leverage new water resources (e.g. recycled water).



石湖墟再造水廠
Shek Wu Hui Water Reclamation Plant

建造可持續設施以提升氣候適應和應變能力
BUILDING SUSTAINABLE INFRASTRUCTURE FOR ADVANCING CLIMATE ADAPTATION AND RESILIENCE

利用多元化的水資源來提升食水供應的應變能力屬於「全面水資源管理策略」的一環。水務署已逐步擴大使用次階水作非飲用用途，以提升氣候適應和應變能力。

As part of the holistic Total Water Management Strategy to build resilience in the fresh water supply with diversified water resources, the WSD has been progressively expanding the use of lower grade water for non-potable uses, with a view to advancing climate change adaptation and resilience.

保護水資源及減少環境影響

水務署其中一項屬里程碑的基礎設施建造工程，是進一步為最近由石湖墟污水處理廠升級至有三級處理的石湖墟淨水設施的排放水加工，生產優質再造水，以節省珍貴的食水資源。

Safeguarding Water Resources while Minimising Environmental Impacts

One of the milestone projects the WSD has embarked on is the infrastructure works for further processing the treated sewage effluent from the Shek Wu Hui Effluent Polishing Plant (EPP) which has recently been upgraded from the Sewage Treatment Works with tertiary treatment process, whilst providing quality reclaimed water for reuse to save our precious fresh water resources.

新發展區首個再造水供應系統

經處理的排放水由薄膜生物反應器過濾， 再透過先進的後期加氯處理，成為再造水，供應上水、粉嶺及新發展區（包括古洞北及粉嶺北）作沖廁及清潔街道等非飲用用途。整個系統為香港首個再造水供應系統。該系統包括新建成的石湖墟再造水廠（毗鄰石湖墟淨水設施），以及新的再造水分配系統。

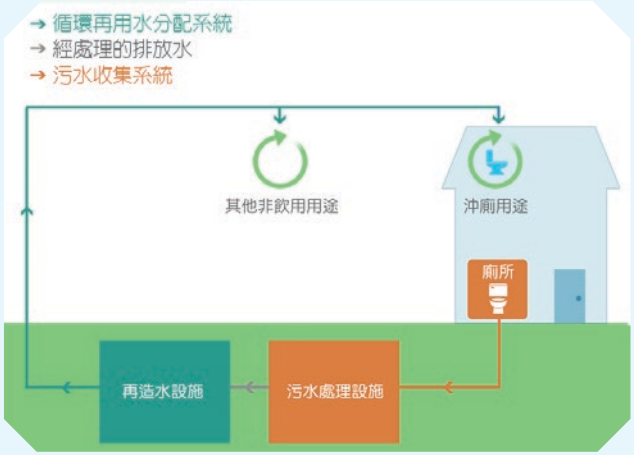
自二零一七年起，上水及粉嶺基礎設施的建造工程已經分階段展開。工程包括建造配水庫、敷設輸水幹管及在上水及粉嶺西南部的分配水管，為當區供應再造水。石湖墟再造水廠正在興建中，預計於二零二四年上半年投產，並於二零二六年前分階段完成餘下的再造水供應系統建造工程。

Developing First-Ever Reclaimed Water Supply System for New Development Areas

Through advanced post-treatment hypo-chlorination process, the treated sewage effluent is filtrated from membrane bioreactor, providing the supply of reclaimed water for non-potable uses such as toilet flushing and street cleansing in Sheung Shui, Fanling as well as New Development Areas (such as Kwu Tung North and Fanling North), creating the first-ever reclaimed water supply system in Hong Kong. The system includes a new Shek Wu Hui Water Reclamation Plant, which is adjacent to Shek Wu Hui EPP, and a new reclaimed water distribution system.

Since 2017, the construction of infrastructure works in Sheung Shui and Fanling, which includes the construction of a service reservoir, laying of trunk water mains, as well as local distribution mains in the south-west part of the areas, has been carried out in phases to facilitate the supply of reclaimed water to these areas. The Shek Wu Hui Water Reclamation Plant is currently under construction and is scheduled to commission in early 2024, while the remaining reclaimed water supply system will be completed in stages by 2026.

再造水過程
Water Reclamation Process

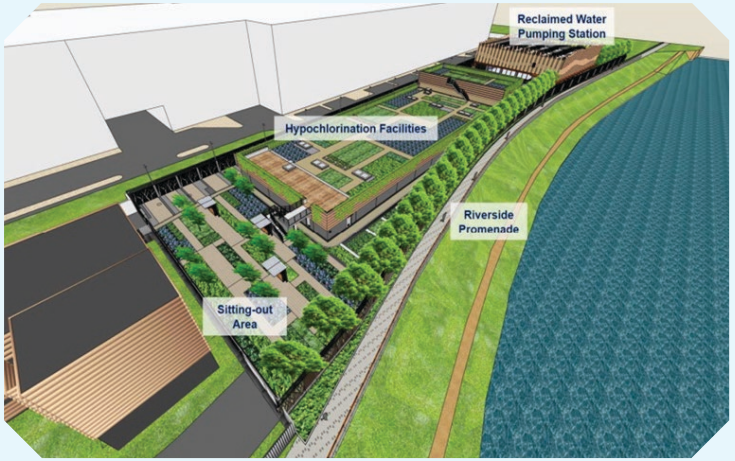


使用循環再用水作非飲用用途不但可節省食水資源，亦可減少排放經處理的排放水至受納水體，從而減低對環境的影響。

Adopting recycled water for non-potable uses not only preserves fresh water resources, but also reduces discharge of treated sewage effluent into the receiving water, hence minimising the impacts to the environment.

正在興建的新石湖墟再造水廠每年可生產高達 2 200 萬立方米的再造水，即每年可節省相應份量的食水供應。

Currently under construction, the new Shek Wu Hui Water Reclamation Plant will produce up to 22 million m^3 of reclaimed water each year, hence saving an equivalent amount of fresh water supply each year.



石湖墟再造水廠由兩棟建築物組成，即加氯淨水設施及再造水抽水站。為確保建築物符合高度限制的同時亦善用空間，石湖墟再造水廠包含地下結構及不高於兩層的主結構，以容納密集的濾水設施，包括管道混合器及液體計量泵，以及加氯接觸池。

The Shek Wu Hui Water Reclamation Plant consists of two buildings, namely the hypochlorination facilities and the Reclaimed Water Pumping Station. To maximise the use of space while adhering to the height restriction, underground structures with a maximum of two storeys above the ground level would be adopted to accommodate the compact treatment process units, including inline mixers and dosing pumps, and the chlorination contact tank.

中水重用及雨水回收

從住宅和工業收集的中水和回收的雨水，經處理後可重新用於非飲用用途，從而減少食水用量。我們於二零二零年九月開始，在安達臣道石礦場用地發展項目中，興建一套每年可處理最高達 120 萬 立方米的中央中水重用系統。系統將由二零二四年開始分階段投入服務，以配合區內人口發展。

中央中水重用系統包括中水處理廠、抽水系統、貯存經處理中水的配水庫，及用於收集中水和向該發展區輸送經處理的中水作沖廁及其他非飲用用途的管道。

政府牽頭推動中水重用及雨水回收系統，更頒布內部指引，在新的政府工程項目採用這些循環再用水設施。在此倡議下，截至二零二三年三月，約有 130 個政府工程項目中的新建大樓已配備中水重用及 / 或雨水回收系統。水務署天水圍大樓是支持相關倡議的政府工程項目之一。

為推動私營企業採用中水重用和雨水回收，我們在香港綠色建築議會的綠建環評新建建築 2.0 版提出新規定，藉以鼓勵發展商在新發展項目中採用中水重用和雨水回收系統。截至目前，約 190 個獲得綠建環評新建建築 1.2 或 2.0 版認證的項目已採用循環再用水設施。

Grey Water Recycling and Rainwater Harvesting

Grey water collected from households and industries as well as rainwater harvested can be treated and reused for non-potable uses thereby reducing fresh water consumption. From September 2020, we began the construction of a centralised grey water recycling system with a maximum treatment capacity of 1.2 million m^3 per year at the Anderson Road Quarry Site Development. The centralised grey water recycling system will be commissioned in phases starting from 2024 to tie in with the population intake of the development.

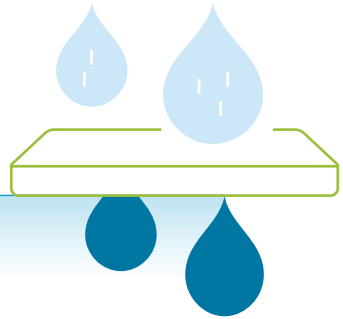
The centralised grey water recycling system consists of a grey water treatment plant, a pumping system, a service reservoir for storing treated grey water, and water mains for grey water collection and distribution of the treated grey water within the development for flushing and other non-potable uses.

The Government is leading by example in adopting grey water recycling and rainwater harvesting systems with the promulgation of internal guidelines for installing these water recycling facilities in new government projects. Following this initiative, new buildings of approximately 130 government projects have been equipped with grey water recycling and/or rainwater harvesting systems as at March 2023. The WSD Tin Shui Wai Building is one of these government projects supporting the relevant initiative.

To advance adoption of grey water recycling and rainwater harvesting in the private sector, we have proposed new provisions in the Hong Kong Green Building Council's Building Environmental Assessment Method (BEAM) Plus New Buildings Assessment Tool Version 2.0 to incentivise project owners to adopt grey water recycling and rainwater harvesting systems in their new development projects. To date, about 190 certified projects under the BEAM Plus New Buildings Assessment Tool v1.2 and v2.0 have initiated efforts in adopting water recycling facilities.

我們於二零二零年九月開始，在安達臣道石礦場用地發展項目中，興建一套每年可處理最高達

From September 2020, we began the construction of a grey water recycling system with a maximum treatment capacity of



1.2 百萬 million

立方米的中水重用系統。

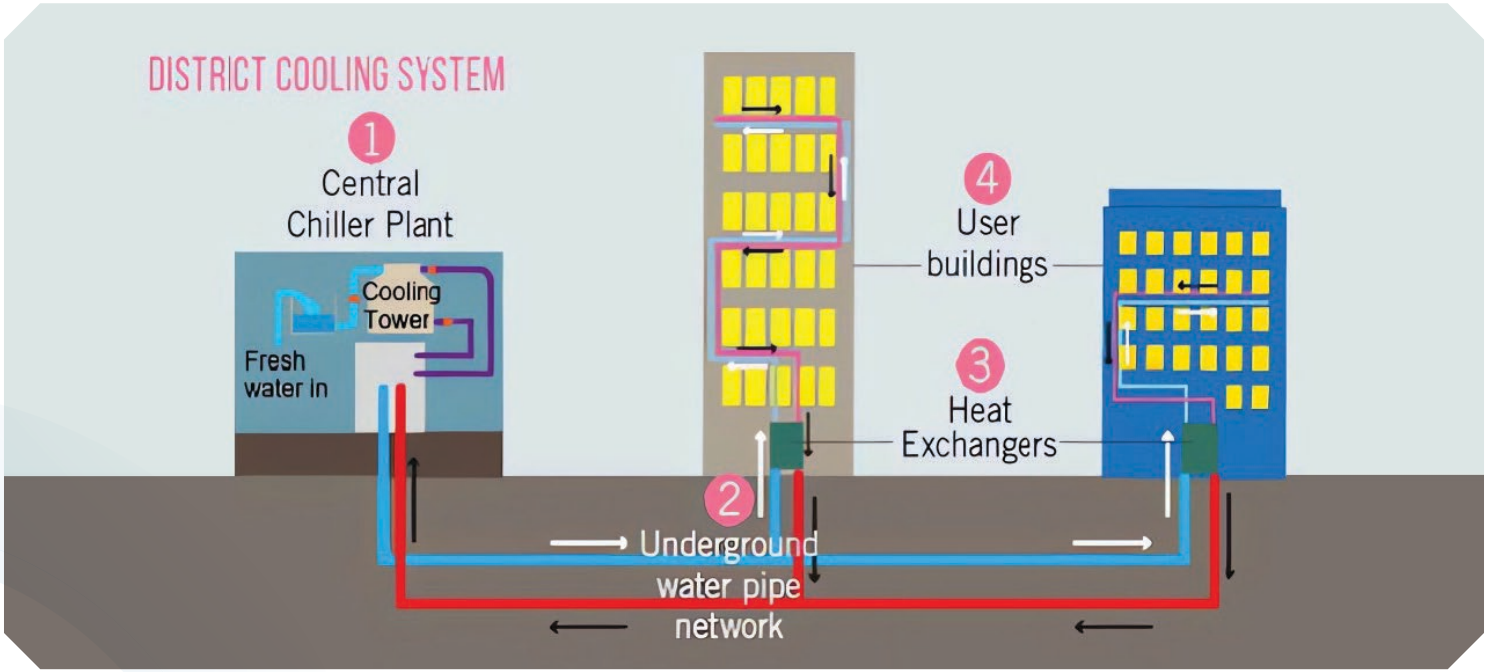
m^3 per year at the Anderson Road Quarry Site Development.

於區域供冷系統中使用循環再用水

區域供冷系統將中央供冷站制造的冷凍水通過地下冷凍水管道網絡輸送給多個建築物以滿足其製冷量需求。新發展區將逐步使用更多區域供冷系統，作為需要使用大量食水的非飲用用途，尤其是無法使用海水為水源的蒸發式製冷系統。為配合香港的可持續發展，一項諮詢研究已於二零二二年九月展開，探討於蒸發式區域供冷系統中使用循環再用水以節省食水在技術及經濟方面是否可行。

Use of Recycled Water in District Cooling System in Hong Kong

District cooling system (DCS) distributes chilled water through a network of underground pipes from central chiller plant to multiple buildings for air-conditioning. DCS will be increasingly adopted in new development areas as one of the non-potable applications using substantial amount of fresh water, in particular for DCS of evaporative type when seawater supply source is not available. To support sustainable development of Hong Kong, a consultancy study was has commenced in September 2022 to investigate into the technical feasibility and financial viability of pioneering the use of recycled water in DCS of evaporative type for conserving fresh water resources.



提升食水供應的應變力

海水化淡

為應對氣候變化對本地集水帶來的極端影響，我們正發展海水化淡這種策略性的水資源，興建將軍澳海水化淡廠第一期，以加強香港食水供應的應變能力。

將軍澳海水化淡廠採用先進的逆滲透技術，生產的食水符合香港食水標準。該廠計劃於二零二三年年底投產，第一期項目的年產量為 5 000 萬立方米，未來更可擴展至每年 1 億立方米。

作為具氣候抵禦力的頂級水務設施，可持續的環保特色已融入於化淡廠的設計、建造和保養工作中，包括採用可再生能源和低耗能工序、雨水回收作灌溉用途、智慧燈柱、屋頂和牆身的綠化，務求將碳足跡減至最低，並提升能源效益。我們亦計劃於新界東南堆填區建造大型太陽能發電場，為將軍澳海水化淡廠供應可再生能源。

根據香港綠色建築議會的暫定評估，將軍澳海水淡化廠的第一期項目已獲得綠建環評（新建建築類別）的「暫定鉑金級」。

BUILDING RESILIENCE IN FRESH WATER SUPPLY

Seawater Desalination

To cope with the extreme impacts of climate change on the local yield, the WSD is developing a strategic fresh water resource — desalination and building the first stage of the Tseung Kwan O Desalination Plant to strengthen resilience for the fresh water supply in Hong Kong.

Using the latest reverse osmosis technology, the Tseung Kwan O Desalination Plant will produce potable water in compliance with the "Hong Kong Drinking Water Standards". Scheduled to start commissioning in end 2023, the first stage of the Desalination Plant will have a production capacity of 50 million m^3 per year with the provision to double its capacity to 100 million m^3 per year in the future.

As a top-class, climate-proof waterworks infrastructure, sustainable and green features are integrated into the design, construction and maintenance of the plant. These include the adoption of renewable energies and low-energy consumption processes, rainwater harvesting for irrigation, smart street lighting poles, green roofs and walls to minimise carbon footprint while enhancing energy efficiency. We are also planning a large-scale solar farm at the South East New Territories Landfill for supplying renewable energy to the Tseung Kwan O Desalination Plant.

Based on the Provisional Assessment by Hong Kong Green Building Council (HKGBC), the first stage of Tseung Kwan O Desalination Plant project has achieved the "Provisional Platinum" rating under the BEAM Plus (New Buildings Category).

將軍澳海水淡化廠第一 期項目可帶來可靠的食水水源，同時將可持續和環保特色融入化淡廠的設計、建造和保養工作中。

The first stage of Tseung Kwan O Desalination Plant will produce a reliable source of potable water while integrating sustainable and green features into the design, construction and maintenance of the plant.

食水安全及供水可靠性
Water Safety and Reliability

從恆常水質監測、全面的水安全計劃、法例規管，以至優質資產管理和策略性優化供水設施，我們均致力促進智慧用水管理和水務方面的科技創新、綜合和協作的解決方案，務求為香港提供安全和可靠的供水。

From routine water quality monitoring, comprehensive water safety plans and legislative regulation to quality asset management and strategic enhancements in water supply infrastructure, we foster technology innovation, integrated and collaborative solutions for smart water management and waterworks to provide Hong Kong with safe and reliable water supplies.

食水安全

香港是全球其中一個擁有最安全食水供應的城市。為了保障公眾健康，我們制定了一套綜合食水水質管理系統，管理從源頭到用戶水龍頭的水質，確保食水水質完全符合香港食水標準。該標準參考由世界衞生組織（世衛）出版的《飲用水水質準則》及其他國際經驗而制定，並不時檢討以確保食水質素及安全。

此外，政府訂立了監察名單、觀察名單及食水感官準則，用於全面監測香港食水質素。

WATER SAFETY

Hong Kong enjoys one of the safest water supplies in the world. We have developed an integrated Drinking Water Quality Management System to manage water quality from sources to consumers' taps and ensure that the quality fully complies with the Hong Kong Drinking Water Standards (HKDWS) for the protection of public health. The HKDWS is established with reference to the Guidelines for Drinking-water Quality published by the World Health Organization (WHO Guidelines) and other international practices, and is reviewed from time to time to ensure the quality and safety of our drinking water.

In addition, the Government established the Surveillance list, the Watch List, as well as the Aesthetic Guidelines for comprehensive monitoring of the drinking water quality in Hong Kong.

水質監測

水質監測是確保食水安全的基本工具。我們實施全面的水質監測計劃，對從水源 * 到用戶水龍頭所收集的食水樣本進行一系列的物理、化學、細菌、生物和輻射檢測，以監測整個供水系統的水質。樣本收集範圍包括木湖抽水站的東江水接收點、集水區與相關設施、水塘、濾水廠、配水庫、食水缸、分配系統和用戶水龍頭。本年內共收集及檢測超過 17 萬個樣本。

* 水源包括東江水和本地集水區收集的雨水。

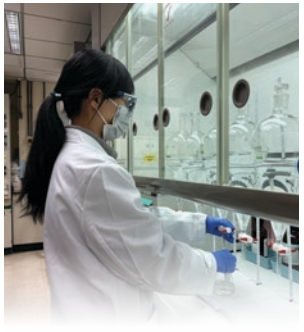
Water Quality Monitoring

Water quality monitoring is a fundamental tool to drinking water safety. We undertake comprehensive programmes through a series of physical, chemical, bacteriological, biological and radiological examinations of samples collected from sources* to consumers' taps to monitor water quality in the entire water supply system. These range from the reception point of Dongjiang water at the Muk Wu Raw Water Pumping Stations, catchment areas and related facilities, impounding reservoirs, water treatment works, service reservoirs, fresh water tanks, distribution systems and consumers' taps. During the year, more than 170 000 samples were collected and tested.

* Water sources includes Dongjiang water and rainwater collected from local water gathering grounds.

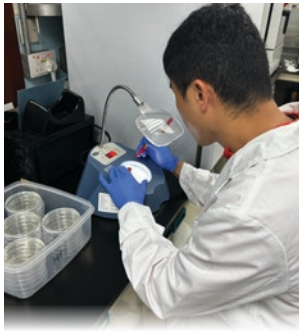
收集及檢測超過 17 萬個原水和食水樣本作全面測量，以確保優質食水。

Over 170 000 raw and drinking water samples were collected and tested for comprehensive examinations to ensure quality drinking water.



使用液 - 液萃取，提取水樣本中微量的有機化合物。

Extract trace organic compounds from water samples by using liquid-liquid extraction.

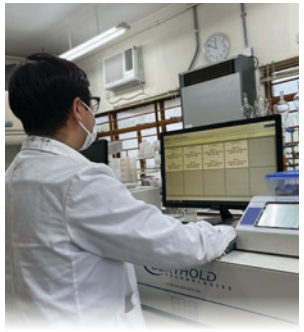


使用微生物菌落計數器檢查水樣本的細菌品質。

Examine the bacteriological quality of water samples through a microbial colony counter.

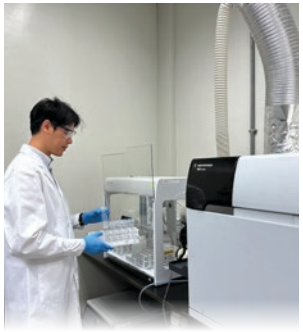
使用濁度計檢測水樣本的混濁度。

Measure turbidity in water samples with a turbidimeter.



使用低本底阿爾法 - 貝他粒子計數系統檢測水樣本的總 α 和總 β 的活度。

Monitor gross alpha and gross beta activity in water samples with a low level alpha-beta counting system.



使用電感耦合等離子體質譜儀檢測水樣本中的微量金屬。

Measure trace metal contents in water samples using an inductively coupled plasma mass spectrometer.

測量食水樣本的餘氯含量。

Examine residual chlorine levels in drinking water samples.

確保東江水水質

根據現行的《東江供水協議》，廣東省當局致力維持輸港東江水水質符合國家《地表水環境質量標準》（GB 3838-2002）第II類水的標準，此標準適用於生活飲用水一級保護區。為防止輸港東江水受到污染，當局更採取了一系列措施和工程：

- 於深圳水庫設立生物硝化站；
- 興建東深專用輸水管道；
- 進行河流污水分流工程和污染防治；
- 設立東江流域水量水質監測和控制系統；以及
- 完成沙灣河水環境綜合整治工程。

我們在接收東江水的木湖抽水站設置在線水質監測系統，對東江水水質進行24小時監測。我們亦定期於木湖抽水站抽取樣本作詳細分析，確保供應香港的東江水符合國家標準。

Ensuring Dongjiang Water Quality

Under the current Dongjiang Water Supply Agreement, the Guangdong authorities ensure the quality of Dongjiang water delivered to Hong Kong meets the national standard for Type II waters in the "Environmental Quality Standards for Surface Water" (GB 3838-2002), which is applicable to the abstraction for human consumption in first class protection area. A series of measures and projects have been adopted to prevent the contamination of Dongjiang water delivered to Hong Kong:

- provision of a bio-nitrification plant at the Shenzhen Reservoir;
- construction of dedicated aqueduct from Dongjiang to Shenzhen Reservoir;
- undertaking of river sewage diversion works and pollution prevention;
- implementation of the Dongjiang Basin Water Quantity and Quality Monitoring and Control System; and
- completion of the comprehensive remediation project for the water environment of the Sha Wan River Basin.

Through our online water quality monitoring system, we monitor the quality of Dongjiang water round the clock at the Muk Wu Raw Water Pumping Stations, where the Dongjiang water is received in Hong Kong and water samples are also collected regularly for detailed analysis to ensure that the Dongjiang water supplied to Hong Kong complies with the national standard.

東江水的平均氨氮及錳水平
Average Ammoniacal Nitrogen and Manganese Levels in Dongjiang Water

	單位 Unit	財政年度 Financial Year			GB3838-2002 第II類標準值 GB3838-2002 Type II Standard Value
		2020/21	2021/22	2022/23	
氨氮 Ammoniacal Nitrogen	毫克/公升 mg/L	0.03	0.04	0.03	≤0.5
錳 Manganese	毫克/公升 mg/L	0.02	0.03	0.03	≤0.1

註：以上的食水樣本是從濾水廠、配水庫、食水缸、供水接駁點及公眾可達的用戶水龍頭抽取。
Note: The above drinking water samples were taken at water treatment works, service reservoirs, fresh water tanks, connection points and publicly accessible consumer taps.

優化食水水質監測

多年來，我們實施一套食水水質監測計劃，於濾水廠、配水庫、食水缸、供水接駁點和公眾可達的用戶水龍頭（例如商場、診所、社區設施、運動場、街市、政府辦事處及屋邨管理處等地方的水龍頭）抽取食水樣本，以監測食水水質，並建立全港食水水質數據庫以檢討香港食水標準。

我們亦推出「水質監測優化計劃」，藉此加強水質監測範圍至用戶水龍頭，透過在全港隨機抽出處所，並在其用戶水龍頭收集食水樣本，檢測可能在內部供水系統出現的六種金屬，即銻、鎘、鉻、銅、鉛和鎳。我們亦由二零二一年五月起，從上述的用戶水龍頭額外收集食水樣本化驗餘氯和埃希氏大腸桿菌。有關這六種金屬、餘氯和埃希氏大腸桿菌的水質統計數據，每周於水務署網站上公布。

水塘的無人船系統

為提升水塘水質監測，水務署人員自二零一一年發起使用無人船系統於水塘進行自動監測水質和取樣，以便下游濾水廠更有效控制食水處理過程，確保食水安全。系統至今已經發展到第四代。

我們現正提升無人船系統並引入自動規劃航線及自動作出應變的功能，系統提升後能夠自動增加監測點以收集更多數據；以及在實時感應器錄得異常水質讀數時進行額外取樣，提升運作效率和緊急狀況應變能力。並計劃於二零二四年第一季完成提升無人船系統。

每艘無人船均配置了水質監測裝置，用於監測溫度、導電率、混濁度、溶解氧、酸鹼值、葉綠素 -a 和藍綠藻；以及自動導航系統和避障系統，在運行時能繞過障礙物。

Enhancing Drinking Water Quality Monitoring

Over the years, we have implemented a drinking water quality monitoring programme to collect drinking water samples from water treatment works, service reservoirs, fresh water tanks, connection points and publicly accessible consumers' taps (such as those in shopping centres, clinics, community facilities, sports grounds, markets, government offices and estate management offices) to monitor the quality of drinking water and facilitate the creation of a territory-wide database for reviewing the HKDWS.

We have also launched the "Enhanced Water Quality Monitoring Programme" to strengthen our water quality monitoring at consumers' taps in randomly selected premises in Hong Kong, and collect drinking water samples from these drinking taps for testing six metals, namely antimony, cadmium, chromium, copper, lead and nickel that could be present in internal plumbing systems. Starting from May 2021, we have collected additional drinking water samples from these drinking taps for testing residual chlorine and Escherichia coli (E.coli). The water quality statistics for the six metals, residual chlorine and E.coli will be published every week on the WSD's website.

Unmanned Surface Vessels System at Impounding Reservoirs

To advance water quality monitoring, since 2011, our staff have initiated the project on the smart use of unmanned surface vessel ("USV") system to perform automatic water quality monitoring and sampling in impounding reservoirs which facilitate the effective control of water treatment process at downstream water treatment works to ensure the safety of drinking water supply. The system is currently at its fourth generation of development.

During the year, we are progressing further enhancements in the USV system to introduce automatic route planning and response. These enhancements enable the USV system to automatically increase the number of monitoring points to collect more data; as well as additional water samples from the reservoir when abnormal water quality is detected by the real-time sensors of the USV, thereby boosting operational efficiency and emergency responsiveness. The Enhanced USV system is scheduled for completion by the first quarter of 2024.

Each USV system is equipped with a water quality monitoring unit to monitor temperature, conductivity, turbidity, dissolved oxygen, pH, chlorophyll-a and blue green algae; as well as auto-navigation and obstacle avoidance systems for navigating around obstacles during operation.

水安全計劃

我們採取風險為本和多重屏障的原則，確保食水安全。我們希望透過與各界別持份者通力合作，有效實施水安全計劃，確保從源頭至用戶水龍頭的食水水質，以保障公眾健康。

此外，我們根據世衛的《飲用水水質準則》，制訂和實施水安全計劃。

食水水質管理系統

我們於二零一七年檢討了部門的水安全計劃，並參考國際專家的建議及西澳洲的實踐經驗，通過健康目標、水質政策、水安全計劃的系統評估和監察、監督安排、溝通、培訓和公眾教育等元素，制定了一套綜合的食水水質管理系統。

作為持續改善的一部分，我們參考內部和第三方審核的結果及建議、海外和本地水質管理的經驗，定期檢討工作流程和運作程序。在於二零二一年加強緊急臨時供水的風險評估後，我們於二零二二年十月再度更新食水水質管理系統，其中包括在濾水廠現場使用氯氣生產設施的風險評估。

Water Safety Plan

We have taken a risk-based and multiple barrier approach to ensuring the safety of our drinking water supply. Through the effective implementation of Water Safety Plan (WSP), in joint collaboration with various stakeholders, we hope to ensure drinking water quality from sources to consumers' taps for the protection of public health.

In addition, we have developed and implemented our WSP based on the WHO Guidelines.

Drinking Water Quality Management System

In 2017, we reviewed and enhanced our WSP by developing an integrated Drinking Water Quality Management System (DWQMS) via health-based targets, water quality policy, system assessment and monitoring of WSP, surveillance arrangements, communications, training and public education, with reference to the recommendations of international experts as well as overseas practices in Western Australia.

As part of our ongoing improvements, we conduct regular reviews of our practices and operational procedures referencing to the findings and recommendations of internal and third-party audits as well as overseas and local experiences in water quality management. Further to the recent enhancement in the risk assessment on emergency temporary drinking water supply in 2021, we updated the DWQMS in October 2022 to incorporate among others, risk assessment on the use of on-site chlorine generation system at water treatment works.

建築物水安全計劃

建築物的食水水質可受其內部供水系統的影響，有機會導致微生物或化學污染。水務署致力推行建築物水安全計劃，以保障香港建築物的食水水質。

我們按照世衞的建議及水務諮詢委員會的意見，推出「大廈優質供水認可計劃－食水（管理系統）」。透過這項水質管理獎勵計劃，鼓勵業主和物業管理人在其處所實施建築物水安全計劃。

此外，我們亦根據風險管理的原則，制定了一套適用於一般建築物以及學校、安老院舍和醫院等特定建築物的指引和範本。

水務署的風險管理指引和範本，獲認可為最能夠促進建築物水安全計劃的實踐模式，並已於世衞和國際水協會共同管理的網站存檔，供國際參考。

為促進計劃的推展，我們還在水務署網站上載《小型樓宇的食水安全小貼士》和《已接受有關建築物水安全計劃培訓的合資格人士名單》，供公眾查閱。

Water Safety Plan for Buildings

Internal plumbing systems of buildings can influence the quality of drinking water which may result in microbial or chemical contamination. The WSD is committed to promoting the implementation of Water Safety Plan for Buildings (WSPB) to safeguard drinking water quality in the buildings in Hong Kong.

Following the recommendations of the WHO, in consultation with the Advisory Committee on Water Supplies, we have launched the "Quality Water Supply Scheme for Buildings – Fresh Water (Management System)", a fresh water quality management cum recognition scheme, to provide incentives for participation by property owners and management agents to implement the WSPB at their premises.

A set of risk management-based guidelines and templates have also been developed to cater for the application by general buildings, as well as specific buildings such as schools, residential care homes for the elderly and hospitals.

The WSD's risk management-based guidelines and templates are considered best practices in promoting the implementation of the WSPB, which are being archived in a website jointly managed by the WHO and the International Water Association for international reference

To facilitate implementation, we have also published "Drinking Water Safety Tips for Small Buildings" and the "List of Qualified Persons Trained in WSPB" on the WSD's website for public access.

自推出以來，本港約有 **3 950** 座建築物已實施建築物水安全計劃並加入相關的「大廈優質供水認可計劃－食水（管理系統）」，

Since its launch, about **3 950** buildings in Hong Kong have implemented the Water Safety Plan for Buildings and joined the associated Quality Water Supply Scheme for Buildings – Fresh Water (Management System),

惠及約 **1 067 000** 戶家庭。

benefiting some **1 067 000** households.

此外，政府已率先在轄下處所實施建築物水安全計劃，自二零二零年第三季起，水務署提供技術支援，協助相關決策局/ 部門在轄下建築物制定水安全計劃。於二零二七年上半年前，所有政府大樓將實施建築物水安全計劃。

香港房屋委員會已完成自二零一八年第四季起在轄下所有公共租住屋邨實施為期四年的建築物水安全計劃。該計劃惠及全港約 76 萬戶的公共租住房屋住戶（佔香港總住戶數目 28.4%）。

為表揚實施建築物水安全計劃，參與「大廈優質供水認可計劃－食水（管理系統）」及實施建築物水安全計劃妥善保養內部供水系統的業主及物業管理人將獲頒發證書。證書分為三個級別，按照大廈參與計劃的持續時間而定（四年以下為藍證書；四年或以上但不足六年為銀證書；六年以上為金證書）。下圖為於華荔邨喜荔樓大堂展示的大廈優質供水認可計劃證書。

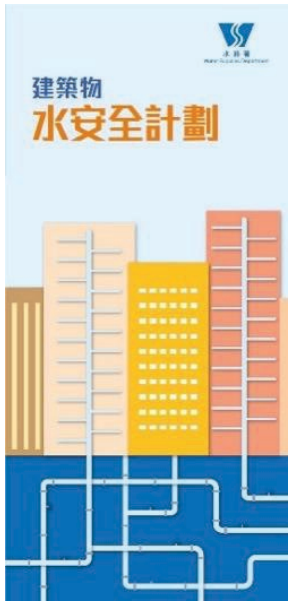
In addition, the Government has taken the lead in implementing the WSPB at its premises. Since the third quarter of 2020, the WSD has been providing technical assistance to the relevant bureaux/ departments in formulating and implementing the WSPB at their buildings. By the first half of 2027, the WSPB will be implemented in all government buildings.

The Hong Kong Housing Authority has completed the four year plan in implementing the WSPB in all of its public rental housing estates which commenced in the fourth quarter of 2018. The plan has benefited about 760 000 households (28.4% of Hong Kong's total households) across all public rental housing estates.

To recognise good practices of property owners and property management agents, certificates will be awarded to those who have joined the Quality Water Supply Scheme for Buildings – Fresh Water (Management System) (QMS) and implemented the WSPB for maintaining the internal plumbing systems properly. The certificates are classified into three grades (Blue for less than 4 years; Silver for 4 years or more but less than 6 years; Gold for 6 years or more) according to the length of the continuous period for which a building has joined the Scheme. The below photo shows the QMS Certificate displayed at the concourse of Hei Lai House, Wah Lai Estate.

我們提供宣傳物品、實用指引和清單範本，以協助推行建築物水安全計劃。

To facilitate the implementation of the Water Safety Plan for Buildings, promotional materials, step by step guide and checklist materials are provided for use.



水安全計劃資助計劃

為鼓勵實施建築物水安全計劃，政府設立了「水安全計劃資助計劃」，為合資格私人樓宇業主或物業管理人參與計劃提供財政資助。資助計劃獲政府撥款 4 億 4 千萬港元，於五年內進行各項相關評估和實施管制措施。計劃自二零二零年七月起開始接受申請以來，收到的申請超過 510 份。

水務署繼續與市區重建局（市建局）合作，將資助計劃納入「樓宇復修綜合支援計劃」促進其實施。申請人可同時申請「水安全計劃資助計劃」及市建局各項樓宇復修計劃。

Water Safety Plan Subsidy Scheme

To encourage the implementation of the Water Safety Plan for Buildings (WSPB) at premises, the "Water Safety Plan Subsidy Scheme" (WSPSS) was set up to provide eligible property owners or management agents of private buildings with financial assistance to adopt the WSPB. The Government has allocated a funding of HK$440 million for the subsidy scheme over five years to carry out various assessments and control measures for the WSPB. Since the launch of WSPSS in July 2020, over 510 applications have been received.

The WSD continues to collaborate with the Urban Renewal Authority (URA) to facilitate the WSPSS application by including the WSPSS in its "Integrated Building Rehabilitation Assistance Scheme". Applicants can apply the WSPSS alongside with applications for URA's various building rehabilitation schemes at the same time.

為加深公眾的了解和鼓勵申請，資助計劃特設定期更新的專題網站，提供全面的資訊供公眾查閱，當中包括參加資格、申請方法、資助金額，以及常見問題和參考文件等。

To provide public understanding and encourage applications, a dedicated website giving regular updates and comprehensive information ranging from eligibility criteria, application method, subsidy amount to frequently asked questions and reference materials, is available for public access.

https://www.wsd.gov.hk/en/water-safety/wspss/index.html

加強規管水喉物料及供水系統啟用要求

為加強內部供水系統的食水安全，自二零一五年起，水務署為水喉物料及新供水系統的設計、建造和啟用制定了更為嚴格的管制措施和指引。於二零一七年設立的「一般認可」制度預先批核符合《水務設施規例》所規定技術要求的水喉產品。另外，水喉產品亦會於水務署的物料測試所進行測試，該測試所於二零二一年八月獲得由香港認可處（HKAS）管理的香港實驗所認可計劃（HOKLAS）發出認可資格。

此外，水務署亦接納持有由獨立認可認證機構發出的「產品認證」證書的水喉產品。「產品認證」透過上游控制和持續監察工廠的生產過程，提升產業質量，從而確保產品品質穩定並符合認可標準。為鼓勵更多此類產品加入「一般認可」水喉產品的行列，水務署於二零一九年進一步推出計劃，豁免對持有「產品認證」證書的水喉產品在「一般認可」制度下的監察要求。

自願性參與「《認可水喉產品》銷售商」計劃

為了使公眾認識及方便購買《一般認可》水喉產品使該等產品得到更廣泛使用，從而減低公眾採用不合規格水喉產品的機會，水務署於二零二零年推出自願性參與「《認可水喉產品》銷售商」計劃。在店內銷售《一般認可》水喉產品的商店會獲提供「《認可水喉產品》銷售商」標籤，讓其張貼於店內當眼位置（如商店入口），使市民易於識別。這些商店須在貨架上為《一般認可》水喉產品展示「產品標籤」，並向職員灌輸有關認可水喉產品的知識，以便向市民講解有關產品。

計劃亦使公眾更容易接觸到這些銷售商，並透過不同途徑獲取產品資訊，包括水務署網站上的《認可水喉產品》銷售商註冊名單、「《一般認可》水喉產品標籤」上的二維碼查閱生產地及批核有效期等產品資料以及在正式銷售收據上的《一般認可》參考編號。

Enhancing Plumbing Material Control and Commissioning Requirements

Since 2015, more stringent control measures and guidelines on plumbing materials, design, construction and commissioning of new plumbing systems have been enforced to strengthen drinking water safety in inside service. The General Acceptance (GA) system was established in 2017 to pre-approve plumbing products in compliance with the technical requirements set out in the Waterworks Regulations. Furthermore, plumbing products are also tested at the WSD's Material Testing Laboratory which was accredited by Hong Kong Accreditation Service under the Hong Kong Laboratory Accreditation Scheme in August 2021.

Plumbing products with product certificates from independent accredited certification bodies are also acceptable to the WSD. The benefits of product certification are to promote industrial quality through control at the upstream, continuous surveillance of production process in factory to ensure consistent production quality and compliance with the recognised standards. To promote inclusion of more of these products into the GA portfolio, the WSD has further introduced a scheme since 2019 to waive the surveillance requirements under the GA system for plumbing products which have joined the product certification scheme.

Voluntary GA Product Shop Scheme

To enhance public knowledge and facilitate their purchase of GA plumbing products, thereby minimising the use of non-compliant plumbing products, the WSD launched the Voluntary GA Product Shop Scheme in 2020 to promote wider use of GA plumbing products in the retail market. Retail shops with GA products on sale are provided with GA Product Shop Labels for affixing at prominent locations for easy identification by the public (e.g. shop entrance). The GA Product Shop should also display on shelf the GA labels of the plumbing products and equip staff with knowledge of GA products for explaining to the public.

The Scheme also enables the public for an easy access to the GA Product Shops and GA product information via a number of ways. These include the List of Registered GA Product Shop on the WSD website, the QR code on the GA label which allows the retrieval of product information such as its country of origin and GA expiry date, and the GA Reference Number of the GA Product on the official sale receipts.

二零二三年二月，題為《焊接物料用無鉛　食水飲用先安全》的教育影片完成製作，旨在加強市民對無鉛焊接物料重要性的認識。

法例檢討

檢討法例以提升食水安全

我們已完成對《水務設施條例》（第 102 章）和《水務設施規例》（第 102A 章）的全面檢討，並已分析法例修訂建議的公眾諮詢結果。我們將會就修訂《水務設施條例》和《水務設施規例》的多個範疇展開法律草擬工作。其中包括水管工程的規管、水喉物料的管制、及保障用戶水龍頭供應的食水安全。

An education video titled "Using Lead-free Soldering Materials for Safe Drinking Water" was also developed in February 2023 to raise public awareness on the importance of lead-free soldering material.

Legislative Review

Legislative Review for Enhancing Drinking Water Safety

We have completed the holistic review of the Waterworks Ordinance (Cap.102) and Waterworks Regulations (Cap.102A), as well as analysis of the results of the public consultation on the proposed legislative amendments. We will proceed with the law drafting work for amending various aspects of the Waterworks Ordinance and Waterworks Regulations. These include the regulation of plumbing works, control of plumbing materials, and safeguarding drinking water safety at consumers' taps.

加強措施防止「劏房」租戶被濫收水費

Stepping up Actions to Protect Tenants of Subdivided Units from being Overcharged for Water

有關「禁止出售用水」的《2021年水務設施（水務設施規例）（修訂）條例》實施後，據部分租戶及機構反映，分間單位（俗稱「劏房」）業主濫收水費的情況仍然存在。為進一步防止「劏房」租戶被業主濫收水費，水務署加強措施多管齊下打擊此類違法行為，採取措施包括：

Upon the enactment of the Waterworks (Waterworks Regulations) (Amendment) Ordinance 2021 in respect of prohibition of sale of water, there are still cases of water overcharging by subdivided units (SDU) landlords as reflected by some tenants and organisations. With a view to enhancing the deterrent effect to protect SDU tenants from being overcharged for water by the landlords, the WSD has stepped up actions and adopted multi-pronged measures to combat such illegal acts. These measures include the following:

加強巡查和檢控工作

為加強處理懷疑違例個案時的成效，水務署與差餉物業估價署（估價署）合作進行巡查及採取聯合行動，共同處理投訴個案，增加向業主索取其繳付 / 收取水費的相關資料時的協同效應。

二零二二年七月下旬至二零二三年三月底期間，水務署及估價署已聯合巡查 / 造訪 3 830 個「劏房」租戶。此外，經修訂《水務設施規例》第 47 條自二零二一年五月實施後至二零二三年三月，水務署共收到 78 宗有關「劏房」租戶被濫收水費的投訴，其中 7 宗已成功檢控及定罪。然而，由於投訴人不願作證及水務署欠缺搜証的法定權力，大部分投訴個案均無法展開進一步調查或作出檢控。

推動修訂法例

為提升執法成效及效率，以打擊「劏房」租戶被濫收水費的情況，水務署正計劃就《水務設施條例》/《水務設施規例》提出修訂建議，並於二零二三年第四季將修訂條例草案提交立法會。初步修訂建議內容如下：

- 賦予水務監督可要求相關人士（例如業主和其代理人等）提交相關資料（例如收據、水費繳款單等）的權力，
- 提高濫收水費的罰則，
- 要求收取水費付還後須發出收據及保存收據副本，以及
- 水務署和估價署就其各自巡查和調查中所獲取有關濫收水費個案的資料進行交換。

Strengthening Inspection and Prosecution

To enhance effectiveness in tackling suspected offence cases, the WSD has collaborated with the Rating and Valuation Department (RVD) to conduct inspections and take joint operations to handle complaints for achieving synergy in soliciting relevant information from the landlords in respect of their payments/ collections of reimbursements for water charges.

For the period from late July 2022 to end March 2023, inspections/visits to about 3 830 SDU households were jointly conducted by the WSD and the RVD. Moreover, since the enactment of amended regulation 47 of the Waterworks Regulations from May 2021 to March 2023, a total of 78 complaints were received about overcharging SDU tenants for water and of which 7 cases were successfully brought to prosecutions and convictions. However, with the complainants' reluctance to serve as witnesses and lacking the statutory power to obtain information, most of the complaint cases could not be pursued for further investigation nor prosecution.

Pressing ahead with Legislative Amendments

To improve effectiveness and efficiency in law enforcement to combat overcharging SDU tenants for water, the WSD is planning to propose legislative amendments of the Waterworks Ordinance/ Waterworks Regulation and submit the amendment bill to the Legislative Council in the fourth quarter of 2023. Preliminary proposed amendments are as follows:

- Empowering the Water Authority to request the relevant person (e.g. landlord and their agent, etc.) to provide relevant information (e.g. receipt, water bill, etc.)
- Increasing the penalty for overcharging for water,
- Issuing and keeping a copy of the receipt after receiving reimbursement of the water charge, and
- Enabling the WSD and the RVD to exchange information obtained from their own inspections and investigations related to water overcharging cases.

改善安裝獨立水錶的申請程序

安裝獨立水錶是避免業主向租戶收回水費時發生爭議的有效方法。有見及此，水務署推出《分間單位安裝獨立水錶計劃》（該計劃）為「劏房」安裝獨立水錶，相關申請程序經已簡化。根據該計劃，業主可為「劏房」申請安裝獨立水錶，「劏房」租戶亦可直接向水務署提出要求，以便水務署主動聯絡業主跟進安裝事宜。每個獨立水錶賬戶會獲發獨立水費單供繳交水費，而「劏房」租戶將獲每四個月首 12 立方米的免費用水量。為鼓勵更多「劏房」業主參與該計劃，二零二三至二四年度財政預算案將會提出豁免每個成功安裝的分間單位獨立水錶的水費按金（400 元）及提供水錶費用（120 元）。

另外，水務署亦與社會服務機構及水喉業協會合辦了一個義工服務計劃，為有需要的「劏房」租戶提供技術意見及免費安裝水務署的水錶。自二零二一年六月推出該計劃至二零二三年三月底，共收到 105 份申請，其中 42 份獲批，涉及 129 個水錶，而當中 113 個已獲安裝，餘下的申請仍在處理中。

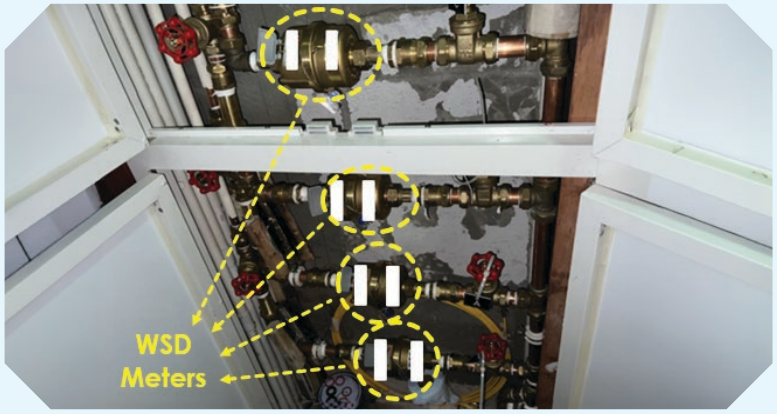
Enhancing Application Procedures for Separate Water Meters

To avoid disputes between tenants and landlords arising from water charges, the most effective measure is to install separate water meters and the WSD has therefore implemented the "Scheme for Installation of Separate Water Meters for Subdivided Units" (the Scheme) with streamlined application procedures for installing separate water meters in SDUs. Under the Scheme, while SDU landlords can apply for the installation of separate water meters for their SDUs, SDU tenants can also make a request directly to the WSD which will then liaise with the respective SDU landlord with a view to facilitating installation. Every such water meter account will have a separate water bill for paying water charge, and the SDU tenants can enjoy the first 12 cubic metres of water consumed for each four-month period free of charge. To encourage landlords' participation in the Scheme, the 2023-24 Budget has proposed to waive the payment of the water fee deposit (HK$400) and the charge for providing a WSD's water meter (HK$120) under the Scheme.

In addition, the WSD has collaborated with social service organisations and plumbing trades on a volunteer service programme offering technical advices and free installation of WSD's water meters to those SDU tenants in need. Since the launch of the Scheme from June 2021 to end March 2023, 105 applications were received and 42 of them were approved involving 129 water meters with 113 of them were installed with remaining applications being processed.

安裝水務署水錶前

Before Installation of WSD's Water Meters



安裝水務署水錶之後

After Installation of WSD's Water Meters

加強宣傳和教育

為推廣於「劏房」安裝水務署的獨立水錶及打擊向「劏房」租戶濫收水費的行為，水務署亦透過一系列活動加強宣傳和教育工作，包括約見地產代理組織，主動巡查懷疑違規的分間單位，派發單張和海報予租戶，以及在多媒體渠道包括電視、電台和水務署網站等發放資訊。

水務署亦新增電話專線 3468 4963 及 WhatsApp 專線 5665 5517，處理與「劏房」安裝獨立水錶有關的問題。此外，水務署鼓勵市民致電熱線 2824 5000，就不良業主向「劏房」租戶濫收水費作出舉報，以便署方跟進及調查。

自安裝水務署的獨立水錶後，水費支出減少，從前一個月需繳交 80 多元水費，現在一季才交 80 多元。另外，「劏房」租戶可享有 12 立方米的免費用水津貼，即約 50 元，為我減輕許多生活支出的負擔。

After installing WSD's separate water meters, my water expenses have been reduced from more than HK$80 a month to around HK$80 a quarter. Besides, SDU tenants are provided with a free supply of 12 cubic meters of water (about HK$50), this has really relieved my burden on living expenses.

*居於深水埗的「劏房」租戶**嚴小姐***
***Miss YIM**, an SDU tenant in Sham Shui Po*

註：受惠人士的引言摘錄自發展局局長隨筆：
Note: beneficiaries' quotes are taken from the Blog of Development Bureau:
https://www.devb.gov.hk/tc/home/my_blog/index_id_1511.html

Increasing Publicity and Education

To promote installation of separate WSD's water meters in SDUs and to combat water overcharges to SDU tenants, the WSD has also strengthened publicity and promotion work through a series of activities. These include meeting with estate agency organisations, conducting proactive patrols in suspected SDUs, distributing leaflets and posters to tenants, and disseminating relevant information via multimedia channels including TV, radio and department website.

A dedicated hotline 3468 4963 and a WhatsApp hotline 5665 5517 have also been set up to handle matters related to installation of separate water meters for SDUs. In addition, the WSD has encouraged the public to report unscrupulous landlords at the WSD hotline 2824 5000 for overcharging SDU tenants to enable follow-up action and investigation.

作為分間單位業主，我歡迎水務署推出安裝獨立水錶的計劃，由遞交申請至成功獲批，只需約 10 個工作天，過程相當暢順。計劃為我節省了為租戶抄錶和計算水費的時間，更重要的是，亦令我免於誤墮法網。

As the SDU landlord, I welcome the Scheme of Separate Water Meters launched by the Water Supplies Department. From handing in the application for the separate water meters to receiving their approval, it only took about 10 working days and the process went through smoothly. The Scheme has saved my time and hassle in meter reading and doing calculation for splitting the water bills among the SDU tenants, and more importantly, prevented me from breaking the law inadvertently.

*分間單位業主**鐘先生***
***Mr CHUNG**, an SDU landlord*

點滴話你知
Did you know?

業主向其租戶收取額外水費，即屬違法。
The registered consumer shall be guilty if they over charge tenants.

經修訂後的《水務設施規例》第 47 條規定，註冊用戶（通常為業主）就供水方面只可向其處所的佔用人（通常為租戶）收回繳交給水務署的水費。若業主向其租戶收取的費用超過此金額，即屬違法。違規者一經定罪，最高處罰款港幣一萬元。二零二二年六月，一名業主向劏房租戶濫收水費，在九龍城裁判法院被定罪及罰款五千元，是首宗被定罪的同類個案。

According to the amended Regulation 47 of the Waterworks Regulations, the registered consumer (usually the landlord) is only allowed to recover from the occupants of the premises (usually the tenants) the water charge paid to the WSD. If the amount recovered exceeds the water charge paid to the WSD, the registered consumer shall be guilty of an offence and be liable to a maximum fine of HK$10,000. June 2022 marked the first successful convicted case — a landlord was convicted of overcharging his SDU tenant for water at Kowloon City Magistrates' Courts and was fined HK$5,000.

供水可靠性
資產管理
水務設施資產管理

為優化水務設施的表現，同時降低運作成本及減少故障風險，我們致力在水務設施的維修保養及管理上達致世界級水平。

我們已實施符合 ISO 55001 的資產管理系統來管理所有水務資產。此系統採用「生命周期」方式來籌劃、設計、發展、建造、運作、維修保養、更新以至棄置所有資產，讓我們作出適當的決策，以應對未來的挑戰，確保符合可持續發展，並提高運作可靠性和效率。此外，系統亦讓我們能夠管理故障風險，同時保持優質的服務水平，並根據風險分析調配資源和釐定行事的優次。

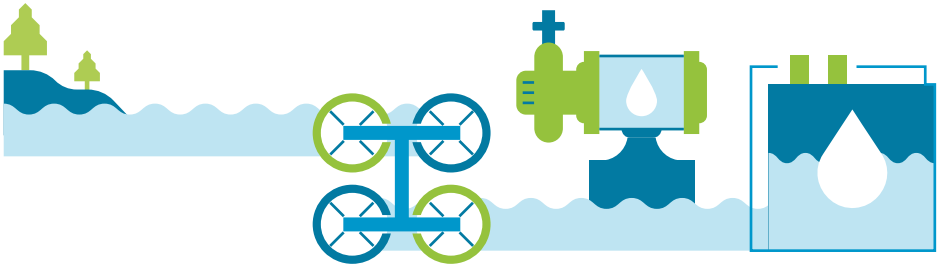
我們為水塘、濾水廠、抽水站、配水庫和斜坡等水務設施建立的資產管理系統，已獲得 ISO 55001 認證。我們計劃在未來將認證範圍擴展到其餘的水務資產。

Following the achievement of the ISO 55001 certification for our asset management system for impounding reservoirs, water treatment works, pumping stations, service reservoirs and slopes, we aim to extend the certification scope to the remaining waterworks assets in future.

WATER RELIABILITY
Asset Management
Waterworks Asset Management

To optimise the performance of our waterworks while minimising operating costs and failure risks, we strive to attain the world-class quality for waterworks maintenance and management.

We have implemented the ISO 55001-compliant Asset Management System to manage all of our waterworks assets. This system uses a "life-cycle" approach that encompasses planning, design, development, construction, operation, maintenance, renewal and disposal of all assets, allowing us to make appropriate decisions to meet future challenges, ensure sustainability and improve our operational reliability and efficiency. In addition, it allows us to manage risks of failure whilst maintaining a high level of service, and to allocate resources and priorities for the various kinds of work required according to risk analysis.



詳細及獨立的水塘視察

二零二二年，雖受限於疫情限制措施，我們仍把握機會，安排外聘專家顧問於部分水塘進行實地視察，另大部分水塘則進行遙距視察。二零二三年初，疫情限制解除後，我們已恢復所有配水庫的實地視察。

Detailed and Independent Reservoir Inspections

Despite the prevailing epidemic restriction measures in 2022, we have seized the opportunity to enable physical inspections by external expert advisors in some reservoirs, while majority were conducted remotely. Following the lifting of the restrictions from early 2023, we have resumed all physical inspections on reservoirs.

在二零二二至二零二三年度，我們為水塘及配水庫進行了以下視察：
In 2022/23, we conducted the following inspections of our impounding and service reservoirs:

73
次由水務署人員進行的詳細視察
detailed inspections conducted by internal staff

13
次由外聘專家顧問進行的遙距獨立視察
remote independent inspections conducted by external expert advisors

20
次由外聘專家顧問進行的實地獨立視察
physical independent inspections conducted by external expert advisors

斜坡維修及鞏固

我們定期為轄下斜坡進行維修及鞏固工程，包括裝設泥釘、加固斜坡表面、在斜坡底部建造矮牆以栽種植物、改善排水系統、栽種一般植被、提供安全通道走廊等，藉此大幅降低發生山泥傾瀉的風險，以及減少對公眾、水務人員和設施所構成的威脅。

Slopes Maintenance and Upgrades

We regularly maintain and upgrade the slopes under our purview via soil-nailing, stabilisation of slope surface, construction of toe planter wall, improvement in drainage system, general planting, provision of safe access corridor and so forth. These efforts significantly reduce the risk of slope failure and the corresponding danger posed to the public, our staff and waterworks installations.

在二零二二至二零二三年度，我們管理約
In 2022/23, we managed approximately

6 500 幅斜坡 slopes

其中，我們視察約
Of these, we inspected

980
幅斜坡
slopes

並為其中 Of these, **76** 幅斜坡 slopes
進行了預防性維修或鞏固工程
received preventive maintenance or upgrades

水管資產管理

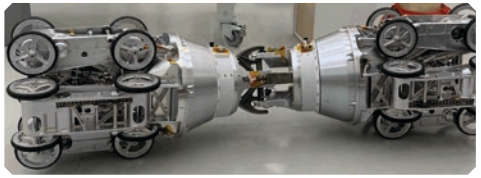
我們致力提升管理龐大水管資產的質素。水管爆裂的個案數字一直維持在低水平，在二零二二年亦只有約 36 宗。我們將繼續推行以風險為本的水管資產管理策略，以維持政府供水網絡的健康狀況，減低水管爆裂或滲漏的風險。

我們會根據水管爆裂或滲漏的後果、水管使用年期和物料、過往爆裂或滲漏記錄、周邊環境等各項因素，為高風險的水管優先進行改善工程，包括進行更換或修復水管，以減低水管爆裂或滲漏的風險。此外，我們亦會為位於「爆喉熱點」（即重複出現水管爆裂的段落）的水管進行改善工程。

利用先進技術檢查水管

地下水管結構複雜，而維修人員在管道內工作亦存在安全與健康隱患，對管道檢測構成了挑戰。為使地下水管檢測工作能以更有效和安全的方式進行，並提高準確率，水務署研發「管道檢測機械人」及相關的協作系統，為未來全港不同物料和直徑的水管檢測工作作好準備。

水務署已進行使用機械人技術檢測直徑 600 毫米金屬水管健康狀況的可行性研究，在無水的管道內，利用非破壞性水管檢查方法，檢測水管的餘壁厚度、表面有否裂紋，以及水管表面和內壁的情況。利用機械人設計、傳感器、影像和人工智能等一系列先進技術，管道檢測機械人能適應香港市區擠迫的地下設施中水管走線和直徑轉變等常見的特徵，為檢查水管的狀況及其結構的完整性提供所需的啟發和技術。



管道檢測機械人能在多種地下環境下，在水管內以不同角度（包括 90 度轉彎）單向高效行駛超過 150 米。

Water Main Asset Management

We are committed to enhancing the management of our vast water main assets. Water main burst cases remain at a relatively low level. In 2022, 36 main burst cases were recorded. We will continue to implement a risk-based water main asset management strategy to maintain the healthiness of the government water supply networks and to reduce the risk of water main bursts or leaks.

Taking into account various factors including the consequences of bursts or leaks, ages and materials of the water mains, past records of bursts or leaks, surrounding environment, etc., we accord priorities for improvement works to those water mains assessed with high risk, including replacement or rehabilitation to reduce the risk of water main bursts or leaks. In addition, we will carry out improvement works to water mains in "main burst hot spots" (i.e. sections with repeated water main bursts).

Advanced Technologies for Water Mains Inspection

Complicated configurations of underground water mains, coupled with the safety and health hazards to the maintenance personnel, have posed challenges to the in-line inspection of water mains. With a view to enhancing the efficiency and safety of underground water mains inspection work with higher accuracy rate, the WSD has conducted an investigation for developing the "In-line Inspection Robot" and relevant collaborative systems, paving the way for the territory-wide application for inspecting different materials and diameters of water mains in future.

Feasibility study on the viability of using robotic technologies has been conducted for assessing the health conditions of metallic water mains of 600 mm diameter, viz. residual wall thickness of pipes, presence of surface cracks and conditions of pipes and linings, by non-destructive testing methods in dry main condition. With the use of advanced technologies such as robotics design, sensors, imaging and artificial intelligence, the In-line Inspection Robot can adapt to the sharp changes in pipe direction and diameter which are common features of water mains in the congested underground utilities in the urban areas of Hong Kong, providing insights and skills to inspect the conditions and assess the structural integrity of the pipes.

Operating under various underground conditions, the In-line Inspection Robot can navigate efficiently along the interior of water mains in different angles such as 90-degree bends in a single pass to reach over a distance of 150 meters.

深井濾水廠晚間遙距運作監控改善工程

近年，全球水務業在水務處理設施廣泛採用遙距控制和監測系統，尤其在疫情期間，世界多個水務機構面對用水需求急劇轉變，以及人力緊拙的問題。

為應對這些挑戰，並在不影響供水穩定的情況下優化對人力的需求，我們已在深井濾水廠展開夜更遙距運作監控試點項目。試點項目已於二零二二年展開，第一階段改善工程預計將於二零二六年底前完成。我們將審慎檢視從第一階段收集得來的運作數據、趨勢和觀察結果，用於制定第二階段工程的策略改善計劃，使深井濾水廠邁向數碼化和自動化的運作模式。

提升供水可靠性

沙田濾水廠原地重置工程（南廠）

沙田濾水廠南廠和北廠分別於一九六四年和一九七三年分階段啟用，是香港最大的濾水廠，為九龍大部分地區、港島中西區和新界部分地區約 200 萬人口供應食水。項目旨在原地重置南廠，更換已使用約 50 年的老化濾水設施，同時提升濾水量，以確保有充足的優質食水供應，應付因逐步落成的新公營及私人房屋發展項目預期會增長的食水需求。

南廠原地重置工程，面對北廠仍在運作的挑戰，加上廠房周邊被密集而複雜的原水收集水管及食水供應網絡包圍，必須採用創新設計和先進濾水處理技術，如高速沉澱、深層濾池、紫外線和臭氧消毒，以優化土地的使用和廠房的運作。

Provision of Mechanical and Electrical Equipment for Remote Operation of Sham Tseng Water Treatment Works for Night Time

In recent years, remote control and monitoring system of water treatment installations have been widely adopted in the global water industry, particularly under the epidemic situation where many water organisations in the world are confronted with the rapid changes in water demands and tight manpower resources.

To address these challenges as well as optimise the manpower requirement without compromising a stable fresh water supply, we have embarked on a trial project to enable remote operation on the night shift at Sham Tseng Water Treatment Works (STsWTW). Commenced in 2022, the pilot is scheduled for the completion of the Stage 1 works by the end of 2026. The operational data, trend and observations acquired in the Stage 1 will be critically examined to formulate the scope of strategic improvement for the Stage 2 works with a view to transforming the operation mode of STsWTW towards digitalisation and automation in the long run.

Enhancing Water Supply Reliability

In-Situ Reprovisioning of Sha Tin Water Treatment Works (South Works)

The Sha Tin Water Treatment Works comprises the South Works (as commissioned in 1964) and the North Works (as commissioned in stages from 1973). It is the largest water treatment works in Hong Kong, providing fresh water supply to a large part of Kowloon, the Central and Western Districts on the Hong Kong Island, and part of the New Territories for around two-million population. The project aims to reprovision the South Works in-situ to replace the aged treatment facilities after some 50 years of service and upgrade the treatment capacity so as to ensure an adequate supply of quality potable water to meet the anticipated increase in fresh water demand due to the progressive implementation of new public and private housing developments.

Facing the challenges of rebuilding South Works at the original footprint with North Works operating and being surrounded by the extensive and comprehensively developed raw water collecting pipelines and fresh water outgoing supply network, innovative design and advanced water treatment technologies such as high rate sedimentation, deep bed filtration, ultraviolet light and ozone for water disinfection have been adopted to optimise land usage and plant operation.

此外，為了在施工階段提高生產力、促進地盤安全和增強環保表現，項目在建造主要濾水設施時採用了創新的施工方法和技術，包括建築信息模擬、雲端通用數據環境平台、製造及裝配設計、數碼工程監督系統和「組裝合成」建築法等。

Besides improving productivity, promoting site safety and enhancing environmental performance during construction stage, the project incorporates innovative construction methods and technologies in building major treatment facilities. These include Building Information Modelling (BIM), cloud-based Common Data Environment (CDE) platform, Design for Manufacture and Assembly (DfMA), Digital Works Supervision System (DWSS) and Modular Integrated Construction (MiC).

為加強供水可靠性，項目已採用可持續建築設計，冀以卓越建築表現，獲取「綠建環評」新建建築最高級別的鉑金評級。

Sustainable building design features have been adopted throughout the project with a view to enhancing water supply reliability and achieving the top BEAM Plus New Buildings Platinum accreditation for its outstanding building performance.

新行政大樓約百分之 65% 的面積，將採用「組裝合成」建築法建造以縮短施工時間、改善工作環境和地盤安全。

Approximately 65% of the new Administration Building is to be constructed by the MiC approach for shortening construction time as well as improving working environment and site safety.

小蠔灣濾水廠擴展工程

為滿足北大嶼山將來的發展需要，我們必須擴建小蠔灣濾水廠，將其濾水量倍增。工程已於二零二二年第一季度展開，並預計於二零二八年投入運作。我們在整個項目周期已廣泛採用 BIM 技術。作為我們對可持續發展承諾的一部分，我們的目標是憑藉項目的建築表現，獲取「綠建環評」新建建築最高級別的鉑金評級。

Siu Ho Wan Water Treatment Works Extension

To cope with North Lantau's future development, it is required to construct the Siu Ho Wan Water Treatment Works extension to double its current water treatment capacity. Construction works commenced in the first quarter of 2022 and are scheduled for commissioning in 2028. Throughout the project cycle, we have adopted the BIM extensively in the project. As part of our commitment to sustainable development, our goal is to achieve the top BEAM Plus New Buildings Platinum accreditation for its building performance.

從二零二八年起，每日濾水量將由
From 2028, the daily water treatment capacity will be doubled from

150 000 立方米 m^3

倍增至 to

300 000 立方米 m^3

配合新發展區的供水

為應付新界西北部發展計劃（包括元朗南、洪水橋 / 廈村、橫洲、丹桂村及朗邊）以及北部都會區發展計劃所帶來的用水需求增長，我們計劃擴建牛潭尾濾水廠，增加其每日濾水量至 44 萬立方米。此外，連接大埔濾水廠和上水濾水廠間現有的輸水系統亦將會升級，以配合新界北規劃發展項目（包括古洞北、粉嶺北、落馬洲河套地區）及粉嶺 / 上水其他新房屋發展項目所帶來的中期用水需求。

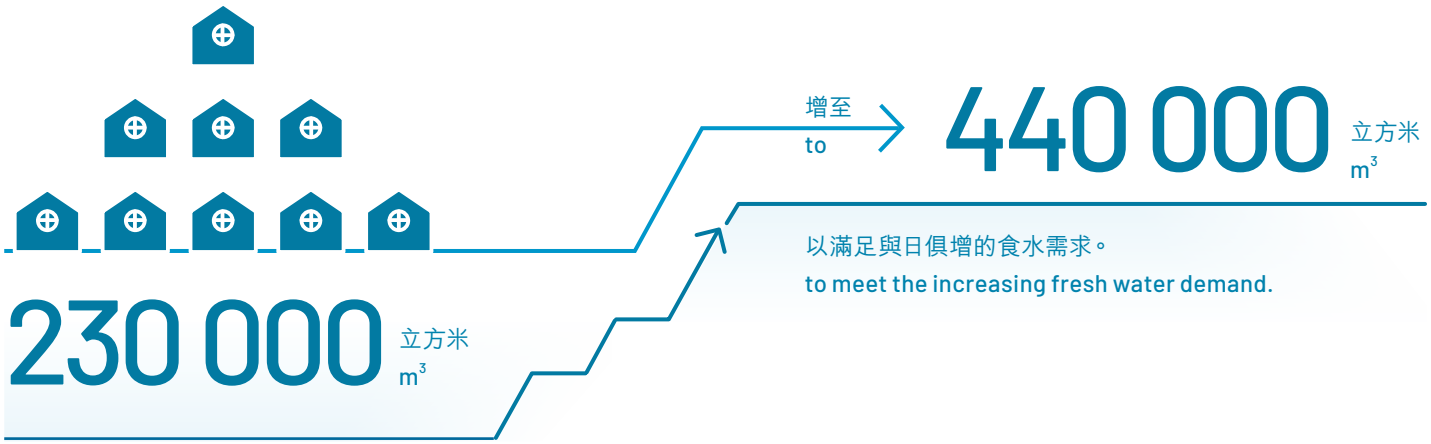
為應對長遠的用水需求，我們已聘請顧問公司為擴建和升級項目進行勘查研究工作，並考慮北部都會區的發展帶來新增的用水需求，以及新水務設施的要求等相關供水策略。

Facilitating Water Supply in New Development Areas

To meet the growing water demand arising from the planned developments in the Northwest New Territories including Yuen Long South, Hung Shui Kiu/Ha Tsuen, Wang Chau, Tan Kwai Tsuen and Long Bin), and the Northern Metropolis Development Plan, we will extend the Ngau Tam Mei Water Treatment Works to increase its daily water treatment capacity to 440 000 m^3. In addition, the existing trunk transfer system between Tai Po Water Treatment Works and Sheung Shui Water Treatment Works will also be upgraded to cater for the medium-term fresh water demand arising from the planned developments in the Northern New Territories (including Kwu Tung North, Fanling North, Lok Ma Chau Loop) and other new housing developments in Fanling/Sheung Shui areas.

To meet the long-term water demand, we have also engaged consultants to carry out investigation works for the extension and enhancement projects, taking into account the potential increase in water demand arising from the Northern Metropolis developments, as well as the relevant water supply strategy including the requirement of new waterworks.

牛潭尾濾水廠的每日濾水量將由
The daily water treatment capacity of Ngau Tam Mei Water Treatment Works will extend from



東江水水管改善工程
Dongjiang Water Main Improvements

採用創新技術的東江水水管改善工程

為持續確保東江水供應的可靠性及靈活性，我們已於二零二零年九月開展極具挑戰性的上水及粉嶺東江水水管 P4 改善工程。此工程項目需要在短短兩年半內，更換長約五公里、直徑 2.3 米的大型舊水管。工程已在二零二三年一月大致完成。

由於工程團隊運用新工程合約提倡的互信及合作共贏精神，在採用創新科技提升管理效益、成本效益及工地安全方面取得出色表現，項目榮獲備受讚譽的新工程合約 2023 年度水務工程項目大獎。項目取得的出色成就及創新領域包括：

- **新思維和新技術：**包括運用「內套喉管法」，把新水管（直徑為1.8米的聚乙烯喉管，亦是迄今香港使用同類型最大的喉管）逐段推入破舊喉管內，再用水泥灌漿填滿新舊管之間的縫隙，亦制定了使用原有東江水水管 P4 為主管具成本效益的方案。該項目成功減低對交通造成的影響，並在節省成本的情況下按時完成。工程團隊和承建商緊密合作，共同克服技術困難，如為工程編製新規格及採購喉管和焊接設備。

Embracing Innovation to Strive for Dongjiang Water Mains Improvements

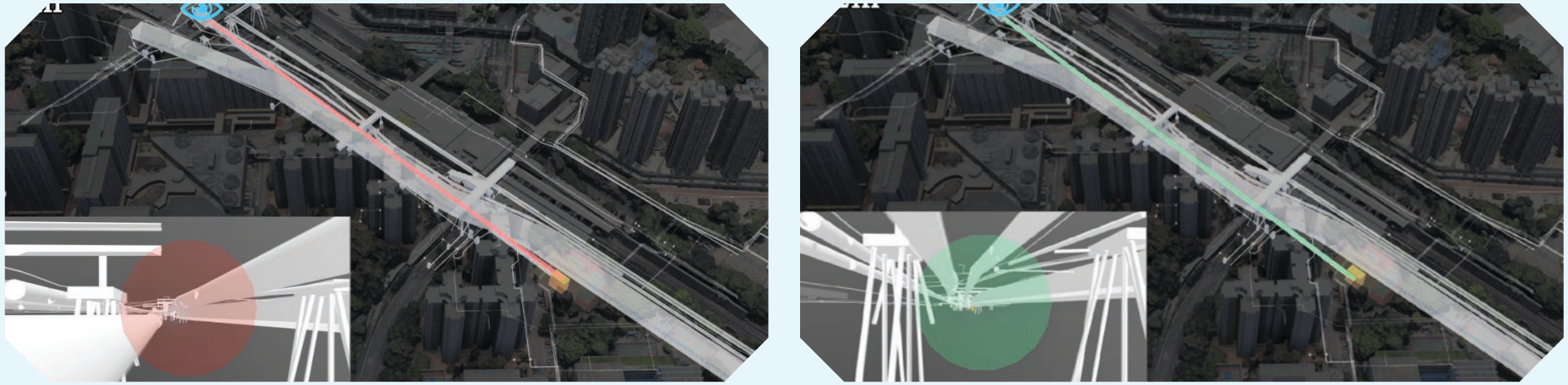
As part of our ongoing efforts to ensure a reliable and flexible water supply of Dongjiang water, we have embarked on a challenging project to conduct improvements to the Dongjiang Water Mains P4 at Sheung Shui and Fanling in September 2020. The project involves the replacement of large aged Dongjiang water mains of about five kilometres long with a diameter of 2.3 metres in a tight period of two and a half years. The project was substantially completed in January 2023.

In light of the outstanding performance in adopting innovation and technology to enhance management efficiency, cost-effectiveness and site safety of the project through effective collaborative partnerships within the framework of the "New Engineering Contract", the project won the highly acclaimed NEC Water Contract of the Year Award 2023. Examples of project excellence and innovations include:

- **New Thinking and Technologies:** These include adopting slip-lining method which involves rehabilitation of pipes by pushing a new liner (polyethylene pipe liner with a diameter of 1.8m, which was the largest ever used in Hong Kong) into the old pipes section by section and filling the gap between the new and the old pipelines with cement slurry. A cost-effective scheme using the existing Dongjiang water mains P4 as the host pipe was also formulated. The project has successfully reduced traffic disruption and was timely completed with cost savings. The project team and the contractor worked closely to overcome technical problems, such as compiling new specifications for the works and sourcing the pipes and welding machines.

- **採用 BIM 技術：**在設計和建造階段採用了建築信息模擬（BIM）技術，提升工程質素及效率。約 70% 須更換的喉管段落位於地底擠迫的地下設施和地基結構之間。工程團隊採用探地雷達核實地底結構和設施的位置，成功使用 BIM 模型進行碰撞分析並制訂出可使用水管推頂法的隧道最佳深度。在 4D 和 5D BIM 模擬的幫助下，得以準確估算改變建造階段造成的時間和成本影響。

- **Leveraging BIM Technology:** Throughout the design and construction stage, Building Information Modelling (BIM) technology was adopted to enhance the project quality and efficiency. About 70% of the replacement sections were located underground with congested utilities and foundation structures. The project team adopted ground penetrating radar to verify the locations of the underground structures and utilities. By using the BIM model, clash detection was successfully performed and a feasible alignment for the pipe-jacked tunnel at an optimal depth was able to be identified. With the help of 4D and 5D BIM simulation, the time and cost implications of alternating the construction phases could be accurately assessed.



使用 BIM 模型進行碰撞分析，確定使用水管推頂法具可行性的隧道最佳深度——7 米處碰撞（紅圈）12 米處可行（綠圈）。

The use of BIM technology enables clash detection and identification of feasible alignment for the pipe-jacked tunnel at an optimal depth – clashed at 7m (red circle) and flexibility at 12m (green circle) is detected.

- **合作夥伴關係：**為按時實現共同的工程目標，工程團隊與承建商緊密合作，制定可行的走線選項及建造方法。雖受二零一九冠狀病毒病疫情影響，項目已於二零二三年一月較原定時間提早兩個月完成。
- **分享知識：**工程完成後，水務署工程師透過各媒體渠道，分享這項大型供水工程項目的挑戰和價值，以及其中各種創新和合作，為實現穩定可靠的供水作出貢獻。

- **Collaborative Partnership:** To achieve the common project goal of timely completion, the project team collaborated closely with the contractor to develop viable alternative alignments and construction methods. Despite the impact of the COVID-19 epidemic, the project was completed in January 2023, which was two months ahead of the schedule.
- **Knowledge Sharing:** Upon the project completion, WSD engineers have shared the challenges and merits of this large-scale water supply project as well as innovative and collaborative efforts in various media to help contribute towards a stable and reliable water supply.

於不同媒體分享項目面對的挑戰、創新及合作，推動知識分享。

Project challenges, innovation and collaborative efforts were published in various media to promote knowledge sharing.

項目成就及創新做法於備受讚譽的 2023 年度新工程合約大獎中得到肯定，榮獲「水務工程項目大獎」。

Project excellence and innovation was recognised as "Water Contract of the Year" in the highly acclaimed NEC Awards 2023.

https://www.wsd.gov.hk/en/water-safety/wspss/index.html

可持續運作
Operational Sustainability

我們一直致力透過節約能源、發展可再生能源及減低環境影響等多項環保措施，在運作中實踐保護環境及減緩氣候變化的理念。

We are dedicated to protecting our environment as well as mitigating climate change in our operations through an array of green initiatives on energy conservation, renewable energy development and environmental mitigation.

節約能源與發展可再生能源

能源管理系統

我們致力在水務設施的管理和運作當中，實施一系列的節能措施，使水務設施的效能得以持續提升。

為展現我們實施有效能源管理的承擔，我們已完成提升我們的能源管理系統認證至 ISO 50001 的最新版本，覆蓋整個供水鏈，包括收集、貯存、輸送及原水處理、以及食水與海水的供應及分配。

ENERGY CONSERVATION AND RENEWABLE ENERGY DEVELOPMENT

Energy Management System

We strive for continuous improvements in our plant performance by implementing a series of energy conservation measures over a broad spectrum of water utility management and operations.

To demonstrate our commitment to effective energy management, we have completed the upgrade of our ISO 50001 certification to the latest version covering the entire water supply chain, from collection, storage, transfer and treatment of raw water to the supply and distribution of fresh water and salt water.

次氯酸鈉溶液投放系統

我們目前營運 22 個海傍海水抽水站，為香港近 85% 的人口每日平均供應 76 萬立方米的沖廁用海水。我們一般使用電解氯化設備將海水電解以製造次氯酸鈉溶液，為海水進行消毒。為了節省更多能源，我們計劃在海傍海水抽水站安裝更節能的次氯酸鈉溶液投放系統。

到目前為此，將軍澳海水抽水站和小西灣海水抽水站的次氯酸鈉溶液投放系統已投入使用。九龍南二號海水抽水站、荃灣海水抽水站和西灣河海水抽水站的次氯酸鈉溶液投放系統將於二零二四年底之前投入使用。

減少碳足跡

我們已經完成五座辦公室大樓的碳審計工作。隨著節能措施相繼實施，例如在部分辦公室大樓以更高能源效益的水冷式冷氣設備取代風冷式冷氣設備，整體溫室氣體排放量有所減少。

以下設施已完成碳審計工作：

- *長沙灣大樓*
- *九龍灣大樓*
- *北角大樓*
- *天水圍大樓*
- *龍翔道機電工場*

Sodium Hypochlorite Dosing Systems

Currently, we operate 22 seafront salt water pumping stations, which supply an average of 760 000 m^3 of salt water per day for toilet flushing to nearly 85% of Hong Kong's population. Electrochlorination plants have conventionally been used to produce sodium hypochlorite solution through the electrolysis of salt water to disinfect salt water. In order to achieve energy saving, we have planned to install more energy-efficient sodium hypochlorite dosing systems (SHDS) in the seafront salt water pumping stations.

So far, SHDS have been put into operation at Tseung Kwan O Salt Water Pumping Station (SWPS) and Siu Sai Wan SWPS. The SHDS at Kowloon South No.2 SWPS, Tsuen Wan SWPS and Sai Wan Ho SWPS will be commissioned by 2024.

Carbon Footprint Reduction

We have completed carbon audits for five of our office buildings. With the implementation of energy-saving measures, such as the replacement of air-cooled chiller plant with higher energy-efficient water-cooled chiller plant in some of our office buildings, the overall greenhouse gas emission was reduced.

Carbon audits have been completed for:

- *Cheung Sha Wan Building*
- *Kowloon Bay Building*
- *North Point Building*
- *Tin Shui Wai Building*
- *Lung Cheung Road Mechanical and Electrical Workshop*

浮動太陽能板發電系統
Floating Photovoltaic Systems

於水塘發展浮動太陽能板發電系統 可再生能源永續未來
LEVERAGING FLOATING SOLAR PANELS ON RESERVOIRS TO GENERATE RENEWABLE ENERGY FOR A SUSTAINABLE FUTURE

水塘開揚及清涼的環境為安裝太陽能發電系統提供了所需的空間和較高的發電效率。繼二零一七年在石壁水塘和船灣淡水湖安裝浮動太陽能板發電系統取得成功後，水務署於二零二二年四月在大欖涌水塘安裝浮動太陽能板發電系統作為第三個先導計劃，這些項目為香港日後發展大型浮動太陽能板發電場奠下長遠發展的基礎。

The open and cool environment of reservoir offers space and efficiency for installing solar energy generation systems. Building on the successful implementation of floating photovoltaic (FPV) systems at the Shek Pik Reservoir and Plover Cove Reservoir in 2017, the WSD commissioned the third pilot at the Tai Lam Chung Reservoir in April 2022, as part of its long-term plan to progressively develop large-scale floating solar farms at impounding reservoirs in Hong Kong.

為《香港氣候行動藍圖 2050》出一分力

利用水塘水面發展可再生能源不但有助抵銷部門的用電量，更可為政府於《香港氣候行動藍圖 2050》中承諾實現碳中和的目標作出貢獻。而石壁水塘、船灣淡水湖和大欖涌水塘的先導計劃亦為未來在香港水塘發展浮動太陽能發電系統奠下堅實基礎。

在完成可行性研究之後，我們計劃在香港水塘逐步發展大型浮動太陽能板發電場，並計劃於未來數年在船灣淡水湖建造首個大型浮動太陽能板發電場。該發電場預計將於二零二六年完工，每年預計可生產約 6 000 000 度電，約等於水務署二零二二至二三年度總用電量的 0.8%，相當於 1 800 戶普通家庭的年用電量，亦為地球每年減少 4200 公噸的二氧化碳排放量。長遠而言，我們計劃從二零三五年起，將可再生能源產電量提升至每年約 60 000 000 度。

Contributing towards Hong Kong's Climate Action Plan 2050

Leveraging the water surface area of reservoirs for renewable energy development not only helps offset the Department's energy consumption but also contributes towards the Government's decarbonisation target of achieving carbon neutrality as pledged in the Hong Kong's Climate Action Plan 2050. The pilot FPV projects at the Shek Pik Reservoir, Plover Cove Reservoir and Tai Lam Chung Reservoir have built a solid foundation for the future development of FPV systems on reservoirs in Hong Kong.

Following a feasibility study, we are progressively planning to implement large-scale floating solar farms at impounding reservoirs in Hong Kong. In coming years, the first large-scale floating solar farm in Hong Kong is being planned to be installed at the Plover Cove Reservoir. Scheduled to be commissioned in 2026, the floating solar farm will generate about 6 gigawatt-hour per year (GWh/year) of electricity, constituting about 0.8% of the WSD's total energy consumption as at 2022-23, which is equivalent to the annual electricity consumption of around 1 800 households with a reduction of about 4 200 tonnes of CO_2 emission. Our long-term plan is to increase the renewable energy generation capacity up to about 60 GWh per year from 2035 onwards.

大欖涌水塘
Tai Lam Chung Reservoir

石壁水塘
Shek Pik Reservoir

船灣淡水湖
Plover Cove Reservoir

安裝於石壁水塘（大嶼山）、船灣淡水湖（大埔）和大欖涌水塘（屯門）水面上的浮動太陽能板發電系統利用水的自然冷卻效果提高太陽能板的發電效率，同時亦有助政府於二零五零年之前實現碳中和的目標。水務署正計劃擴大浮動太陽能發電技術的應用規模。

The FPV systems on the water surface at the Shek Pik Reservoir (Lantau), Plover Cove Reservoir (Tai Po) and Tai Lam Chung Reservoir (Tuen Mun) can naturally cool the solar panels to enhance the overall efficiency in electricity generation while contributing to the Government's decarbonisation target of achieving carbon neutrality before 2050. The WSD is planning to deploy the technology on a larger scale for developing floating solar farms at impounding reservoirs.

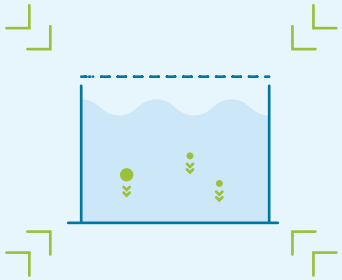
在水塘安裝浮動太陽能發電系統的好處

除了利用來自太陽的可再生能源之外，在水塘安裝浮動太陽能發電系統還有其他的好處：

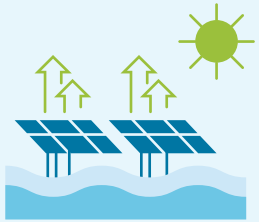
Benefits of Floating Solar Power Systems on Reservoirs

Apart from harvesting renewable energy from the sun, there are additional benefits of installing FPVs over the reservoir surface, which include the following:

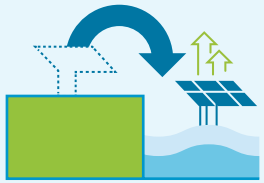
少水分蒸發，保護水資源
Reduce water evaporation of impounding reservoirs hence protecting water resources



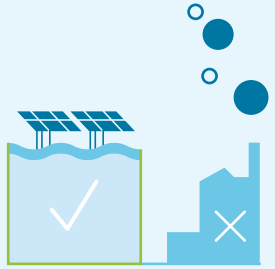
透過減少光合作用抑制藻類生長，改善水質
Suppress algae growth with less photosynthesis effect helping to improve water quality



透過水的冷卻效果，浮動太陽能發電系統的發電效率較安裝在屋頂或地面的系統可提高約 20%
Enhance efficiency of the solar energy generation system in electricity generation by around 20% as compared with those installed on roofs or ground due to the cooling effect of water on solar panels



省卻珍貴土地資源建造太陽能發電場，並獲取更高的發電效率
Save the need to clear precious land resources for solar farms yielding a higher solar panel power generation efficiency



透過開發可再生能源及減少使用化石燃料，減少碳排放
Reduce carbon emissions by developing renewable energy and using less fossil fuels

大欖涌水塘的浮動太陽能發電系統

浮動太陽能發電系統是由安裝於浮動平台上的太陽能板組成的集群或「島嶼」。浮動平台由水體底部的錨固定着。水底電纜將光伏太陽能板產生的電力輸送到岸上電力轉換設施以提供電力。

浮動太陽能發電系統簡介

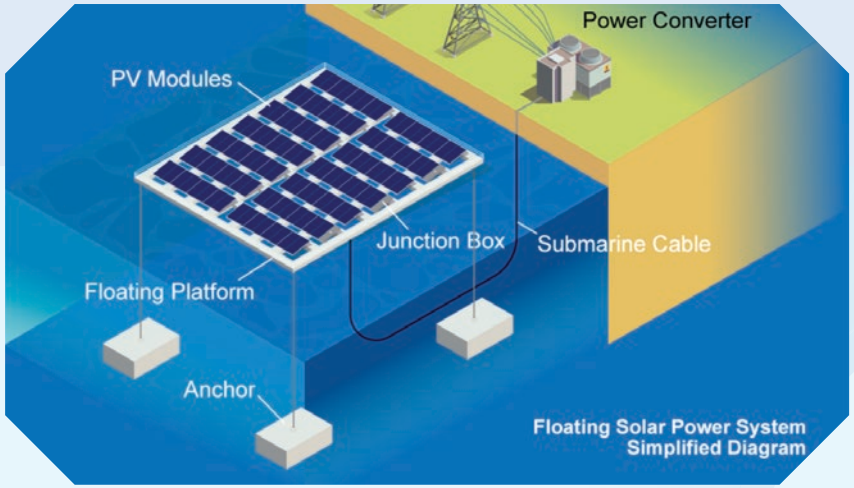
- 功率為 100 千瓦的浮動太陽能發電系統由十組共 188 塊光伏太陽能板組成，將太陽能轉換為直流電，其後又由兩個逆變器將直流電轉換為交流電，為水塘附近的水務設施供電。
- 太陽能板安裝在直徑為 41 米的圓形浮台上。
- 浮台由輕量、堅固的塑膠絕緣材料製造，可抵禦紫外線輻射和腐蝕，符合 BS 6920: 2014 標準並適用於飲用水使用。
- 浮台由 13 個錨及 16 條繫繩固定，可抵禦不同水位下時速高達 210 公里的強風。

Floating Solar Power System at the Tai Lam Chung Reservoir

The FPV system is a cluster or "island" of solar panels, built atop a buoyant mounting platform which is secured by anchors at the bottom of the water body. The submarine cables connect the PV panels to power converter on land to supply electricity.

About the Floating Solar Power System

- The 100kW-capacity FPV system consists of 188 photovoltaic panels arranged in 10 strings to convert solar energy to DC power. The generated DC power is then converted to AC power by two inverters to support the nearby waterworks facilities.
- The PV panels are mounted on a circular floating platform with a diameter of 41 metres.
- Made of light-weight, durable HDPE insulator materials which are resistant to UV radiation and corrosion, the floating platform complies with the BS 6920: 2014 Standard and is suitable for use in drinking water.
- The floating platform is secured by 13 anchors and 16 mooring lines which can withstand strong winds up to 210km/hour and a wide range of water level variations.



浮動太陽能發電系統具應變力設計令其效能、安全性及可持續性有所提升

在暴風雨或旱季期間，水塘的水位可能出現大幅變化。大欖涌水塘的浮動太陽能發電系統在建造時將氣候變化日益嚴重的影響納入考量，適當考慮到應變力、效能、安全性及周圍環境。

Resilient FPV Design with Enhanced Efficiency, Safety and Sustainability

A reservoir's water level can change dramatically during heavy rain, storms or droughts. Taking into account the intensifying impacts of climate change, the FPV system at the Tai Lam Chung Reservoir is built with due consideration to resilience, efficiency, safety and the surrounding landscape.

適應氣候的靈活設計

- 彈性錨固系統可有效應付強風荷載、風暴下的波浪及水塘水位大幅度變化。系統設計中已採用彈性繫繩，避免超出負載及在錨點之間更均衡地分散壓力。

Flexible Design for Climate Adaptation

- Elastic mooring system could better cope with high wind loads, wave forces under storm conditions as well as a wide range of reservoir level variations. Elastic mooring lines were employed in the system design to avoid overloading and distribute the stress more evenly among the anchors.

高效運用太陽能

- 為充分利用所收集的太陽能，已引入能源儲存系統以儲存浮動太陽能發電系統多出的能源，而非直接輸送至電網中。儲存的能源可用於多雲或晚間負載消耗。

Efficient Use of Solar Energy

- To make the most of the harvested solar power, an energy storage system was introduced to store surplus energy generated from the FPV system instead of sending the energy directly to the power grid. The stored energy would serve for load consumption during cloudy or night time.

優化程序提升效能及安全

- 為縮短水底作業的時間及減低風險，我們採用了新的安裝流程，加大錨籠的體積，以便可隨時透過漏斗型管道放置水泥磚。新方法較由潛水員在水底放置水泥磚的傳統方法合共可節省 32.5 小時的水底工程時間，工作效能及工地安全均得到改善。

Optimised Procedure for Enhanced Efficiency and Safety

- To minimise the time and risks of underwater works, a new installation procedure was adopted by enlarging the size of the anchor cage to allow for random deployment of concrete blocks via a funnel duct. Compared with traditional procedure where divers deploy concrete blocks underwater, this optimised approach has saved a total of 32.5-hour time of underwater works, enhancing both work efficiency and site safety

與周邊環境融為一體

- 大欖涌水塘青山環繞，素有「千島湖」的美譽。安裝在大欖涌水塘的浮動太陽能發電系統採用圓形設計，仿似其中一座島嶼，與周邊自然環境融為一體，和諧共生。

Integration with the Surrounding Environment

- The Tai Lam Chung Reservoir is commonly known as "Thousand Island Lake" flanked by picturesque and lush green rolling hills. To integrate with the surrounding nature, the Tai Lam Chung Reservoir FPV system has adopted a circular design to be incorporated as one of these thousand islands creating a harmonious and symbiotic environment.

點滴話你知

Did you know?

各個浮動太陽能發電系統先導計劃每年能產生約 12 萬度電
Each pilot FPV system generates about 120 000kWh of electricity annually

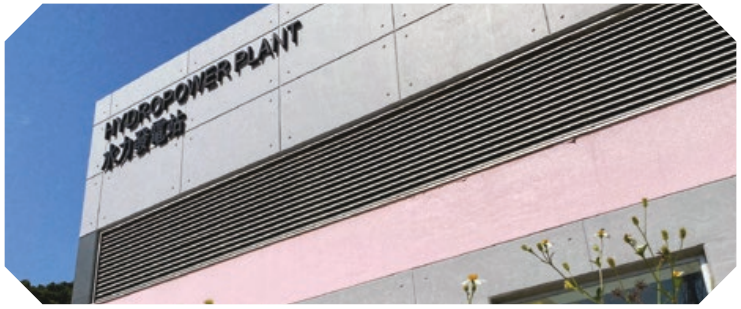
各個浮動太陽能發電系統先導計劃每年能產生約 12 萬度電（約等於 36 戶普通家庭一年的用電量），可為附近的抽水站或水塘的空氣壓縮機房供電，亦為地球每年減少 84 公噸的二氧化碳排放量。
Each pilot FPV system generates about 120 000kWh of electricity annually which will be used to power nearby pumping station or air compressor house of the reservoir. The amount of electricity generated is equivalent to the annual electricity consumption of 36 average households with a reduction of 84 tonnes of CO_2 emission.

水力發電廠

繼香港首個和第二個分別位於屯門濾水廠和沙田濾水廠的水力發電站落成後，位於馬鞍山濾水廠的水力發電站的設計工作亦已完成，預計於二零二六年內投入運作。

Hydropower Generation Plants

Following the establishment of Hong Kong's first and second hydropower plants at Tuen Mun Water Treatment Works and Sha Tin Water Treatment Works respectively, the design for another hydropower plant at Ma On Shan Water Treatment Works was completed which will be commissioned in 2026.



了解更多水力發電站
Learn more about hydropower plant

內聯閉式水力發電裝置

在線監測儀器和無線數據傳輸器是智慧管理現代供水網絡的重要工具。內聯閉式水力發電裝置是一種可再生能源發電裝置，能夠將地下水管網絡中多餘的水能量轉換為電力。為進行實時監測，我們正著手在「智管網」的部分監測區域安裝內聯閉式水力發電裝置，為感應及監測設備和數據傳輸裝置提供電力。

在前創新及科技局的科技統籌（整體撥款）計劃資助下，我們已從香港理工大學採購了 20 套內聯閉式水力發電裝置，其中六套已於「智管網」的站點試行，表現令人滿意。我們正尋求合適的「智管網」站點，務求在內聯閉式水力發電裝置的運行範圍符合食水分配網絡的運行條件時，安裝更多內聯閉式水力發電裝置。

In-line Hydropower Harnessing Devices

Online monitoring instruments and wireless data transmitters are important tools for the smart management of a modern water supply network. In-line hydropower harnessing device (IHHD) is a renewable energy device that enables the conversion of surplus water power in the underground water pipework into electrical energy. To achieve real-time monitoring, we are installing IHHDs in some of the District Metering Areas (DMAs) established under the Water Intelligent Network (WIN) to power sensing and monitoring equipment and data transmission devices.

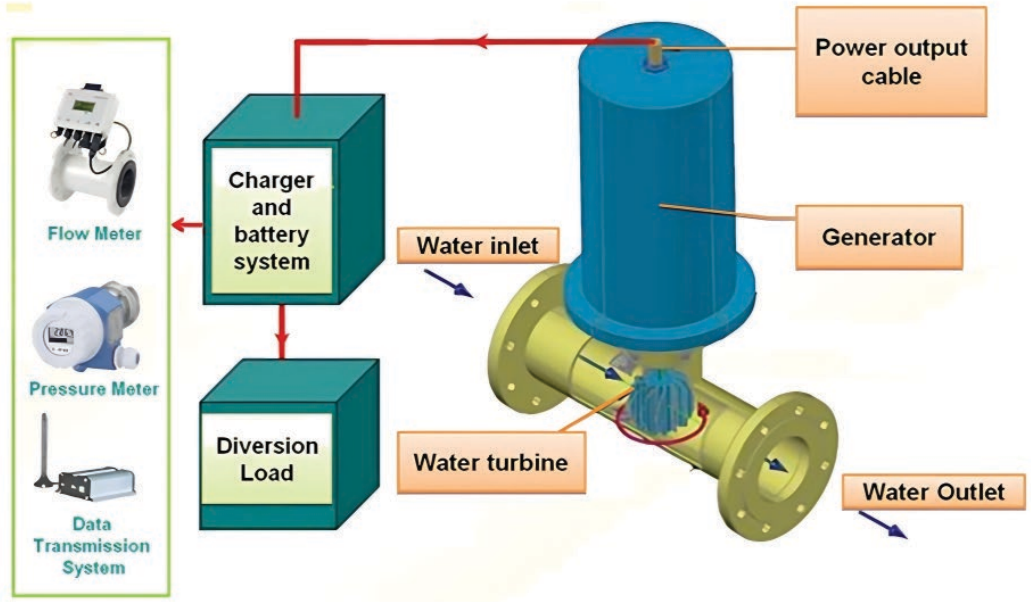
Funded by the then Innovation and Technology Bureau's TechConnect Block Vote, we have procured 20 sets of IHHD from the Hong Kong Polytechnic University (PolyU) with six of them have been deployed to the WIN sites with satisfactory performance. Suitable WIN sites are being explored for installing more IHHDs when the operating range of the IHHDs ties in with the operating conditions of the fresh water distribution network.

與此同時，我們亦與香港理工大學合作開發新一代的內聯閉式水力發電裝置，以配合更多水流量較低的「智管網」站點，以擴大安裝規模。

Meanwhile, we are also collaborating with the PolyU for developing the next generation of IHHDs to cater for more WIN sites with lower flow conditions with a view to increasing the scale of deployment.

內聯閉式水力發電裝置，為「智管網」的感應及監測設備和數據傳輸裝置提供電力，以達至實時遙距監測的目標。

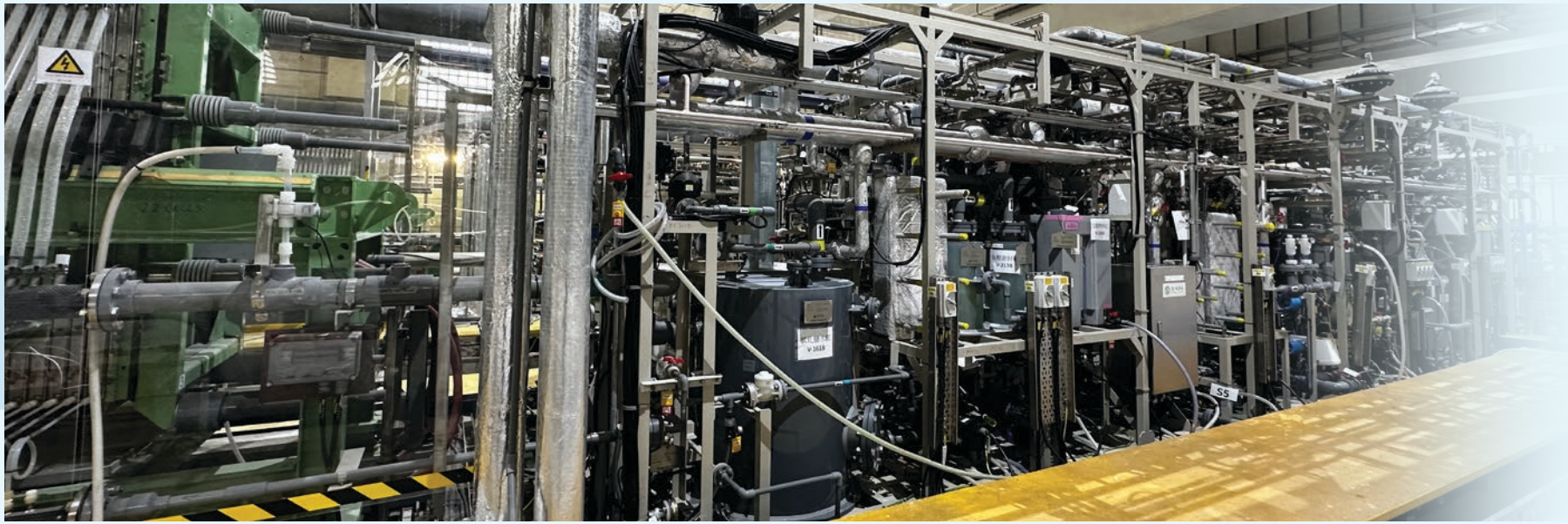
In-line hydropower harnessing devices provide electric power supply to the sensing and monitoring equipment and data transmission devices of the Water Intelligent Network for real-time remote monitoring purposes.



新一代的內聯閉式水力發電裝置整體作為「系統」運作，為「智管網」的監測和數據傳輸裝置提供電力。該裝置由多個部分組成，包括將水管中多餘的水能量轉換為零碳電力的集成渦輪發電機，用於快速安裝的短管，應對食水供應管網晝夜流量特徵的充電器和電池系統，以及消散多餘電力和防止集成渦輪發電機機組轉速過快的分散負載。

The new generation of the IHHD works "as a system" to power the monitoring and transmission equipment for the smart water network). It is composed of various components, namely, an integrated turbine-generator for harnessing surplus water power in the pipeline for converting it into zero-carbon electricity, a short pipe for swift installation to a pipeline, a charger and battery system for dealing with diurnal flow characteristics of the fresh water distribution network, and a diversion load for dissipating surplus electricity and preventing overspeeding of the integrated turbine-generator unit.

現場生產氯氣
Onsite Chlorine Gas Generation



現場生產氯氣以改善水質和社區安全

過去數十年，香港一直使用由液態氯產生的氯氣消毒食水，抑制細菌滋生，這種方法亦廣泛地在世界各地使用。液態氯被歸類為危險品，須從中國內地廣東省進口，以危險品車輛運輸至本港各濾水廠貯存及使用。在這過程中，可能涉及氯氣洩漏風險。此外，液態氯的供應可能會出現波動，對香港食水處理和供水造成影響。

Enhancing Drinking Water Quality and Community Safety with Onsite Chlorine Gas Generation

For decades, Hong Kong had disinfected drinking water to suppress bacterial growth by using chlorine gas produced from liquid chlorine, a method which was also widely adopted throughout the world. Classified as dangerous goods, liquid chlorine was imported from the Guangdong Province, mainland China and transported by dangerous goods vehicles to various water treatment works (WTWs) for storage and use. This might incur potential risks of chlorine leakage during transportation and storage. Besides, its supply might fluctuate thereby posing an impact on the fresh water treatment and supply of drinking water in Hong Kong.

為消除進口液態氯時在運輸和貯存過程中的洩漏風險，及確保用於食水處理的氯氣和次氯酸鈉溶液有穩定的供應，水務署自二零一六年起已展開一項大型建設項目，為十二間主要濾水廠安裝現場氯氣生產設備，供消毒食水使用。二零二三年一月，這些濾水廠的消毒設備已完成升級，由使用液態氯轉為現場生產氯氣，並已全面投入使用。

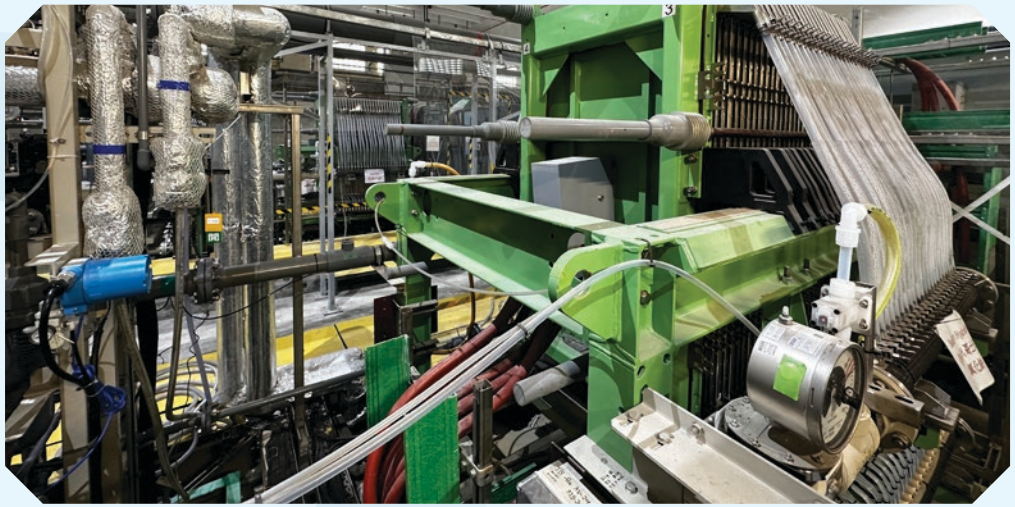
水務署重視創新和科技進步，大規模使用現場生產氯氣技術作食水消毒為全球首例。透過採用先進的臭氧水處理技術，濾水廠的氯消耗量減少了 30%。現場生產的氯氣可立即使用，無需貯存。

在主要濾水廠安裝現場氯氣生產設施無疑是香港食水消毒領域的一大里程碑。這除了降低氯氣洩漏對附近社區的潛在危害及對環境的影響外，亦有助改善食水質素、安全性及可靠供應。

To eliminate the potential leakage hazards during transportation and storage arising from the importation of liquid chlorine, and secure a reliable supply of chlorine gas and sodium hypochlorite solution for the fresh water treatment, the WSD has launched a major construction project since 2016 to install onsite chlorine gas generation facilities at 12 major WTWs to produce chlorine gas on demand for drinking water disinfection. In January 2023, the upgrading of disinfection facilities from liquid chlorine to onsite chlorine gas generation at these WTWs was completed and the onsite chlorine gas generation facilities were put into operation in full swing.

Pivoting innovation and technological advancement, the WSD has extensively applied the technology of generating chlorine gas on-site in disinfecting drinking water, the scale of which is the first of its kind in the world. By adopting the advanced ozone water treatment technology, the chlorine consumption in WTWs could be reduced by 30%. The chlorine gas generated can also be used immediately without the need for storage.

The installation of onsite chlorine generation facilities at major WTWs signifies a major milestone in drinking water disinfection in Hong Kong. Aside from entirely reducing the potential hazards of chlorine leakage to nearby communities and mitigating the impact on the environment, the onsite chlorine gas generation facilities also help in enhancing the quality, safety and reliable supply of drinking water.



在主要濾水廠現場生產氯氣取代使用從廣東省進口液態氯為食水消毒，藉此消除與液態氯運輸和貯存相關的氯氣洩漏的風險，提升食水消毒作業的安全。

The liquid chlorine imported from the Guangdong Province being used for disinfection will be replaced by the chlorine gas generated at the major WTWs, therefore eliminating the risks of chlorine leakage during the transportation and storage of liquid chlorine and enhancing the safety of the disinfection operation.

安裝現場氯氣生產設備後，食水處理和消毒過程已不再使用液態氯。

The installation of onsite chlorine generation has marked the end of using liquid chlorine for fresh water treatment and disinfection.

點滴話你知
Did you know?

氯氣被歸類為危險品條例下的第 2.3 類危險品
Chlorine gas is classified as Class 2.3 Dangerous Goods under the Dangerous Goods Ordinance

由於氯氣有毒、具腐蝕性及易於擴散，其被歸類為危險品條例下的第 2.3 類危險品，液態氯的運輸和貯存亦須遵守嚴格的安全和操作要求。例如，消防處對運輸液態氯的車輛訂立具體安全要求，而海事處亦對運輸液態氯的船舶訂立要求。

此外，水務署使用深水角氯氣裝卸區來專門裝卸液態氯。食水處理和消毒過程停止使用液態氯後，水務署已安排一項為期 12 個月的計劃，用於妥善運輸、除毒（清除所有殘餘氯氣）及處置超過 1 000 個曾盛載液態氯的容器。

Due to the toxic, corrosive and diffusible nature, chlorine gas is classified as Class 2.3 Dangerous Goods under the Dangerous Goods Ordinance, and the transportation and storage of liquid chlorine is subject to stringent safety and operational requirements. For example, the Fire Services Department has specific safety requirements for vehicles used for the conveyance of liquid chlorine, while the Marine Department has requirements for vessels used for the transportation of liquid chlorine.

In addition, the WSD has dedicated Sham Shui Kok Chlorine Trans-shipment Dock for loading and unloading liquid chlorine. Following the cessation of liquid chlorine for fresh water treatment and disinfection, the WSD has arranged a 12-month programme to properly transport, detoxify (via removal of all remaining chlorine gas) and dispose of over 1 000 used liquid chlorine containers.

減低建造工程的影響

我們的設計及建設科竭力於水務工程中的規劃、設計及建造等各個環節，盡量降低工程對環境造成的影響。每年，我們均會參照《ISO14001:2015 環境管理體系》認證訂立新方向和目標，不斷提升我們在環境管理體系及環保方面的表現。

提高生物多樣性

根據前環境局制定的《生物多樣性策略及行動計劃 2016-2021》，水務署繼續在漁農自然護理署的支持下，致力加強天然溪澗和引水道的保育工作，以改善和盡量減少維修工程對生態造成的影響。此外，我們將繼續尋找機會，為政府的生物多樣性保育工作及國家《生物多樣性策略及行動計劃》作出貢獻，同時提高公眾意識和社區參與度。

推廣水資源和生態保育

為確保城市的可持續發展，社會各界需同心協力保護生物多樣性。除了在灌溉水塘建設人工生態棲息地等多項生物多樣性先導項目外，我們一直與環保團體合作，向公眾宣傳集水區的水資源和生態保護。

Minimising Construction Impacts

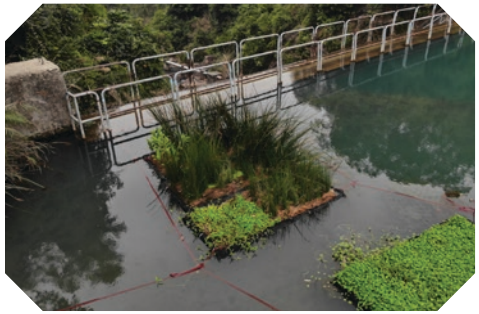
Our New Works Branch strives to minimise the environmental impacts arising from our waterworks construction throughout the planning, design and construction processes. Each year, we establish new objectives and targets under the ISO 14001:2015 Environmental Management System (EMS) to continually improve our EMS and environmental performance.

Enhancing Biodiversity

Under the "Biodiversity Strategy and Action Plan 2016-2021" (BSAP) formulated by the then Environment Bureau, the WSD continues to contribute efforts in enhancing conservation of natural streams and catchwaters by improving practices in and minimising ecological impacts from our maintenance works, with the support of the Agriculture, Fisheries and Conservation Department. In addition, we will continue seeking opportunities to contribute to the Government's efforts on biodiversity conservation and to Mainland's national BSAP while promoting public awareness and community involvement.

Promoting Water and Ecology Conservation

Concerted efforts across the society to conserving biodiversity is essential to ensuring the city's sustainable development. Apart from various biodiversity enhancement pilot projects which include artificial ecological habitats in irrigation reservoirs, we have been collaborating with green groups to promote water and ecology conservation in water gathering grounds to members of the public.



灌溉水塘中的人工生態棲息地

Artificial ecological habitats in irrigation reservoirs

我們與綠色力量和香港賽馬會慈善信託基金合作，開展賽馬會集水成自然教育計劃。二零二二年六月，我們透過網絡研討會為交流會議提供支持。該會議討論和探索集水區棲息地、生態系統與人類利益之間的相互關係。

為了宣傳「水與生態」關係的重要性，我們亦為中學教師撰寫教師用書提供支援，並由綠色力量出版。

In collaboration with Green Power and the Hong Kong Jockey Club Charities Trust in its JC Flow Programme (Jockey Club – Fluvial Liveliness of Water Gathering Grounds), we provided support to an interflow session via webinar which was held in June 2022 to discuss and explore the interrelationship between the habitats in water gathering grounds, ecosystems and the benefits to people.

To promote the importance of the interrelationship between water and ecology, we have also provided support to the development of reference books for secondary school teachers, which were published by Green Power.

水塘的釣魚期

有見公眾對垂釣的興趣日益增加，水務署於二零二一年推出先導計劃，放寬水塘的釣魚期，讓持有有效釣魚牌照人士在船灣淡水湖及大潭水塘群垂釣，同時提高公眾對保護水資源重要性的認識。水務署委任專家顧問評估此舉對水塘環境和水質的影響，以及水塘內魚類的種類和數量。

由於對供水可靠性及安全沒有構成明顯影響，我們已自二零二二年四月起放寬所有水塘（包括 17 個水塘和 9 個灌溉水塘）的釣魚期，並會繼續定期監測水塘的水質和抽取水樣本，以確保水塘的水質優良。

Fishing Period in Reservoirs

In view of increasing public interest in fishing, the WSD launched a pilot scheme in 2021 to relax the fishing period in reservoirs, allowing anglers holding valid fishing licences to fish in the Plover Cove Reservoir and Tai Tam Group of Reservoirs whilst raising public awareness of the importance of protecting water resources. An expert consultant was commissioned to assess the impact on the water quality of the reservoir environment, as well as the species and quantities of fish inside the reservoirs.

Taking into account no appreciable impact on the reliability and safety of the water supply, we have relaxed the fishing period in all reservoirs (including 17 reservoirs and nine irrigation reservoirs) since April 2022, and will continue to conduct regular water monitoring and sampling in reservoirs to ensure good water quality.

於先導計劃下，水塘釣魚期放寬，讓公眾享受釣魚的樂趣。

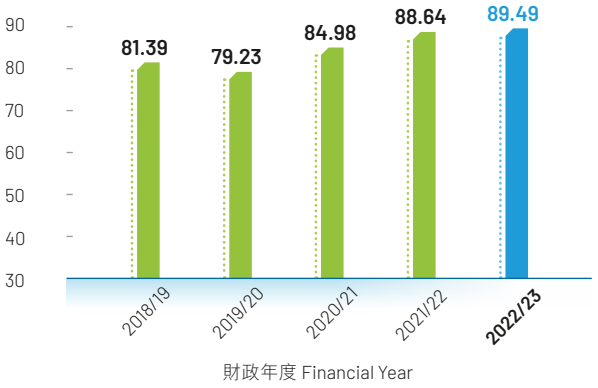
Fishing period in reservoirs was relaxed to enable public enjoyment following a pilot scheme.

可持續發展數據

FIGURES UNDER SUSTAINABILITY

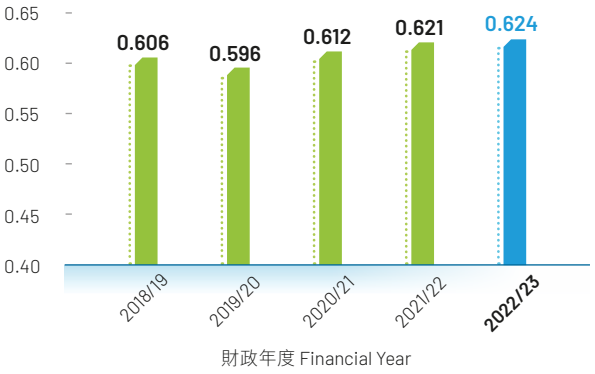
人均耗電量（食水及原水）
Per Capita Electricity Consumption (Fresh Water and Raw Water)

千瓦時/每人/每年 kWh/head/year



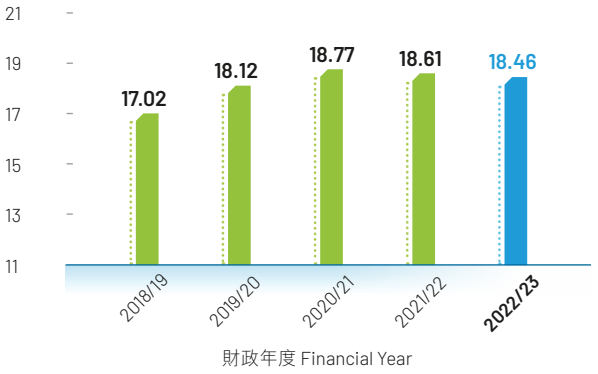
每單位耗電量（食水及原水）
Unit Electricity Consumption (Fresh Water and Raw Water)

千瓦時/立方米 kWh/m³



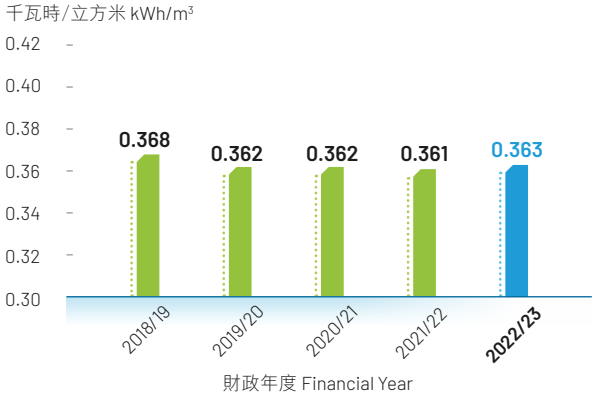
人均耗電量（海水）
Per Capita Electricity Consumption (Salt Water)

千瓦時/每人/每年 kWh/head/year



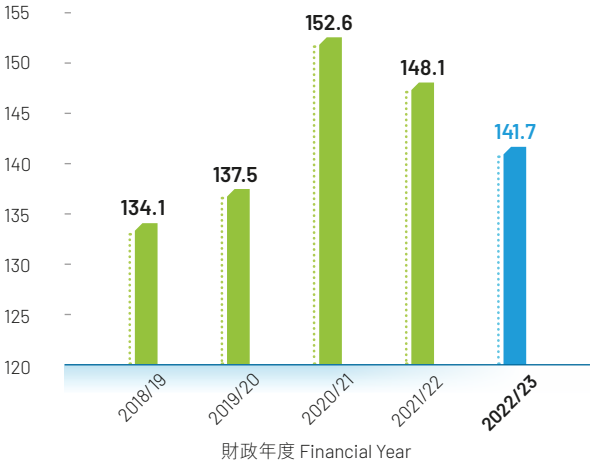
每單位耗電量（海水）
Unit Electricity Consumption (Salt Water)

千瓦時/立方米 kWh/m³



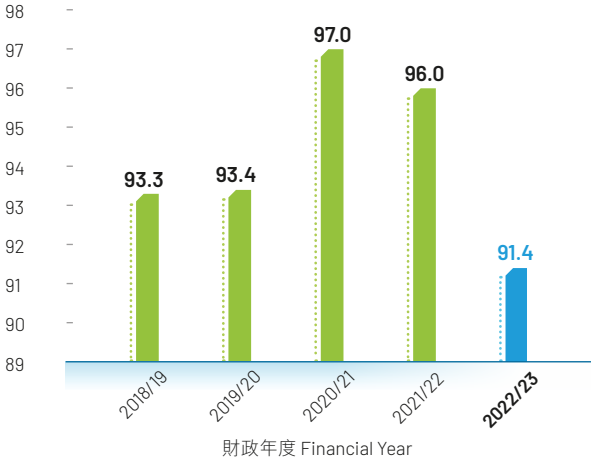
人均住宅食水用量
Per Capita Domestic Fresh Water Consumption

公升/日 Litres/day



人均沖廁水用量（食水及海水）
Per Capita Flushing Water Consumption (Fresh Water and Salt Water)

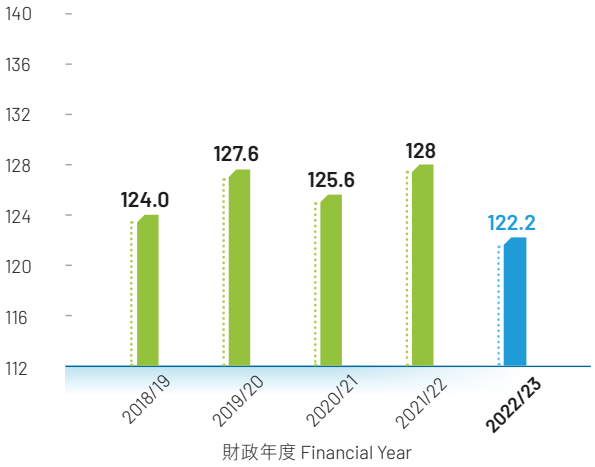
公升/日 Litres/day



註：人均沖廁水用量（食水及海水）是根據本港的沖廁水總用量計算而得。
Per Capita Flushing Water Consumption (Fresh Water and Salt Water) is based on Hong Kong's total flushing water consumption.

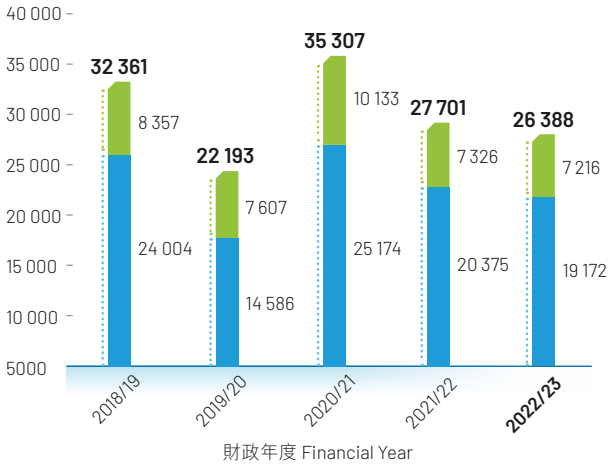
辦公室每單位樓面面積的耗電量
Office Electricity Consumption Per Unit Floor Space

千瓦時/平方米 kWh/m²



耗紙量
Paper Consumption

令 Reams



無木漿紙張 Wood-free Paper

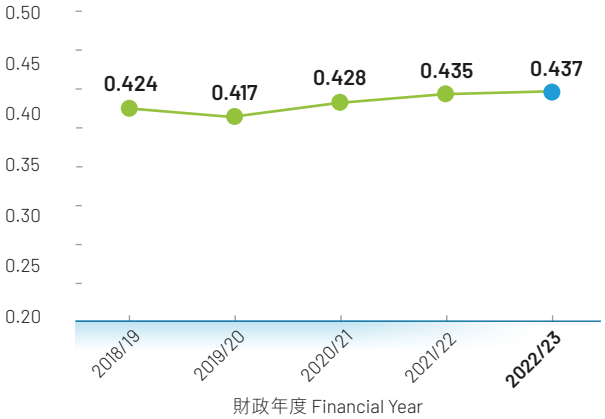
再造紙張 Recycled Paper

註：由於二零二零年第一季實施特別上班安排，原定預計於二零一九至二零年度訂購的 1 752 令無木漿紙張和 5 442 令再造紙張延遲至二零二零至二一年度。

Note: 1 752 reams of wood-free paper and 5 442 reams of recycled paper originally planned to be ordered in 2019/20 was deferred to 2020/21 due to the special work arrangements implemented in the first quarter of 2020.

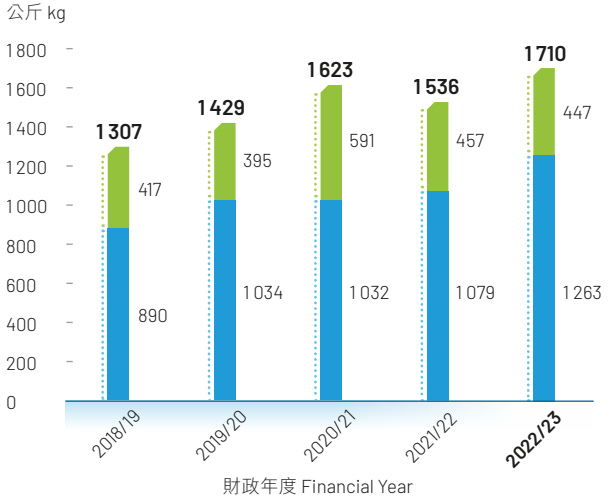
水務署因使用電力處理食水而產生的溫室氣體排放
Greenhouse Gas Emissions Incurred From Electricity Used for Fresh Water Processing by the WSD

千克二氧化碳/立方米 kg CO_2/m^3



內部工作所需揮發性有機化合物耗用量
VOC Consumption for In-house Work

公斤 kg

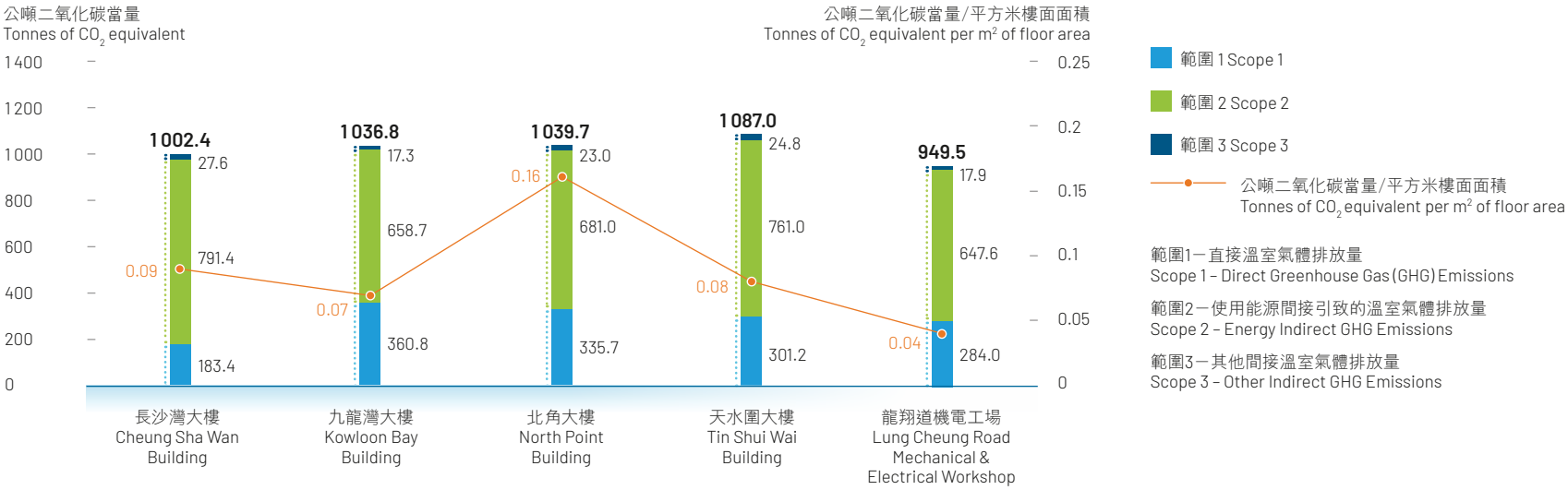


塗料、黏合劑及密封劑
Paints, Adhesives and Sealants

其他
Others

VOC：揮發性有機化合物
Volatile organic compound

碳審計報告
Carbon Audit Report



範圍1－直接溫室氣體排放量
Scope 1 – Direct Greenhouse Gas (GHG) Emissions

範圍2－使用能源間接引致的溫室氣體排放量
Scope 2 – Energy Indirect GHG Emissions

範圍3－其他間接溫室氣體排放量
Scope 3 – Other Indirect GHG Emissions

可再生能源產量
Renewable Energy Generated

財政年度 Financial Year	18/19	19/20	20/21	21/22	22/23
水務設施中的太陽能板發電系統的發電量（千瓦時）（見下面的註釋） Renewable Energy (RE) Generated by Land-based Photovoltaic (PV) Panels in Waterworks Installations (kWh) (see Note below)	29 437	28 940	230 257	267 438	**278 782**
水塘浮動太陽能板發電系統的發電量（千瓦時） RE Generated by Floating PV Systems in Impounding Reservoirs (kWh)	131 328	200 428	209 007	211 811	**269 896**
濾水廠中的水力發電系統的發電量（千瓦時） RE Generated by Hydropower Plant at Water Treatment Works (kWh)	311 587	1 491 819	1 478 767	1 510 453	**1 421 976**
總量（千瓦時）Total (kWh)	472 352	1 721 187	1 918 031	1 989 702	**1 970 654**
減少二氧化碳排放當量（公斤）【全港性的溫室氣體排放系數預設值為0.7公斤/千瓦時】 Equivalent Reduction in CO_2 Emission (kg) [The territory-wide default value of the emission factor is 0.7 kg/kWh]	330 646	1 204 831	1 342 622	1 392 791	**1 379 458**

註：欣澳海水抽水站的可再生能源發電系統的發電量，為 12 千瓦太陽能板發電系統和 2.5 千瓦風力發電系統的總和。
Note: The RE generated from Sunny Bay Salt Water Pumping Station is the summation of both 12kW PV system and 2.5kW wind turbine system.

公用集調車輛資料
Information on Vehicle Pool Transport

財政年度 Financial Year	投入運作的政府車輛 No. of Government Vehicles in Operation			總燃料耗用量（公升） Total Fuel Consumption (Litres)			總車程（公里） Total Mileage (km)		
	20/21	21/22	**22/23**	20/21	21/22	**22/23**	20/21	21/22	**22/23**
柴油 Diesel	90	112	**126**	220 661	273 899	**269 231**	1 112 553	1 343 851	**1 302 188**
汽油 Petroleum	112	104	**98**	285 478	264 289	**247 757**	1 513 801	1 491 913	**1 452 705**
混合（汽油/電力） Hybrid (Petrol/Electric)	1	1	**1**	671	620	**589**	13 903	13 590	**12 376**
液化石油氣 LPG	11	11	**10**	47 122	47 599	**46 148**	126 774	129 778	**125 810**
電力 Electricity	13	13	**12**	–	–	**–**	65 975	65 972	**67 816**

廢氣排放
Emissions

以公噸計 Figures in Tonnes	二氧化碳 CO_2			二氧化硫 SO_2			氮氧化物 NO_x			可吸入懸浮粒子 RSP		
財政年度 Financial Year	20/21	21/22	**22/23**	20/21	21/22	**22/23**	20/21	21/22	**22/23**	20/21	21/22	**22/23**
直接廢氣排放 Direct emissions												
車輛（柴油）Vehicle fleet (diesel)	536	730	**704**	–	–	**–**	1	2	**3**	–	–	**–**
車輛（汽油）Vehicle fleet (petrol)	565	561	**585**	–	–	**–**	1	1	**1**	–	–	**–**
車輛（液化石油氣）Vehicle fleet (LPG)	77	84	**77**	–	–	**–**	–	–	**–**	–	–	**–**
間接廢氣排放 Indirect emissions												
耗用電（九龍及新界） Electricity consumed (Kowloon and New Territories)	255 372	278 889	**281 734**	30	38	**27**	170	189	**188**	6	6	**6**
耗用電（港島） Electricity consumed (Hong Kong Island)	50 053	50 107	**49 086**	8	6	**10**	38	36	**32**	1	1	**1**
總量 Total	306 603	330 371	**332 186**	38	44	**37**	210	228	**224**	7	7	**7**

客戶服務
Customer Services

提升服務質素 應付客戶增長

我們一直秉承以客為本的核心理念，竭誠提供適時、高效及以客為本的服務。我們不斷探索嶄新和有效措施，滿足增長中的的各種客戶需求，同時促進經濟繁榮。

我們善用新興技術實施多項服務提升措施，務求提供方便、靈活和高效的服務。

ENHANCING SERVICES TO MEET CUSTOMER GROWTH

As part of our core values, we strive to enhance customer satisfaction in delivering responsive, efficient and customer-oriented services. We are constantly exploring new and effective ways to meet the diverse needs of our increasing customers while underpinning a thriving economy.

Through emerging technologies, we have implemented a number of service enhancements to provide convenience, flexibility and efficiency.

財政年度 Financial Year	18/19	19/20	20/21	21/22	22/23
客戶數目 Number of Customer Accounts	3 042 700	3 077 800	3 115 900	3 159 000	**3 196 800**

多元化的付款方法

為了進一步方便客戶，我們提供更多元化的繳費方式，當中包括自動轉賬、自動櫃員機、繳費靈、轉數快、支票、電話理財和網上繳費。我們將繼續探索更多付款方式的選擇，滿足客戶的不同需要。

電子賬單服務

我們為客戶提供電子賬單服務，助其輕鬆管理水費單及減少紙張消耗，並提供多項增值服務，例如即時以電郵接收最新賬單、可獲延長繳費限期一個月（水費結算期為一個月的高用水量用戶除外）、接收繳費提示電郵，以及查閱過去兩年的用水和付款記錄。截至二零二三年三月三十一日，超過 186 700 名客戶已選用電子賬單。

水務署流動應用程式

「水務署流動應用程式」提供最新資訊，包括賬單摘要、催繳通知、暫停供水通告，以及有關水務署的計劃和服務的最新消息。用戶亦可以利用應用程式：

- 以二維碼於便利店或透過轉數快繳付帳單，無須出示實體水費單。
- 接收來自 452 個區議會劃分選區或大型屋苑的暫停供水通告。
- 獲取水務署「一般認可」水管及配件的產品資料。

免費下載「水務署流動應用程式」
Download the WSD Mobile App for free

Android 版本
Android version

iOS 版本
iOS version

Diversified Payment Options

To bring greater convenience to customers, we provide diversified payment options for water bills. These include autopay, ATM, PPS, FPS (Faster Payment System), cheque, phone and internet banking. We will continue to explore other payment options for meeting the varied needs of our customers.

E-Bill Service

We offer e-bill service to help customers manage their water bills with ease and reduce paper consumption. Additional value-added benefits are provided, including instantly receiving new bills by email, enjoying one-month extension of payment due date (except for high water consumption consumers who are billed at monthly intervals), getting email payment reminders, and viewing water consumption records and payment history for the last two years. As at 31 March 2023, over 186 700 customers have switched to electronic billing.

WSD Mobile App

Our mobile application "WSD Mobile App" provides updated information including bill summary, reminders, water suspension notices as well as the latest news about the WSD's initiatives and services. Users can make use of the app to conduct the following:

- make payments at convenience stores or through FPS by using the QR code provided without the need to present paper water bills.
- receive water suspension notices from among 452 sub-districts according to the District Council Election Constituencies or concerned Large Housing Estates.
- obtain product information of water supply pipes and fittings with valid General Acceptance status issued by the WSD.

提升供水申請服務

為方便水喉業界和市民大眾，水務署正計劃透過一套新的供水申請管理系統來提升服務。新系統將於數碼平台運作，用於接收和處理供水申請。該系統的可行性研究已於二零二三年展開，目標於二零二五年起分階段實施。

繼二零一九年至和二零二一年期間提供電子遞交供水申請服務予村屋、簡單水管工程（包括指定行業如飲食業、理髮店、美容店和洗衣店，以及分拆水錶）及採用建築信息模擬（BIM）技術設計的項目後，我們已於二零二二年九月起將此服務擴展至公司申請流動水錶及向水務監督提出施工要求。

此外，為方便水喉業界查閱有關水管工程及提交申請的最新指示和指引，我們於二零一八年起推出了《樓宇水管工程技術要求》和《申請供水指引》，並每年檢視和更新該兩份刊物。於更新期間的所有新政策和指引將透過通函發布。另外，我們亦透過定期舉行會議作為與業界溝通的平台。

暫停供水自動通告系統

為加強與客戶溝通，我們正逐步設立一套以地理訊息系統為本的「暫停供水自動通知系統」，主動通知因緊急暫停食水供應而受影響的客戶。在水管發生緊急故障時，該系統能協助我們識別因緊急維修而需要關閉的閥門和暫停使用的水管，從而確認供水受影響的建築物並通知有關方面。

第一階段「暫停供水自動通知系統」已於二零二零年十二月推出。當大型屋苑（即不少於 1 000 個住宅單位的屋苑）受緊急暫停食水供應所影響，「暫停供水自動通知系統」將通知受影響的大型屋苑管理處。該服務由二零二二年四月開始已透過水務署流動應用程式擴展至大型屋苑的相關用戶，並於二零二二年十一月進一步擴展至受緊急暫停沖廁水影響的大型屋苑。

Service Enhancement for Water Supply Applications

With a view to providing convenience to the plumbing trade and members of the general public, the WSD is planning a service enhancement through a new water supply application management system. The new system will run on a digital platform for receiving and processing applications for water supply. The feasibility study of the system commenced in 2023 with the target implementation in phases starting from 2025.

Further to our provision of the electronic submission channel between 2019 and 2021 for the water supply application catered for village-type houses, simple plumbing works (including selected business trade such as food business, barber & beauty shops and laundries, separate meters), and those design projects adopting the Building Information Modelling (BIM) technology, we have then extended this service to the company for their application for portable meter as well as request for work to be carried out by the Water Authority since September 2022.

In addition, in order to provide easy reference for the plumbing trade to identify the latest instructions and guidelines on the requirements on plumbing works and submissions, we have promulgated "Technical Requirements for Plumbing Works in Buildings" and "Guide to Application for Water Supply" since 2018, and both publications will be reviewed and updated annually. In between the two updates, any new policies and guidelines will be promulgated by means of Circular Letters. Moreover, we have established a communication platform with the trade through regular meetings.

Water Suspension Notification System

To enhance customer communications, we are progressively developing a geographic information system (GIS)-based Water Suspension Notification System ("WATSUN") to proactively notify affected customers in the event of emergency suspension of fresh water supply. At times of emergency failure in water mains, the WATSUN could assist to identify the valves to be closed and the sections of water mains to be isolated for emergency repair works, thereby identifying the buildings to be affected and notifying the concerned parties.

Phase 1 development of WATSUN was rolled out in December 2020. When there is emergency fresh water supply suspension affecting Large Housing Estates (LHEs), i.e. estates with not less than 1 000 housing units, WATSUN will notify the management offices of the affected LHEs. In April 2022, the notification service was extended to individual consumers in LHEs through the WSD Mobile App. In November 2022, the notification service was further extended to cover emergency flushing water supply suspension affecting LHEs.

我們正計劃於二零二四年將該服務擴展至受緊急暫停食水及沖廁水影響的小型屋苑（即至少兩幢及介乎 100 至 1 000 個住宅單位的屋苑）。

為合資格水喉匠提供電子牌照

隨著「智方便」流動應用程式推出後，自二零二二年三月起，我們提供電子牌照選項，允許合資格水喉匠透過網上申請方式取得數碼格式的牌照。電子牌照具有防偽特色，並可透過二維碼連結到水務署的持牌水喉匠名冊，驗證有效期等牌照相關資料。

提供電子牌照讓申請者可以全天候辦理網上牌照申請服務，而無須親身前往發牌辦事處領取傳統紙本水喉匠牌照。截至二零二三年三月，我們已向合資格水喉匠發出約 370 張電子牌照。

聊天機器人和語音分析

為提升客戶服務，讓客戶可迅速獲取資訊和支援，我們於二零二二年十二月在水務署網站引入了人工智能聊天機器人技術。聊天機器人可處理來自公眾的簡單查詢，並能提供與住宅用水帳戶的相關資訊。

在二零二二年六月開發語音分析系統後，我們正積極探討將人工智能技術延伸至「語音機器人」，藉以提升客戶電話諮詢中心的服務質素，並透過省卻處理口頭查詢和簡單服務要求的人手以提升運作效率。

In 2024, we are planning to extend the notification service to cover emergency suspension of both fresh water and flushing water supplies affecting Small Housing Estates (SHEs), i.e. estates with at least two blocks and housing units between 100 and 1000.

Provision of Electronic Licence for Eligible Plumbers

With the launch of "iAM Smart" mobile application, we have provided an option for electronic licence (e-licence) since March 2022 allowing eligible plumbers to apply for licence in digital format through online application. The e-licence contains anti-counterfeit features and enables verification of licence information such as its validity period through a link to the WSD's Licensed Plumber Directory via the QR code.

The provision of e-licence allows applicants to conduct online licensing application services round the clock without the need to visit the licensing offices in person to get plumber's licences in conventional paper format. Up to March2023, we have dispatched about 370 e-licences to eligible plumbers.

Chatbot and Speech Analytics

To enhance customer service with fast access to information and support, we introduced the artificial intelligence (AI) chatbot technology to the WSD website in December 2022. The chatbot handles simple enquires from the public and provides information on domestic account related matters.

With the development of the Speech Analytic System in June 2022, we are actively exploring the extension of AI technology by using "voicebot" with a view to enhancing the services of the Customer Telephone Enquiry Hotline as well as operational efficiency of the Customer Telephone Enquiry Centre through saving manpower resources in handling verbal enquiries and simple service requests.

創建一個有利於共同協作的環境，以加強供水應變能力，邁向有供水保障的未來。

Creating an enabling environment for collaborative actions to strengthen water resilience towards a water-secure future

全力支持 · SUPPORT

我們致力透過建構能力、連結行業及社區、制定政策、建立合作關係及共享經驗，以傳承知識及延續供水創新，從而實現可持續發展。

We foster knowledge and sustain water innovations through capacity building, industry and community engagement, policy development, partnerships and insights sharing for achieving sustainable development.

我們的員工
Our People

賦予能力 服務更佳

水務署相信提升員工的知識、技能、安全和健康水平，是提供卓越服務的開端。現今的動態環境，氣候變化、科技發展或客戶期望均瞬息萬變。我們透過傳承知識、鼓勵協作和推動學習文化來迎接及適應轉變，從而不斷提升服務質素，並讓員工發揮潛能，成就更多。

EMPOWERING OUR PEOPLE TO SERVE BETTER

At the WSD, we believe the provision of outstanding service starts with empowering our staff with enhanced knowledge, skills, safety and wellness. In today's dynamic environment, customer expectations are constantly transforming coupled with the rapid shifts in climate and technologies. Through fostering knowledge, collaboration and learning culture, we are embracing and adapting to these changes to continuously enhance our services, as well as enable our staff to flourish and achieve greater success.

人員編制 Staff Establishment

財政年度 Financial Year	2018/19	2019/20	2020/21	2021/22	2022/23
初級人員 Junior Staff	411	416	418	412	**411**
一般及共通職系人員 General & Common Grades Staff	1 649	1 673	1 688	1 679	**1 679**
督察及技術人員 Inspectorate & Technical Staff	2 074	2 127	2 163	2 221	**2 214**
專業人員 Professional Staff	379	387	398	397	**396**
總數 Total	4 513	4 603	4 667	4 709	**4 700**

知識管理

在水務署，我們培養、追求、分享知識並使之成為方便應用的策略性資產，以增強我們在日益複雜的營運環境中創新和適應挑戰的能力。知識管理是支持能力建構、推動數碼化、智慧水務創新，以及提升工作表現和營運效率的關鍵因素。

於新常態下善用知識

二零一九冠狀病毒病疫情帶來工作、舉辦活動及分享知識的根本轉變。儘管疫情帶來挑戰，但我們繼續善用知識管理及數碼技術，持續培養學習文化。

年內，我們以面授、網上及混合模式舉辦各種知識管理活動，如「知識管理茶座」、技術研討會、分享會、K-POP 及參觀活動等，迎合不同領域、職系和分區員工的學習需要，有助將寶貴見解轉化為新知識。這些知識管理活動為員工提供有效的平台，讓他們孕育創意、分享經驗、發展最佳實務，以及緊貼水務最新動向及技術提升。水務署透過這些平台，打造有利於知識分享與協作的環境，使員工能夠發揮專業知識，同時可由同儕分享的知識中獲益。

二零二二至二三年度，儘管受疫情影響，我們在培養持續學習文化方面取得良好進展，有超過 1 400 人次參與了 24 項知識管理活動。

靈活知識管理平台推動合作、學習及創新

我們的一站式知識管理平台「點聚」整合了知識管理活動、培訓課程及水務相關資料，推動知識協作及見解分享，讓員工能規劃自己的專業發展，亦可輕鬆透過水務署的知識寶庫，獲取文件、報告、指引及最佳實務等資訊。

KNOWLEDGE MANAGEMENT

At the WSD, knowledge is a strategic asset that we cultivate, capture, share and make it accessible for enhancing our resilience to innovate and adapt to the challenges of the increasingly complex operating environment. Knowledge management is the key to supporting capacity building, driving digitalisation and smart water innovations, as well as enhancing performance and operational efficiency.

Harnessing the Power of Knowledge in the New Normal

The COVID-19 epidemic has brought a fundamental shift in how we work, organise events and share knowledge. Despite the challenges, we have continued to foster learning culture by harnessing the power of knowledge management and embracing digital technologies.

During the year, a wide variety of knowledge management activities, for example, themed KM Cafés, Technical Seminars, Sharing Sessions, K-POPs and Site Visits were conducted in in-person, online and hybrid modes, which addressed different learning needs of our staff members across disciplines, grades and geographies; as well as facilitated the transformation of valuable insights into new knowledge. These Knowledge Management (KM) activities provided effective platforms for staff members to generate ideas, share experiences, develop best practices and stay updated with the latest industry trends and technological advancement. Through these platforms, the WSD has created an environment conducive to knowledge sharing and collaboration, empowering staff members to contribute their expertise while benefitting from the knowledge of their peers.

In 2022/23, we achieved good progress in fostering a culture of continuous learning amidst the impact of the epidemic with over 1 400 man-time participating in 24 KM activities.

Versatile KM Portal for Empowering Collaboration, Learning and Innovation

As the focal point of knowledge events, training courses and waterworks-related materials, our one-stop KM Portal fosters knowledge collaboration and insights sharing, enables staff to plan for their professional development, as well as provides an easy access to information as the repository of WSD's various knowledge assets including documents, reports, guidelines and best practices.

在知識管理平台「點聚」，員工可透過論壇、聊天功能及項目管理等協作通訊工具，進行實時意見交流和項目案例分享，以促進團隊合作和協作。在新項目開發、流程改善或服務提升期間，「點聚」是推動創新的重要工具，對鼓勵創意及解決問題發揮重要作用。

除此之外，「點聚」提供多元化學習機會，包括網上課程、電子學習影片、網絡研討會及培訓資料。我們的員工可利用這些資源持續汲取新知識、提升技能及了解最新水務動向。為便利及時更新工作知識，「點聚」亦可讓員工查閱個人培訓記錄，並提供證書到期和更新提示，讓員工更有效地規劃自己的進修歷程。

Through the collaborative communications tools such as discussion forums, chat functionalities and project management features, the KM Portal enables real-time exchange of ideas and project cases while fostering teamwork and collaboration. In times of new project development, process improvement or service enhancements, the KM Portal is also pivotal to encouraging idea generation and problem solving, hence providing a key tool to drive innovation.

Furthermore, the KM Portal provides a diverse range of learning opportunities, such as online courses, e-learning videos, webinars, and training materials. These resources enabled our staff members to continuously acquire new knowledge, enhance their skills, and stay updated on industry trends. To facilitate timely review of work knowledge, the KM Portal also allows the retrieval of personal training records and provides staff with reminders on certificate expiry and renewal, thereby empowering our staff to effectively plan for their learning journeys.

工程師出席以「水務業創新發展」為主題的國際研討會後，在「知識管理茶座」活動上分享見解。

In the KM Café activity, the engineer shared valuable insights gained from attending international conferences which focused on the innovative developments in the water industry.

我們邀請了內部及外來嘉賓講者分享專業知識及經驗，從而推動知識交流和持續學習的文化，其中一場以香港探測滲漏技術為主題的「知識管理茶座」，就是透過現場和網上混合模式舉辦。

Internal and external guest speakers are invited to share expertise, knowledge, and experience to foster a culture of knowledge exchange and continuous learning. A KM Café on Leakage Detection Technologies in Hong Kong was held in a hybrid mode.

在知識管理「走在最前線—18區管網透視系列」影片中，技術團隊分享他們於各區管理供水網絡時所獲得的知識和經驗。

Technical teams shared their learning and experiences in managing water networks in each district through the KM Video Series of Experienced Staff.

員工培訓

二零二二至二三年度，我們提供了 10 496 個員工培訓工日。

Staff Training

In 2022/23, we provided 10 496 man-days of training.

培訓工日 Training Man-days

財政年度 Financial Year	2019/20	2020/21	2021/22	2022/23
培訓工日 Training Man-days	8 666	*5 532	9 977	**10 496**

* 在二零一九冠狀病毒病疫情下，面授培訓課程的人數受限或需要長時間暫停。

* In-person training courses were highly restricted or suspended for a prolonged period during the COVID-19 epidemic.

職業健康及安全

我們致力保障員工和工人在職場的健康和安全，並按需要採取措施提高安全標準。

我們定期舉行會議，討論與職業健康及安全相關的議題，並舉辦宣傳活動，推廣健康和愉快的工作環境。例如：我們簽署了《好心情 @ 健康工作間約章》，向員工宣傳「健康飲食」、「體能活動」和「精神健康」等健康資訊。

我們的水務工程合約意外率一直遠低於政府就工務工程合約規定的上限，對此我們感到十分自豪。展望將來，我們將致力進一步降低意外率。

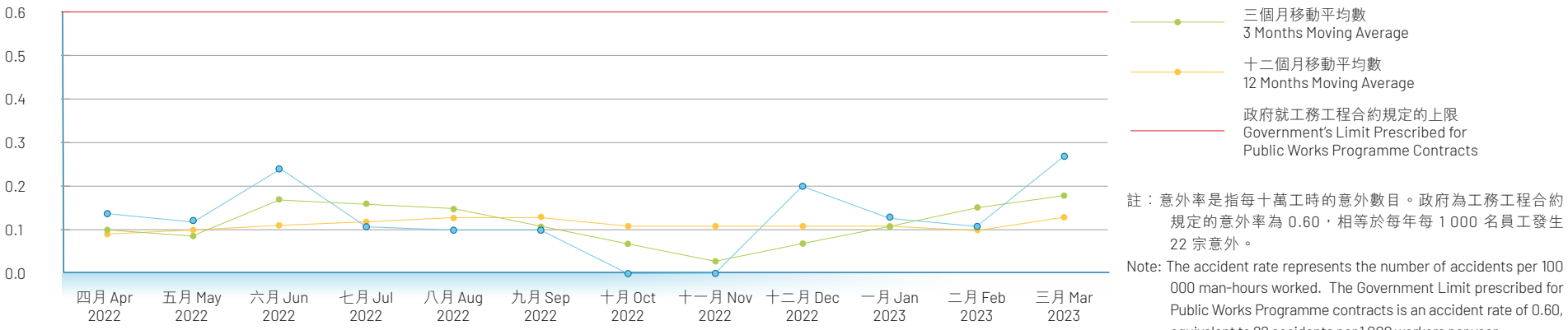
OCCUPATIONAL HEALTH AND SAFETY

We are committed to protecting the health and safety of our staff and workers in the workplace and introducing measures to enhance the safety standards where needed.

We hold meetings on a regular basis to discuss matters of concern relating to occupational health and safety, and organise awareness campaigns to promote a healthy and joyful workplace. For example, we have signed the Charter of Joyful@Healthy Workplace and developed communications to promote "Healthy Eating", "Physical Activity" as well as "Mental Health" such as health messages to our staff.

We take pride in our consistently low accident rate in our waterworks projects compared to the Government Limit prescribed for Public Works Programme contracts. We are dedicated to lowering the accident rate even further in future.

二零二二至二三年度水務工程合約意外率 Accident Rate in Waterworks Contracts 2022/2023



註：意外率是指每十萬工時的意外數目。政府為工務工程合約規定的意外率為 0.60，相等於每年每 1 000 名員工發生 22 宗意外。

Note: The accident rate represents the number of accidents per 100 000 man-hours worked. The Government Limit prescribed for Public Works Programme contracts is an accident rate of 0.60, equivalent to 22 accidents per 1 000 workers per year.

服務社區

積極保持工作與生活平衡，是水務署文化的核心。我們鼓勵和支持員工參與體育活動，以及社區和慈善項目。

水務署義工隊於二零零二年成立，旨在鼓勵員工積極參與各項社區和慈善活動，包括探訪和服務弱勢社群、清潔海灘、電話輔導和外展服務支援、籌款等。

儘管二零一九冠狀病毒病疫情帶來挑戰，我們的義工隊對社區的承諾和關懷毫不間斷，包括透過探訪長者和殘疾人士、以互聯網和電話提供服務與支援，以及協助籌集善款。我們本年共提供了 1 624 小時的義工服務。

SERVING THE COMMUNITY

At the WSD, maintaining a positive work-life balance is central to our culture. We encourage and support staff participation in sports activities as well as community and charitable causes.

Established in 2002, the WSD Volunteer Team aims to encourage staff to make active contributions to various community and charitable causes, ranging from visits and services to vulnerable groups, beach cleaning to lifeline and outreach services support, fundraising and so forth.

Despite the challenges posed by the COVID-19 epidemic, the WSD Volunteer Team continued our commitment and care for the community by conducting visits to the elderly and disabled, providing services and support through the internet or telephone, as well as helping with fundraising. During the year, a total of 1 624 man-hours of volunteer work were contributed.

二零二二至二三年度員工義工服務 Staff Volunteer Service in 2022/23

162 個慈善活動 charity events

貢獻了 Contributed **1624** 義工服務時數 volunteer service man-hours

員工義工服務（工時） Staff Volunteer Service (Man-hours)

財政年度 Financial Year	2017/18	2018/19	2019/20	2020/21	2021/2022	2022/2023
工時 Man-hours	4 902	5 217	3 153*	1 000*	1 208*	**1 624***

* 註：鑑於二零一九冠狀病毒病疫情，二零二零年年初起有多項活動被取消，部分義工活動現已恢復如常。

* Note: A lot of activities have been cancelled since early 2020 due to the COVID-19 epidemic, and some voluntary activities have resumed to normal.

員工嘉許認可和活動

員工嘉許認可和獎項

獎項和嘉許印證我們的出色表現，鼓舞團隊再接再厲，力爭上游。今年，我們的員工和工程項目繼往開來，員工出眾的表現和對行業的專業貢獻再次受到嘉許，得獎如下：

- 2 位同事榮獲 2022 年**申訴專員嘉許獎（公職人員獎）**
- 2 位人員獲頒 2022 年**公務員事務局局長嘉許狀**

STAFF RECOGNITION AND ACTIVITIES

Staff Recognition and Awards

Award and appreciation are a testament to our outstanding performance, boosting our motivation and inspiring team for further success. This year, our staff and projects were once again commended for their outstanding performance and professional contributions to the industry. These include the following:

- Two officers were given **The Ombudsman's Awards 2022 for Officers of Public Organisations**
- Two officers received **The Secretary for the Civil Service's Commendation Award 2022**

安達臣道中水處理廠項目在「2022 年度新工程合約可持續發展」獎項中獲高度讚揚獎

水務署安達臣道石礦場用地發展—中水處理廠項目榮獲「2022 年度新工程合約可持續發展」高度讚揚獎。該項目是香港首個以地區為基礎的中水重用系統，處理在發展區內所收集的中水作沖廁及其他非飲用用途。

該獎項旨在表彰水務署在減少碳排放對環境的整體影響，並建立應對氣候變化的抗禦力以配合政府的減碳目標。此令人鼓舞的成果反映了水務署透過建立合作夥伴關係實施新工程合約的決心，以確保香港供水的長期可持續性。

安達臣道中水處理廠項目亦憑藉為香港帶來裨益、項目的成本效益、可持續性和切合於香港高密度高樓大樓的新發展區，榮獲英國土木工程師學會頒發 2021 年土木工程師學會 Chris Binnie 持續水務管理大獎。

Anderson Road Grey Water Treatment Plant received the 2022 NEC Sustainability Award - Highly Commended

The WSD has won the NEC Sustainability Award of the Year 2022 – Highly commended for the grey water treatment plant project at the Development of Anderson Road Quarry Site. The plant is the first ever district-based grey water recycling system in Hong Kong which will treat the grey water collected from the developments for toilet flushing and other non-potable uses.

The NEC Sustainability award recognises the WSD's efforts to minimise impact on the environment in terms of carbon emissions, and build resilience to climate change in alignment with government carbon reduction targets. The encouraging result also demonstrates the determination of the WSD in implementing NEC through achieving collaborative partnership to ensure the long-term sustainability of Hong Kong's water supply.

The Anderson Road Grey Water Treatment Plant project was also awarded the Institution of Civil Engineers (ICE) Award 2021 - Chris Binnie Award for Sustainable Water Management for its benefits, value of money, sustainability and versatile application to new dense high-rise developments in Hong Kong.

國際認可的創新知識管理

水務署連續兩年榮獲享負盛名的「全球最具創新力知識型機構大獎」及「香港最具創新力知識型機構大獎」，這些獎項是評估最佳知識管理和創新實踐的一項全球基準。有關獎項表彰水務署持續的出色表現，亦印證我們的承諾及持續努力以有效運用知識推動創新，及改善供水服務與營運。

除了透過一系列的知識管理活動建構內部框架，以鎖定、組織及傳遞具價值的知識，水務署亦主動與行業專家、學術機構及其他持份者建立協作關係，以交流知識、分享最佳實務及緊貼水資源管理的最新發展。

International Recognition for Innovative Knowledge Management

For two consecutive years, the WSD has been honoured with the prestigious "Global Most Innovative Knowledge Enterprise (MIKE) Award" and the "Hong Kong MIKE Award", which is an international benchmark to assess best knowledge management and innovation practices. The awards recognise the department's consistent outstanding performance and are a testament to the commitment and sustainable efforts in effectively harnessing knowledge to drive innovation and improve water supply services and operations.

In addition to establishing an internal robust framework for capturing, organising, and disseminating valuable knowledge through a series of knowledge management initiatives, the WSD has actively engaged in various collaborative partnerships with industry experts, academic institutions, and other stakeholders with a view to exchanging knowledge, sharing best practices, and staying at the forefront of water management advancements.

水務署副署長周世威先生對於獲得二零二二年香港最具創新力知識型機構大獎感到欣喜。他表示獎項將激勵水務署在知識管理與創新方面持續改善，追求世界級水平。

Mr. CHAU Sai-wai, Deputy Director of Water Supplies was delighted to receive the Hong Kong MIKE Award 2022. He said that the award would provide the WSD with motivation to strive for continuous improvements and world-class standards in knowledge management and innovation.

體育比賽

年內，水務署同事積極參加由不同機構舉辦的各類體育比賽，包括發展局籃球錦標賽 2022 及工商機構運動會 2023。水務署體育隊亦聯同發展局不同部門的同事，參加建造業議會舉辦的多個體育活動。

Sports Competitions

During the year, colleagues took active participation in a variety of sports competitions held by various organisations. These included the Development Bureau Basketball Tournament 2022 and the Corporate Games 2023. Our team also joined with colleagues of other departments from the Development Bureau to compete in the various Construction Industry Council sports events.

我們的社區
Our Community

推廣智慧用水文化

為了延續市民惜水的習慣，及在控制食水需求增長方面帶來正面的改變，我們透過公眾教育活動，以目標為本的方針來與社區密切合作，務求推動公眾支持，提高活動的成效。

PROMOTING WATER-WISE CULTURE

To sustain water-cherishing behaviour and effect positive changes in containing the growth of fresh water demand, we leverage both public education campaigns as well as a targeted approach in close collaboration with the local communities to mobilise support and enhance effectiveness.

「齊來慳水十公升 2.0」活動
"Let's Save 10L Water 2.0" Campaign

為了鼓勵市民積極節約用水，我們舉辦了「齊來慳水十公升 2.0」社區節約用水活動。當中包括「創新節水花灑頭設計比賽」、「挑戰沖涼 4 分鐘」及「私人屋苑及私立學校免費安裝節流器」等一系列活動。

To encourage the public in making active contributions in cherishing water, we have organised the community water conservation campaign namely "Let's Save 10L Water 2.0". This campaign comprises a series of activities including the "Innovative Water Efficient Showerhead Design Competition", the "4-minute Shower Challenge" and "Free Installation of Flow Controllers at private housing estates and private schools" etc.

「惜水大使計劃 2021/22」KOL 計劃
Cherish Water Ambassador Scheme 2021/22" KOL Scheme

「惜水大使計劃」始於二零一八年，透過一系列培訓和教育活動，鼓勵年青人保護水資源及培養向公眾推廣節約用水良好習慣的技能。於二零二一 / 二二學年 *，計劃成功招募超過 360 名中學生擔任計劃的「惜水大使」。我們邀請人氣 KOL 與學生分享經驗與貼士，並透過教學影片及網上工作坊創作各類社交媒體內容。同學其後將學到的知識活學活用，推行為期一個月的「惜水宣傳計劃」，向公眾宣傳保護水資源的重要性。優勝者會透過評審及公眾投票選出，以嘉獎其出色表現。

Established in 2018, the "Cherish Water Ambassador" Scheme motivates youngsters to protect water resources and nurtures their skills to advocate good habits of water conservation to members of the public through a series of training and educational activities. In the academic year of 2021/2022*, the Scheme successfully recruited over 360 secondary school students as Cherish Water Ambassadors who participated in the Scheme's competition. Popular Key Opinion Leaders (KOLs) were invited to share their experiences and tips with students for creating a variety of social media contents via a tutorial video and online workshops. The students then put their learning into practice by executing a one-month "Cherish Water Publicity Plan" to promote water conservation to the public. Through the judging process and public voting, winners were selected and awarded for their remarkable achievements.

* 受二零一九冠狀病毒病疫情影響，加上二零二一 / 二二學年的特別假期安排，比賽延至二零二三年五月完成。
* Affected by the COVID-19 epidemic, and special holiday arrangements in the school year 2021/22, the competition was postponed and completed in May 2023.

中學生受訓成為「惜水大使」，透過各類社交媒體內容宣傳保護水資源的重要性。經過評審及公眾投票後，計劃共設有八個獎項，包括冠、亞、季軍、優異獎（3 名）、「至 Like Instagram 大獎」及「最踴躍參與學校大獎」。

Secondary school students were trained as Cherish Water Ambassadors to advocate the importance of water conservation through a variety of social media contents. Through the judging process and public voting, a total of eight awards were presented to the winners, including the Champion, First Runner-Up, Second Runner-Up, Merit Awards (for 3 winners), "Most Liked Instagram Award", and "Most Active Participating School Award".

抽水俠 Ben Sir 醒你慳水小貼士
Water Saving tips from Word Jacker (Ben Sir)

為使節約用水的訊息更具吸引力，提高市民的慳水意識，名人歐陽偉豪博士 (Ben Sir) 寓教於樂，設計一系列可應用於日常生活的節水小貼士，並透過社交媒體、網站、刊物和戶外場地等不同媒介廣泛宣揚這些節約用水小貼士。

To enhance the appeal of the water-saving messages and raise public awareness of water conservation, a suite of water-saving tips for different daily life applications using edutainment approach are designed and promoted by the popular celebrity Au Yeung Wai Hoo (Ben Sir). These water-saving tips are widely disseminated through different media covering social media, website, publications and outdoor spots.

「滴滴遊蹤深導行」參觀活動
"Excursion with Water Save Dave" Visiting Programme

「滴滴遊蹤深導行」自二零一九年開始舉辦，旨在讓公眾透過導賞團的形式，參觀水務署轄下的水塘和濾水廠等不同水務設施，加深公眾對水資源的認識及鼓勵大家共同保護水資源，好讓下一代繼續享有。

導賞團共設三個主題、共七個參觀點，讓參加者可以互動形式了解水務署的日常運作及供水基礎設施錯綜複雜的動態，以及個人和團體需節約用水的原因。於二零二二 / 二三年度，隨著二零一九年冠狀病毒病疫情轉趨穩定，社會逐漸回復正常運作，我們亦已全面復辦「我們的水資源」及「水務文物徑」參觀活動。

Established since 2019, the "Excursion with Water Save Dave" Visiting Programme aims to raise public knowledge about water resources and encourage their collective efforts in protecting our water resources for future generations via a guided tour of the WSD's various waterworks facilities including reservoirs and water treatment works.

Under the Programme which comprises three thematic topics with a total of seven visiting locations, participants could learn more through an interactive mode about the daily operations of the WSD, the complex dynamics of our water supply infrastructure, as well as the reason for conserving water both at individual and collective levels. With gradual resumption of normalcy in the society upon the stabilisation of COVID-19 epidemic situation, we had fully resumed the visiting programmes of "Our Water Resources and Nature" and "Waterworks Heritage Trails" in 2022/23.

導賞主題：
Guided tour themes:

- 我們的水資源
  Our Water Resources and Nature
- 水務文物徑
  Waterworks Heritage Trails

參觀地點：
Visiting locations:

- 船灣淡水湖 Plover Cove Reservoir
- 萬宜水庫 High Island Reservoir
- 大潭水務文物徑 Tai Tam Waterworks Heritage Trail
- 九龍水務文物徑 Kowloon Waterworks Heritage Trail

惜水運動

除了提高市民的節約意識和推動智慧用水的生活外，我們亦與學校和企業等目標群組合作，提高節約用水的成效。

Cherish Water Programme and Campaigns

Apart from promoting conservation awareness and water-wise living among members of the public, we have also collaborated with targeted groups such as schools and enterprises to enhance effectiveness in conserving water.

「惜水學堂」節約用水教育計劃

為培養年青一代良好的節約用水習慣，我們推出專門為幼稚園和小學而設的「惜水學堂」節約用水教育計劃，旨在透過多元化的教材，結合理論與實踐，拓寬學生對水資源的認識，並提高他們對節約用水和可持續發展的意識。

我們於二零二二年七月舉辦「節約用水週」，透過一系列的比賽和活動，鼓勵學生學習和理解珍惜用水的重要性。當中包括「挑戰沖涼 4 分鐘」、「水危機」英文填字遊戲、「氣候變化與水」海報及標語設計比賽，以及專為小學生而設的廣告短片創作比賽及專為幼稚園學生而設的「氣候變化與水」親子海報填色比賽。以下為各項比賽的得獎作品：

"Cherish Water Campus" Integrated Education Programme

To nurture good water-saving habits amongst the younger generation, we have launched a dedicated "Cherish Water Campus" Integrated Education Programme (IEP) for kindergartens and primary schools. The Programme aims to broaden students' knowledge about water resources and raise their awareness about water conservation and sustainability by integrating theory with practice with the aid of diversified teaching materials.

In July 2022, the "Cherish Water Campus" Water Saving Week was held to encourage students to learn and understand the importance of cherishing water via a series of competitions and activities. These include: the "4-minute Shower Challenge", "Water Crisis" Crossword Puzzle, Slogan-cum-Poster Design Competition on "Climate Change and Water" and Promotional Video Contest (For Primary Schools) and "Climate Change and Water" Parent-child Poster Colouring Competition (For Kindergartens). Below are winning entries of respective competitions:

小學組
Primary Schools

「氣候變化與水」海報及標語設計比賽
Slogan-cum-Poster Design Competition on "Climate Change and Water"

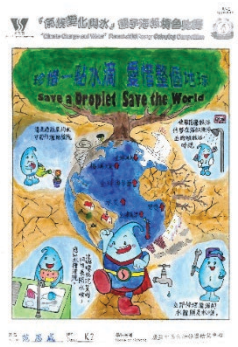
冠軍（初小組）
Champion (Junior Level)

廣告短片創作比賽
Promotional Video Contest

冠軍
Champion

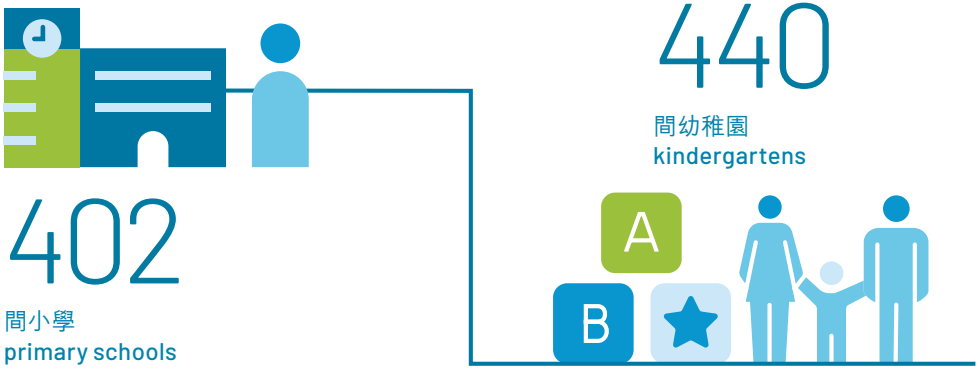
幼稚園組
Kindergartens

「氣候變化與水」親子海報填色比賽
"Climate Change and Water" Parent-child Poster Colouring Competition



冠軍（幼稚園組）
Champion (Kindergarten)

參與「惜水校園」教育計劃的學校數目：
Number of schools participated in the Cherish Water Campus Integrated Education Programme:



為了在個別學習計劃下推動家庭和學校節約用水，我們亦建議舉辦「校園用水考察」、「家庭用水考察」及主題比賽等多項活動，讓學生和老師享受積極參與的樂趣。

To promote application of water conservation at home and in schools under the IEP, we also suggested various activities such as School Water Audit, Home Water Audit as well as thematic competitions which enjoyed active participation from both students and teachers.

教學資源豐富的電子學習平台

E-learning Platform with Enhanced Teaching Resources

為了讓中學生加深對水資源及水資源保護的認識，我們亦為更新後教材《知水 • 惜水》提供電子學習平台。這些內容，涵蓋與水有關的科目、討論主題、STEAM 活動、圖像說明和照片，務求平衡不同範疇的知識來促進學生對水資源保護、社會發展和水資源可持續發展重要性的關注。

To equip secondary school students with a better understanding of water resources and conservation, we have also provided an e-learning platform with enhanced teaching kit "Water: Learn & Conserve". These cover water-related subjects, discussion topics, STEAM activities, illustrative diagrams and photographs, aiming to foster a balanced consideration of water conservation, social development and the importance of water resource sustainability.

除了學校，我們亦鼓勵全民參與來管理和減少用水與用水流失，並且身體力行，教育年輕一代及其家人（包括外籍家庭傭工）節約用水，帶領智慧用水的生活方式。

Apart from schools, we encourage every citizen to manage and reduce water use and loss, and join our cause in educating the younger generation and their families (including foreign domestic helpers) in conserving water and leading a water-wise lifestyle.

建立企業承諾協作平台

為提升非住宅用戶的用水效益，水務署聯同環保促進會於二零二二年一月合辦 **ECH$_2$O -「商約」惜水運動**，藉以尋求跨界別對節約用水的支持和承諾。工商業等非住宅用水量約佔香港總用水量的 45%。此運動為工商機構提供協作平台，當中涵蓋不同類型活動，包括簽署惜水承諾、委任「惜水經理」、宣傳教育（例如攤位、網絡研討會、工作坊和展覽）、改善設備，以及嘉許計劃，務求促進非住宅減少用水量。

自活動開展以來，獲得商會和不同行業協會的積極參與。在為期一年的活動中，共有 624 個工商機構簽署約章承諾珍惜用水。所有參與處所於二零二二年的總用水量顯著減少達 5%，相當於約 500 000 立方米或 200 個奧林匹克游泳池的容量。

為了協助機構制訂合適的用水效益指標，水務署為四類主要處所，包括商場、工商業樓宇、酒店和餐廳，編制了營運活動數據和相關用水量，以制定績效基準和規劃提升表現的措施。

Building Collaboration Platform for Enterprise Commitment

In order to enhance water efficiency in the non-domestic sector, in collaboration with the Green Council, the WSD launched the **"ECH$_2$O - Enterprises Cherish Water Campaign"** in January 2022 to seek multi-sectoral support and commitment in water conservation. The Campaign serves as a collaboration platform for commercial and industrial organisations to reduce non-domestic water use which accounts for approximately 45% of the total water consumption in Hong Kong. It covers different components which include the signing of charter, appointment of "Water Conservation Manager", education and promotion activities (e.g. booths, webinars, workshops and exhibitions), equipment improvement; as well as an award recognition programme.

Since its launch, the Campaign has received positive response from commerce chambers and industry associations. The one-year campaign has garnered the participation of 624 commercial and industrial organisations who have pledged to commit to cherishing water. All participating premises have achieved a significant reduction in overall water consumption in 2022 by 5%, or about 500 000 cubic metres, which is equivalent to 200 Olympic-size swimming pools.

To help organisations develop appropriate water efficiency indicators, business activity data and associated water consumption across four major industries: shopping malls, industrial and commercial buildings, hotels and restaurants are compiled to facilitate performance benchmarking and action planning.

在二零二三年三月二十二日舉辦的「商約」惜水大獎頒獎典禮上，水務署署長邱國鼎衷心感謝各機構及其員工對「商約」惜水運動的積極參與，並能夠在節約用水量方面取得顯著成效。

At the ECH$_2$O Awards Ceremony held on 22 March 2023, the Director of Water Supplies, Mr Tony Yau expressed heartfelt gratitude to all the organisations and staff for their active participation in the ECH$_2$O and remarkable achievements in reducing water consumption.

同心協心 推動行動

要推動精明運用水資源，以及應對與日俱增之水資源風險，同心協力是當中的重要關鍵。在這一年裡，我們與不同團體建立合作關係，支持不同社區活動，使節約和安全用水的訊息能深入社會的每個角落。

FOSTERING SYNERGIES TO INSPIRE ACTION

Concerted efforts and collaboration are critical drivers to inspiring the wise use of our water resources and addressing the growing water risks. During the year, we built partnerships and provided support in various community activities to widen our reach to all walks of life and amplify our messages on water conservation and safety.

前深水埗配水庫參觀活動

前深水埗配水庫建於一九零四年，是當時九龍重力自流供水系統的一部分，及後於一九七零年停用。該著名地標於二零二一年獲評定為一級歷史建築。鑑於其文物價值重受公眾關注，水務署已開展多項文物保育及提升服務措施，讓這座歷史悠久的水庫活化作為展覽地點，有限度開放予公眾參觀及欣賞。此為長期保育及翻新計劃完善前的臨時方案。

百年古蹟為公眾教育提供良好平台，藉以了解香港食水供應系統的歷史發展，以及觀賞歷史建築的美學設計和內部結構。自二零二一年十二月起，水務署已組織導賞團供公眾參觀，同時亦徵集有關未來保育計劃的意見。由於導賞團反響熱烈，自二零二二年十月起我們亦安排了自助導賞遊，以提供彈性，讓更多訪客參觀。

Ex-Sham Shui Po Service Reservoir Visiting Programme

Established as part of the Kowloon Waterworks Gravitation Scheme in 1904 and later decommissioned in 1970, the iconic Ex-Sham Shui Po Service Reservoir was accorded a Grade 1 historic building status in 2021. With the renewed interest in its heritage value, the WSD had commenced various restoration works and service enhancements to revitalise the historic service reservoir into an exhibition site for restricted public access and enjoyment - which is an interim solution before the long-term conservation and revitalisation plan is finalised.

The century-old monument provides a good education platform to understand the history of the fresh water supply system in Hong Kong, and appreciate the aesthetic design and internal structures of the historic building. Since December 2021, the WSD has arranged guided tours for public appreciation, as well as to seek views on future conservation efforts in the long run. With an overwhelming response to the guided tour, since October 2022, we have organised self-guided tours to offer flexibility and cater for more visitors.

活化後的前深水埗配水庫內是羅馬建築風格的花崗岩支柱、紅磚拱券及混凝土拱頂天花，讓訪客得以一窺百年間香港食水供應的歷史。

Featuring Roman architecture style granite piers, red brick arches and concrete cove ceilings, the revitalised Ex-Sham Shui Po Service Reservoir offers a precious glimpse of Hong Kong's water supply history over the past 100 years.

馬鞍山濾水廠開放日2022

為慶祝香港特別行政區成立二十五周年，水務署於二零二二年十月舉辦為期兩天的馬鞍山濾水廠開放日活動，並設有主題展覽讓公眾更了解水務署如何致力維持香港可靠及優質的供水系統，以及我們最新的創新水務項目。這些項目均是支持香港長期發展、和將香港建設成一個綠色及可持續發展的智慧城市的關鍵。此次開放日活動吸引超過 2 700 名公眾人士參與，包括學生及專業團體。

Ma On Shan Water Treatment Works Open Day 2022

Leveraging the 25th anniversary of the establishment of the Hong Kong Special Administrative Region, a two-day Ma On Shan Water Treatment Works Open Day event was organised in October 2022 with thematic exhibitions for raising public knowledge of the WSD's dedication in maintaining a reliable and quality water supply system in Hong Kong and its latest innovative waterworks projects, which are pivotal to supporting its long-term development as well as building Hong Kong into a smart, green and sustainable city. The event attracted over 2 700 members of the public to visit, including students and professional groups.

「東江水供港」專題展覽展示東江水的水資源發展、東江水供港計劃的建立、應對嚴重旱情所採取的節水措施，包括1960年代實施制水措施時的珍貴歷史相片。

The "Dongjiang Water Supply" exhibition featured the water resource development of Dongjiang Water, the establishment of the Dongjiang Water Supply Scheme, water conservation measures adopted due to severe droughts as well as precious historical photos of water rationing measures in 1960s.

「精益求精—二十一世紀的水務創新里程」專題展覽介紹香港供水概況及水務署近年的多項智慧創新項目，包括用於水塘的可再生能源發展的浮動太陽能板、用於地下水管的管道檢測機械人、及最新的測漏儀器及技術等。

The "Drive for Excellence – The Innovation Milestones for the 21st Century" thematic exhibition introduced the overview of Hong Kong's water supply and showcased WSD's recent smart innovations. These included floating solar power systems on reservoirs for renewable energy development, in-line inspection robot for underground water mains inspection, and latest leak detection instruments and technologies.

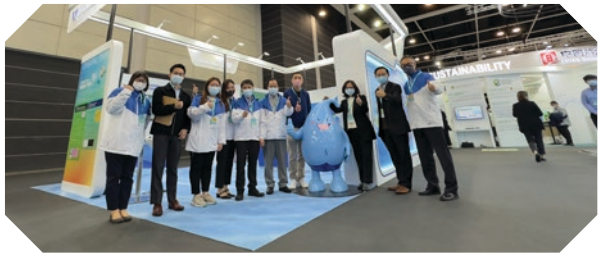
水務署職員展示重要發展項目並示範水務資產及技術的操作方式，藉此增進公眾認識水務署的工作及推動節約用水的努力。

WSD staff presented key development projects and demonstrated operation of waterworks assets and technologies for enhancing public knowledge of WSD's work and conservation efforts.

建造創新博覽會 2022
Construction Innovation Expo 2022

為增進業界對水務署在不同供水項目採用的創新設計及建設工程的認識，我們於二零二二年十二月參加了由建造業議會舉辦的「建造創新博覽會2022」，設置互動攤位介紹水務署如何將最新技術、智慧建設及可持續發展元素用於最新的水務基礎建設項目，如將軍澳海水化淡廠第一期。攤位上設有虛擬實境安全培訓、智慧設備以及有關最新建造方法的資訊，例如使用建築資訊模型(BIM)及場外建造以改善質素、用時及成本控制，同時提高工作場所安全性、生產力及團隊協作。

To raise industry awareness of WSD's innovative design and construction initiatives in waterworks projects, we took part in the "Construction Innovation Expo 2022" in December 2022 which was organised by the Construction Industry Council. An interactive exhibition booth was set up to introduce how the WSD had integrated cutting-edge technologies, smart construction and sustainable features into its recent waterworks infrastructure projects such as the First Stage of the Tseung Kwan O Desalination Plant. These included virtual reality safety training, smart devices as well as latest construction approaches such as Building Information Modelling (BIM) and off-site construction to enhance quality, time and cost control while increasing workplace safety, productivity and team collaboration.



國際環保博覽 2022
Eco Expo Asia 2022

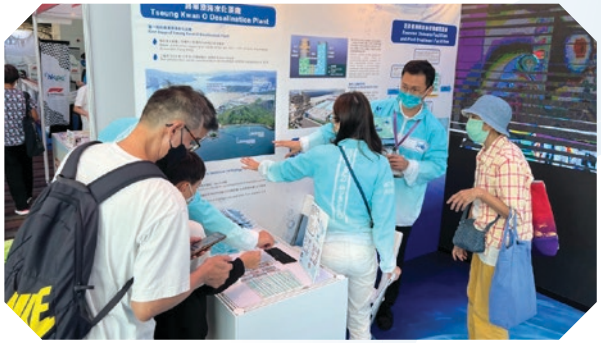
我們透過攤位的互動展示，向公眾介紹在石壁水塘、船灣淡水湖及大欖涌水塘成功落實的浮動太陽能發電系統先導計劃，講解在水塘面安裝浮動太陽能發電系統的特色和好處，其對政府減碳目標作出的貢獻，以及水務署在減少能源消耗方面的工作。此外，我們亦於亞洲環保會議上作出主題為《教研合作 - 主動測漏的科技與培訓》(Collaboration with Academia on the Active Leak Detection Technology and Training)的簡報。

Through the interactive display at the exhibition booth, we introduced the successful implementation of our pilot projects of floating solar power system installed at the Shek Pik Reservoir, Plover Cove Reservoir and Tai Lam Chung Reservoir for generating renewable energy. Aside from the features and benefits of floating solar power systems on reservoirs, we explained to the public about their contributions towards the Government's decarbonisation target as well as the Department's efforts to reduce energy consumption. In addition, we gave a presentation under the topic of "Collaboration with Academia on the Active Leak Detection Technology and Training" at the Eco Asia conference.

創新科技嘉年華 2022
InnoCarnival 2022

將軍澳海水化淡廠第一期預計將於二零二三年投入運作。為增加市民對海水化淡廠的認識，水務署參與了由創新科技署舉辦的「創新科技嘉年華2022」。活動中，我們介紹了淡化海水可用於提升食水供應的應變能力；海水化淡廠的食水產量；採用的先進逆滲透淨化技術；以及在設計、建設及維護海水化淡廠時加入的智慧措施、可持續發展及環保元素。

With the scheduled commissioning of the First Stage of the Tseung Kwan O Desalination Plant in 2023, we participated in the "InnoCarnival 2022" organised by the Innovation and Technology Commission, with a view to enhancing public understanding of the desalination plant. During the event, we introduced the use of desalinated water for strengthening fresh water resilience; production capacity of the desalination plant; adoption of state-of-the-art reverse osmosis technology; as well as integration of smart construction initiatives, sustainable and green features into the design, construction and maintenance of the plant.



第十九屆環保嘉年華 2023
The 19th Green Carnival 2023

水務署作為支持機構，在環保促進會舉辦的「環保嘉年華 2023」設置攤位。該活動旨在透過吸引和資料豐富的遊戲攤位，向公眾推廣綠色及低碳生活。同場亦舉行了環保創意模型設計比賽，鼓勵中小學生發揮創意，利用回收材料製作模型。為提倡節約用水的重要性，我們的攤位設有有獎短片問答遊戲，並配置了一個滿載豐富禮品的扭蛋機，市民反應熱烈。

As a supporting organisation, we took part in the Green Council's Green Carnival 2023 which was organised to promote green and low-carbon living to the public through informative and attractive game booths. The Eco-model Tournament was also held to encourage primary and secondary students to make use of recyclable materials to create their own models. To advocate the importance of water conservation, we developed a video quiz game with a prize capsule machine at the booth which received enthusiastic response from members of the public.

活水．行 2022
Walk for Living Water 2022

水務署與愛德基金會（香港）合辦「活水 • 行 2022」活動，呼籲公眾參與步行籌款活動，籌得的款項用於為緬甸、尼泊爾及柬埔寨的用水及衛生工程，以及在當地進行有關惜水和環保教育工作。除組隊參加步行籌款活動外，水務署亦透過不同的網上平台宣傳活動，增進公眾的節水意識和行動。超過 200 多個來自香港、英國、加拿大及德國的團體及人士參與，合共創出逾 320 萬步的成績。

Co-organised with the Amity Foundation (Hong Kong), the WSD called for public participation in the "Walk for Living Water 2022" to raise funds for supporting the construction of water and sanitation facilities in Myanmar, Nepal and Cambodia as well as educational initiatives on water conservation and environmental protection in these areas. Aside from organising teams to join the walkathon, the WSD promoted the event via various digital platforms to raise water awareness and action. More than 200 participants and organisations from Hong Kong, Britain, Canada, and Germany took part and walked over 3.2 million steps in the event.

香港水足印定向 2022
Hong Kong Water Race 2022

由和富社會企業主辦、水務署協辦的「香港水足印定向 2022」為透過手機應用程式進行的野外定向活動，旨在提升公眾對水資源的認識。參加者可自選走訪任何一條由大會提供的路線，包括九龍水務文物徑、中西區環保遊路線和大潭水務文物徑；沿途須掃描各檢查點的二維碼，透過互動問答增進對水資源的認識。作為活動的協辦機構，水務署負責安排沿指定路線的部分水務設施地點，同時透過社交媒體宣傳活動，鼓勵市民踴躍參與，藉此喚醒大眾關注節約用水。

Launched by the Wofoo Social Enterprises and co-organised by the WSD, the event was held in the form of a city hunt via the mobile app to enhance public understanding about water resources through nature orienteering. Through scanning the QR code signages at the checkpoints, participants could explore any one of the designated routes, including Kowloon Waterworks Heritage Trail, Green Walk at Central and Western District, and Tai Tam Waterworks Heritage Trail and learn more about water resources through interactive questions. As the co-organiser, the WSD arranged for some water facility venues along the designated routes, and promoted the event through social media to enhance public participation and raise their awareness of water conservation.

香港綠色日及「著綠狂奔」2022
Hong Kong Green Day and Green Run 2022

我們作為支持機構，積極在各數碼平台宣傳香港綠色日，鼓勵公眾為環保出一分力。超過 250 間機構許下「綠色承諾」，逾 50 間商戶加入成為「綠色食肆」或「綠色商店」，一同在辦公室和店舖實行環保措施，並鼓勵可持續發展的消費模式。

此外，我們亦鼓勵公眾參與由環保促進會舉辦的「著綠狂奔 2022」，透過跑步活動推廣低碳生活。

Participating as a supporting organisation, we actively publicised the event on various digital platforms, encouraging the public to make an effort for environmental protection. Over 250 organisations have made "Green Pledge" and more than 50 merchants have registered as "Green Restaurants" or "Green Shops" to implement eco-friendly measures in their offices and shops, as well as to encourage sustainable consumption of goods or services.

In addition, we have encouraged public participation in the "Green Run 2022" which was organised by the Green Council to promote a low-carbon lifestyle through running.

揹水一戰 2023
Race for Water 2023

為響應每年一度的「世界水日」及增進公眾對全球水資源問題的認識，水務署全力支持「揹水一戰 2023」活動。當日超過 1 200 名健兒參加「揹水一戰」，大家身體力行為解決尼泊爾和柬埔寨山區食水問題籌集善款。

水務署助理署長 / 發展馬漢榮先生擔任起步禮的其中一名主禮嘉賓，藉此向公眾宣揚惜水信息。水務署亦透過網上平台推廣是次活動，鼓勵大眾一同參與其中。

Leveraging the annual World Water Day to raise awareness of global issues of water resources, we supported the "Race for Water 2023" event which attracted over 1 200 participants to take part and raise funds for tackling water issues in remote areas of Nepal and Cambodia.

The Assistant Director/Development of WSD officiated the kick-off ceremony as one of the Guests of Honour spreading messages on water conservation. Besides, we promoted the event via online platforms to encourage public engagement and participation.

加強與區議會交流

水務署一直重視與社區保持緊密聯繫，加強彼此的溝通，藉以增進市民對水務署服務及設施的認識，並會召開會議探討關注事項，以及採納市民的意見和建議。年內，我們繼續邀請不同地區的區議員參觀水務設施，向他們提供水務署工作的資訊。

- 二零二二年六月，葵青區議會主席盧婉婷女士應水務署邀請，率領當區區議會成員代表團到訪位於青衣的「Q-Leak」地下水管測漏中心，了解「Q-Leak」如何模擬在香港複雜的供水管網內出現的地下水管滲漏及水務署的滲漏檢測技術。此外，水務署署長及職員亦與代表團討論葵青區的供水事宜。

- 二零二二年七月，沙田區議會副主席冼卓嵐應水務署邀請，率領當區區議會成員到訪沙田濾水廠。水務署團隊介紹濾水廠內的濾水設備、濾水流程及水質監測程序，以及南廠原地重置工程的進展。水務署署長及職員亦與代表團討論沙田區的供水事宜。

- 水務署署長於二零二二年八月及九月分別到訪元朗區議會及深水埗區議會，介紹香港水資源情況及討論當區供水事宜。

- 二零二二年十一月及十二月，大埔區議會主席毛家俊及油尖旺區議會主席林健文應水務署邀請，分別率領其區議會成員代表團到訪大埔濾水廠。水務署署長及職員亦與兩個代表團討論兩區供水事宜。各區議會成員了解濾水廠的濾水設備、濾水流程、水質監測程序，以及濾水廠的先進技術和創新設計。

Enhancing Exchange with District Councils

The WSD has all along been attaching great importance to maintaining close ties and enhancing communications at the community level for raising knowledge about WSD's services and facilities, conducting meetings to discuss matters of concern, as well as taking views and suggestions. During the year, we continued our invitations to the Members from various District Councils and conducted visits at waterworks installations to provide information about WSD's work.

- Upon our invitation, the Chairman Ms LO Yuen-ting led a delegation of the Kwai Tsing District Council members to visit Q-Leak, the underground water mains leak detection training centre in Tsing Yi in June 2022 to gain an understanding of how the Q-Leak simulated the water leakage of underground pipes of complicated water mains network in Hong Kong and the leak detection technologies of WSD. In addition, the Director of Water Supplies and WSD staff held discussion with the delegation on the water supply services in the Kwai Tsing District.

- Upon our invitation, the Sha Tin District Council members led by the Vice-Chairman Mr SIN Cheuk-nam visited the Sha Tin Water Treatment Works in July 2022. The WSD team provided briefings on the water treatment facilities, treatment process and water quality monitoring procedures of the Water Treatment Works, as well as the progress of the in-situ reprovisioning works of the South Works. The Director of Water Supplies and WSD staff also held discussion with the delegation about the water supply services in the Sha Tin District.

- The Director of Water Supplies visited the Yuen Long District Council and the Sham Shui Po District Council in August and September 2022 respectively to provide an overview of Hong Kong's water resources and hold discussions about the water supply services in the districts.

- Upon our invitation, Mr MO Ka-Chun, the Chairman of the Tai Po District Council and Mr LAM Kin-man, the Chairman of the Yau Tsim Mong District Council led the delegations of District Council members to visit the Tai Po Water Treatment Works in November and December 2022 respectively. The Director of Water Supplies and WSD staff held discussions with the delegations about the water supply services in the two districts. Council members were provided an overview of the water treatment facilities, treatment process, water quality monitoring procedures, as well as the advanced technologies and innovative designs adopted in the Water Treatment Works.

同心抗疫服務社區

JOINING ANTI-EPIDEMIC WORK TO SERVE THE COMMUNITY

二零一九冠狀病毒病疫情為香港帶來了前所未有的挑戰。為回應市民和社會的需要，政府力求推出多輪積極措施，協助受影響民眾抗疫。

水務署聯同其他政府部門調動人手及資源，務求盡快推行並完成多項抗疫行動，確保對受影響居民的滋擾減至最低，並以盡早發現確診者為目標，實行及早隔離和及早治療的安排。在二零二二年四月至十一月期間，水務署帶領五次強制檢測公告執法行動及五次「受限區域強制檢測」行動，每次行動須動員30 至 100 名人員。

The COVID-19 epidemic has brought exceptional challenges to Hong Kong. The Government strives to respond to the needs of the public and society and has launched many rounds of measures to assist the affected population in fighting the virus.

In joint collaboration with other Government departments, the WSD has mobilised available manpower and resources for a number of anti-epidemic operations with a view to completing the operations as soon as possible, thereby minimising the disturbance on the affected residents and achieving the objective of early identification, early isolation and early treatment. From April to November 2022, the WSD has taken charge five enforcement actions on compulsory testing notice and five "Restriction-testing Declaration" operations deploying 30 to 100 members in each operation.

放眼世界
Our Global Network

合作推進水務管理

為香港提供優質且可持續的供水服務是我們一直秉承的抱負。為此，我們投入參與國際性水務專業團體，並與海內外國際同業緊密合作，以探索與水務管理相關的創新科技和最佳實務方案、提升實力，以及分享我們的見解及解決方案，與其他智慧用水的城市優勢互補。

PARTNERING FOR ADVANCING WATER MANAGEMENT

As part of our vision to excel in providing quality and sustainable water supply in Hong Kong, we join the global knowledge hubs for water professionals and work in close collaboration with our regional and international counterparts. We seek to explore the latest innovations, technologies and best practices of water management; build capacity; as well as contribute insights and solutions adding value to the work of many other water-wise cities.

水務署投入參與以下世界頂尖的水務公用事業網絡和知識平台，以汲取可持續和智慧水務管理的實踐和創新資訊，並連繫水務行業具影響力的領導者：

The WSD joins the following international leading water utility networks and knowledge hubs to access sustainable and smart water practices and innovations, and collaborate with thought leaders of the water sector:

- 國際水協會
  International Water Association (IWA)
- 國際海水化淡協會 *
  International Desalination Association
- 國際公用事業專業網絡 *
  Leading Utilities of the World
- 國際水利與環境工程學會
  International Association for Hydro-Environment Engineering and Research
- 美國水務協會 *
  American Water Works Association
- 智能供水網絡論壇 *
  Smart Water Networks Forum

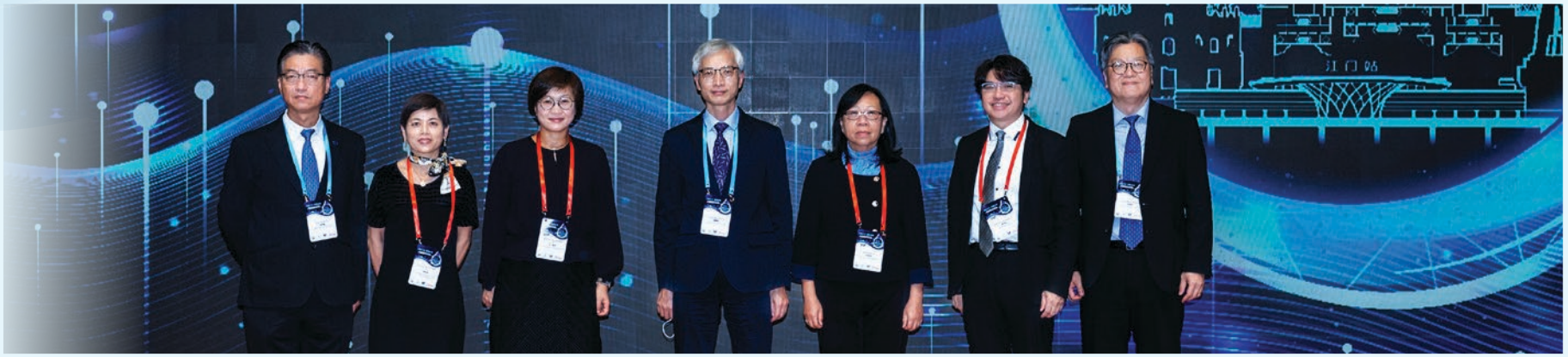
* 註：中文譯名

疫情下，我們參加了多個地區性及國際性的線上會議，學習和分享水務管理的見解、最佳實務方案和未來趨勢。當中包括：

Despite the epidemic, we virtually participated in various regional and international conferences for learning as well as sharing water management insights, best practices and future trends. These include:

第 4 屆粵港澳大灣區水務論壇暨第14 屆深港珠澳供水界學術交流會

The 4th Guangdong-Hong Kong-Macao Greater Bay Area Water Forum cum 14th Shenzhen, Hong Kong, Zhuhai and Macao Seminar on Water Supply



隨著氣候影響日益加劇，為實現大灣區水務共同繁榮，加強合作至關重要。第 4 屆粵港澳大灣區水務論壇暨第 14 屆深港珠澳供水界學術交流會提供一個獨特平台，讓大灣區水務公用事業的領袖及從業員聚首一堂，合作及推動解決長遠供水的挑戰。

此次年度活動於二零二二年十一月十六至十八日舉行，由水務署及深圳市環境水務集團有限公司合辦，亦為慶祝香港特別行政區成立 25 周年的活動之一。是次論壇主題為「同源共享，創智水務」，聚焦以創新科技更有效地運用水資源，以及加強大灣區供水機構之間的合作。

Fostering collaboration is the key to achieving water for shared prosperity in the Greater Bay Area (GBA) amidst the intensifying impacts of climate change. The 4th Guangdong-Hong Kong-Macao GBA Water Forum cum the 14th Shenzhen-Hong Kong-Zhuhai-Macao Water Supply Seminar provide a unique platform where the leaders and practitioners of the water utilities in the GBA gather, collaborate and make long-term progress on future water challenges.

Co-organised by the WSD and the Shenzhen Water and Environment Group Company Limited, the annual event was held from 16 to 18 November 2022 with the event also hailed as one of the celebration highlights for the 25th anniversary of the establishment of the Hong Kong SAR. Entitled "Precious Water, We Share; Smart Water, We Aspire", the forum focused on the use of innovative technologies to utilise water resources more effectively and strengthen the cooperation among the water supply organisations in the GBA.

活動的主論壇在香港故宮文化博物館香港賽馬會演講廳及深圳龍崗區珠江皇冠假日酒店同步進行，並全程連線直播。區內 11 個供水機構超過 500 名代表及專家參與，共同探討供水技術創新以及可持續水資源管理的選項和有效方法。

是次活動包括高峰論壇及一系列技術分論壇和平台交流會議。大灣區城市供水機構領導出席高峰論壇，就如何透過創科綠色水務工程建設智慧灣區提供見解和策略。同時，平台交流會議則提供資源豐富的平台，供從業員就水務營運各方面的問題（如水質控制及緊急應變管理等）交流專業知識和經驗。大會收到超過 130 篇優質技術論文，其中超過 50 篇於學術交流會上分享。

Held at the Hong Kong Jockey Club Auditorium of the Hong Kong Palace Museum and the Crowne Plaza Shenzhen Longgang City Centre in Shenzhen simultaneously with live streaming, the main forum brought together over 500 delegates and experts from 11 water supply organisations in the GBA to explore options and effective approach for water technology innovation as well as sustainable water resource management.

Comprising a summit and a series of technical seminars and workshops, the event is presided by a summit with the leaders of water supply agencies of the GBA cities providing insights and strategies on innovative green waterworks for building the Smart GBA, and supported by workshops which offer a resourceful platform for the practitioners to exchange their expertise and experience in various aspects of waterworks operations, such as water quality control and emergency response management. During the event, over 130 high-quality technical papers were received and more than 50 of them were presented in the seminars for knowledge sharing.

主論壇在香港和深圳會場同步進行，全程連線直播，吸引區內 11 個供水機構超過 500 名代表參與，共同探討如何合作透過創新科技改善水資源和資產管理。

The main forum was held in Hong Kong and Shenzhen venues simultaneously with live streaming, attracting over 500 delegates from 11 water supply organisations in the GBA to explore regional collaboration in enhancing water resources and assets management through the use of innovative technologies.

香港智慧供水創新展示

香港會場設立了展覽區，展示水務署在水務資產管理及供水服務中採用的創新科技及智慧設施。

參觀者可借助沉浸式 CAVE 裝置的虛擬導覽穿越時空，能彷如親歷其境般參觀位於主教山經活化的前深水埗配水庫及位於天水圍的「水知園」教育中心。

於 CAVE 裝置內亦可觀看一段沉浸式影片，當中介紹目前進行中的水務基礎設施項目，如「搬遷鑽石山食水及海水配水庫往岩洞」水務優化計劃。參觀者透過 CAVE 裝置可走進工地，體驗水務工程的爆破工作及想像工程完成的景象。

4D CAVE 沉浸式體驗 – 前深水埗配水庫。

4D Immersive CAVE experience – Ex-Sham Shui Po Service Reservoir

此外，展覽亦置設了提供互動體驗的虛擬實景 (VR) 區。參觀者只需戴上 VR 眼鏡，即可體驗在香港的第一個水塘 — 薄扶林水塘上空模擬飛行。除此之外，亦可體驗在水務基礎設施項目中採用的沉浸式高空工作及吊運工作的安全培訓。

Innovative Showcase of Smart Water Supply in Hong Kong

An exhibition area was established at the Hong Kong venue to showcase WSD's adoption of innovative technologies and smart devices in waterworks asset management and water supply services.

An immersive Cave Automatic Virtual Environment (CAVE) system was set up for providing virtual tours to the revitalised historic Ex-Sham Shui Po Service Reservoir at Mission Hill and the H_2OPE public education Centre in Tin Shui Wai. Visitors could enjoy the tours without spatial and temporal constraints.

The CAVE was also equipped with an immersive video to feature the ongoing waterworks infrastructure projects, for example "Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns" waterworks optimisation project initiative, visitors could walk through the construction sites to experience the blasting waterworks and visualise the completed waterworks building in the video through the CAVE system.

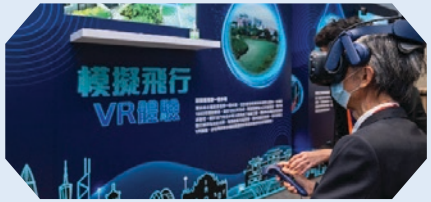
4D CAVE 沉浸式體驗 – 水知園

4D Immersive CAVE experience – H_2OPE Centre

In addition, a virtual reality (VR) corner was also set up to provide interactive experience. By wearing the VR goggles, visitors could fly through the Pok Fu Lam Reservoir (Hong Kong's first service reservoir) through flight control simulation. Furthermore, visitors could experience the immersive safety trainings for working at height and lifting operations which are adopted in waterworks infrastructure projects.

為展示水務署如何採用智慧建造方式打造安全、高效及創新的未來水務設施資產，展覽設有一面 3D LED 顯示屏幕牆 播放標誌性項目「設計、建造及運作將軍澳海水化淡廠第一期」，該項目在水務資源開發、智慧建造管理、資訊整合、工作場所安全、團隊合作及工地協調方面均屬典範。

To present WSD's adoption of smart construction initiatives for delivering safe, efficient and innovative waterworks assets of the future, a 3D LED Wall was designed to feature the iconic "Design, Build and Operate First stage of Tseung Kwan O Desalination Plant" project - an exemplary showcase of transformative performance in water resource development, intelligent construction management, information integration, workplace safety, collaborative work and site coordination.



薄扶林水塘上空模擬飛行

Aerial virtual tour of the Pok Fu Lam Reservoir

3D LED 顯示屏幕牆 - 滴惜仔講解海水淡化技術及智慧建造

3D LED Wall - Water Save Dave introducing desalination technology and smart construction

2022 國際水務協會 數碼供水高峰會 2022

從分配管網的先進管理到數碼客戶聯繫計劃均可看到數碼解決方案及創新對可持續及具成本效益的水務管理至關重要。為探討全球水務行業的最新數碼化成果並學習國際同業的最佳實務，我們參加了二零二二年十一月二十九日至十二月二日於西班牙畢爾包舉辦的國際水務協會 數碼供水高峰會 2022 (IWA Digital Water Summit 2022)。是次全球峰會主題為「共同步上轉型之旅」(Join the Transformation Journey)，關注水務解決方案。水務行業的領袖、決策者、領導研究人員、技術提供商及營運商聚首一堂，探討及分享如何於水務行業結合數碼轉型。

IWA Digital Water Summit 2022

From advanced management of the distribution network to digital customer engagement programmes, digital solutions and innovations are central to sustainable and cost-effective water management. To explore the latest innovations on the digitalisation for the global water sector and learn from the best practices of international counterparts, we attended the IWA Digital Water Summit 2022 taken place in in Bilbao, Spain from 29 November to 2 December 2022. Entitled "Join the Transformation Journey", the Summit was a global event on water solutions that brought together thought leaders, decision makers, leading researchers, technology providers and operators in the water sector to discuss and share ideas on integrating digital transformation into the water industry.

新加坡國際能源周 2022

新加坡國際能源周 2022 於二零二二年十月二十五至二十八日舉行。是次全球會議由新加坡能源市場管理局舉辦，旨在分享有關能源界的全球新趨勢、技術創新及領先實務的新知識，打造共建綠色環境的重要轉型。活動嘉賓陣容強大，包括全球能源方面的政府領袖及業界翹楚，分享有關主題「富應變力及可持續的能源未來」(A Resilient and Sustainable Energy Future) 的觀點。水務署代表分享有關在水塘上建造大型浮動太陽能板發電系統的知識，及能源管理系統的最新技術發展。

Singapore International Energy Week 2022

Singapore International Energy Week 2022 was held from 25 - 28 October 2022. It was a global conference organised by the Energy Market Authority of Singapore for sharing new insights into the global trends in the energy world, technological innovation and leading practices that shaped the major transformation into a greener environment. The event featured a strong line-up of global energy government leaders and industry captains who shared their perspectives on the theme "A Resilient and Sustainable Energy Future". Our representatives exchanged their knowledge on the implementation of large scale floating solar farm on impounding reservoirs and the latest technological developments in energy management system.

財務及水費
Finance and Water Charges

水費

與世界其他主要城市相比，香港客戶為優質食水所繳付的費用相對低廉。除了一九九六年七月修訂的非本地船隻用水收費外，水費自一九九五年二月至今亦一直維持不變。

WATER CHARGES

Customers in Hong Kong pay less for high-quality fresh water than their counterparts in most major cities around the world. Water charges have not been revised since February 1995 (other than the charge for non-local vessels, which was last revised in July 1996).

收費幅度

住宅用戶的食水水費（沖廁用水除外）按以下四級制，以四個月為期計算：

SCALE OF CHARGES

Fresh water for domestic use (other than flushing) is charged by four-month periods, with rates set out in a four-tier system as follows:

	每單位 (1立方米) 收費 Charging rate per unit of one cubic metre
第一級 — 首12個單位 Tier 1 for the first 12 units	免費 Free
第二級 — 繼後的31個單位 Tier 2 for the next 31 units	$4.16 (註一 Note 1)
第三級 — 再繼後的19個單位 Tier 3 for the next 19 units	$6.45 (註二 Note 2)
第四級 — 餘下單位 Tier 4 for the remainder	$9.05 (註三 Note 3)

作其他用途的食水，會根據其用途按下表所列收費：

Fresh water for other uses is charged at different rates as follows, based on the purpose of consumption.

用途 Purpose	每單位 (1立方米) 收費 Charging rate per unit of one cubic metre
商業 Trade	$4.58 (註四 Note 4)
建築 Construction	$7.11 (註五 Note 5)
航運（非本地船隻）Shipping (Non-local Vessels)	$10.93 (註六 Note 6)
航運（本地船隻）Shipping (Local Vessels)	$4.58 (註七 Note 7)
航運以外的任何用途（非本地船隻），並以預先繳費票繳交水費 Any purpose other than Shipping (Non-local Vessels) where payment is made against a prepaid ticket	$4.58 (註七 Note 7)
沖廁水每四個月的收費率 Flushing per four-month period — 首30個單位 for the first 30 units — 餘下單位 for the remainder	免費 Free $4.58 (註七 Note 7)

海水沖廁費用全免。
Sea water for flushing is supplied free of charge.

註一：一九七九年推出水費分級制度時，第二級收費的目標是大致收回每單位的淨生產成本，即按照水錶記錄的耗水量計算每單位的總生產成本（包括固定資產平均淨值的目標回報率）減去每單位的差餉補貼。於二零二二至二三年度，每單位的淨生產成本為 11.4 元，遠超 4.16 元的收費水平，主要因為水費自一九九五年起並無任何變動。

註二：一九七九年推出水費分級制度時，第三級收費的目標是大致收回每單位的總生產成本，即按照水錶記錄的耗水量計算每單位的平均生產成本（包括固定資產平均淨值的目標回報率）。於二零二二至二三年度，每單位的總生產成本為 16.8 元，遠超 6.45 元的收費水平，主要因為水費自一九九五年起並無任何變動。

註三：第四級收費定價比第三級收費高出約 40%，以阻止過量及浪費用水。

註四：一九九二年前，商業用途的收費與住宅用戶第二級收費相同。自一九九二年起，商業用途的收費修訂至高於住宅用戶第二級收費水平，旨在減少對非住宅用戶的補貼。

註五：一九九二年前，建築用途的收費與住宅用戶第三級收費相同。自一九九二年起，建築用途的收費修訂至高於住宅用戶第三級收費水平，旨在減少對非住宅用戶的補貼。

註六：航運（非本地船隻）收費於一九九六年作出修訂，當時收費水平訂為高於每單位總生產成本的 40%，目的是阻止非本地船隻在香港取水。

註七：此等收費與商業用途收費相同。

Note 1. When the tariff structure was introduced in 1979, the charge for the second tier was to recover approximately the net unit production cost, which meant the full unit production cost (including a target rate of return on average net fixed assets (ANFA)) less the average contribution from rates per unit, calculated based on the quantity of the metered consumption. In 2022-23, the net unit production cost is $11.4, which is materially higher than the charging rate of $4.16, mainly because water tariffs have not been changed since 1995.

Note 2. When the tariff structure was introduced in 1979, the charge for the third tier was to recover approximately the full unit production cost, which meant the average production cost per unit (including a target rate of return on ANFA), calculated based on the quantity of the metered consumption. In 2022-23, the full unit production cost is $16.8, which is materially higher than the charging rate of $6.45, mainly because water tariffs have not been changed since 1995.

Note 3. The fourth tier is set about 40% higher than the third tier to discourage extravagant and wasteful use of water.

Note 4. Prior to 1992, the charging rate for trade purposes was equal to the second-tier rate for domestic purposes. Commencing from 1992, the charging rate for trade purposes was set higher than the second-tier rate for domestic purposes mainly to reduce the subsidy to non-domestic consumers.

Note 5. Prior to 1992, the charging rate for construction purposes was equal to the third-tier rate for domestic purposes. Commencing from 1992, the charging rate for construction purposes was set higher than the third-tier rate for domestic purposes mainly to reduce the subsidy to non-domestic consumers.

Note 6. The charging rate for shipping (non-local vessels) was last revised in 1996. At that time, it was set at 40% above the full unit production cost to discourage the taking of water in Hong Kong.

Note 7. These charging rates were set at the rate equal to the charging rate for trade purposes.

自一九九八至九九年度起，水務經營帳目包括各項補貼收入後仍錄得虧損，需依靠政府一般收入補助。二零二二至二三年度錄得虧損24.1 億元，成本回收率為 79.3%。政府會繼續定期檢討水費，審慎考慮各項因素，包括承擔能力、水務設施的財政表現、當時的經濟形勢，以及立法會議員的意見。

除水費外，《水務設施規例》（第 102A 章）亦列明 25 項法定收費項目。我們一直遵照政府的「用者自付」原則檢討這些收費項目，旨在悉數收回提供服務的成本。於二零一八至一九年度，25 項法定收費項目已作調整，修訂自二零一九年三月二十九日起生效。

水費收入總覽

於二零二二至二三年度，約 16% 住宅用戶毋須支付任何水費；40% 達到第二級水費，需繳付每單位 4.16 元水費；19% 需繳付第三級水費，即每單位 6.45 元；餘下 25% 需繳付第四級水費，即每單位 9.05 元的水費。於二零二二至二三年度，290 萬住宅用戶（包括無須繳付水費之用戶）的每月平均水費為 49 元。根據政府統計處的住戶開支統計調查，水費及排污費開支約相等於住戶每月平均開支的 0.3%。

水費收入（按用戶類別劃分）

過去五年按用戶類別劃分的水費收入分析如下：

Waterworks operations, after including revenue from various contributons, have seen deficits since 1998-99, and thus are subsidised by the Government's General Revenue. In 2022-23, the deficit was $2,413.4M and the cost recovery rate was 79.3%. The Government continues to review the water tariff periodically, taking into consideration a number of factors, including affordability, financial performance of waterworks operations, the prevailing economic situation, and the views of Legislative Council members.

Other than water charges, there are 25 statutory fee items stipulated in the Waterworks Regulations (Cap. 102A). The WSD periodically review these fee items in accordance with the Government-wide "user pays" principle, which aims to recover the full cost of providing services. During the year 2018-19, 25 statutory fee items have been revised effective from 29 March 2019.

PROFILES OF THE REVENUE FROM WATER CHARGES

During this financial year, about 16% of domestic customers were not required to pay water charges, 40% paid up to the tier 2 rate of $4.16 per unit, 19% paid up to the tier 3 rate of $6.45 per unit, and 25% paid up to the tier 4 rate of $9.05 per unit. For the WSD's 2.9 million domestic customers, the average water charge in 2022-23, including those not required to pay any charge, was $49 per month. According to the Census & Statistics Department household expenditure survey, the water and sewage charges amount to about 0.3% of the average monthly household expenditure.

WATER CHARGES (BY SECTOR)

An analysis of the water charges by sector over the past five years is outlined as follows:

用戶類別 Sector	財政年度（百萬元） Financial Year ($million)					
	18/19	19/20	20/21	21/22	22/23	% (22/23)
商業 Trade	974	727(905)	277(828)	298(890)	**301(904)**	**13.2(30.8)**
住宅 Domestic	1,556	1,643(1,643)	1,867(1,867)	1,768(1,768)	**1,678(1,678)**	**73.6(57.2)**
政府 Government	164	172(172)	148(148)	162(162)	**170(170)**	**7.4(5.8)**
其他# Others#	187	165(182)	125(177)	128(180)	**132(182)**	**5.8(6.2)**
總收入 Total	2,881	2,707(2,902)	2,417(3,020)	2,356(3,000)	**2,281(2,934)**	**100.0(100.0)**

包括沖廁用淡水
Includes fresh water for flushing

括號內數字為實際水費收入加上水費寬減額。
Figures in brackets are actual water charges received plus concession.

收入及開支分析

水費收入包括一般水費、各項收費、牌費，以及可收回支出的工程費用。在編製水務賬目時，會以應計賬目基準呈列財務表現及狀況，其中包括各項非現金收入項目，主要為差餉補貼、免費用水補貼及政府用水。總運作成本主要包括員工開支、購買東江水的成本、折舊、運作及行政開支。過去五年的收入及開支分析如下：

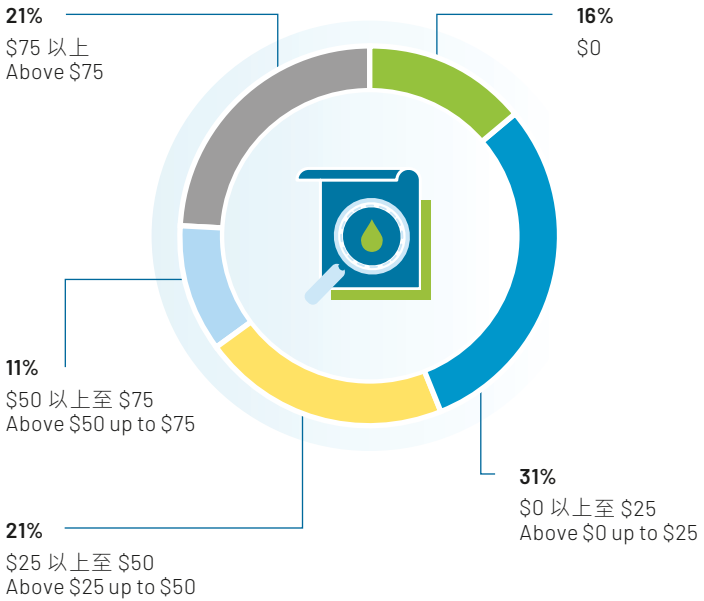
ANALYSIS OF REVENUE AND EXPENDITURE

Revenue collections include chargeable water supplies, fees, licences, and reimbursable works. In preparing the Waterworks Operating Accounts which present the WSD's financial results and positions on an accrual accounting basis, the revenues include non-cash items, mainly contributions from rates, contributions on free allowance, and water supplies to Government establishments. The total operating costs include mainly staff costs, Dongjiang water purchase costs, depreciation, operating and administration expenses. An analysis of the revenue and expenditure over the past five years is as follows:

收入（百萬元）
Revenue ($million)

財政年度 Financial Year	18/19	19/20	20/21	21/22	22/23
一般水費 Chargeable Supplies	2,717.2	2,534.8	2,268.5	2,193.6	**2,110.8**
差餉補貼 Contribution from Rates	2,574.8	3,146.7	2,856.4	2,888.1	**2,864.7**
差餉寬減補貼 Government Contribution on Concession of Rates	2,665.0	2,340.3	2,622.2	2,252.6	**2,285.4**
水費寬減補貼 Government Contribution on Concession of Water Charges	-	195.2	603.3	644.5	**653.5**
免費用水補貼 Government Contribution on Free Allowance to Consumers	1,055.0	1,083.3	1,129.8	1,171.5	**1,084.1**
政府用水 Supplies to Government Establishments	163.8	172.0	148.3	162.1	**169.8**
各項收費、存款利息及其他 Fees, charges, interest from deposits and others	60.3	72.6	35.4	28.5	**77.2**
總額 Total	9,236.1	9,544.9	9,663.9	9,340.9	**9,245.5**

二零二二／二三年度住宅用戶每月水費分佈圖
Distribution of Household Average Monthly Bills 2022/23



開支（百萬元）
Expenditures ($million)

財政年度 Financial Year	18/19	19/20	20/21	21/22	22/23
員工開支 Staff costs	2,077.9	2,195.0	2,042.7	1,973.0	**1,973.1**
運作及行政開支 Operating and administration expenses	2,023.6	2,094.1	2,453.7	2,389.8	**2,454.1**
購買東江水的成本 Dongjiang water purchase cost	4,796.5	4,810.9	4,821.4	4,856.6	**4,965.3**
折舊 Depreciation	2,013.6	2,120.5	2,171.2	2,181.5	**2,266.4**
總額 Total	10,911.6	11,220.5	11,489.0	11,400.9	**11,658.9**

本署致力以符合成本效益的方式提供服務，並在固定資產、設備、資訊科技及人力資源方面投入大量資源，藉此提高運作效益及員工生產力，務求滿足市民對更優質服務的需求。社會大眾以及我們的用戶可以放心，我們會實行嚴謹的財務紀律，在提供優質服務滿足用戶需要之餘，不忘提升成本效益。這是我們實現抱負和使命的基本法則。

The WSD is committed to providing services as cost effectively as possible, and has made substantial investments in fixed assets, equipment, information technology and human resources to improve operational efficiency and staff productivity to meet the public's demand for a higher quality of services. Our customers and the public at large can rest assured that the WSD will exercise strict financial discipline and be very cost conscientious in delivering quality services to meet customer demands. This is the WSD's underlying approach to achieve its vision and missions.

水務 - 經營帳目

二零二二／二零二三年度回顧

截至二零二三年三月三十一日止的財政年度

工作方面 Activities
按照水錶記錄的淡水耗水量下降0.9%至6.71億立方米 Metered fresh water consumption decreased by 0.9% to 671 million cubic metres

WATERWORKS – OPERATING ACCOUNTS

REVIEW OF THE YEAR 2022-23

For the year ended 31 March 2023

財務表現 Financial Performance
收入下降1.0% Revenue decreased by 1.0%
開支上升2.3% Expenditure increased by 2.3%
稅後虧損由二零二一／二二年度的20.6億元升至二零二二／二三年度的24.1億元 Deficit after taxation increased from $2,060.0 million in 2021-22 to $2,413.4 million in 2022-23
按固定資產平均淨值計算的回報率由二零二一／二二年度的-2.9%降至二零二二／二三年度的-3.2% Return on Average Net Fixed Assets decreased from -2.9% in 2021-22 to -3.2% in 2022-23

經營帳目

截至二零二三年三月三十一日止的財政年度

OPERATING ACCOUNTS

For the year ended 31 March 2023

		註 Note	2023(百萬元)$M	2022(百萬元)$M
收入	Revenue	2	**9,245.5**	9,340.9
開支	Expenditure	3	**11,658.9**	11,400.9
稅前虧損	**Deficit before taxation**		**(2,413.4)**	(2,060.0)
稅項	Taxation	1(e) and 4	**-**	-
稅後虧損	**Deficit after taxation**	1(i)	**(2,413.4)**	(2,060.0)

附註為這帳目的一部分。 The annexed notes form part of these accounts.

衡量財務表現的指標

截至二零二三年三月三十一日止的財政年度

FINANCIAL PERFORMANCE MEASURES

For the year ended 31 March 2023

		註 Note	2023(百萬元)$M	2022(百萬元)$M
固定資產平均淨值	Average net fixed assets (ANFA)	1(h) and 5	**75,014.2**	70,301.0
實際回報額	Actual return		**(2,413.4)**	(2,060.0)
目標回報額	Target return		**1,125.2**	1,827.8
按固定資產平均淨值計算的實際回報率	Actual return as % of ANFA	1(g)	**(3.2%)**	(2.9%)
按固定資產平均淨值計算的目標回報率	Target return as % of ANFA		**1.5%**	2.6%

附註為這帳目的一部分。 The annexed notes form part of these accounts.

財務狀況表

於二零二三年三月三十一日

STATEMENT OF FINANCIAL POSITION

As at 31 March 2023

		註 Note	2023(百萬元)$M	2022(百萬元)$M
可動用淨資產	**Net assets employed**			
固定資產	**Fixed assets**	1(b),1(c) and 5	**77,792.6**	72,235.8
流動資產	Current assets	1(d) and 6	**2,843.6**	2,894.1
流動負債	Current liabilities	7	**(2,890.6)**	(2,838.5)
流動資產淨值	**Net current assets**		**(47.0)**	55.6
			77,745.6	72,291.4
財政來源	**Financed by**			
公共資本帳目	**Public capital account**	1(i) and 8	**77,745.6**	72,291.4

附註為這帳目的一部分。 The annexed notes form part of these accounts.

帳目附註

1. 會計政策

(a) 會計基礎

此帳目是根據歷史成本基礎來制定，並略加修訂以包括名義的收支。

(b) 固定資產

(i) 除政府收回的土地外，固定資產不包括水務設施和集水區位處的土地。至於政府收回的土地，其收回成本已包括在有關的工程成本內。

(ii) 至於工程項目，成本包括實際直接開支，和施工期間有關設計、規劃和監督等的員工開支。

(iii) 所有其他固定資產，除了建造中的資產以成本值計算外，均以其成本值減去累計折舊列出。

(c) 折舊

(i) 折舊是根據固定資產成本值減去使用期末的剩餘值，採用直線攤銷法按其預計使用年期分期攤銷。每年折舊率為：

隧道、堤壩、收回土地及造林等	1%
土木工程	2%
喉管 — 淡水	2%
— 海水	5%
機電工程、機器及設備	4%-20%
水錶	8.33%
電腦硬件、軟件及系統	10%-33.33%
車輛	10%-20%

(ii) 建造中的資產並沒有折舊撥備。

Notes to the Accounts

1. Accounting Policies

(a) Basis of Accounting

The accounts have been prepared on the historical cost basis of accounting, modified to include notional receipts and payments.

(b) Fixed Assets

(i) No cost is included for land which is occupied by installations or sterilised by catchment areas except that, where it has been resumed, the cost of resumption has been included in the capital cost of the project concerned.

(ii) For capital projects, the costs include the actual direct expenditure and staff costs for design, planning and supervision during the construction period.

(iii) All other fixed assets are stated at cost less accumulated depreciation except assets under construction which are stated at cost.

(c) Depreciation

(i) Depreciation is provided on a straight-line basis to amortise the cost of fixed assets less residual value over their estimated useful lives. The annual rates of depreciation used are:

Tunnels, dams, resumption and afforestation, etc.	1%
Civil engineering works	2%
Water mains - fresh	2%
- salt	5%
Mechanical/electrical works, plant and machinery	4%-20%
Meters	8.33%
Computer hardware, software and system	10%-33.33%
Motor vehicles	10%-20%

(ii) No depreciation is provided on assets under construction.

(d) 現有存貨

重要的現有存貨以加權平均法，按成本值計值。

(e) 稅項

由二零二二至二三年度起，名義利得稅不再包括在帳目內。在二零二二至二三年度之前，名義利得稅依照以下會計政策報告在經營帳目內。

名義利得稅乃按年度預期的應課溢利，以報告期末日期的現行稅率，及過往年度的應付稅項調整而作出所需要的撥備。由於這項公用事業於本年度沒有應課稅溢利，因此無需在帳目上作出名義利得稅的撥備。由於這項公用事業沒有應課稅溢利可用作抵銷可扣稅暫時差額，因此無需在帳目上就所有重大暫時差額作出遞延稅項撥備。

(f) 僱員福利

僱員福利（包括薪金、酬金、退休金、房屋津貼和年假）會被確認為對僱員當年度所提供之相關服務而列作應計開支。

(g) 按固定資產平均淨值計算的實際回報率

按稅前（二零二二年：按稅後）溢利或虧損與固定資產平均淨值的比率計算。

(h) 固定資產平均淨值

固定資產平均淨值是指總固定資產值減去累計折舊在期初及期末兩項數值的簡單平均數。

(i) 虧損

由於水務監督沒有獨立的法定身份，其財政資源均視為政府一般收入的一部分，而有關虧損亦會於這項公用事業的公共資本帳目中調節。

(d) Stocks in Hand

Stocks in Hand are valued at cost using the weighted average cost method to the extent that they are material.

(e) Taxation

Notional profits tax is excluded from reporting with effect from 2022-23. Prior to 2022-23, notional profits tax was reported in the operation accounts in accordance with the following accounting policies -

Notional profits tax was provided, where necessary, based on the expected taxable surplus for the year, using the tax rates prevailing at the reporting period end date, and any adjustment to tax payable in respect of previous years. No provision for notional profits tax had been made in the accounts, as the utility had no taxable surplus for the year. No provision for deferred tax in respect of all material temporary differences had been made in the accounts as the utility had no taxable surplus against which the temporary differences could be utilised.

(f) Employee Benefits

Employee benefits, including salaries, gratuities, pensions, housing benefits and annual leave, are accrued and recognised as an expense in the year in which the associated services are rendered by employees.

(g) Actual Return on ANFA

This is calculated as a percentage of surplus/deficit before taxation (2022: after taxation) to average net fixed assets (ANFA).

(h) Average Net Fixed Assets

The average net fixed assets (ANFA) represents the simple average of the opening and closing value of total fixed assets less accumulated depreciation.

(i) Deficit

Since the Water Authority does not have a separate legal identity, its financial resources form part of the General Revenue. All deficits are deemed to be financed by the General Revenue and adjusted to the Public Capital Account of the utility.

2. 收入

2. Revenue

		2023(百萬元)$M	2022(百萬元)$M
收費供水	Chargeable supplies	**2,110.8**	2,193.6
差餉補貼	Contribution from rates	**2,864.7**	2,888.1
政府對寬減計劃的補貼	Government contribution on concessions	**2,938.9**	2,897.1
政府為用戶提供免費用水的補貼	Government contribution on free allowance to consumers	**1,084.1**	1,171.5
政府樓宇用水	Supplies to Government establishments	**169.8**	162.1
收費、牌照及可收回支出的工程	Fees, licences and reimbursable works	**26.6**	25.7
存款利息	Interest from deposits	**50.6**	2.8
		9,245.5	9,340.9

政府對寬減計劃的補貼包括差餉及水費兩部分：

(i) 政府對二零二一／二二年度及二零二二／二三年度的差餉寬減計劃的補貼分別為22.526億元及22.854億元，以彌補於該年度因實行差餉寬減措施而造成的差額；及

(ii) 政府對二零二一／二二年度及二零二二／二三年度的水費寬減計劃的補貼分別為6.445億元及6.535億元，以彌補於二零二一年四月一日至二零二三年三月三十一日因實行非住宅用戶的淡水收費寬減措施而造成的差額。

政府為用戶提供免費用水補貼的計算方法，是把二零二一／二二年度及二零二二／二三年度分別為12.7元和11.4元的淡水每單位淨生產成本（已包括按固定資產平均淨值計算的目標回報額，在相關年度分別為每單位2.8元和1.4元），乘以按照水錶記錄淡水耗用量內的免費用水補貼用量。

The Government contribution on concessions comprises two parts:

(i) Government contribution on concession of rates of $2,252.6M in 2021-22 and $2,285.4M in 2022-23 to cover the shortfall in contribution from rates resulting from the concession of rates granted during the years; and

(ii) Government contribution on concession of water charges of $644.5M in 2021-22 and $653.5M in 2022-23 to cover the shortfall in chargeable supplies resulting from concession of water charges for fresh water consumption for non-domestic purposes from 1 April 2021 to 31 March 2023.

The calculation of Government contribution on free allowance to consumers is based on the fresh water net unit production cost of $12.7 and $11.4 for the years 2021-22 and 2022-23 respectively, which has included a target return on ANFA of $2.8 and $1.4 per unit for the respective years, multiplied by the quantity of metered fresh water consumption within the free allowance quantity.

3. 開支

3. Expenditure

		2023(百萬元)$M	2022(百萬元)$M
員工開支	Staff costs*	**1,973.1**	1,973.0
運作及行政開支	Operating and administration expenses*	**2,454.1**	2,389.8
購買東江水的成本	Dongjiang water purchase cost	**4,965.3**	4,856.6
折舊	Depreciation	**2,266.4**	2,181.5
		11,658.9	11,400.9

* 帳目不包括「防疫抗疫基金」撥款推行的創造職位計劃所涉及的開支。
* The expenditure relating to Job Creation Scheme funded under the Anti-epidemic Fund have been excluded.

4. 稅項

由二零二二至二三年度起，水務監督不再需要在帳目上報告名義利得稅。因此，水務監督沒有為截至二零二三年三月三十一日止財政年度的名義利得稅進行撥備。

截至二零二二年三月三十一日止財政年度的經營帳目內的相關稅項如下 –

4. Taxation

The Water Authority is no longer required to report notional profits tax with effect from 2022-23. Accordingly, no notional profits tax has been provided by the Water Authority for the year ended 31 March 2023.

The taxation charged to the Operating Account for the year ended 31 March 2022 represented –

		(百萬元)$M
名義利得稅	Notional profits tax charge for the year	0.0
以下項目的遞延稅項資產/（負債）未被確認： 未使用的稅項虧損	Deferred tax assets/(liabilities) not recognized in respect of: Unused tax loss	49,920.4
由折舊免稅額所產生的重大暫時差異	Material temporary difference arising from depreciation allowances	(29,025.8)

5. 固定資產 5. Fixed Assets

		樓宇、過濾器、喉管等 Buildings, Filters, Mains, etc. (百萬元)$M	機器及設備 Plant and Machinery (百萬元)$M	電腦硬件、軟件及系統 Computer Hardware, Software & System (百萬元)$M	海水沖廁設施 Salt Water Flushing (百萬元)$M	船灣淡水湖 Plover Cove (百萬元)$M	萬宜水庫 High Island (百萬元)$M	水錶 Meters (百萬元)$M	車輛 Motor Vehicles (百萬元)$M	建造中的資產 Assets Under Construction (百萬元)$M	總額 Total (百萬元)$M
成本	**Cost**										
二零二二年四月一日	At 1 April 2022	73,160.1	234.2	491.2	15,211.7	702.0	1,661.2	461.3	106.1	13,605.3	105,633.1
添置	Additions	-	12.7	0.8	-	-	-	-	2.0	7,820.9	7,836.4
轉撥	Transfers	4,218.4	2.7	33.3	1,424.5	-	-	-	10.4	(5,689.3)	-
處置	Disposals	(0.3)	(7.4)	(0.1)	(45.8)	-	-	(18.1)	(5.3)	-	(77.0)
二零二三年三月三十一日	**At 31 March 2023**	**77,378.2**	**242.2**	**525.2**	**16,590.4**	**702.0**	**1,661.2**	**443.2**	**113.2**	**15,736.9**	**113,392.5**
累計折舊	**Accumulated Depreciation**										
二零二二年四月一日	At 1 April 2022	23,166.4	164.9	393.8	7,462.0	495.1	1,302.6	350.4	62.1	-	33,397.3
該年折舊	Charge for the year	1,584.8	10.9	19.2	576.5	9.3	28.5	27.5	9.7	-	2,266.4
處置後轉回	Written back on Disposals	(0.2)	(7.3)	(0.1)	(33.2)	-	-	(18.1)	(4.9)	-	(63.8)
二零二三年三月三十一日	**At 31 March 2023**	**24,751.0**	**168.5**	**412.9**	**8,005.3**	**504.4**	**1,331.1**	**359.8**	**66.9**	**-**	**35,599.9**
帳面淨值	**Net Book Value**										
二零二三年三月三十一日	**At 31 March 2023**	**52,627.2**	**73.7**	**112.3**	**8,585.1**	**197.6**	**330.1**	**83.4**	**46.3**	**15,736.9**	**77,792.6**
二零二二年三月三十一日	At 31 March 2022	49,993.7	69.3	97.4	7,749.7	206.9	358.6	110.9	44.0	13,605.3	72,235.8

帳目不包括搬遷食水及海水配水庫和濾水廠往岩洞工程項目的資本開支。
The capital expenditure relating to the relocation of fresh water and salt water service reservoirs and water treatment works into caverns have been excluded.

6. 流動資產

6. Current Assets

		2023(百萬元)$M	2022(百萬元)$M
現有存貨	Stocks in Hand	**156.5**	157.5
應收帳項	Debtors	**297.6**	398.9
與庫務署的往來帳	Current Account with the Treasury	**2,389.5**	2,337.7
		2,843.6	2,894.1

7. 流動負債

7. Current Liabilities

		2023(百萬元)$M	2022(百萬元)$M
用戶和承建商的按金	Consumers' and contractors' deposits	**2,379.5**	2,327.7
應付帳項	Creditors	**511.1**	510.8
		2,890.6	2,838.5

8. 公共資本帳目

公共資本帳目指政府在這項公用事業的投資。

8. Public Capital Account

The Public Capital Account represents the Government's investment in this utility.

		2023(百萬元)$M	2022(百萬元)$M
四月一日結餘	Balance as of 1 April	**72,291.4**	68,462.3
本年度的虧損	Deficit for the year	**(2,413.4)**	(2,060.0)
政府的額外現金投資	Additional cash investment by the Government	**7,867.6**	5,889.1
三月三十一日結餘	**Balance as at 31 March**	**77,745.6**	**72,291.4**

9. 承擔

於二零二三年三月三十一日及二零二二年三月三十一日，未於經營帳目作出撥備的未償還承擔如下：

9. Commitments

Outstanding commitments as at 31 March 2023 and 31 March 2022 not provided for in the operating accounts were as follows:

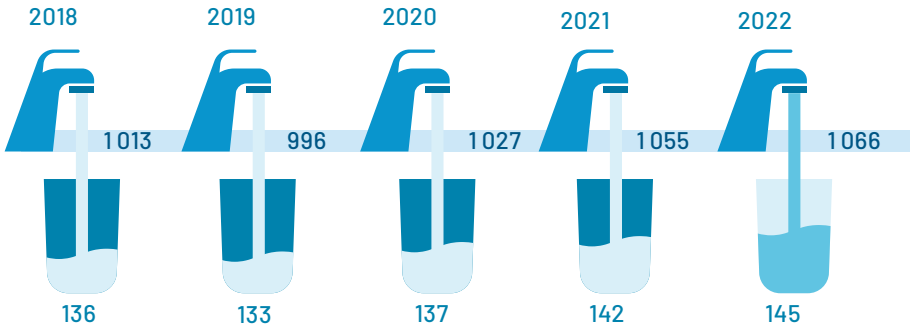
		2023(百萬元)$M	2022(百萬元)$M
(i)基本工程項目、物業、機器及設備以及非經常資助金	(i) Capital works projects, property, plant and equipment and capital subvention	**26,061.5**	29,391.8
(ii)非經常性開支	(ii) Non-recurrent expenditure	**-**	-
(iii)投資	(iii) Investments	**-**	-
(iv)貸款及非經常性撥款補助金	(iv) Loans and non-recurrent grants	**-**	-
		26,061.5	**29,391.8**

數據一覽
Data Summary

二零一八至二二年全年食水用量及人均用水量
ANNUAL FRESH WATER CONSUMPTION AND PER CAPITA CONSUMPTION 2018 – 2022

全年食水用量
Annual Fresh Water Consumption
（百萬立方米 million m^3）

人均用水量 *
Per Capita Consumption*
（立方米/每年 m^3 per year）



二零一八至二二年全港人口及獲食水供應人口
POPULATION IN HONG KONG AND POPULATION SERVED WITH FRESH WATER 2018 – 2022

年份 Year	2018	2019	2020	2021	2022
全港人口*（百萬） **Population in Hong Kong*** (million)	7.45	7.51	7.48	7.41	**7.35**
獲食水供應人口（百萬） **Population served with fresh water** (million)	7.45#	7.51#	7.48#	7.41#	**7.35#**

* 根據政府統計處公佈的年中人口數字。
* Based on the mid-year population figures released by the Census and Statistics Department.
# 全港超過 99.9% 人口獲食水供應。
# Over 99.9% of the population in Hong Kong is served with fresh water.

二零一八至二二年全年海水用量及獲海水供應人口
ANNUAL SALT WATER CONSUMPTION AND POPULATION SERVED WITH SALT WATER 2018 – 2022

年份 Year	2018	2019	2020	2021	2022
全年海水用量（百萬立方米） **Annual Salt Water Consumption** (million m^3)	279	307	318	321	**319**
獲海水供應人口（百萬） **Population Served with Salt Water** (million)	6.27	6.33	6.31	6.27	**6.21***

* 在二零二二年，儘管沖廁用海水供應網絡的覆蓋率輕微上升，但由於全港人口下跌，獲海水供應人口相比二零二一年亦因而有所減少。
* In 2022, notwithstanding the slight increase in the network coverage of salt water supply for flushing, the population served with salt water is less than that in 2021 due to the decline in Hong Kong's population.

二零二二年四月至二零二三年三月的食水水質

香港特別行政區政府於二零二一年四月二十二日公布了最新的香港食水標準，當中包括 60 個水質參數。市民可參閱水務署網頁了解香港食水標準。

政府亦訂立了食水感官準則，以確保食水的感官質量，如味道和氣味等。

食水樣本是從濾水廠、配水庫、食水缸、供水接駁點及用戶水龍頭抽取。

這時段內供應至客戶的香港食水水質達標率躋身世界發達國家及城市前列，食水水質優良。

DRINKING WATER QUALITY FOR THE PERIOD OF APRIL 2022 - MARCH 2023

The Government of the Hong Kong Special Administrative Region promulgated on 22 April 2021 the latest Hong Kong Drinking Water Standards ("HKDWS") which includes 60 water quality parameters. The public may visit the WSD website for information on HKDWS.

The Government has also established the Aesthetic Guidelines ("AG") in ensuring the aesthetic quality, such as the taste and odour, of the drinking water in Hong Kong.

Drinking water samples were taken at water treatment works, service reservoirs, fresh water tanks, connection points and consumers' taps.

The compliance rate of the quality of drinking water supplied to customers in Hong Kong during this period is high amongst developed countries and cities and the drinking water is of excellent quality.

甲、香港食水標準
Part A. Hong Kong Drinking Water Standards

參數	Parameter	單位 Unit	監測結果(註釋 1) Monitoring Data(Note 1) (04/2022 - 03/2023) 最低值 Minimum	最高值 Maximum	平均值 Average	香港食水標準標準值 Standard Value in HKDWS	達標(註釋 1) compliance(Note 1)
艾氏劑和狄氏劑	Aldrin & dieldrin	微克/公升 μg/L	< 0.008	< 0.008	< 0.008	≤ 0.03	✓
銻	Antimony	毫克/公升 mg/L	< 0.001	< 0.001	< 0.001	≤ 0.02	✓
砷	Arsenic	毫克/公升 mg/L	< 0.001	< 0.001	< 0.001	≤ 0.01	✓
鋇	Barium	毫克/公升 mg/L	0.003	0.025	0.015	≤ 1.3	✓
苯	Benzene	微克/公升 μg/L	< 2.5	< 2.5	< 2.5	≤ 10	✓
苯并[a]芘	Benzo[a]pyrene	微克/公升 μg/L	< 0.002	< 0.002	< 0.002	≤ 0.7	✓
硼	Boron	毫克/公升 mg/L	< 0.02	0.06	0.03	≤ 2.4	✓
溴酸鹽	Bromate	微克/公升 μg/L	< 1	2.0	< 1	≤ 10	✓

參數	Parameter	單位 Unit	監測結果(註釋1) Monitoring Data(Note 1) (04/2022 - 03/2023) 最低值 Minimum	最高值 Maximum	平均值 Average	香港食水標準標準值 Standard Value in HKDWS	達標(註釋1) compliance(Note 1)
一溴二氯甲烷	Bromodichloromethane	微克/公升 μg/L	< 15	18	< 15	≤ 60	✓
溴仿	Bromoform	微克/公升 μg/L	< 25	< 25	< 25	≤ 100	✓
鎘	Cadmium	毫克/公升 mg/L	< 0.001	< 0.001	< 0.001	≤ 0.003	✓
四氯化碳	Carbon tetrachloride	微克/公升 μg/L	< 0.5	< 0.5	< 0.5	≤ 4	✓
氯酸鹽	Chlorate	微克/公升 μg/L	< 10	110	28	≤ 300	✓
氯丹	Chlordane	微克/公升 μg/L	< 0.05	< 0.05	< 0.05	≤ 0.2	✓
氯	Chlorine	毫克/公升 mg/L	< 0.1	1.5	0.8	≤ 5	✓
亞氯酸鹽	Chlorite	微克/公升 μg/L	< 10	< 10	< 10	≤ 700	✓
氯仿	Chloroform	微克/公升 μg/L	< 50	< 50	< 50	≤ 300	✓
鉻	Chromium	毫克/公升 mg/L	< 0.001	0.001	< 0.001	≤ 0.05	✓
銅	Copper	毫克/公升 mg/L	< 0.003	0.75	0.020	≤ 2	✓
二(2-乙基己基)鄰苯二甲酸鹽	Di(2-ethylhexyl)phthalate	微克/公升 μg/L	< 2	< 2	< 2	≤ 8	✓
二溴乙腈	Dibromoacetonitrile	微克/公升 μg/L	< 0.5	1.8	< 0.5	≤ 70	✓
二溴一氯甲烷	Dibromochloromethane	微克/公升 μg/L	< 25	< 25	< 25	≤ 100	✓
1,2-二溴-3-氯丙烷	1,2-Dibromo-3-chloropropane	微克/公升 μg/L	< 0.25	< 0.25	< 0.25	≤ 1	✓
1,2-二溴乙烷	1,2-Dibromoethane	微克/公升 μg/L	< 0.1	< 0.1	< 0.1	≤ 0.4	✓
二氯乙酸鹽	Dichloroacetate	微克/公升 μg/L	< 2.0	16	4.0	≤ 40	✓
二氯乙腈	Dichloroacetonitrile	微克/公升 μg/L	< 2.5	4.0	< 2.5	≤ 20	✓
1,4-二氯苯	1,4-Dichlorobenzene	微克/公升 μg/L	< 75	< 75	< 75	≤ 300	✓

參數	Parameter	單位 Unit	監測結果(註釋1) Monitoring Data(Note 1) (04/2022 - 03/2023) 最低值 Minimum	最高值 Maximum	平均值 Average	香港食水標準標準值 Standard Value in HKDWS	達標(註釋1) compliance(Note 1)
1,2-二氯乙烷	1,2-Dichloroethane	微克/公升 μg/L	< 7.5	< 7.5	< 7.5	≤ 30	✓
二氯甲烷	Dichloromethane	微克/公升 μg/L	< 5	< 5	< 5	≤ 20	✓
1,4-二噁烷	1,4-Dioxane	微克/公升 μg/L	< 1.5	3.8	< 1.5	≤ 50	✓
異狄氏劑	Endrin	微克/公升 μg/L	< 0.15	< 0.15	< 0.15	≤ 0.6	✓
乙苯	Ethylbenzene	微克/公升 μg/L	< 75	< 75	< 75	≤ 300	✓
氟化物	Fluoride	毫克/公升 mg/L	< 0.14	0.58	0.48	≤ 1.5	✓
六氯丁二烯	Hexachlorobutadiene	微克/公升 μg/L	< 0.15	< 0.15	< 0.15	≤ 0.6	✓
鉛	Lead	毫克/公升 mg/L	< 0.001	0.008	< 0.001	≤ 0.01	✓
林丹	Lindane	微克/公升 μg/L	< 0.5	< 0.5	< 0.5	≤ 2	✓
汞	Mercury	毫克/公升 mg/L	< 0.00005	< 0.00005	< 0.00005	≤ 0.006	✓
甲氧毒草安	Metolachlor	微克/公升 μg/L	< 2.5	< 2.5	< 2.5	≤ 10	✓
微囊藻毒素-LR	Microcystin-LR	微克/公升 μg/L	< 0.5	< 0.5	< 0.5	≤ 1	✓
禾草特	Molinate	微克/公升 μg/L	< 1.5	< 1.5	< 1.5	≤ 6	✓
一氯乙酸鹽	Monochloroacetate	微克/公升 μg/L	< 2	2.1	< 2	≤ 20	✓
鎳	Nickel	毫克/公升 mg/L	< 0.001	0.062	0.002	≤ 0.07	✓
硝酸鹽(以 NO_3- 計)	Nitrate (as NO_3-)	毫克/公升 mg/L	< 2.5	14	4.7	≤ 50	✓
亞硝酸鹽(以 NO_2- 計)	Nitrite (as NO_2-)	毫克/公升 mg/L	< 0.004	0.020	< 0.004	≤ 3	✓
N-亞硝基二甲胺	N-Nitrosodimethylamine	微克/公升 μg/L	< 0.025	< 0.025	< 0.025	≤ 0.1	✓
高氯酸鹽	Perchlorate	微克/公升 μg/L	< 1	5.7	1.1	≤ 70	✓
硒	Selenium	毫克/公升 mg/L	< 0.003	< 0.003	< 0.003	≤ 0.04	✓

參數	Parameter	單位 Unit	監測結果(註釋1) Monitoring Data(Note 1) (04/2022 - 03/2023) 最低值 Minimum	最高值 Maximum	平均值 Average	香港食水標準標準值 Standard Value in HKDWS	達標(註釋1) compliance(Note 1)
西瑪三嗪	Simazine	微克/公升 µg/L	< 0.5	< 0.5	< 0.5	≤ 2	✓
苯乙烯	Styrene	微克/公升 µg/L	< 5	< 5	< 5	≤ 20	✓
特丁津	Terbuthylazine	微克/公升 µg/L	< 1.8	< 1.8	< 1.8	≤ 7	✓
四氯乙烯	Tetrachloroethene	微克/公升 µg/L	< 10	< 10	< 10	≤ 40	✓
甲苯	Toluene	微克/公升 µg/L	< 175	< 175	< 175	≤ 700	✓
總三鹵甲烷	Total trihalomethanes	比率總和(註釋2) sum ratio(Note 2)	0	0.48	0.21	比率總和 ≤ 1 sum ratio ≤ 1	✓
三氯乙酸鹽	Trichloroacetate	微克/公升 µg/L	< 2	12	3.9	≤ 200	✓
氟樂靈	Trifluralin	微克/公升 µg/L	< 5	< 5	< 5	≤ 20	✓
鈾	Uranium	毫克/公升 mg/L	< 0.0002	0.0004	< 0.0002	≤ 0.03	✓
二甲苯	Xylenes	微克/公升 µg/L	< 125	< 125	< 125	≤ 500	✓
總 α 活度	Gross alpha (α) activity	貝可/公升 Bq/L	< 0.1	0.1	< 0.1	≤ 0.5	✓
總 β 活度	Gross beta (β) activity	貝可/公升 Bq/L	< 0.2	0.2	< 0.2	≤ 1.0	✓
埃希氏大腸桿菌	Escherichia coli	菌落數/100毫升 cfu/100mL	0	0	0	0	✓

註釋

1. "✓" 表示這時段內抽取的食水樣本的食水水質均完全符合香港食水標準。本報告的監測結果不包括因個別處所內部供水系統的安裝、維修或保養出現問題而引致的不達標個案，有關個案於水務署網頁 (www.wsd.gov.hk/tc/dwsewqmp) 內公布。
2. 總三鹵甲烷的比率總和不得超出 1，其計算方式如下：

$$\frac{\text{溴仿含量}}{\text{其香港食水標準值}} + \frac{\text{一溴二氯甲烷含量}}{\text{其香港食水標準值}} + \frac{\text{二溴一氯甲烷含量}}{\text{其香港食水標準值}} + \frac{\text{氯仿含量}}{\text{其香港食水標準值}}$$

Notes

1. "✓" indicates full compliance of drinking water quality with the HKDWS in all drinking water samples taken during this period. Monitoring data in this report does not include non-compliant case(s) caused by the improper installation, repairing or maintenance of internal plumbing system at individual premises, information of which is published on the WSD's website (www.wsd.gov.hk/en/dwsewqmp).
2. Sum ratio of total trihalomethanes should not exceed 1, as calculated by:

$$\frac{\text{Bromoform}}{\text{its HKDWS}} + \frac{\text{Bromodichloromethane}}{\text{its HKDWS}} + \frac{\text{Dibromochloromethane}}{\text{its HKDWS}} + \frac{\text{chloroform}}{\text{its HKDWS}}$$

乙、感官準則
Part B. Aesthetic Guidelines

參數	Parameter	單位 Unit	監測結果(註釋1) Monitoring Data(Note 1) (04/2022 - 03/2023) 最低值 Minimum	最高值 Maximum	平均值 Average	準則值 Guideline Value	達標(註釋 2) Compliance(Note 2)
鋁	Aluminium	毫克/公升 mg/L	0.02	0.16	0.02	≤ 0.2	✓
色度	Colour	Hazen	< 5	< 5	< 5	≤ 15	✓
鐵	Iron	毫克/公升 mg/L	0.02	0.26	0.02	≤ 0.3	✓
錳	Manganese	毫克/公升 mg/L	< 0.01	0.02	< 0.01	≤ 0.08 註釋3 Note 3	✓
2-甲基異莰醇	2-Methyl-isoborneol (MIB)	納克/公升 ng/L	< 5	40	10	≤ 50	✓
氣味	Odour	–	無異味 Unobjectionable			無異味 Unobjectionable	✓
酸鹼值(水溫25℃時)	pH at 25 ℃	–	7.0	9.2	8.3	6.5 - 9.5	✓
味道	Taste	–	無異味 Unobjectionable			無異味 Unobjectionable	✓
混濁度	Turbidity	NTU	< 0.1	2.9	0.2	≤ 3	✓
鋅	Zinc	毫克/公升 mg/L	< 0.01	0.11	< 0.01	≤ 1.5	✓

註釋

1. 以上參數是有關香港食水的感官質量。水質超過感官準則值一般不會導致健康問題，但可能會導致較差的感官質量。
2. "✓" 表示這時段內抽取的食水樣本的食水水質均完全符合感官準則。

Notes

1. The above parameters relate to the aesthetic quality of drinking water in Hong Kong. The exceedance of which could cause objectionable aesthetic effects but will not cause health concerns in general.
2. "✓" indicates full compliance of drinking water quality with the AG in all water samples taken during this period.

丙、香港食水的一般特性
Part C. General Properties of the Drinking Water in Hong Kong

參數 Parameter	單位 Unit	監測結果(註釋1) Monitoring Data(Note 1) (04/2022 - 03/2023) 最低值 Minimum	最高值 Maximum	平均值 Average
導電率（水溫25℃時）Conductivity at 25 ℃	μS/cm	53	286	167
溫度 Temperature	℃	12.8	33.0	24.3
總鹼度（以 $CaCO_3$ 計）Total alkalinity (as $CaCO_3$)	毫克/公升 mg/L	8	46	27
總硬度（以 $CaCO_3$ 計）Total hardness (as $CaCO_3$)	毫克/公升 mg/L	6	75	40
鈣 Calcium	毫克/公升 mg/L	1	24	14
鎂 Magnesium	毫克/公升 mg/L	0.4	2.6	1.5
氯化物 Chloride	毫克/公升 mg/L	< 5	22	12
硫酸鹽 Sulphate	毫克/公升 mg/L	5	29	16
正磷酸鹽（以 PO_4 計）Ortho-phosphates (as PO_4)	毫克/公升 mg/L	< 0.01	0.01	< 0.01
二氧化硅（以 SiO_2 計）Silica (as SiO_2)	毫克/公升 mg/L	1.5	14	9.5

註釋

1. 以上項目是有關香港食水的一般物理和化學特性。香港食水標準及感官準則並不包括這些項目，因此沒有以上項目的標準值或準則值。

Notes

1. The above parameters relate to the general physical and chemical properties of the drinking water in Hong Kong. The HKDWS and AG do not include these parameters and hence there are no standard values or guideline values for them.

附錄
Appendices

附錄一

客戶諮詢中心
香港區

灣仔客戶諮詢中心
灣仔告士打道 7 號入境事務大樓 1 樓

九龍區

大角咀客戶諮詢中心
大角咀鐵樹街 41 號地下

新界區

沙田客戶諮詢中心
沙田上禾輋路 1 號沙田政府合署 3 樓

大埔客戶諮詢中心
大埔汀角路 1 號大埔政府合署 4 樓

屯門客戶諮詢中心
屯門屯喜路 1 號屯門政府合署 7 樓

APPENDIX I

Customer Enquiry Centres
Hong Kong

Wan Chai Customer Enquiry Centre
1/F, Immigration Tower, 7 Gloucester Road, Wan Chai

Kowloon

Tai Kok Tsui Customer Enquiry Centre
G/F, 41 Tit Shu Street, Tai Kok Tsui

New Territories

Sha Tin Customer Enquiry Centre
3/F, Sha Tin Government Offices, 1 Sheung Wo Che Road, Sha Tin

Tai Po Customer Enquiry Centre
4/F, Tai Po Government Offices, 1 Ting Kok Road, Tai Po

Tuen Mun Customer Enquiry Centre
7/F, Tuen Mun Government Offices, 1 Tuen Hi Road, Tuen Mun

附錄二

客戶查詢及申請服務的統計數字

APPENDIX II

Statistics on Customer Enquiries and Requests for Service

個案數目 Number of Enquiries and Requests	年份 Year 2018	2019	2020	2021	2022
書面、傳真、電郵 Letter, Fax and Email	259 039	266 624	290 771	316 721	**290 202**
電話 Telephone	860 650	836 767	859 836	846 353	**676 319**
親身 Counter	329 551	317 921	232 078	315 435	**262 351**
總數 Total	1 449 240	1 421 312	1 382 685	1 478 509	**1 228 872**

附錄三

客戶投訴的統計數字

APPENDIX III

Statistics on Customer Complaints

投訴數目 Number of Complaints	年份 Year 2018	2019	2020	2021	2022
與帳戶有關的投訴# Account-Related#	138	94	679	544	**60**
與帳戶無關的投訴 Non-Account-Related	6 454	5 828	6 519	7 174	**6 601**
總數 Total	6 592	5 922	7 198	7 718	**6 661**

由區議會、立法會及申訴專員轉介與帳戶有關的投訴。
Account-related complaints from District Councils, Legislative Council and The Ombudsman.

附錄四

二零二二至二三年度繳費方式的統計數字

APPENDIX IV

Statistics on Mode of Payment 2022/23

繳費方式 Mode of Payment	交易數目 No. of Cases	百分比 Percentage (%)
親身繳費 In person	3 077 000	39.1
郵寄 By post	47 000	0.6
自動轉帳 Autopay	844 000	10.7
繳費靈 Payment by Phone Service (PPS)	511 000	6.5
自動櫃員機 ATM	207 000	2.6
網上繳費 Internet	3 183 000	40.5
總數 Total	**7 869 000**	**100.0**

財政年度：由每年四月一日起至翌年三月三十一日止
年份：由每年一月一日起至十二月三十一日止

Financial Year: 1 April to 31 March
Year (Calendar Year): 1 January to 31 December

匯率
除另有說明外，本年報所用「元」均指港元。自一九八三年十月十七日起，政府透過一項有關發行紙幣的措施，將港元與美元聯繫，以 7.8 港元兑 1 美元為固定匯率。

Exchange Rates
When dollars are quoted in this report, they are, unless otherwise stated, Hong Kong dollars. Since 17 October 1983, the Hong Kong dollar has been linked to the US dollar, through an arrangement in the note-issue mechanism, at a fixed rate of HK$7.80 = US$1.

水務署
WATER SUPPLIES DEPARTMENT

香港灣仔告士打道七號入境事務大樓四十八樓
電話：(852) 2824 5000
傳真：(852) 2824 0578
電子郵件：wsdinfo@wsd.gov.hk
互聯網地址：http://www.wsd.gov.hk

48/F Immigration Tower, 7 Gloucester Road, Wan Chai, Hong Kong.
Telephone：(852) 2824 5000
Facsimile: (852) 2824 0578
E-mail：wsdinfo@wsd.gov.hk
Website address：http://www.wsd.gov.hk